



Waterford Institute *of* Technology
INSTITIÚID TEICNEOLAÍOCHTA PHORT LÁIRGE

**The Mental Health of Irish Jockeys: A Mixed-Methods
Approach**

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for the award of Doctor of Philosophy.

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“Vulnerability is not weakness. And that myth is profoundly dangerous... Vulnerability is the birthplace of connection and the path to the feeling of worthiness”

Dr Brene Brown

Abstract

Title: The Mental Health of Irish Jockeys: A Mixed-Methods Approach

Author: Lewis King

Background: The mental health of elite athletes has gathered increasing attention in recent years. Despite this, limited research exists regarding the mental health of professional jockeys. Thus, the primary aim of this study was to investigate the mental health and help-seeking attitudes of professional jockeys in Ireland.

Methods: *Study One:* Qualitative, semi-structured interviews were utilised to explore stressors experienced by jockeys. *Study Two:* An online questionnaire was completed by 84 jockeys to explore the prevalence of common mental disorders (psychological distress, depression, generalised anxiety, adverse alcohol use) and their associations with specific risk-factors (burnout, career satisfaction, social support, contemplating retirement). *Study Three:* Qualitative, semi-structured interviews were conducted to examine jockeys barriers and facilitators towards help-seeking. *Study Four:* An online questionnaire examined the relationships between mental health literacy and stigma on attitudes towards help-seeking. The study also sought to quantitatively assess the key barriers to help-seeking for jockeys.

Results: Study One revealed jockeys experienced a wide variety of stressors that were characterised into four general dimensions including: competition-based stressors; racing industry stressors; interpersonal stressors; and career-based stressors. In Study Two, nearly 80% of all professional jockeys who took part in the study met the criteria for at least one mental health disorder, indicating probable or potential mental ill-health. Specifically, 61% for adverse alcohol use, 35% for depression, 27% for generalised anxiety, and 19% for psychological distress. Burnout, career satisfaction, and contemplating retirement were all significantly associated with generalised anxiety and psychological distress. In Study Three, a number of barriers (negative perceptions of others; cultural norms; low mental health literacy) and facilitators (education; social support; media campaigns) to help-seeking were identified. In Study Four, findings indicated that MHL, self-stigma of seeking psychological help and public stigma significantly predicted attitudes towards help-seeking over current levels of psychological distress and previous help-seeking history. The association between MHL on attitudes towards help-seeking was partially mediated by self-stigma. The most prominent barriers to help-seeking for CMDs reported by jockeys was the fear of owners/trainers finding out they were seeking help, limited time to engage with services, and difficulty understanding when support from a mental health professional is required.

Conclusion: Overall, this thesis contributes unique findings to the understanding of jockey mental health, whilst also extending knowledge of the broader athlete mental health literature. The thesis highlights the challenging nature of a career as a jockey which may be linked to adverse mental health outcomes such as a prevalence of common mental disorders. Findings also indicated a number of barriers to help-seeking which may promote a reluctance to seek help, with self-stigma and mental health literacy appearing important constructs to address in future research and psychoeducational programmes.

Declaration

I declare that the work in this thesis is my own work, completed under the supervision of Dr Ciara Losty (Department of Sport and Exercise Science, Waterford Institute of Technology), Dr SarahJane Cullen (Department of Sport and Exercise Science, Waterford Institute of Technology) and Professor Giles Warrington (Department of Physical Education and Sport Sciences, University of Limerick), with guidance also from Dr Adrian McGoldrick (former Senior Medical Officer of the Irish Horse Racing Regulatory Board), and Dr Jennifer Pugh (Senior Medical Officer of the Irish Horse Racing Regulatory Board). This work has not been submitted for any academic award at this, or any other, third level institution.

Signed: 

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Publications

Publications from the Thesis

King, L., Cullen, SJ., O'Connor, S., McGoldrick, A., Pugh, J., Warrington, G., Woods, G., Nevill, A., & Losty, C. (2020). Common mental disorders among Irish jockeys: prevalence and risk factors. *The Physician and Sportsmedicine*. 49(2), 1-7.

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Conference Proceedings

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King, L., Losty, C., Warrington, G., McGoldrick, A., and Cullen, SJ. (2019). Mental health and lifestyle factors of Irish jockeys. *International Conference for the Health, Safety, and Welfare of Jockeys*, Dubai, United Arab Emirates.

King, L., Losty, C., Warrington, G., McGoldrick, A., and Cullen, SJ. (2018). The mental health of retired jockeys. *European Conference of Sport Science*, Dublin, Ireland.

Industry Dissemination

The findings presented throughout the present thesis have been shared via multiple sources and outlets, beyond academic publications. This included a number of interviews published in newspaper articles and online media, as well as radio interviews. Details and links to each dissemination source are provided below:

Newspaper Articles and Online Media

Irish Field – Sport Psychology the key to added success (July 2018) - <https://www.theirishfield.ie/health-column-sport-psychology-the-key-to-added-success-387668/>

RTE Brainstorm – How Jockeys Cope with a Tough and Demanding Sport (March 2019) - <https://www.rte.ie/brainstorm/2019/0306/1034587-how-jockeys-cope-with-a-tough-and-demanding-sport/>

Irish Field – Reaching out to Jockeys and Trainers – Mental Health Study (July 2019)
- <https://www.theirishfield.ie/health-reaching-out-to-trainers-and-jockeys-478067/>

The Sunday Independent – Racehorse Trainer Mental Health (July 2019) – Study aims to examine burnout level - <https://www.independent.ie/sport/horse-racing/study-aims-to-examine-trainer-burnout-level-38289021.html>

Irishracing.com – My Racing Story (November, 2019) - <https://www.irishracing.com/blog-item?headline=Lewis-King&prid=202478>

Racing Post – Study finds 79 per cent of Irish jockeys meet criteria for a mental health issue (August 2020) - <https://www.racingpost.com/news/study-finds-79-per-cent-of-irish-jockeys-meet-criteria-for-a-mental-health-issue/447601>

The Sunday Independent – Eight in ten jockeys suffer mental health issue (September 2020) - <https://www.independent.ie/sport/horse-racing/eight-in-ten-irish-jockeys-suffer-mental-health-issue-39563825.html>

Racing Post – Four in ten Irish trainers showing signs of depression, report reveals (February 2021) - <https://www.racingpost.com/news/latest/research-reveals-40-per-cent-of-irish-trainers-showing-signs-of-depression/474835>

Irish Examiner – Jockeys and mental health: Delving into the unspoken world of horseracing (May 2021) - <https://www.irishexaminer.com/sport/racing/arid-40294727.html>

Radio

Interviewed on **WLR FM** to discuss mental health amongst Irish jockeys (November 2019). Link to interview: <https://t.co/gmb3Ilyl66?amp=1>

Interviewed on **WLR FM** to discuss racehorse trainer mental health (March 2021).

Link to interview: https://www.spreaker.com/user/wlrfm/deise-today-friday-12th-march-part-1_1

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List of Abbreviations

Abbreviation	Meaning
ABQ	Athlete Burnout Questionnaire
BRUMS	Brunel Mood Score Scale
CES-D	Center for Epidemiological Studies - Depression
CMD	Common Mental Disorder
CI	Confidence Intervals
DALYs	Disability Adjusted-Life Years
DSM	Diagnostic and Statistical Manual of Mental Disorders
F2F	Face-to-Face Counselling
GAD	Generalised Anxiety Disorder
GDP	Gross Domestic Product
HRI	Horse Racing Ireland
ICD	International Statistical Classification of Diseases and Related Health Problems
IHRB	Irish Horseracing Board
MDD	Major Depressive Disorder
MHD	Mental Health Difficulties
MHL	Mental Health Literacy
MMR	Mixed-Methods Research
NH	National Hunt
OC	Attitudes towards Online Counselling
OR	Odds Ratio
PD	Psychological Distress

PS	Public Stigma
PSOSH	Perception of Stigmatisation by Others for Seeking Help
SO	Significant Other
SS	Self-Stigma
SSOSH	Self-stigma of Seeking Help Scale
SSRPH	Self-stigma of Receiving Psychological Help
TRA	Theory of Reasoned Action
TPB	Theory of Planned Behaviour
TSS	Total Social Support
WHO	World Health Organisation
YLD	Years Lived With Disability
YLL	Years of Life Lost

Glossary of Terms

Flat racing: Horseracing that takes place with no obstacles involved over 1 - 4km.

National hunt (jump) racing: Horseracing that takes place over obstacles (hurdles or fences) over 3.2 - 7.2km.

Ride work: Riding work involves exercising the horses at a variety of paces (walk, trot, canter, and gallop) to improve fitness levels in preparation for a race.

Schooling: Applies to jump horses. This involves practicing jumping hurdles or fences in an attempt to improve a horse's proficiency over obstacles.

Making weight: A process of weight loss whereby reaching a specific weight allows the competitor to legally compete in their chosen sport.

Wasting: A term used by jockeys in reference to the multiple rapid weight loss strategies (e.g., dehydration, food restriction) used by jockeys to make weight.

Apprentice jockey: A flat jockey, in the early stages of their career, who is not classed as a full professional due to not riding a set number of winners. These jockeys ride with a weight allowance, also known as a claim, to improve the chances of their horse being successful in a race to account for their lack of competitive experience.

Conditional jockey: A jump jockey, in the early stages of their career, who is not classed as a full professional due to not riding a set number of winners. These jockeys ride with a weight allowance, also known as a claim, to improve the chances of their horse being successful in a race to account for their lack of competitive experience.

1 Chapter One - Introduction

1.1 Rationale and Background

Emerging research has indicated that athletes are at risk of developing mental health issues, with prevalence rates of common mental disorders (CMDs) highlighted between 19% for adverse alcohol use and 34% for anxiety/depression (Gouttebauge *et al.*, 2019). Mental health has been defined as “a state of well-being in which every individual realises his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (World Health Organisation (WHO), 2001, p. 1). More recently, Breslin and colleagues evolved the WHO’s definition with the inclusion of sport-specific factors and stated that:

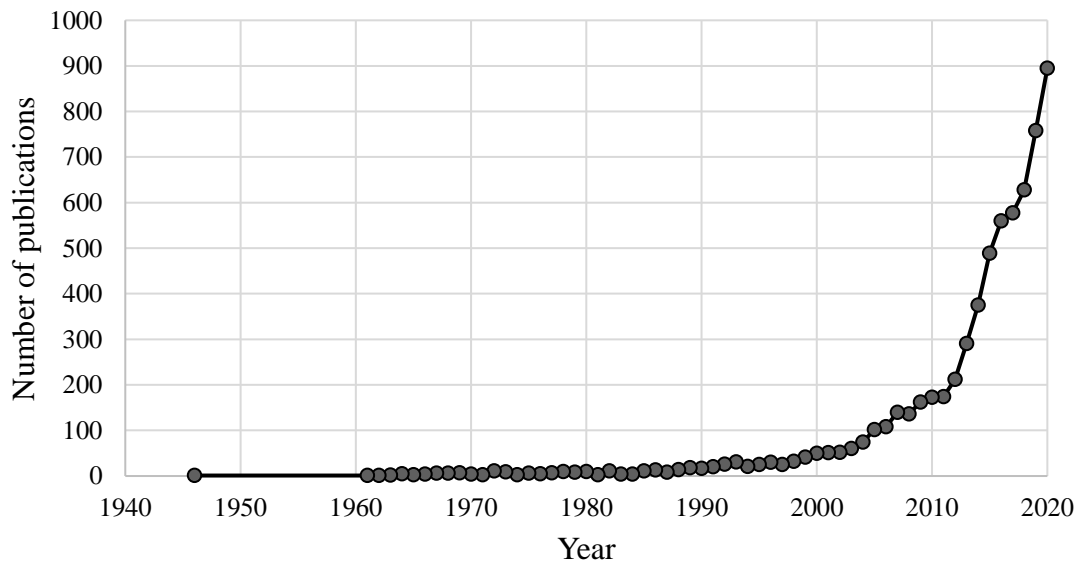
Mental health is not merely the absence of illness, but a state of well-being in which those involved in competitive sport realise their purpose and potential, can cope with competitive sport demands and normal life stressors, can work productively and fruitfully, can act autonomously according to their personal values, are able to make a contribution to their community and feel they can seek support when required (Breslin *et al.*, 2019b, p. 4).

Athlete mental health research has continued to grow in recent years, highlighted in Figure 1.1, with governing bodies and organisations beginning to place greater importance in exploring and understanding the mental health of athletes. This represents a distinct shift from the abundance of research in the field of sport psychology, with its emphasis predominantly on performance factors and psychological skills (Moore & Bonagura, 2017). In recent years, a plethora of consensus statements exploring athlete mental health have been published by a number of professional bodies including the International Olympic Committee (Reardon *et al.*, 2019), the International

Society of Sport Psychology (Henriksen *et al.*, 2019) and the European Federation of Sport Psychology (FEPSAC; Moesch *et al.*, 2018). High profile public disclosures from elite athletes such as Michael Phelps, Gianluigi Buffon and Jonny Wilkinson, amongst others, have further shone the spotlight on the mental health of athletes. Thus, the viewpoint that elite athletes are immune from mental health issues due to the beneficial factors of training and sport participation have been brought into question.

Figure 1.1

Athlete Mental Health Publications



The high-performance environment in which an elite athlete competes has been reported as a potential explanatory factor for the development of CMDs within this unique population (Breslin & Leavey, 2019; Rice *et al.*, 2016). Recently, Swann *et al.* (2015) proposed categories of elite athletes due to the ambiguity in many studies using elite athlete samples. This included: semi-elite athletes (e.g., below the top standard possible in the athletes sport; in talent development programmes; second tier of competition); competitive-elite athletes (e.g., competing at the highest tier of their sport but have not had success); successful-elite athletes (e.g., compete at the highest level

with some success); and world-class elite athletes (e.g., sustained success at the highest tier of their sport over a prolonged period of time). Elite athletes report more than 640 stressors that they may experience throughout their careers, which range from similar stressors to non-athletes such as relationship issues and financial concerns, to sport-specific stressors such as injury and transitioning to retirement (Arnold & Fletcher, 2012). Nevertheless, despite the growth of athlete mental health research in the past ten years, much of the athlete mental health literature has focussed on popular team sports such as Rugby (Gouttebauge *et al.*, 2018) and soccer (Wood *et al.*, 2017), or multi-sport studies such as those of Australian (Gulliver *et al.*, 2015; Purcell *et al.*, 2020; Walton *et al.*, 2021), New Zealand (Beable *et al.*, 2017), and Dutch elite athletes (Gouttebauge *et al.*, 2017b), meaning several sports are underrepresented within the research base. One of which is the sport of horseracing.

In relation to the study of Swann *et al.* (2015) in classifying elite athletes, jockeys most likely sit between semi-elite and competitive elite athletes. For instance, many jockeys compete in the most lucrative and esteemed races, however very few have success at the highest level (Group One or Grade One races), whilst also the talent development pathway is not well defined for jockeys. Most jockeys are at developmental stages of their careers (e.g., apprentices and conditionals), and very few reach world-class elite athlete status. However, in Ireland, the competitiveness of horseracing is greatest according to the taxonomy of Swann *et al.* (2015), with horseracing regarded as a national sport, and the sport semi-state funded. The dominance of Irish horseracing extends to a global level with continued success on international stages including the United Kingdom (e.g., Cheltenham Festival; English Classic races) and in the USA (e.g., the Breeders Cup).

Jockeys are renowned for taking part in a tough and demanding sport (Warrington *et al.*, 2009). Despite this, only one study in the academic literature has explored the stressors these athletes face with the findings highlighting that Australian jockeys reported a wide variety of stressors ranging from weight issues to power dynamics (Landolt *et al.*, 2017). Although this study is useful in developing understanding of the stressors experienced by this population of athletes, it remains unknown if jockeys in different racing jurisdictions experience similar or differing stressors. Differences may occur due to the varying weight restrictions between multiple countries, the geographical landscape (e.g., size) of a country, and the code of racing the jockeys compete in (flat versus national hunt). Experience level of the jockey may also play a role. In the Australian study (Landolt *et al.*, 2017), participants were limited to apprentice jockeys. Apprentice jockeys are younger jockeys, often inexperienced, who ride with a claiming allowance to offset their career inexperience. Apprentice jockeys are often required to ride at lower weights than senior jockeys to maximise the likelihood of a horse winning a race (Wilson *et al.*, 2014). Future research may seek to unearth stressors experienced by jockeys beyond those at the apprentice level. Moreover, given the often cited potential links between athlete mental health and the stressors athletes experience throughout their careers (Beable *et al.*, 2017; Gouttebarga *et al.*, 2019; Kuettel & Larsen, 2019; Rice *et al.*, 2016), exploring this research area in greater depth may help identify future areas whereby mental health support or provision is required.

Only one previous study has identified prevalence rates of CMDs amongst jockeys (Losty *et al.*, 2019). This research highlighted that jockeys may report symptoms associated with CMDs at a greater rate than other sports such as soccer, Rugby, and Gaelic athletes (Rice *et al.*, 2016). In particular, from a sample of 42

licenced professional jockeys, 57% met the criteria for depression, 36% for psychological distress, and 21% for generalised anxiety. Jockeys who were currently injured were nearly 50 times more likely to meet the criteria for depression than those not injured. This was one of the first studies to shed light on the topic of the mental health of jockeys with the findings indicating that further research is required to explore the elevated prevalence rates and associated risk factors. However, a limitation of the study was the small sample size. Whilst the sample may represent a large proportion of the active jockey population (e.g., jockeys competing on a regular basis), the findings may not necessarily be representative of the wider jockey community, therefore future studies should attempt to draw conclusions from a larger sample. Losty *et al.* (2019) examined some stressors (e.g., injury), although these were not conducted with validated self-report questionnaires, as has been outlined in previous studies (Castaldelli-Maia *et al.*, 2019; Gouttebarga *et al.*, 2016c, 2017a, 2018; Kuettel & Larsen, 2019; Rice *et al.*, 2016; Schuring *et al.*, 2016). To better understand the relationship between jockey stressors and prevalence of CMD symptoms, validated questionnaires may provide a more accurate method of measurement.

Although mental health research among elite athletes from a variety of sports has identified that CMDs are prevalent, it has been suggested that athletes may not seek professional help for psychological issues (Castaldelli-Maia *et al.*, 2019; Martin *et al.*, 2020; Putukian, 2016; Rice *et al.*, 2016; Souter *et al.*, 2018; Uphill *et al.*, 2016). Elite sport often places emphasis on masculine ideals such as strength, mental toughness, and resilience, whereby suppression of perceived weakness and vulnerability are positively enforced (Reardon & Factor, 2010). Athletes also report fear of deselection and judgement from teammates if seeking help from professional psychological support services (López & Levy, 2013). Given the findings presented by Losty *et al.* (2019),

symptoms associated with CMDs may be prevalent in the sport, therefore professional psychological support services are required. Within the broader help-seeking behaviour literature existing theories including the Theory of Reasoned Action (TRA: Fishbein & Ajzen, 1975) aid development of theoretically informed studies. The TRA provides a framework to help better understand why people make certain decisions. For instance, understanding how an individual's subjective norms (e.g., perceptions of stigma) and beliefs (e.g., mental health literacy) influence attitudes towards seeking help. However, to date, this theory has been applied sparingly amongst athletes, and is yet to be explored within the jockey population.

1.2 Originality of Research

Awareness of athlete mental health continues to grow with multiple mental health position statements (see Vella *et al.*, 2021 for full review) and review articles (Castaldelli-Maia *et al.*, 2019; Gorczynski *et al.*, 2017a; Gouttebauge *et al.*, 2019; Rice *et al.*, 2016) published in recent times. However, research critically examining the mental health of jockeys is sparse. The career of a jockey is frequently cited anecdotally and in academic literature as challenging, demanding, and strenuous for jockeys (Dolan *et al.*, 2013; Warrington *et al.*, 2009), yet limited studies have explored the stressors reported by jockeys outside of apprentice status. To the author's knowledge, the study of Losty and colleagues (2019) is the only study to comprehensively examine jockey mental health, with findings indicating that a prevalence of symptoms of CMDs may be greater amongst jockeys than other elite athletes. Nevertheless, the sample size within the study was small ($n = 42$), and further exploration of risk factors using validated measures is required. Furthermore, support from professional psychological support services may be required throughout a jockey's career. Currently, there is minimal information in relation to help-seeking among jockeys, including barriers and

facilitators to help-seeking, and relationships with attitudes towards help-seeking. Thus, the present thesis aims to investigate the mental health and help-seeking attitudes of jockeys. Conducting this research can develop understanding of the mental health of jockeys and facilitate the creation of future mental health support programmes and interventions. This work will also contribute to the current dearth of academic literature examining jockey mental health and extend current knowledge of mental health within elite athlete populations. Lastly, via raising awareness of key issues and constructs in the world of jockey mental health, the research documented within the present thesis has the potential to influence key stakeholders and organisational policy given the thesis was commissioned by a prominent figure in Irish horseracing, the Irish Horseracing Regulatory Board.

1.3 Research Philosophy in the Present Thesis

A research paradigm refers to the philosophical assumptions or beliefs that a researcher adopts to inform the development of research questions, the data collection tools used to harness data on the research question, and how that data is interpreted (Ryan, 2018). The philosophy of research is an important component to consider prior to scientific explorations as each varying approach results in differing views around knowledge and what can (or cannot) be answered by science. Each paradigm is underpinned by four core concepts related to ontology (the nature of reality), epistemology (the nature of knowledge), methodology (theory informed approach to facilitate data collection), and methods (the tools used to collect data) (Rehman & Alharthi, 2016). Traditionally, research paradigms are split into positivism and interpretivism (Ryan, 2018). However, the present thesis utilises both paradigms, underpinned by a third research paradigm, pragmatism, due to the mixed-methods

approach adopted throughout the thesis. Mixed-methods research (MMR) has been defined as:

The type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g. use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration (Johnson *et al.*, 2007, p. 123)

The central tenet of mixed-methods research (MMR) is that the employment of multiple research strategies are likely to provide a richer, detailed, and comprehensive picture of the research problem than if either method (qualitative or quantitative) was conducted individually (Bryman, 2006). A by-product of this is that it minimises the limitations and maximises the strengths of each method (Tashakkori & Teddlie, 2010). MMR is not used to replace quantitative or qualitative research methods, but in fact combine to promote research that obtains perspectives from a variety of sources, explores a wider breadth of research questions, utilise multiple data collection and analysis techniques, and interpret them accordingly (Henn *et al.*, 2006). From a pragmatic perspective, MMR is useful, necessary, and logical (Creswell & Plano Clark, 2011).

Notwithstanding such potential benefits, criticisms or disadvantages of MMR include: the challenge for one researcher to conduct both types of research; the combination of weaknesses of both qualitative and quantitative research methodologies; the time consuming nature of MMR; cost; and, and the various difficulties around one researcher learning and mastering multiple research methods (Johnson *et al.*, 2007). However, the most prominent criticism of MMR has largely

been concerned with the potential problematic consequences of mixing different types of ontological, epistemological and methodological beliefs and assumptions that are aligned with opposing paradigms (Morgan, 1998). This has been posited as the incompatibility thesis which argues that quantitative and qualitative research paradigms should not be combined (Howe, 1988). However, this purist approach has been widely dismissed by scholars, particularly in the social sciences, as research projects continue to develop where successful implementation of MMR is achieved (Tashakkori & Teddlie, 2008). Indeed, perhaps indicative of this, a journal titled the *Journal of Mixed Methods Research* publishes high-quality peer review studies quarterly. Ultimately, mixed-methods researchers have rejected the notion of an incompatibility thesis (Tashakkori & Teddlie, 2010) and calls for what Hammersley referred to as “methodological eclecticism” are prevalent (Hammersley, 1996, p.168). Howe (1988) instead referred to the compatibility thesis, the opposite of the incompatibility thesis he coined, and stated: “the compatibility thesis supports the view, beginning to dominate practice, that combining quantitative and qualitative methods is a good thing and denies that such a wedding is epistemologically incoherent” (p. 10).

Within a sport and exercise psychology setting, Moran *et al.* (2011) suggested the combination of methods represents an exciting opportunity for the field. Specifically, the advantages provided include: triangulation “the use of different methods to seek corroboration in underlying meaning”; complementarity (“the enhancement or clarification of findings from one method by the use of another”; development (“the use of findings from one phase of research to inform the development of methods for the following stage”; and, initiation (“the capacity to assess new insights into a particular phenomenon” (Moran *et al.*, 2011, p. 365).

In recent years, a number of research projects in sport have demonstrated the value of MMR. Bird *et al.* (2018) examined the help-seeking experiences of student athletes using a convergent design (quantitative and qualitative data collected and analysed at the same time) with the health belief model employed as a theoretical framework. The qualitative findings complimented the quantitative survey with quotes illuminated from participants related to factors described by the health belief model. The study highlighted potentially important factors that may facilitate help-seeking amongst student-athletes. Another study used a sequential-explanatory design (quantitative data collection and analysis followed by qualitative component) to examine cumulative lifetime stress exposure, depression, anxiety, and well-being in elite athletes (McLoughlin *et al.*, 2021). Findings revealed significant associations between cumulative lifetime stress, greater depression and anxiety symptoms, and poorer well-being. Interviews with six athletes highlighted that the relationships between cumulative lifetime stress and negative mental health outcomes may be linked to unhealthy long-term coping strategies, an increased susceptibility to future stress, and challenges establishing personal relationships with others. The MMR design helped provide an in-depth insight of a novel research area.

The most common research philosophy associated with MMR is the pragmatic approach, with an acknowledgement of multiple viewpoints, perspectives, study designs, and knowledge production (Gunasekare, 2015) in one study or research programme. Indeed, pragmatism in research:

Provides a set of assumptions about knowledge and inquiry that underpins the mixed methods approach and distinguishes the approach from purely quantitative approaches that are based on a philosophy of (post)positivism

and from purely qualitative approaches that are based on a philosophy of interpretivism or constructivism (Denscombe, 2008, p. 273).

In terms of reality, pragmatists hold the view that a reality does exist, but its fluid, and changes on human experience and factors such as habits and behaviours (Tashakkori & Teddlie, 1998). In this context, the environment is key. Pragmatists suggest that reality is socially constructed, but these social constructions vary between each individual, with some constructions more closely aligned to an individual's experiences than others (Morgan, 2014). Therein, the pragmatist is not concerned with metaphysics such as truth or reality (unlike positivist and interpretivist approaches; Kaushik & Walsh, 2019), but in accepting that single or multiple realities are present dependent on the nature of inquiry (Creswell & Plano Clark, 2011). This does not mean that contentions around philosophy and metaphysics are unimportant, more that the philosophical debates around reality, knowledge production, and inquiry will never be solved (Kaushik & Walsh, 2019). Pragmatists have concluded that this is the case because meaning is inseparable from human experience and is dependent upon the context in which they are situated (Dillon *et al.*, 2000).

Within sport psychology, calls to adopt a pragmatic research philosophy were championed by Giacobbi *et al.* (2005) who suggested that the combination of pragmatism and mixed-methods research would create exciting opportunities for research and applied practice due to the multiple perspectives on offer. The present thesis adopts a pragmatic flexible approach that allows the research to select the appropriate research design dependent on the research question (Erzberger & Kelle, 2003; Feilzer, 2010; Pansiri, 2005). For a pragmatist, this is the most important aspect of research (Bryman, 2006). The mental health of jockeys is a relatively new research area, therefore knowledge development and understanding in the area is limited.

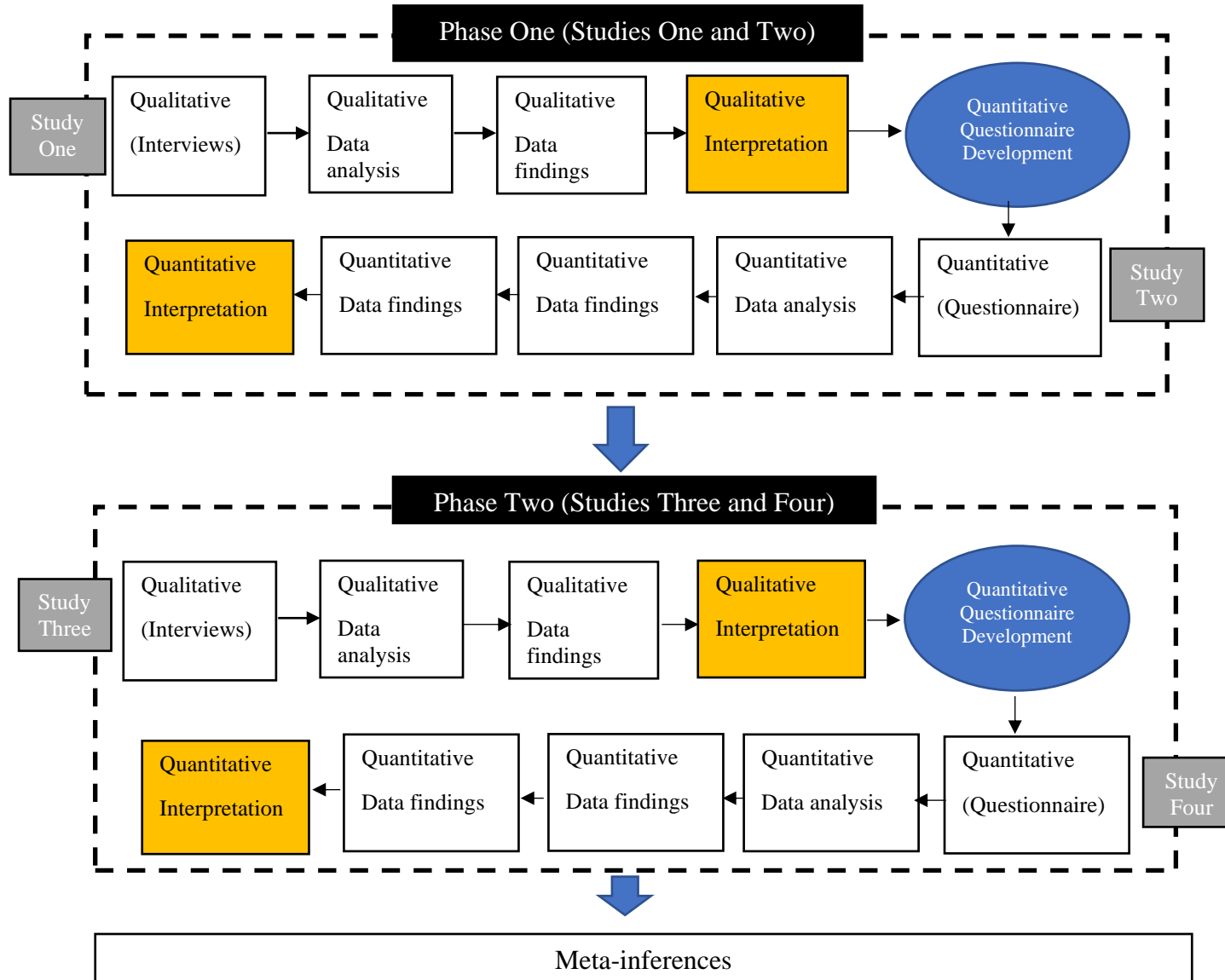
Adopting a unidimensional approach in quantitative (e.g., questionnaires) or qualitative (e.g., interviews) methods inhibits the researcher from answering the research questions and objectives proposed within the thesis. To support this approach, a sequential exploratory mixed-methods design was utilised.

1.3.1 Rationale for Adopting a Sequential Exploratory Mixed-Methods Approach

Within the present thesis a sequential exploratory design (qualitative component precedes quantitative examination) was adopted to answer the overarching research aim and research objectives (Figure 1.2). The rationale for a sequential exploratory mixed-methods design is that they are often used for explorations in new research areas where empirical understanding of a topic is absent (Cabrera, 2011). This is particularly poignant within the current thesis due to the paucity of literature related to jockey mental health as highlighted in the literature review. Few research articles have also yet to adopt qualitative methods with jockeys. In this approach, qualitative data is collected and analysed with the identified themes used to develop or implement an instrument to explore findings in more detail (Creswell & Plano Clark, 2011). Thus, qualitative research provides rich, meaningful data that is translated into variables to be subsequently examined quantitatively within a larger population (Plano Clark & Ivankova, 2015). Strengths of this approach are that in comparison to other types of MMR it is simple to implement study designs, interpret findings, and report on. Other types of MMR (e.g., concurrent designs) are difficult to employ due to the challenges involved with collecting, analysing, and interpreting qualitative and quantitative data at the same time. .

Figure 1.4

Sequential Exploratory Approach used in the Present Thesis



A sequential exploratory approach negates these challenges via undertaking each step individually, with interpretations of the findings integrated into the next step of the research. The approach is also suitable in its application to multi-phase research programmes (Giacobbi *et al.*, 2005), such as the current thesis. (Figure 1.2)

1.3.2 Overview of Study Design

The sequential exploratory approach was split into two phases. Phase One contained Studies One and Two, whilst Phase Two contained Studies Three and Four. The studies were organised in this manner due to the differing research topics covered. In the present study, Chapter Three (Study One) qualitatively (semi-structured interviews) explored the stressors experienced by jockeys, with the data explicated and used to inform Chapter Four (Study Two) which examined prevalence of CMDs and risk factors (via a questionnaire). The findings in Chapter Four (Study Two) indicated a potential need for access to mental health support programmes for jockeys therefore the research entered Phase Two, with a focus on help-seeking. Chapter Five (Study Three) explored barriers and facilitators to help-seeking among jockeys (semi-structured interviews), where findings highlighted several key variables that may influence jockeys attitudes towards help-seeking. These variables were assessed via a questionnaire in Chapter Six (Study Four).

1.4 Thesis Aim and Objectives

The overarching aim of this thesis was to investigate the mental health and help-seeking attitudes of jockeys. To reach this central research aim, four research objectives were set, with the findings from each objective outlined in Chapters Three to Six:

- Objective one (Study One): To explore the stressors experienced by professional jockeys (Chapter Three)

- Objective two (Study Two): To identify the prevalence of distress, depression, generalised anxiety and adverse alcohol use amongst professional jockeys and to identify potential associations between those CMDs and specific risk-factors (Chapter Four)
- Objective three (Study Three): To examine the barriers and facilitators towards help-seeking for CMDs among professional jockeys (Chapter Five)
- Objective four (Study Four): To examine the relationships between identified barriers in chapter six (mental health literacy, stigma) and attitudes towards help-seeking among professional jockeys (Chapter Six)

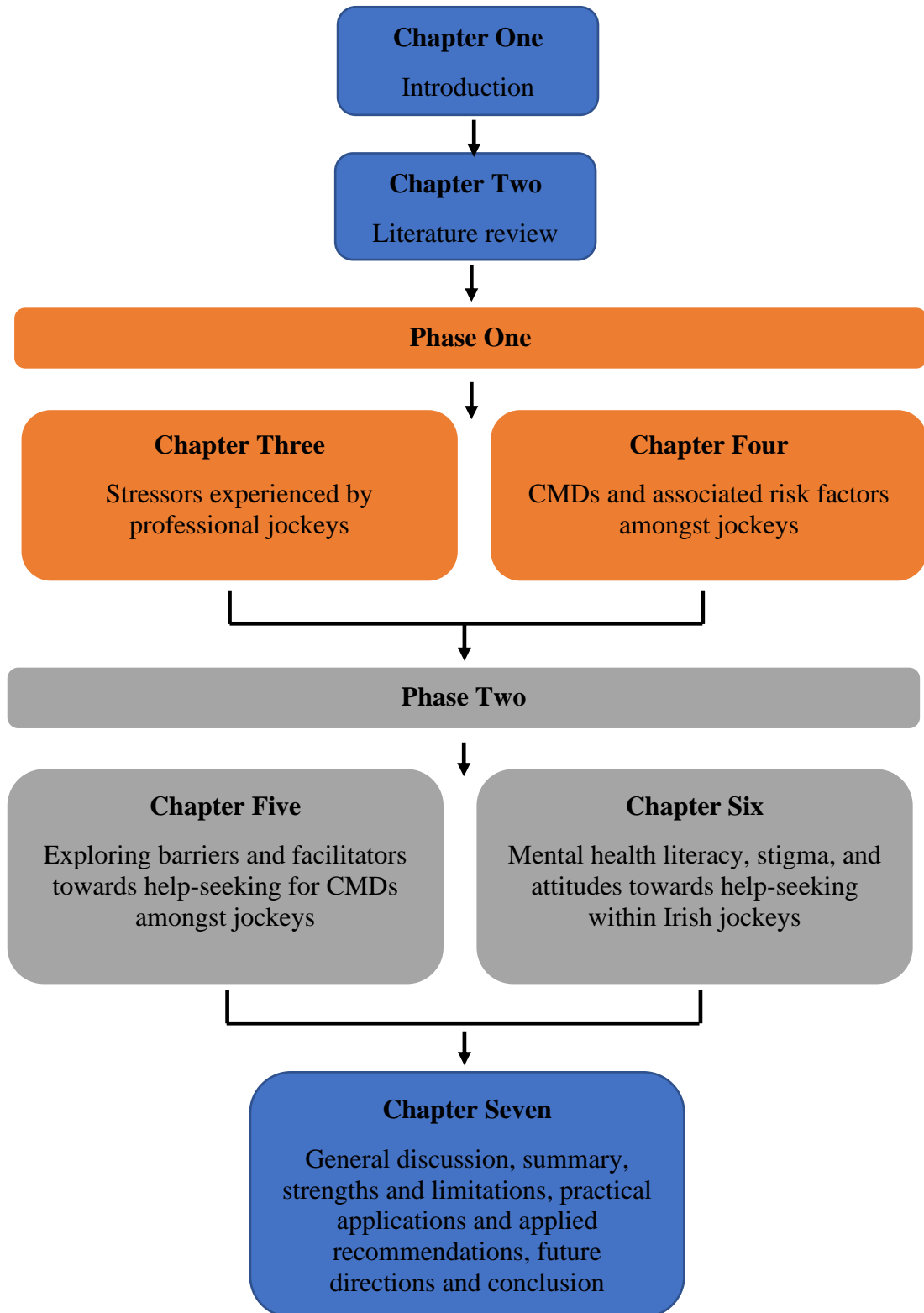
1.5 Overall Thesis Structure

A schematic overview of the thesis structure is summarised in Figure 1.3. The current chapter provides a brief overview of the research topic, including the research philosophy underpinning the present thesis, and aims and objectives of the research. The thesis is formatted, cited, and referenced in the style of the American Psychological Association (7th edition).

Chapter Two critically reviews the evidence in relation to the wider athlete mental health literature prior to a review of jockey mental health research. The specific topics covered within the review include the stressors experienced by athletes, CMD prevalence and risk factors, the challenging lifestyle of a jockey, current jockey mental health research, and psychological help-seeking.

Figure 1.7

Schematic Overview of the Thesis Structure



Chapters Three, Four, Five and Six contain empirical research (Studies One – Four). Within each chapter, an introduction to the research topic, methods, results, discussion, practical and applied recommendations, and conclusions are outlined.

Chapter Seven includes a general discussion of the findings presented in the thesis including critical analysis of the findings from the four studies collectively. Strengths, limitations, future research directions, and applied recommendations are also provided.

2 Chapter Two – Literature Review

*The present literature review has been adapted and published in the *BMJ Open Sport & Exercise Medicine*. The citation for the review is:

King L., Cullen SJ., McGoldrick A, Pugh, J., Warrington, G., Woods, G., & Losty, C. (2021). Mental health difficulties among professional jockeys: A narrative review. *BMJ Open Sport & Exercise Medicine*. 7(e001078), 1-13. (Published version of the literature review is outlined in Appendix A).

Preface

The following chapter critically reviews the subject areas and literature that informed the development and creation of the studies present within this PhD thesis. To date, limited attention has been paid to the mental health of jockeys, therefore evidence from other sports are provided. The first section will explore the stressors experienced by elite athletes and the demands athletes face throughout their careers. Following this, the prevalence of CMDs among elite athletes will be examined. Then, a discussion of the risk factors to elite athlete mental health is conducted. The next section will begin to outline empirical research amongst jockeys, which includes providing context to the challenging lifestyle associated with a career as a jockey, horseracing culture, and jockey mental health research. Psychological help-seeking is then explored.

2.1 Athlete Stressors

Stressors can be defined as “the environmental demands (i.e. stimuli) encountered by an individual” (Fletcher *et al.*, 2006, p. 359). Research surrounding athlete stressors began in the early 1990’s with a sample of elite ice skaters (Scanlan *et al.*, 1991). Since then, a host of sport psychology researchers have identified a wide range of stressors encountered by athletes (Arnold *et al.*, 2017; Arnold & Fletcher, 2012; Evans *et al.*, 2012; Gould *et al.*, 1993; Hanton *et al.*, 2005; McKay *et al.*, 2008; Mellalieu *et al.*, 2009; Olusoga *et al.*, 2009; Sarkar & Fletcher, 2014). Originally characterised into competition and non-competition sources, more recently stressors have been associated with situations relating to the competition environment, the sport organisation, and other stressors not related to sport participation (e.g., personal stressors) (Sarkar & Fletcher, 2014).

2.1.1 Competitive Stressors

Competitive stressors refer to stressors that are directly associated with competition and have been defined as “the environmental demands associated primarily and directly with competitive performance” (Fletcher *et al.*, 2006, p.3). Preliminary stress in sport investigations explored the role of competitive anxiety and its impact on the athlete (e.g., Lavallée & Flint, 1996) however, more recently, systematic approaches (Hanton *et al.*, 2005; Mellalieu *et al.*, 2009) have identified stressors relating directly to competition to include: preparation, injury, performance pressure, expectations, and rivalry (Sarkar & Fletcher, 2014).

A common competitive stressor reported by athletes is preparation. In particular, the elements surrounding the physical, mental, technical and tactical aspects of the sport (Sarkar & Fletcher, 2014). These stressors are largely based around adequacy (e.g., competing whilst injured; support during preparation; not enough technical drills; lack of information on opponents), appropriateness (e.g., perception of training success; watching other competitors; problems with equipment; misunderstood tactical instructions from the coach), and arduousness of the preparation strategies (e.g., too much preparation; setting unrealistic goals; technical set-up of equipment; too much information from the coach) (Mellalieu *et al.*, 2009).

Injury has also been reported as a competitive stressor for athletes. In a sample of elite athletes from the United Kingdom, McKay *et al.* (2008), reported that specific concerns related to injury included being unable to compete or perform due to injury and worries about injury and potential re-injury. Injured athletes have also reported concerns around an inability to return to pre-injury level, internal and external pressures, and a loss of fitness (Evans *et al.*, 2012). Injured athletes are more likely to

report depressive symptoms than those who are not injured (Wolanin *et al.*, 2015), whilst the number of severe injuries also play a factor in the level of depressive symptomology reported by athletes (Gouttebarga *et al.*, 2015b).

Another common stressor reported by athletes is pressure. There is a pressure to perform for athletes, where in some cases athletes work on a four-year cycle (e.g., Olympics) to compete at a specific event. These athletes are required to perform at the best of their capabilities in the most intense environments, where success and failure are perceived to determine a large portion of an athlete's career. In a study on Canadian swimmers attempting to qualify for the Olympic and world championship teams, Hammond *et al.* (2013) found that prior to competition, 68% of athletes had experienced a major depressive episode in the previous three years. After the swimming competition, 34% of all participants met the criteria for a major depressive episode. Interestingly, when accounting for the most talented athletes in the sample (e.g., the top 25%), reporting of depressive symptoms almost doubled to 66%. Regression analyses revealed that swimming time and depressive symptoms were associated for the most talented athletes, meaning that if athletes swam slowly, producing a poor performance, they reported greater levels of depressive symptoms. Similar findings have been reported elsewhere in the literature with those who performed poorly in both the Olympic Games (Baille *et al.*, 2014) and soccer matches (Hassmén & Blomstrand, 1995) increased the likelihood of a major depressive episode or symptoms of depression. These findings further highlight the potential significance that pressure and failure may have on an athlete's mental health.

2.1.2 Organisational Stressors

Organisational stressors refer to the stressors experienced as a direct result of the organisation and environmental demands in which the individual or team is competing within and has been defined as “an ongoing transaction between an individual and the environmental demands associated primarily and directly with organisations within which he or she is operating.” (Hanton *et al.*, 2005, p. 1130). The work of Fletcher *et al.* (2012) reported that the most commonly reported organisational stressors in sport were unfair selection criteria, tedious training regimes, conflict with the coach, and lack of financial support, amongst others. Responses to the organisational stressors ranged from anger and anxiety to happiness and hope. Youth Olympic athletes discussed organisational stressors relating to transport issues, time of competition, missing usual teammates and coaches, and concerns with facilities (Kristiansen & Roberts, 2010).

A systematic review of organisational stressors in sport conducted by Arnold and Fletcher (2012) unearthed 640 unique organisational stressors from 34 studies, which were categorised into 31 subcategories, forming four broader categories, which included: leadership and personnel issues, cultural and team issues, logistical and environmental issues, and performance and personal issues. Leadership and personnel issues largely pertained to interactions with the coach and their behaviour, the coach’s personality and attitudes, external expectations, support staff, sports officials, spectators, media, performance feedback and governing body. Cultural and team issues were identified as teammates’ interaction and behaviours, communication, team atmosphere and support, teammates personality and attitudes, roles, cultural norms and goals. Logistical and environmental issues included: facilities and equipment, selection, competitive format, structure of training, weather conditions, travel, accommodation,

rules and regulations, distractions, physical safety, and technology. Performance and personal issues were reported as injuries, finance, diet and dehydration, and career transitions.

2.1.3 Personal Stressors

Personal stressors have been defined as “the environmental demands associated primarily and directly with personal nonsporting life events” (Sarkar & Fletcher, 2014, p. 11). Such stressors include managing athlete-life balance, relationship issues, and traumatic events such as the loss of a loved one. First, managing a healthy athlete-life balance may be difficult for athletes given the plethora of demands placed upon them. Athletes are required to spend significant periods of time training for competitions, whilst also competing in competitions nationally and internationally. The implications for younger athletes include consequences to academic endeavours (e.g., Kristiansen, 2017). For older athletes, this imbalance may negatively impact relationships with loved ones including spouses and children (Gould *et al.*, 1993). Indeed, given the precarious nature of an elite athlete’s career, it’s unsurprising to see that financial difficulties and concerns around providing for the household are cited as stressors for athletes (Cecić Erpič *et al.*, 2004; Thelwell *et al.*, 2007). Athletes may also be required to relocate for their sport which can result in pressures to find new and suitable accommodation (Schinke *et al.*, 2011). Lastly, the death of a loved, which can include family members (Aarresola *et al.*, 2017) or teammates (Simpson & Elberty, 2018; Vernacchia *et al.*, 1997) have been recognised as personal stressors.

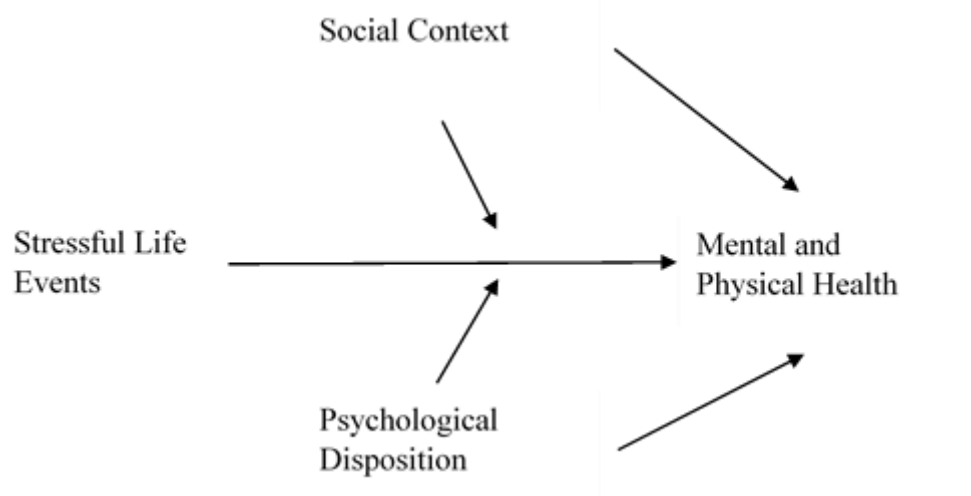
2.1.4 Impact of Stressors on Mental Health

One model that has gained popularity in mainstream psychology is the diathesis-stress model (Spielman *et al.*, 1987). The model (Figure 2.1) suggests that

each individual has a certain level of predisposing (e.g., genetics, physiological, psychological, environmental), precipitating (physiological or psychological stressors) and perpetuating (behavioural, cognitive, environmental) factors that interact with one another in the development of specific conditions (e.g., depression; Abramson *et al.*, 1989; Beck, 1987; Monroe & Simons, 1991). The multiple factors that appear to impact an individual, as per the diathesis stress model, is applicable to elite athletes given the significant number of unique and intense stressors that they experience throughout their careers. As such, as stress increases, it is expected that the prevalence and severity of mental disorders follow suit. In light of that, Nixford *et al.* (2013) reported significant correlations between levels of chronic stress and depressive symptoms in a sample of German elite athletes. Moreover, Tenenbaum and Eklund (2007) suggest the diathesis-stress model represents a suitable heuristic for sport psychologists and researchers due to the inevitable stress that the world of elite sport places upon athletes.

Figure 2.1

Diathesis-Stress Model. Social Context and Psychological Disposition Moderate the Effects of Stressful Life Events to Mental and Physical Health. Taken from Burns and Machin (2013).



2.1.5 Summary

In summary, this section has outlined the overarching categories of stressors and specific subcategories. This synthesis highlighted the wide ranging and varied stressors that elite athletes experience. This includes competition, organisational, and personal stressors. In relation to the mental health of athletes, it is important to identify the vast array and number of stressors experienced by elite athletes which may increase susceptibility or vulnerability to CMDs. Findings can help improve the provisions of applied interventions (e.g., evidence based programmes), as well as developing understanding of the demands elite athletes face. Whilst theories such as the diathesis-stress model suggest a certain level of stress provides individuals with an opportunity for growth and enhance an individual's capabilities, how athletes manage these stressors can play a major part in their mental health and athletic performance (Lazarus, 2000).

2.2 Prevalence of CMDs amongst Elite Athletes

CMDs are prevalent worldwide. The WHO estimates that one in four individuals experience a CMD every year (WHO, 2018). The *Global Burden of Disease* study conducted in 2017 estimates that 792 million individuals, or 10.9% of the world's population, are living with a CMD (females = 11.9%; males = 9.3%) (Ritchie & Roser, 2020). The most common disorders within the general population are those related to anxiety (284 million), depression (264 million), and alcohol misuse (107 million). According to the aforementioned report, when considering mental health disorders and substance abuse disorders, 970 million (13% of the global population) are said to be affected.

In Ireland, a *Health at a Glance* report placed Ireland third for prevalence of CMDs in Europe, with nearly 19% of the population reporting a CMD (OECD/EU, 2018). The report also stated the highest rate of chronic depression in Europe was found in Ireland (12%), larger than countries such as Portugal (11.9%), Turkey (11%), and Germany (10.6%) (OECD/EU, 2018). Prevalence of chronic depression was greater in females than males in Ireland (13.4% vs 10.8%). The report also highlighted the cost of CMDs at around €8.2 billion annually which represents over 3% of gross domestic product (GDP). Collectively, these figures indicate that mental illness is a concerning problem for both individuals and wider society.

In a sporting context, whilst studies have suggested that sports and exercise serve as protective factors to CMDs (Biddle, 2016), findings from recent reviews have indicated that prevalence of CMDs are largely comparable (Gorczyński *et al.*, 2017a; Gouttebauge *et al.*, 2019; Rice *et al.*, 2016) amongst athletes in comparison to non-athletes. Moreover, the primary competitive years for athletes overlaps with the age ranges with the greatest risk for the development of CMDs (Rice *et al.*, 2016). Golding *et al.* (2020) found that symptoms of depression varied between 6.7% and 34% in a recent systematic review examining depression amongst high performance athletes (defined as competing at collegiate, regional, national, international, or Olympic level). The studies included multi-sport studies from individual and team sport athlete, as well as sport-specific studies (soccer, American football, Rugby league, baseball, swimming). Prevalence of combined anxiety disorders amongst elite athletes also appear comparable to the general population (8.6%) (Schaal *et al.*, 2011). An analysis of 3335 male and female elite athletes across 11 studies, revealed a prevalence of psychological distress in one in five athletes (Gouttebauge *et al.*, 2019). Adverse alcohol use has also been examined extensively with a meta-analysis indicating that 19% of

athletes (from a sample of 5555 athletes) from multiple sports met the threshold indicative of adverse alcohol use (Gouttebarga *et al.*, 2019). Certain CMDs are reported at a lower prevalence rate which include eating disorders or disordered eating practices (1 – 28%) (Gouttebarga *et al.*, 2019). As highlighted in multiple systematic reviews and meta-analyses (Golding *et al.*, 2020; Gorczynski *et al.*, 2017a; Gouttebarga *et al.*, 2019; Rice *et al.*, 2016) prevalence rates of symptoms of CMDs vary across studies. Potential reasons for this variance include the array of validated measures used in assessment. To highlight the differences between prevalence rates, assessment methods, and athletic samples, the following sub-section reports on a number of multi-sport and sport-specific athlete mental health studies.

2.2.1 Multi-Sport Studies

A retrospective study exploring CMDs of athletes was one of the first to attempt to ascertain prevalence rates (Schaal *et al.* 2011). This large-scale study was conducted on 2067 French elite athletes from a nationwide sample (13% of the French elite athlete population) between 2008 and 2009. The athletes participated in 36 sports, grouped into seven categories which included: aesthetic, contact/combat, high risk, aiming and fine motor skill, racing, racquet, and team ball sports. Assessments were conducted by psychologists and physicians, with diagnosis based upon the DSM-IV or CIM 10 criteria. The authors reported that 16.9% (male = 15.1%, female = 20.2%) of the athletes had recent or current experiences of CMD, with GAD the most prevalent (male = 5.2%, female = 7.5%). Greater rates of GAD were found in athletes competing in aesthetic sports (gymnastics, synchronised swimming, figure skating) in comparison to all other sports (38.9% versus 10.3% for female,; 16.7% versus 6.8% for male). Depression prevalence was reported at 3.6% (male = 2.6%; female = 4.9%). Lifetime prevalence of at least one depressive episode was greatest amongst aesthetic sport

athletes (24.2%), and markedly lower in team ball sports (8.1%). CMDs were reported at a greater rate for female athletes than males. Underreporting may have occurred in this study due to potential mental health stigma amongst the athletes assessed. Moreover, whilst the use of assessments by professionals can be regarded as a strength, an anonymous approach may have yielded different results, with the potential for athletes to feel more inclined to share personal or emotional concerns. The study also employed varying professionals to assess CMDs, however it was acknowledged that psychologists reported CMDs at a greater rate than physicians. The difference between identification of CMDs between psychologists and other professionals may have led to under-reporting or misidentification amongst some of the sample.

The second seminal study in the field of athlete mental health was conducted in Australia. Gulliver *et al.* (2015) developed a cross-sectional questionnaire examining a variety of CMDs in a sample ($n = 224$) of Australian elite athletes predominantly from sports such as cricket, soccer, hockey, netball, rowing, sailing, water polo, and softball. CMDs were assessed using validated questionnaires which included:

- Psychological distress – Kessler 10 (K10) scale (Kessler *et al.*, 2003).
- Depressive symptoms – Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977).
- Anxiety symptoms – Generalised Anxiety Disorder 7 scale (GAD-7) (Spitzer *et al.*, 2006).
- Social anxiety – Social Phobia Inventory (SPIN) (Connor *et al.*, 2000).
- Panic disorder – Panic Disorder Severity Scale (PDSS-SR) (Shear *et al.*, 1997).
- Eating disorder – SCOFF questionnaire (Morgan *et al.*, 1999).

The results from these measures were compared to a large-scale control group consisting of individuals between the ages of 16 and 85. The findings highlighted that 46.4% (male = 38.7%, female = 53.4%) of the sample met the threshold for at least one of the measures assessed. The most prevalent was depressive symptoms, with 27.2% of the sample (male = 23.6%, female = 30.5%) meeting the criteria. Other prevalence rates included 7.1% for GAD (male = 3.8%, female = 10.2%), 22.8% for eating disorders (male = 12.3%, female = 32.2%), and 16.5% for general psychological distress (male = 12.3%, female = 20.3%). In comparison to the control group, symptoms of CMDs were elevated for eating disorders in male athletes, and psychological distress for female athletes. All other measures assessed were comparable to general populations. In line with the results of the study of Schaal *et al.* (2011), females reported CMDs at a greater rate than males. A relatively low response rate to the questionnaire (25%) was apparent which may have resulted in a bias sample with those with experience of CMDs more inclined to take part. Thus, the figures presented may reflect an overestimated prevalence rate of CMDs amongst the Australian elite athlete population. Findings from the study were not age or gender matched to the control group which may have impacted the results and makes direct comparisons difficult. Lastly, 25% of the sample were classified as injured which may have repercussions for the prevalence of CMD symptomology where injured athletes were more likely to report depressive symptoms in comparison to non-injured athletes (Brewer & Petrie, 1995).

A cross-sectional study was conducted in New Zealand examining depression prevalence amongst high-performance athletes (Beable *et al.*, 2017). The authors also explored: a) the relationship between depression prevalence and life stressors; and b) the impact specific demographic and health history has on depressive symptoms. One hundred and eighty seven participants completed the questionnaire, including male (*n*

= 74) and female ($n = 113$) athletes, representing a 51% response rate. Age ranges within the 187 participants varied between 18-20 years old ($n = 43$), 21-24 years old ($n = 62$), 25-29 years old ($n = 51$), and 30+ years ($n = 31$). Most of the athletes (60.4%) competed in individual sports (athletics, cycling, canoe/kayak, equestrian, golf, weightlifting, Paralympics, rowing, sailing, swimming, triathlon, winter sports), with the remaining 39.6% participating in team sports (football, netball, hockey, Rugby sevens). Other demographic variables captured highlighted that 100 (53.48%) had relocated for their sport, and 25 (13.37%) were planning to retire from sport within the next 12 months. Nearly 7% of the sample had been previously diagnosed with depression. The authors administered the Center for Epidemiological Studies Depression scale – Revised (CESD-R) to examine depressive symptoms. Life stressors were measured via a Daily Hassles Scale (DeLongis *et al.*, 1982) which explored stressor frequency (e.g., being lonely) and the intensity of the stressor (e.g., none, somewhat severe, moderately severe, extremely severe).

In total, 39 participants (21%) met the threshold indicative of a depressive disorder on the CESD-R questionnaire (a score over 16). Those who were undecided (OR = 9.0 CI = 3.0 -27.4) or had decided to retire from sport within the next 12 months (OR = 4.1 CI = 1.2 - 14.0) were more likely to report depressive symptoms in comparison to those who were not retiring from sport within the next 12 months. Participants competing in individual sports were over four times more likely to report depressive symptoms in comparison to team-sport athletes (OR = 4.2 CI = 1.6 - 11.1). The most commonly reported daily hassles for athletes included concerns around their future, concerns around meeting high standards, and worries about not getting enough sleep. The frequency and intensity of daily hassles experienced by athletes were associated with depressive symptoms ($p < .01$), female gender ($p < .01$), competing in

individual sports ($p < .05$), and relocating for sport purposes ($p < .05$). In total, those who met the threshold on the CESD-R on average experienced 17 more daily hassles, and a 31-point increase of severity of hassles, in comparison to those who did not meet the depressive threshold. The findings corroborate previous research highlighting that depressive symptoms are present amongst elite athletes (Beable *et al.*, 2017; Foskett & Longstaff, 2018; Golding *et al.*, 2020; Gorczynski *et al.*, 2017a; Gouttebauge *et al.*, 2019; Hammond *et al.*, 2013; Jensen *et al.*, 2018; Rice *et al.*, 2016; Souter *et al.*, 2018; Trojian, 2016; Wolanin *et al.*, 2015, 2016). Individual athletes may be more susceptible to depressive symptoms, although further research surrounding personality and sport-specific factors are required. The study of Beable *et al.* (2017) was one of the first studies to highlight the potential impact that retirement status may have on an athlete's mental health, with 70% of the sample reporting concerns around their future as a daily hassle. Much of the focus on athletic retirement has explored the transition from athlete to non-athlete, whereas Beable *et al.* (2017) suggest that support or screening measures applied pre-retirement may aid the mental health of athletes with interventions such as career planning potentially alleviating the worry around athletic retirement. Some limitations associated with the study pertain to a lack of inclusion from popular sports in New Zealand including Rugby, cricket and men's football. This was due to the organisational policy of these sports therefore findings may not be representative of elite athletes from New Zealand. Moreover, whilst participant response rate was 51% in the present study and considerably greater than many other studies in the area (e.g., Gulliver *et al.*, 2015), it is a possibility that selection bias impacted the findings of the study. As the authors highlight, it may be the case that those more prone to depressive symptoms respond to such questionnaires, or vice versa. The questionnaire data were

also gathered via self-report measures which ensures a clinical diagnosis of depression was not possible.

Another study exploring the prevalence of CMDs was conducted on elite Gaelic athletes over a six-month period (Gouttebarga *et al.*, 2016c). Gaelic sports (football, hurling, camogie) are the most popular sports in Ireland and the study examined the prevalence of CMDs (distress, anxiety/depression, sleep disturbance, adverse alcohol use) and their associations with potential stressors (severe musculoskeletal injuries, surgeries, recent life events, career dissatisfaction) (Gouttebarga *et al.*, 2016c). Prevalence rates for anxiety/depression (48%), distress (38%), sleep disturbance (33%) and adverse alcohol use (23%) were reported with incidence rates for anxiety/depression (21%), adverse alcohol use (18%), distress (14%), and sleep disturbance (11%). Of the sample, zero injuries (20%), one or two injuries (43%) and three or more injuries (37%) were acknowledged. Recent life events, including zero life events (40%), one or two life events (46%) and three or more life events (14%) were established. 27% met the threshold for career dissatisfaction. Regression analyses revealed that number of surgeries was significantly associated with distress (OR = 3.4 CI 1.1 - 10.4) and anxiety/depression (OR = 3.1 CI 1.2 - 8.2). Career dissatisfaction was also significantly associated with distress (OR = 5.8 CI 1.4 - 24.1). Moreover, an increased number of musculoskeletal injuries (e.g., muscle/ligament strain) and life events were associated with meeting the criteria for the CMDs assessed. Limitations of the study related to low response rate (31%), however, over the follow-up period of six months, a 69% follow-up rate was secured. As with all self-report studies, clinical diagnosis of CMDs was not possible. However, self-report questionnaires are easy to distribute and begin to establish baseline prevalence symptoms figures amongst this unique sample.

The final multi-sport study to be examined was conducted on elite athletes in the United Kingdom (Foskett & Longstaff, 2018). The study aimed to explore the prevalence of anxiety/depression and distress, as well as testing their associations with specific variables (severe injuries, career satisfaction). Anxiety/depression was measured via the 12-Item General Health Questionnaire (GHQ-12; Goldberg *et al.*, 1997), and distress via the Four-Dimensional Symptom Questionnaire (Terluin *et al.*, 2006). Severe injuries were categorised into four groups: 0 injuries, 1 injury, 2 injuries, and 3 or more injuries. Career satisfaction scores were assessed on the Greenhaus scale (Greenhaus *et al.*, 1990). One hundred and forty three athletes completed the online questionnaire, including male ($n = 81$), female ($n = 61$), and did not specify ($n = 1$). On average, the participants were 24 years old ($SD = 8.6$) and competed in a variety of team, individual or other sports. The competition level of the elite athletes varied from professional international, professional national, to amateur international, and amateur national. In total, almost 48% of the sample met the threshold for anxiety/depression (male = 42.9%, female = 54.1%). Anxiety and depression scores were combined due to the methodological assessment employed. Team sport athletes (51.7%) were more likely to meet the criteria for anxiety/depression than individual sport athletes (38.5%). For distress, 26.8% of the sample met the threshold indicative of distress, with prevalence greater in females (39.3%) than males (17.3%). For the specific variables assessed, career satisfaction decreased the odds of meeting the criteria for anxiety/depression ($OR = 0.84, p < .01$). Number of severe injuries was not a significant independent predictor of anxiety/depression. For distress, career satisfaction decreased the likelihood of meeting the criteria for distress by 15.1% ($OR = 0.85, p < .01$). Gender was positively associated with distress ($\chi^2 = 8.64, df = 1, p = 0.01$), with females almost three times more likely to meet the threshold for distress in comparison to males.

The findings are consistent with previous research (Gouttebarga *et al.*, 2019; Kuettel & Larsen, 2019; Rice *et al.*, 2016) highlighted throughout this sub-section wherein career (dis)satisfaction is associated with anxiety, depression, and distress. Gender differences were reported with distress caseness greater amongst female than male athletes; similar to a study on Australian elite athletes (Gulliver *et al.*, 2015). It was proposed that career (dis) satisfaction may be used as a screening measure for athlete mental health, with a plethora of articles highlighting the potential impact it may have in the development of CMD symptoms. The career satisfaction scale used in the present study includes specific questions relating to perceptions of satisfaction in: a) career success; b) reaching career goals; c) financial income; d) career progression; and, e) developing new skills. Thus, the scale may be a suitable construct to assess a variety of satisfaction outcomes for athletes. As with all the studies highlighted in this sub-section, the study is cross-sectional, thus, causal factors are unable to be identified. Moreover, self-report data does not allow for clinical diagnosis of the conditions assessed. The questionnaire achieved a response rate of 29%, therefore data may not be representative of all elite athletes in the United Kingdom. Lastly, the nature of ‘elite’ athletes are not clearly defined in this article. As Swann *et al.* (2015) highlighted, the term ‘elite’ has been justified to range from Olympic gold medallists to university level athletes. The paper reported that within specific ‘elite’ athlete domains, certain tiers are present. For example, in English soccer, there is the Premier League, Championship, League One, League Two, etc. An individual competing in League Two should not be directly compared to a soccer player competing in the Premier League. Thus, further clarification is required in the Foskett and Longstaff (2018) study as to the level of ‘elite’ athlete under investigation. Multi-sport studies captured prevalence data from a

wide variety of sports, however, studies have also been conducted to investigate the mental health of athletes competing in specific sports.

2.2.2 Sport-Specific Studies

Soccer

Gouttebarga *et al.* (2015b) explored prevalence of CMDs of current ($n = 149$) and retired ($n = 104$) soccer players across six countries (Australia, Ireland, Holland, New Zealand, Scotland, United States of America). In current players, prevalence rates were identified for burnout (5%), anxiety/depression (26%), distress (10%), adverse smoking behaviour (7%), adverse nutritional behaviour (26%) and adverse alcohol use (19%). Of the retired players, prevalence rates were reported for burnout (16%), anxiety/depression (39%), distress (18%), adverse smoking behaviour (12%), adverse nutritional behaviour (42%) and adverse alcohol use (32%). The findings suggest that retired soccer players reported higher levels of CMDs in comparison to current soccer players. The findings highlight a need for support programmes for both current and retired soccer players. Limitations associated with the study include its cross-sectional nature which does not allow for causal explanations. Moreover, the study also used self-report questionnaires which does not allow for clinical diagnosis of the CMDs assessed. Lastly, a low response rate was achieved (29%), therefore selection bias may have occurred which could have resulted in a non-representative sample across the six countries.

Kilic *et al.* (2017) explored the symptoms associated with CMDs (distress, anxiety/depression) and related stressors (severe injuries, surgeries, number of life events) among Danish professional soccer players. Three hundred and forty eight players participated in the cross-sectional study, consisting of both males (82%) and

females (18%). The findings highlighted that 14.7% of players met the threshold for distress, with 18.1% meeting the criteria for anxiety/depression. Significant associations were identified between prevalence of distress and number of severe injuries (OR = 1.2 CI 1.0 - 1.4), as well as number of life events within the previous 12 months (OR = 1.2 CI 1.1 - 1.4). Meeting the threshold for anxiety/depression was positively associated with number of life events within the previous 12 months (OR = 1.1 CI 1.0 - 1.3). Prevalence of anxiety/depression was identified at a lesser rate among professional Danish soccer players than in the abovementioned study exploring soccer players from multiple countries (18.1% versus 26%). The findings highlight the important role multi-inter disciplinary teams can play in identifying and supporting athletes in relation to their mental health, with number of severe injuries and number of life events within the previous 12 months increasing the likelihood of meeting the criteria for a CMD.

Rugby League

A recent study examining the prevalence of CMDs was conducted on professional Rugby league players from the United Kingdom (Nicholls *et al.*, 2020). In total, 233 Super League (the highest tier of Rugby league played in the northern hemisphere) players completed questionnaires relating to depression and anxiety symptoms (Hospital Anxiety Depression Scale; HADS) and psychological well-being (Short Warwick Edinburgh Mental Well-being Scale; SWEMWBS). For the depression subscale of the HADS, 85.8% reported a normal score, 11.6% a mild score, with 2.6% reporting a moderate/severe score. For anxiety subscale of the HADS, 67.4% reported a normal score, 18.9% a mild score, and 13.7% a moderate/severe score. Most of the participants reported an average score on the SWEMWBS, although 35.2% scored below average. In comparison to other studies, such as a recent meta-analysis

(Gouttebarga *et al.*, 2019), depressive symptoms reported by the participants in the study was low, which the authors suggest potentially highlights the protective mechanisms of competing in a team sport. Symptoms of mild and moderate/severe anxiety were reported greater amongst the Rugby league players in comparison to other studies (Du Preez *et al.*, 2017; Gulliver *et al.*, 2015), although this may be due to the differing methodological assessment chosen by the authors. The study was novel in that it is one of the first to explore psychological well-being amongst an elite sample of Rugby league players, with findings indicating a large portion of the athletes scored below average which may highlight potential issues around coping or being unhappy (Nicholls *et al.*, 2020). Limitations associated with the study include the choice of questionnaires which makes accurate comparisons between studies difficult. Moreover, over 30% of participants did not complete the questionnaire, therefore findings may not be representative of all Rugby league players.

2.3 Exploring Risk Factors to Elite Athlete Mental Health

The prevalence rates of symptoms of CMDs varies between conditions and athletic samples. Yet, often via cross-sectional and qualitative studies, a number of risk factors related to the sport-environmental domain and personal factors have been identified (Gouttebarga *et al.*, 2019; Kuettel & Larsen, 2019). Risk factors in this instance relate to factors that potentially increase an individual's susceptibility of developing a mental illness or an increase in symptoms of CMDs. Within the review of Kuettel and Larsen (2019), the most commonly reported risk factors related to sport-specific aspects, with the sporting domain exposing athletes to unique conditions (Schaal *et al.*, 2011). This includes: experiencing performance pressure and competitive anxiety; fear of failure; injury; deselection; match inexperience; and, player's position (see Kuettel & Larsen, 2019 for full review). Athletes competing in aesthetic sports

with an emphasis on leanness also reported a greater prevalence of symptoms associated with CMDs (see Mancine *et al.*, 2020 for a full review). Athlete's uncertainty around their retirement status (e.g., potentially retiring from sport within the next 12 months) was also associated with an increase in symptoms of depression (Beable *et al.*, 2017).

Personal risk factors in the review of Kuettel and Larsen (2019) centred prominently on injury, with multiple studies reporting an increase in symptoms of CMDs for those who experienced a greater number of severe injuries and surgeries (Appaneal *et al.*, 2009; Biggin *et al.*, 2017; Gouttebarga *et al.*, 2016a; 2017b; Gulliver *et al.*, 2015). Risk factors related to perfectionist concerns (Jensen *et al.*, 2018) and maladaptive coping strategies (Nixdorf *et al.*, 2013, 2016) were also prevalent. Adverse life events such as the death of a loved one or relationship breakdowns were common in numerous studies (Gouttebarga *et al.*, 2015a, 2017a, 2017b; Kilic *et al.*, 2017; Schuring *et al.*, 2017), with positive associations found between an athlete's experience of an adverse life event(s) and symptoms of CMDs. Gender was found to be an attributable risk factor with female athletes at a greater risk of developing CMD symptoms (Åkesdotter *et al.*, 2020; Beable *et al.*, 2017; Foskett & Longstaff, 2018; Hammond *et al.*, 2013; Junge & Feddermann-Demont, 2016; Schaal *et al.*, 2011) although recent research has suggested that whilst symptoms of CMDs may be greater amongst female athletes, those meeting the caseness on validated questionnaires appears similar to male athletes (Walton *et al.*, 2021). Risk factors related to athletic identity (e.g., the degree to which an athlete identifies with their role as an athlete; Brewer *et al.*, 1993) and hypermasculinity (Steinfeldt *et al.*, 2009; Steinfeldt & Steinfeldt, 2012a, 2012b) were also found in numerous studies. Lastly, athlete's

dissatisfactions with their careers was also reported as a prominent risk factor (Foskett & Longstaff, 2018; Gouttebarga *et al.*, 2016c, 2017a, 2017b).

Individual sport athletes may also be at a greater risk for symptoms of CMDs. For instance, the study of Nixdorf *et al.* (2016) examining junior elite athletes found that individual athletes were more prone to depressive symptoms than team athletes. The authors also found a significant association between negative attribution and individual sports. As further commented on by the authors, individual sport athletes are often deemed solely responsible for the outcome of a performance, whereas in team sport athletes the responsibility of the outcome is predominantly shared between the group. Thus, individual athletes may respond differently to athletic failure, a common aspect of elite sport for most athletes, and may indicate that support and interventions with individual and team sport athletes should adopt a bespoke approach. Other studies have also reported a greater prevalence of symptoms of CMDs amongst individual athletes in comparison to team sport athletes (Nixdorf *et al.*, 2016; Schaal *et al.*, 2011; Wolanin *et al.*, 2016). Nevertheless, determining true difference of symptoms associated with CMDs between individual and team sport athletes is challenging. This is primarily due to the wide array of methodological assessments employed by athlete mental health researchers. As proposed by Gouttebarga *et al.* (2019) establishing sport-specific measurement tools is key to promote accurate comparison between sports and sport types (e.g., individual versus team).

Early sport specialisation, defined as “intense, year-round training in a single sport with the exclusion of other sports” (Jayanthi *et al.*, 2013, p. 252), has also been reported as a potential risk factor to athlete mental health. Early sport specialisation can be beneficial to young elite athletes, documented in research highlighting the positive relationship between time spent practicing and achievement (Baker *et al.*, 2009). The

theory of deliberate practice also advocates early sport specialisation, whereby individuals undertake extensive and effortful practice sessions, often low in enjoyment, to help improve perceived areas of weakness (Ericsson *et al.*, 1993). However, the psychosocial implications of early sport specialisation have also been reported with young athletes exposed to a multitude of challenges. From an early age, young athletes specialising in sport may experience social isolation, long training hours, increased susceptibility to burnout, less enjoyment participating in sport, increased stress, performance pressure, adverse sleep patterns, a unidimensional athletic identity, and a negative relationship on academic performance (Baker *et al.*, 2009; Brenner *et al.*, 2019; Gould *et al.*, 1996; Smith, 1986). The sporting environment is also key for young athletes. Numerous media related articles have highlighted instances of abuse within large sporting governing bodies, with coaches found guilty of both emotional (e.g., Team GB Cycling) and sexual abuse (e.g., USA Gymnastics). Moreover, research by Gervis and Dunn (2004), reported on the negative impact of children with elite athlete status, with the behaviour of coaches altering once it was established they were elite performers. Participants within the study reported experiencing a multitude of types of abuse including shouting, belittling, threatening, humiliating, scapegoating, ignoring, rejecting, and isolating.

2.3.1 Summary of CMDs and Risk Factors within Elite Athletes

Research indicates that the prevalence of symptoms of CMDs within athletes may be similar to non-athletes (Gouttebarga *et al.*, 2019; Rice *et al.*, 2016). However, increasing evidence suggests that athletes experience a variety of both sport-environmental and personal factors associated with an increase in, or vulnerability to, symptoms of CMDs (Gouttebarga *et al.*, 2019; Kuettel & Larsen, 2019; Rice *et al.*, 2016). Identification of risk factors across differing sports is key in developing

awareness of athlete mental health and to facilitate effective strategies to support athletes. The following section critically reviews the current literature base in relation to the athletic population under investigation within the present thesis, jockeys.

2.4 Jockeys as Elite Athletes – The Challenging Lifestyle of a Jockey

2.4.1 Jockey Licensing and Weight Allocations

Jockeys can obtain a professional license from the age of 16 and compete under one of two codes, flat and national hunt. Horseracing is a unique sport, with the jockey required to align their weight with the weight allocated to the horse. This occurs due to a process called handicapping, with better horses required to carry a heavier load to improve the competitiveness of each race. In flat racing, jockeys compete between weights of 52.7 - 64kg, whilst national hunt jockeys racing weight sits between 62 - 76kg (HRI, 2018), inclusive of all racing equipment which is typically a saddle, clothing, riding boots, and protective equipment (e.g., helmet). Under each racing code (e.g., flat and national hunt), younger jockeys also participate in the sport, with these jockeys required to compete at lower weights. Apprentice and conditional jockeys take part in flat and national hunt racing, respectively. These jockeys compete at lower racing weights, known as a claim, to maximise the competitiveness of a race, but also to create riding opportunities. In essence, a horse riding with less weight on its back is more likely to win a race. Apprentices begin their claim at 4.5kg and conditionals at 3.2kg. Over time, the claim reduces based on the number of winners the jockey has. Apprentice jockeys are required to ride 95 winners, with conditional jockeys set at 60 winners, before they are classed as professional jockeys and compete with no claim carrying the original full weight allocated to the horse.

2.4.2 Making and Managing Weight over an Unspecified Season

Jockeys are required to maintain a low weight throughout a prolonged racing season to ensure they can maximise riding opportunities (Wilson *et al.*, 2014a). The struggle to make weight has been compounded by gradual anthropometric changes among the general population (increased mean height and body mass) not being mirrored by equivalent adjustments to riding weights (Cullen *et al.*, 2015a). Cullen *et al.* (2015a) observed that the average trainee jockey's weight entering the Racing Academy and Centre of Education (RACE) had increased by 47% in the preceding 30 years compared with only a 10% increase of the minimum riding weight.

Unlike other weight-making sports, jockeys must weigh out before a race and weigh in immediately after a race, meaning replenishment of energy and fluid is unachievable (Warrington *et al.*, 2009). This is different to other sports such as wrestling, rowing and boxing whereby athletes are often given 24 hours to replace energy and fluids lost in the weight-making process. Jockeys may have multiple rides in one day, which means they must continually align their weight with the horse of that specific race, therefore consistent monitoring of body mass is a necessity throughout the day. In Ireland, a horse is not declared to run in a race until 48 hours prior to competition, therefore weight manipulation occurs over a relatively short period of time (Wilson *et al.*, 2014). In this time period, jockeys often lose on average ~4% of their body mass (Dolan *et al.*, 2013). The methods used to manipulate body mass varies, with rapid weight loss often referred to as 'wasting' in the horseracing industry (Moore *et al.*, 2002). Dolan *et al.* (2011) reported on the weight-making methods of Irish jockeys, with the primary method via the use of a sauna or exercising to sweat, but other methods also included food restriction, skipping meals, avoidance techniques (e.g., keep busy), wearing plastic, and skipping breakfast, amongst others. The sports culture

leads to many jockeys engaging in archaic weight-making practices and serves as a barrier to high-performance practices (Martin *et al.*, 2017; Wilson *et al.*, 2014a). Qualitative research has highlighted such instances as McGuane *et al.* (2019) reported a quote by one jockey which stated: “if you wanna ride, then you waste” (p. 16). The study from McGuane *et al.* (2019) also highlighted how wasting was an accepted, in group norm amongst the jockey population, despite the research demonstrating the negative impact wasting can have on relationships with loved ones and poorer mental health such as an increase in anger, stress, anxiety, and depression.

The racing season for jockeys has continued to lengthen over the past two decades, with introductions of all-weather racing tracks such as Dundalk, meaning flat racing can continue throughout the winter months. Many jockeys also travel to the United Arab Emirates or Australia throughout the winter where racing carnivals worth vast amounts of prize money take place. For national hunt jockeys, popular summer racing festivals such as Galway and Killarney ensure jockeys compete all year round. The relentless competition schedule means it is difficult for jockeys to periodise training programmes to peak both physically and mentally during the competitive year. The riding weights at which jockeys compete at also varies between racing jurisdictions, placing the jockey under greater physiological and psychological stress to reduce riding weights if they compete in multiple countries.

2.4.3 Risk of Injury

Jockeys participate in a sport that is high-risk whereby injury is not uncommon (O'Connor *et al.*, 2017a, 2017b). Jockeys ride thoroughbred racehorses, typically weighing around 500kg and reaching racing speeds of up to 65km per hour. The high risk nature of horse racing is reflected by the fact, it is one of the only sports where the

athlete is continuously followed by multiple ambulances during a race. As a consequence, injury for a jockey is inevitable (Balendra *et al.*, 2008).

In Ireland, a recent study examined the nature of race-day falls in flat and national hunt racing between 2011 and 2015. The findings demonstrated that jockeys competing in national hunt racing experienced significantly more falls, with one fall in every 20 rides and 20% resulting in injury, whereas one fall per 250 rides was present for flat jockeys, with 35% resulting in injury (O'Connor *et al.*, 2017a). The most common injuries to occur over this period were soft tissue injuries (68.8% national hunt; 61.54% flat), with fractures the second most common injury reported (18.06% national hunt; 15.38% flat). Concussive injuries also occur in horseracing, accounting for 12% of injuries in flat racing and 6% in national hunt racing. Concussions were more likely to occur in flat racing as a result of falls in comparison to national hunt racing, likely due to the speed at which the horses travel and thus the speed at which the jockey hits the ground upon exiting the horse (O'Connor *et al.*, 2017b). A recent study by O'Connor *et al.* (2018b) found that one in two jockeys would continue to ride out if they suspected they had a concussion that occurred during riding out. This figure increased to 64% if an important race was scheduled to occur within the following week. Just under one in ten jockeys in the study disclosed that they had ridden a race the same day as suffering a suspected concussion, with nearly one in four jockeys admitting to returning to riding out after being stood down by a medical professional. The reason for continuing to ride out with a suspected concussion was not attributed to any single factor but predominant reasons included: not considering it serious (84.7%), under pressure of potentially losing the ride on a horse (84%), not wanting to let the owner of a horse down (77.8%), and considered a sign of weakness (74.1%).

2.4.4 The Job Demands of a Jockey

The horseracing industry is embedded with traditional practices that have predominantly stood the test of time, albeit such practices are centred on the apparent best practice for the horse, and not others working within the industry (e.g., jockeys) (Legg *et al.*, 2020). Not only are jockeys required to make low riding weights, often all year round, most jockeys supplement their racing careers via working in horseracing yards, exercising or schooling horses, as well as conducting general stable duties (Landolt *et al.*, 2017; Legg *et al.*, 2020). Therefore, as highlighted by Kiely *et al.* (2020), competition (race-riding) represents a small part of a jockeys working week with jockeys working on average 34 hours per week prior to race-riding. This figure is likely to be significantly greater when considering the vast amounts of travel jockeys undertake when driving to yards and racetracks. Table 2.1 illustrates a typical working day for a jockey in the United Kingdom (Wilson *et al.*, 2014a).

Table 2.1*Typical Working Day of a Jockey (Wilson et al., 2014a, p. 787)*

Time	Activity	Additional comment
6.30am	Wake up	Cup of tea (no breakfast)
7.00 a.m. to 9.15 a.m.	'Riding out'	Many jockeys will ride racehorses in exercise for trainers who provide them with race rides
9.30 a.m. to 10 a.m.	Breakfast	Cup of tea and biscuits or no food if a jockey is riding at a low racing weight
10.15 a.m. to 11.15 a.m.	'Riding out' / schooling	'Schooling' involves putting (Flat) racehorses through starting stalls (gates) or riding (national hunt) horses over fences or hurdles
1.00 p.m.	Arrive at racecourse	Jockeys arrive *1 h before first race. On the journey to a racecourse, if required to lose weight it is not uncommon for jockeys to wear a sweat suit and travel in a car with heaters on
1.00 p.m. to 2.00 p.m.	Prepare for first race to ride	If weight for the first race ride of the day is required to be reduced, a jockey will either run around the racecourse (track) in a sweat suit, or sit in the racecourse sauna
2.00 p.m.	Race ride	The jockey weighs out before the race and weighs in after the race if winning or placed
2.10 p.m.	Back in weighing room to change to prepare for next race	During this period, a jockey typically will consume sandwiches and/or convenience foods (biscuits, chocolate, jellies) and drink sugared tea or fizzy drinks/sports drinks in the weighing room canteen. If required to ride at the lowest riding weight for the day, a jockey may not consume any food or fluid
2.30 p.m.	Race ride	
3.40 p.m. to end of race meeting	The jockey will repeat the preparation for each consecutive race (as previously described)	If there is a need to acutely lose weight throughout the race meeting, it is not uncommon for a jockey to sweat further
5.00 p.m.	End of race meeting shower and travel home	At the end of the races, jockeys will typically consume food and drink (described) in the weighing room
7.30 p.m.	Arrive home	A jockey will commonly only have one main meal a day, which typically includes meat or fish (e.g., chicken nuggets/fish in breadcrumbs and fries), and alcohol if not race riding the next day

In one of the few studies to explore occupational stressors associated with a jockey's career, Landolt *et al.* (2017) adopted a qualitative approach to capture these stressors in more detail using the effort-reward imbalance model (Siegrist, 1996) as a theoretical framework. The authors used focus groups with Australian apprentice ($n = 35$) jockeys. The male ($n = 20$) and female ($n = 15$) jockeys varied in apprenticeship years which included first ($n = 10$), second ($n = 8$), third ($n = 8$) and fourth year ($n = 9$) apprentices.

Jockeys reported five key demands associated with their careers. Firstly, time demands were acknowledged. The authors reported that jockeys worked long hours, although these were not always related to the athletic aspect of being a jockey. Jockeys spent great periods of time travelling to and from race meetings, potentially driving hundreds of kilometres each day and travelling up to six hours each way due to the vast landscape of Australia. Secondly, apprentice jockeys reported role suppression which largely pertained to the lack of opportunities afforded to them outside of their specific role. The authors highlight the master/servant relationship typical with jockey apprenticeships wherein substantial power dynamics often arise. This led to jockeys often feeling a lack of autonomy or control over their careers due to the trainer dictating the content of their working day. They were also aware of the scrutiny and pressure placed upon them when riding competitively. This is prevalent due to the gambling nature of the sport of horseracing, but also because of the investment from owners into the sport. Competition stressors, relating to form, specifically leaving a race-meeting without a winner, and also experiencing periods of poor form were also cited.

The importance of networking and building relationships with important others within the racing industry was particularly prevalent for first year apprentices who were beginning their careers in the sport, but also for fourth year apprentices who were close

to ending their apprenticeship and becoming a fully licenced jockey. These jockeys start riding without a claim and compete off level weights with senior licenced jockeys after reaching a certain number of winners or years riding. Moreover, the media was also cited as a demand of the sport, with jockeys reporting that it required considerable effort to speak to a variety of media sources.

Physical demands were experienced by jockeys, especially the demands around managing or maintaining weight. The sample stressed the difficulty in maintaining a low weight and adequate fitness levels in the attempt to avoid wasting. Interestingly, the jockeys in the study did not want the weights to be raised, as has been suggested by practitioners in a recent academic article (Wilson *et al.*, 2020). The jockeys cited that the stringent weight demands set them apart from other athletes. The raising of weights was perceived to have a negative impact on their career opportunities due to an increase in the number of jockeys who can make the lowest weights.

Riding a horse was also cited as a physical demand due to the ‘push and pull’ requirements needed by a jockey (Landolt *et al.*, 2017). Thus, jockeys felt they needed a certain level of strength to maximise the performance of the horse. Injury was also reported as a demand of the sport by jockeys, with the unpredictability of racehorses acknowledged by the sample. Finally, the authors reported that the workload associated with being an apprentice was gruelling, with long hours a frequent part of the role. This appeared to impact the opportunity for holidays, as well as social support networks outside of racing, with limited time available for social outings.

Fourthly, jockeys reported that the occupation required intense periods of concentration for short periods on frequent occasions throughout a working day. This source ranged from concentrating intently on the horse itself or using psychological

strategies to prepare for a race. Jockeys were also required to concentrate throughout the apprentice training programme which includes education classes. Lastly, the final theme identified by authors was ancillary demands, especially for first year apprentices. These demands included other tasks that were not related to race-riding and included washing down the horses, feeding horses, track work, cleaning out the stables, swimming the horses and saddling the horses.

Whilst these findings are useful in developing our understanding of the demands associated with a career as a jockey, the findings must be interpreted with caution. Apprentice jockeys may experience different stressors in comparison to professional jockeys, particularly in relation to weight, given that apprentice jockeys are afforded a claim to counteract their inexperience. Although in theory this enhances the jockey's likelihood of winning a race due to the horse carrying less weight than its competitors, it places apprentice jockeys under increasing pressure to ride at low weights to maximise earning and career opportunities (Wilson *et al.*, 2014a). The authors acknowledge that their findings may not be generalisable to other racing jurisdictions and stages of jockey's career. The career experience of a jockey in Australia may be comparatively different to a jockey in Ireland given the varying nature of racing riding weights, prize money, racing code, and geographical landscape. Therefore, further research exploring the stressors experienced by jockeys in differing racing jurisdictions is required to begin to understand the demands placed upon these athletes.

2.4.5 Prevalence of CMDs among Jockeys

The previous sections have highlighted a variety of demands that are placed upon jockeys. Despite these demands, few studies have established prevalence rates of CMDs amongst this population. Recently, Losty *et al.* (2019) conducted a cross-

sectional study to determine the prevalence of CMDs amongst the jockey population. In total, 116 jockeys completed the anonymous online questionnaire, including amateur ($n = 74$) and professional ($n = 42$) jockeys. The results showed that 57% of professional jockeys met the criteria for depression (measured via CES-D), 36% for psychological distress (K10), and 21% for GAD (GAD-7). Moreover, 38% reached the threshold for social phobia (SPIN), 52% for perceived stress (PSS), and 31% for low self-esteem (RSES). Risk factors for depression were also documented, with currently injured jockeys 46 times more likely to meet the criteria for depression in comparison to those who were not injured. Presence of social phobia (OR = 6.82 CI = 1.49 - 31.19) and stress (OR = 14.44 CI 0.69 - 17.61) resulted in an increase in meeting the criteria for depression. In comparison to amateur jockeys, professional jockeys reported greater mean scores on all mental health conditions assessed except for self-esteem. The authors suggested that professional jockeys may experience a greater number and magnitude of stressors throughout their careers, whilst amateur jockeys participate across defined seasons, with occupations outside of horseracing. Despite the small sample size of professional jockeys ($n = 42$), the study was the first to highlight that CMDs may be prevalent amongst this sample of athletes.

The findings from this study suggest that professional jockeys may experience the symptoms of CMDs at a greater rate than other elite athletes. For instance, the study of Gulliver *et al.* (2015) in Australia where similar validated questionnaires were used reported symptoms of depression (57% vs 28%), psychological distress (36% vs 17%), and generalised anxiety (21% vs 7%) all below the prevalence rates in the study of Losty *et al.* (2019). In New Zealand, those displaying depressive symptoms at the clinical cut-off was 21% (Beable *et al.*, 2017). In the United Kingdom, Foskett and Longstaff (2018) reported that nearly one in two athletes met the criteria for anxiety

and depression. However, the questionnaires used in this study were different to the study of Losty *et al.* (2019) therefore comparisons are difficult.

Whilst the findings of the Losty *et al.* (2019) study provide useful preliminary evidence of CMDs amongst jockeys, the study is not without limitations. Firstly, the numbers of licenced jockeys to take part in the study was relatively small therefore findings may not be representative of the whole jockey population. However, response rates were in line with other similar studies in the area. Whilst the study did explore some risk-factors (e.g., injury), these were not based on validated questionnaires. Previous research has highlighted a variety of risk-factors to athlete mental health via validated questionnaires (Kuettel & Larsen, 2019; Rice *et al.*, 2016), thus, utilising these constructs would have resulted in a deeper examination and understanding of jockey mental health.

2.4.5.1 Mood State of Jockeys

Multiple studies have examined the mood of jockeys, often in the context of making weight (Caulfield & Karageorghis, 2008; Dolan *et al.*, 2013; McGuane *et al.*, 2019; Wilson *et al.*, 2012, 2013, 2015). The sport of horseracing places jockeys under relentless pressure to maintain low competition weights throughout the competitive season, with qualitative research highlighting that weight related factors are all consuming for jockeys (Martin *et al.*, 2017; McConn-Palfreyman *et al.*, 2019; McGuane *et al.*, 2019). Most studies in this area have typically examined weight and mood via utilisation of the Brunel Mood Scale (BRUMS) (Terry *et al.*, 1999), a self-report 24-item abridged version of the Profile of Mood States (McNair *et al.*, 1971). The BRUMS' measures include five negative mood states (depression, anger, tension, fatigue and confusion) and one positive mood state (vigour), and research suggests that

making low riding weights are associated with more negative mood profiles. A study of 41 professional jockeys found that participants' mood profiles were significantly different at minimum weights (achieved via rapid weight loss) than at optimal (not excessively restricting weight; feeling healthy) and relaxed (no rides at light weights in the near future or no rides at all) (Caulfield & Karageorghis, 2008). That is, when making minimum weights, jockeys reported significantly greater scores for depression, anger and fatigue, whilst vigour was observed to be reduced. No significant differences were found between optimal and relaxed weights. Wilson *et al.* (2013) reported on the mood profiles of UK flat and national hunt jockeys. Abnormal mood profiles for all measures were reported on the BRUMS except for tension. Flat jockeys reported significantly poorer scores for anger and fatigue variables in comparison to national hunt jockeys, perhaps due to the need to reach lower competitive riding weights.

Given these findings, several studies have highlighted the effects of making weight without the need for dehydration and food restriction with promising results (Wilson *et al.*, 2012, 2015). A case study which included a jockey engaging in a structured exercise and diet plan found that the individual reported a switch from above-average anger and depression BRUMS score pre-intervention to below average scores post-intervention, with vigour scores moving in the opposite direction (Wilson *et al.*, 2012). Positive findings were also reported in larger scale intervention via a six-week individually tailored diet plan in UK jockeys. ($n = 10$). Jockeys mean General Health Questionnaire scores (Goldberg *et al.*, 1997) scores, a measure of psychological distress, reduced from 10.3 ($SD = 4.3$) pre-intervention, to 8.9 ($SD = 3.8$) post-intervention (Wilson *et al.*, 2015). The number of jockeys who met the threshold indicative of psychiatric caseness also dropped from two to one post-intervention. The findings suggest that further educational programmes or support from practitioners on

effective weight-making practices are required for jockeys. Moreover, as highlighted by Martin *et al.* (2017), further research may also seek to explore the apparent reluctance to adopt a healthier approach to riding by jockeys, as currently a reliance on older, less effective methods appear dominant.

2.4.6 Summary of Jockey Mental Health

The review highlights preliminary evidence that life as a jockey is both physically and psychologically challenging (Landolt *et al.*, 2017; Losty *et al.*, 2019; McGuane *et al.*, 2019; Wilson *et al.*, 2014a). However, in comparison to other elite athletes, the research pertaining to the mental health of jockeys is relatively absent. Only one study has examined stressors reported by jockeys (Landolt *et al.*, 2017), albeit in a specific context (e.g., Australia), and with a limited sample of jockeys where findings may not be representative or applicable beyond apprentice jockeys. The study of Losty *et al.* (2019) was the first to examine symptoms of CMDs among jockeys with emerging evidence indicating that jockeys may report symptoms of CMDs at a greater rate than elite athletes in other sports. The authors acknowledge that further research is required in the area. Studies adopting larger sample sizes are necessary, with use of validated risk factor measures also encouraged. Although the study of Losty *et al.* (2019) highlighted preliminary findings that symptoms of CMDs are prevalent amongst jockeys, no data currently exists in relation to help-seeking amongst this population of athletes.

2.5 Psychological Help-Seeking

Help-seeking has been defined as “a term generally used to refer to the behaviour of actively seeking help from other people” (Rickwood *et al.*, 2005, p.4). However, although CMD’s are prevalent across society, help-seeking rates are

relatively low, despite a wide range of evidence-based treatments available (Kohls *et al.*, 2017). In Europe, it was reported that only one-third of individuals who experienced a CMD received treatment within the previous 12 months (Alonso *et al.*, 2004). Research has also indicated that athletes may be reluctant to seek help for CMDs from professional support services (Castaldelli-Maia *et al.*, 2019; Rice *et al.*, 2016). The importance of help-seeking for CMDs is well established within the literature. Positive associations have been identified between length of time in starting treatment and severity of CMD (de Diego-Adeliño *et al.*, 2010). That is, the longer an individual does not seek help, symptoms of CMDs worsen over time. Moreover, previous research reported on the predictive factor of time to treatment (onset and time to treatment) and CMD (depressive) symptoms (Scott *et al.*, 1992) where one of the most significant predictors of persistent depressive symptoms is the difference between onset of depressive symptoms and receiving treatment. Early intervention, therefore, is critical. Beyond severity and persistence of symptoms of CMDs, benefits to help-seeking include improved mental health, reduced levels of stress, resolving personal issues, develop a sense of self-awareness, improved satisfaction with life and better relationships with important others (Vidourek *et al.*, 2014). Understanding why athletes may not seek help is vital in improving understanding and knowledge of optimal and appropriate methods to support athletes. Several barriers and facilitators to help-seeking are addressed in the following sub-sections.

2.5.1 Barriers to Help-Seeking

A barrier to help-seeking refers to a factor that inhibits an individual or group of individuals from seeking help for CMDs. Two of the most significant barriers to help-seeking among general and athletic populations include stigma and mental health

literacy (MHL) (Castaldelli-Maia *et al.*, 2019; Clement *et al.*, 2015; Gulliver *et al.*, 2012a).

2.5.2 Stigma – An Overview

Stigma has been defined as “a process involving labelling, separation, stereotype awareness, stereotype endorsement, prejudice and discrimination in a context in which social, economic or political power is exercised to the detriment of members of a social group” (Clement *et al.*, 2015, p. 11). Stigma, therefore, relates to the disapproval or prejudgement of a person or group that separates them distinctively from other members of the human population (Breslin *et al.*, 2019a). Indeed, often mental illness is framed negatively (Vogel *et al.*, 2007) with those who are stigmatised, feeling inadequate or unaccepted in wider society. Thus, although the care and treatment of those with a mental illness has improved dramatically improved throughout the past 50 years, many people still do not seek help for mental health concerns. Globally between 52 - 74% of individuals do not receive support from qualified personnel for mental illnesses (Kessler *et al.*, 2005; Thornicroft, 2007; Wittchen & Jacobi, 2005).

A recent study by Clement *et al.* (2015) conducted a meta-analysis on the relationship between mental health-related stigma and help-seeking. The findings reported a small to moderate negative relationship between the two concepts ($d = -.027$). More specifically, stigma associated seeking or receiving psychological help (treatment stigma) produced the strongest negative association in comparison to the other forms of stigma analysed ($d = -2.73$ to 0.36). Although there are a host of stigma types (see Clement *et al.*, 2015 for a full review), two that are reported to be important are public stigma and self-stigma.

Corrigan (2004), proposed that public stigma and self-stigma occur sequentially, whereby at first individuals experience public stigma (e.g., people with a mental illness are crazy), which leads to negative perceptions and feelings about oneself, with the process resulting in self-stigma (e.g., I am crazy), which has consequences to attitudes and intentions towards seeking help. Conceptually, public stigma is usually what individuals think of when referring to stereotypical stigma (Corrigan & Rao, 2012). Public stigma is the general population's discrimination or prejudice towards an individual or group. For instance, depressed individuals are often regarded as dangerous to society, unpredictable and hard to talk to (Crisp *et al.*, 2000). Moreover, individuals who seek help for CMDs are often labelled negatively including weak, cold, insecure, disturbed, crazy and unstable (Ben-Porath, 2002; King *et al.*, 1973; Sibicky & Dovidio, 1986). Self-stigma refers to individuals holding negative views about themselves due to the internalisation of stigmatising viewpoints that are held by the wider society (Corrigan & Watson, 2002a). As such, depressed individuals may describe their mental illness as: "only weak people get depressed. If I am depressed, I am weak" (Halter, 2004, p. 178). Self-stigma has implications to lowered self-efficacy and confidence (Corrigan *et al.*, 2006), diminished self-esteem (Link & Phelan, 2001), increased prevalence of depression (Manos *et al.*, 2009), compliance with treatment protocols (Fung *et al.*, 2007), and adverse attitudes towards help-seeking (Conner *et al.*, 2010).

2.5.3 Stigma and Elite Athletes

Athletes may not seek help due to stigma-related factors. Wahto *et al.* (2016) examined 43 college student-athletes participating in a variety of sports although these were not disclosed to protect confidentiality of the individual athletes. The average age of the participants was 21.6 years old, ranging from 18 to 31 years old. The gender of

the participants was predominantly female (73.7%), with male (25%) and transgender (2.3%) athletes also taking part. Most of the participants were white (73%). Almost 20% of the sample had reported previous use from professional mental health services, with over 9% reporting previous use of psychiatric medications. Measurement for public stigma was taken via the stigma scale for receiving psychological help (SSRPH; (Komiya *et al.*, 2000), self-stigma via the self-stigma of seeking help scale (SSOSH; (Vogel *et al.*, 2006), and attitudes via the inventory attitudes toward seeking mental health services (IATSMHS; Mackenzie *et al.*, 2004). Hierarchical regression analysis revealed that public stigma and self-stigma independently predicted the participant's help-seeking attitudes. Combined, public stigma and self-stigma accounted for 66% of the variance in help-seeking attitudes. Independently, public stigma accounted for 9% of variance in help-seeking attitudes, with self-stigma predicting 31% of variance in attitudes. Adding gender and previous treatment history to the model including public stigma and self-stigma accounted for 77% of the variance in help-seeking attitudes amongst this sample group. Due to the significance of the prediction of attitudes demonstrated by public stigma and self-stigma, mediation analyses were conducted. The authors noted that the impact of self-stigma partially mediated the relationship between public stigma and attitudes.

The findings from the study of Wahto *et al.* (2016) are important because they highlight the relationships between public stigma, self-stigma, and subsequent attitudes towards seeking help. The authors report that whilst self-stigma explained greater variance in attitudes towards seeking help, stigma theories and mediation models presented in the literature suggest that self-stigma is a consequence of public stigma. That is, the negative stereotypes towards help-seeking portrayed in public are internalised via individuals which has a negative relationship towards attitudes to

seeking help. Improving public perceptions towards help-seeking may be challenging due to the difficulty in changing public attitudes at the macro level, therefore interventions designed to target self-stigma at the micro (e.g. individual level) may be more effective. Programmes and campaigns should include messages that help normalise help-seeking attitudes and behaviours, and help dispel myths that help-seeking is a sign of weakness or shameful. The study is not without limitations. Firstly, the sample was predominantly female, accounting for three quarters of the sample size. Gender has been determined as a key component of attitudes towards seeking help, with females reporting more positive attitudes towards seeking help than males (Nam *et al.*, 2010). Moreover, the sample size is small ($n = 43$). This represents one quarter of all student-athletes at the institution where the study was conducted, which may have resulted in selection bias. Similarly, most of the participants were white, thus given the research highlighting how stigma varies across race and ethnicity (Clement *et al.*, 2015), the findings may not be generalisable to wider populations.

Bird *et al.* (2018) explored public stigma, self-stigma and attitudes towards online counselling (OC) and face-to-face counselling (F2F) and the relationship between these variables in a sample of student athletes ($n = 101$) and non-student athletes ($n = 101$). Public stigma was measured using the perception of stigmatisation by others (PSOSH) scale and self-stigma via the SSOSH. F2F counselling via the face-to-face counselling attitudes scale (FCAS), and online counselling via the online counselling attitudes scale (OCAS) (Rochlen *et al.*, 2004). The student athletes participating in the study represented 20% of the student-athletes at the institution at which the study took place. Non-athletes were matched via age and race to account for observed differences in demographic factors on attitudes towards help-seeking (Nadeem *et al.*, 2007). Each sample group contained 51 males and 50 females. The

authors employed a multiple group path analysis to examine the relationship between public stigma, self-stigma, and attitudes towards seeking psychological help. The model demonstrated that for student-athletes, public stigma was a positive predictor of self-stigma ($\beta = .39$), with self-stigma a significant negative predictor of value in F2F counselling ($\beta = -.35$), and positively predicting discomfort in F2F counselling ($\beta = .48$). The study found no significant differences between public stigma and the two sample groups assessed. A strength of the study was the matching of participants for demographic variables which may explain why no differences were observed between groups. However, the authors acknowledge that further research between student-athletes and non-student athletes is required given the previous research highlighting that student-athletes report greater levels of stigma than non-athletes (Kaier *et al.*, 2015). Limitations of the study echo those reported previously (Wahto *et al.*, 2016), such as the study accounting for a small percentage of student-athletes (20%) from the given institution which may increase selection bias.

Hilliard *et al.* (2019) investigated stigma and attitudes amongst a sample of student-athletes and non-athletes. Two-hundred and forty three participants were assessed, of which 146 were male. Public stigma was measured using SSRPH, self-stigma via the SSOSH, and attitudes via the short form version of the ATSPPH. The authors found significant correlations between public stigma and self-stigma, and public stigma and attitudes. Self-stigma was significantly correlated with attitudes. Structural equation modelling was then used to analyse the pathways between each variable. Significant positive relationships were identified between public stigma and self-stigma ($\beta = .43$), and self-stigma and attitudes ($\beta = -.73$). The model supports previous research that highlights public stigma predicts self-stigma, and a negative relationship between self-stigma and attitudes towards seeking psychological help.

Limitations associated with the study include a low response rate (30%) and the predominance of white participants.

2.5.4 Mental Health Literacy – An Overview

The term mental health literacy (MHL) emanates from the field of health literacy. Definitions of health literacy are varied, however a general description of the term has been proposed as “the degree to which individuals can obtain, process, understand, and communicate about health-related information needed to make informed health decisions” (Berkman *et al.*, 2010, p. 16). The term MHL was introduced by Jorm *et al.* (1997) and relates to the “knowledge and beliefs about mental disorders which aid their recognition, management, or prevention” (p. 182). The concept was developed due to a lack of knowledge in the area of mental disorders in comparison to other physical diseases such as cancer or heart disease (Jorm *et al.*, 2006). MHL is underpinned by six factors that are described as: 1) recognition of symptoms of mental health disorders; 2) ability to identify risk factors and causes of mental health disorders; 3) displaying favourable attitudes towards mental health concerns and seeking help from professional services; 4) knowledge of self-help strategies and methods; 5) ability to identify mental health information; and 6) actively seek professional help (Jorm *et al.*, 2006). MHL research has established links between both intentions and attitudes towards seeking help from professional services. In the United Kingdom, greater levels of mental health knowledge predicted stronger intentions to seek help (Rüsch *et al.*, 2011). Further research with university students demonstrated a positive correlation between MHL and help-seeking behaviour ($r = .12$, $p < .05$) (Gorczyński *et al.*, 2017b). Similar findings have been echoed within a study conducted in the United States where individuals with greater MHL scores reported more favourable attitudes towards help-seeking ($r = .42$, $p < .001$) (Jung *et al.*, 2017).

The level of MHL an individual has is likely to impact their perceptions on those with a mental illness, beliefs around the efficacy of treatment, and their willingness to use a mental health service (Gulliver *et al.*, 2010). As such, it is unsurprising that individuals who believe treatment for mental illness is beneficial and effective are more likely to use a mental health service (Givens *et al.*, 2007).

2.5.5 Mental Health Literacy and Elite Athletes

In sport, low levels of MHL have been reported as one of the key barriers to help-seeking within athletic populations (Biggin *et al.*, 2017; Castaldelli-Maia *et al.*, 2019; Gulliver *et al.*, 2012a; Kola-Palmer *et al.*, 2020; Watson, 2005; Wood *et al.*, 2017). Within these quantitative and qualitative studies, athletes reported negative attitudinal views towards help-seeking, a lack of knowledge and understanding of CMD symptoms, and uncertainty on where to seek professional psychological support. Intervention studies designed to increase MHL among athletes show promise. For instance, a randomised control trial which examined young elite athletes found that after participating in a MHL/destigmatisation intervention, there was a trend towards an increase in help-seeking behaviour (Gulliver *et al.*, 2012c). The authors reported that the MHL/destigmatisation condition was positively associated with increased depression and anxiety literacy ($p < .05$). Another study found that student-athletes who accessed an interactive website designed to enhance knowledge and confidence for effective mental health referrals reported greater improvements on the outcome variables in comparison to a control group (van Raalte *et al.*, 2015). Lastly, a study in the United States examined the impact of a four-week programme designed to improve MHL, reduce stigma, and enhance attitudes and intentions towards seeking help (Chow *et al.*, 2020). Each week consisted of four evidence-based interventions which included MHL, empathy, counter stereotyping, and contact. MHL increased from pre to post-

intervention, and at one month follow up. However, a recent review has reported that these findings should be interpreted with caution (Breslin *et al.*, 2017). Breslin and colleagues report that studies in the field showed poor methodological quality, a high-risk of bias, and based on a lack of psychological theory (e.g., behaviour change). Moreover, many of the studies conducted utilise student-athlete or young elite samples, therefore understanding of MHL beyond these two cohorts may not be representative of elite athletes. Despite these shortcomings, the findings presented highlight the potential effectiveness of MHL interventions.

2.5.6 Other Barriers to Help-Seeking

2.5.6.1 Gender Stereotypes

Gender stereotypes have been reported to play a role with masculinity reported as one of the key factors in stigmatising attitudes and lack of help-seeking behaviour amongst men (Clement *et al.*, 2015). Males often seek help from professional services at a lesser rate than females (Addis & Mahalik, 2003; Judd *et al.*, 2008). The widely reported literature states that this may be due to masculine gender role socialisation whereby men often display traditional masculine traits such as stoicism, a lack of femininity, showing no signs of “weakness”, and avoiding situations that may leave the individual vulnerable (Addis & Mahalik, 2003). Thus, seeking help could be considered the opposite of such masculine norms, hence a reluctance to reach out for help (Courtenay, 2000).

In sport, Delenardo and Terrion (2014) found concepts related to public perceived stigma, self-stigma, social norms facilitating stigma and masculinity/toughness were all prevalent amongst a sample of college football players. The authors reported that many of the participants felt that mental illness could be used

as an excuse to not compete or take part in training, whilst others felt that individuals needed to ‘man up’ if a mental illness persisted for a sustained period of time. As such, it is plausible to understand why males among this sample of athletes may find it difficult to seek help for fear of being perceived weak by their teammates. In another study, conformity to masculine norms was assessed, with 31% of college football players classified as ‘high conforming players’ and thus conformed to masculine norms such as winning, emotional control, risk-taking, and self-reliance (Steinfeldt & Steinfeldt, 2012a). Sports which place emphasis on macho behaviour, such as aggression and physical contact, may facilitate perceptions of weakness if the athlete wishes to disclose any personal or emotional problems they are experiencing (Zakrajsek *et al.*, 2011). Furthermore, college soccer players who reported greater gender role conflict and athletic identity reported a greater level of stigma towards seeking help from psychological services (Steinfeldt *et al.*, 2009).

2.5.6.2 Self-Reliance

Self-reliance is related to an individual’s desire to manage problems on their own (Labouliere *et al.*, 2015). Studies have found that a preference for self-reliant attitudes are a significant barrier associated with help-seeking (Han *et al.*, 2018). Much of the research which has examined self-reliance and help-seeking has done so with suicidal individuals, where one study found that extreme self-reliant attitudes are associated with a reduction in help-seeking, and depressive symptoms (Labouliere *et al.*, 2015). In sport, authors have suggested that the culture of sport lends itself to self-reliant attitudes (Kaier *et al.*, 2015), where one study has reported the construct as a barrier to help-seeking among athletes (Gulliver *et al.*, 2012a).

2.5.6.3 Service Related Barriers

Service related barriers to help-seeking have also been documented within the literature, with one of the most prominent barriers being the cost of treatment, particularly among rural populations as documented in multiple systematic reviews (Brown *et al.*, 2016; Gulliver *et al.*, 2010). Practical barriers also exist, such as a lack of time, or accessibility issues which include transport or distance required to visit a mental health professional (Ali *et al.*, 2017). Concerns about the treatment provider, such as confidentiality and trust concerns, have also been reported (Kantor *et al.*, 2017).

2.5.7 Facilitators

Facilitators, or enablers, to help-seeking for CMDs are under-researched in comparison to barriers, particularly within athletic samples. The following sub-section draws upon the evidence presented across predominantly general populations and includes: mental health literacy; positive past experiences; social support, and gender.

2.5.7.1 Mental Health Literacy

While MHL has been documented as a barrier to help-seeking previously in this sub-section, MHL also serves as a facilitator to help-seeking. That is, greater levels of MHL have been found to predict the use of professional help-seeking services (Bonabi *et al.*, 2016; Gorczynski *et al.*, 2017b). In sport, Kola-Palmer *et al.* (2020) demonstrated in a sample of professional league players that greater MHL scores were associated with actual help-seeking behaviour, and that players with higher MHL scores were more likely to seek professional help than players with lower levels of MHL. MHL is also associated with more positive attitudes towards help-seeking (Cheng *et al.*, 2018; Jung *et al.*, 2017). Other studies have found that knowledge of services is an important

component of MHL (Rothi & Leavey, 2006). This may include knowing who the mental health professional is, location of services, pathways to accessing services, and the cost of mental health support (Gagnon *et al.*, 2017). Attitudes towards treatment are also an important factor attributed to MHL. Individuals who believe that treatment will be helpful and effective have been reported to hold more positive attitudes towards help-seeking or expressed a greater degree of interest in accessing mental health services (Givens *et al.*, 2007; Gonzalez *et al.*, 2011; Jorm, 2012; ten Have *et al.*, 2010)

2.5.7.2 Positive Past Experiences

Positive past experiences with a mental health professional are reported to predict more positive attitudes towards help-seeking in the future (Rickwood *et al.*, 2005). This may be achieved via a good therapeutic relationship between patient and professional. Findings have indicated that a positive therapeutic relationship between patient and professional are associated with better outcomes over the course of a pharmacological treatment programme (Wienke Totura *et al.*, 2018). In a systematic review examining barriers and facilitators to help-seeking in young people, positive past experiences with help-seeking was reported as the most prevalent facilitator (Gulliver *et al.*, 2010). Similar findings have been echoed amongst athletes (Gulliver *et al.*, 2012b). Another study using a sample of 2721 young individuals (14 – 24 years old) reported positive past experiences as a prominent facilitator (Rickwood *et al.*, 2005). The authors also found that negative attitudes towards treatment were lower for individuals who had previously accessed support for their mental health within the previous three weeks.

2.5.7.3 Social Support

Social support factors enable help-seeking and promote more positive attitudes towards help-seeking (Han *et al.*, 2018; Jung *et al.*, 2017). Jorm *et al.* (2012) reported that informal support structures are often rated positively, above and beyond the use of formal support networks. In the sports domain, one study found that received social support from teammates in a plethora of intercollegiate sports (e.g., track and field; baseball; American football; basketball; soccer; volleyball; swimming; handball; gymnastics; Rugby; tennis; squash; golf; badminton; and, bowling) was negatively associated with depression (Hagiwara *et al.*, 2017). Another study with team-sport and individual sport athletes (specific sports not mentioned to protect the identity of participants) found that encouragement from coaches served as a facilitator to help-seeking (Gulliver *et al.*, 2012a). Social support networks may also facilitate problem recognition within the individual and encourage them to seek professional help (Jorm, 2012). Nevertheless, although support from informal structures such as family and friends are important, they may become problematic if used as an alternative to formal help-seeking and professional support. For instance, an individual may share information related to a CMD with a friend or family member that requires professional intervention (e.g., medication; therapy), and fail to seek help in an appropriate manner which may lead to worsened symptoms over time.

2.5.7.4 Gender

Gender appears to play an important role in help-seeking. Although overall prevalence of CMDs is similar between males and females, access to services and more positive attitudes to treatment is significantly greater amongst females than males (Leong & Zachar, 1999; Mackenzie *et al.*, 2006; Nam *et al.*, 2010; Wendt & Shafer,

2014). A small to moderate effect size was reported on gender and attitudes towards seeking help (Nam *et al.*, 2010). As highlighted in the barriers sub-section (section 2.5.6), gender stereotypes and conformity to masculine norms have been documented as significant barriers to help-seeking amongst males. Men may be less likely to seek help due to cultural factors, where emotional openness, expressions of feelings, and a stoic approach to life are deemed paramount to identify as a 'real man' (Addis & Mahalik, 2003). Conversely, previous research has shown that females are significantly more likely to seek emotional support than males, report lower levels of stoicism than males, and perceive less personal stigma towards CMDs than males (Judd *et al.*, 2008; Tamres *et al.*, 2002).

2.6 Summary of Literature Review

This chapter provided an overview of the broader athlete mental health literature including athlete stressors, prevalence of CMDs and risk factors, and psychological help-seeking. The chapter also examined the challenging lifestyle of a jockey, yet identified a relative absence of jockey mental health research. The literature review highlights several key points for consideration. Firstly, although a plethora of research is documented regarding athlete stressors, several sports are underrepresented within the literature. As Thelwell *et al.* (2007) noted, research into these sports is necessary to enhance the effectiveness of applied programmes delivered to athletes. Currently, only one study has examined the stressors reported by jockeys (Landolt *et al.*, 2017). This is surprising given the multitude of academic articles published documenting the demanding nature of the sport and the sport-specific demands placed upon them as highlighted in the review (Landolt *et al.*, 2017; Losty *et al.*, 2019; Wilson *et al.*, 2014a). Moreover, the links between the unique stressors experienced by athletes and a prevalence of CMDs are acknowledged in other sports, thus a deeper understanding of

the stressors experienced by jockeys may highlight specific risk factors for CMD prevalence. There is limited evidence on CMD prevalence amongst jockeys, with only one study conducted utilising validated measures, albeit with a small sample (Losty *et al.*, 2019). Preliminary evidence suggests a prevalence of CMDs may be greater among jockeys than other athletes although further inquiry is necessary with the use of larger samples. The literature review documented that help-seeking for CMDs is low for athletes with a number of key barriers such as stigma and MHL identified (Castaldelli-Maia *et al.*, 2019; Gouttebarga *et al.*, 2019; Gulliver *et al.*, 2012a; López & Levy, 2013; Rice *et al.*, 2016; Wood *et al.*, 2017). Facilitators to help-seeking are comparatively under researched. For jockeys, to the author's knowledge, no empirical research exists regarding barriers and facilitators to help-seeking, or more broadly, jockeys attitudes towards help-seeking. Evidently, given the prevalence of CMDs reported by Losty *et al.* (2019), support from professionals for CMDs is likely to be required for some jockeys throughout their careers. Due to the cultural norms of the sport of horseracing, and sport in general, dominated by masculinity and perceptions of strength (Ramaecker & Petrie, 2019), there may be factors inhibiting jockeys help-seeking behaviours. Exploration of help-seeking for CMDs would begin to shed light on this topic. The current lack of empirical evidence amongst professional jockeys impedes evidence based organisational policy designed to ensure jockey welfare, as well as limiting the application of interventions and support programmes. Thus, the research objectives of the thesis are clarified below.

2.7 Clarification of Research Objectives

The present research thesis attempts to address four specific research objectives:

- 1) To explore the stressors experienced by jockeys
- 2) To identify the prevalence of CMDs and associated risk factors among jockeys
- 3) To explore barriers and facilitators towards help-seeking for CMDs
- 4) To examine the relationships between identified barriers and attitudes towards help-seeking among professional jockeys

3 Chapter Three – Stressors Experienced by Professional Jockeys in Ireland

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King, L., Cullen, S. J, McGoldrick, A., Pugh, J., Warrington, G., & Losty, C. (2021). Stressors experienced by professional jockeys. *The Sport Psychologist*, 35(2), 142-154. (Published version of the study is outlined in Appendix B).

3.1 Preface

The literature review in Chapter Two identified the sport of horseracing as a demanding sport for jockeys, from both a physiological and psychological perspective. Whilst physiological demands have been outlined in the literature, much of the psychological elements associated with a jockey's career have been reported anecdotally. This chapter provides an insight into the stressors jockeys experience to help guide future studies within the PhD thesis. The qualitative approach gives jockeys a voice to report on stressors which may have yet to be reported on within the literature.

3.2 Introduction

For athletes, competing in elite sport can be a stressful experience (Arnold & Fletcher, 2012). A host of studies over the past 30 years have explored stressors amongst elite athletes across multiple sports and a range of competition levels to better understand the demands athletes experience throughout their careers (e.g., Hanton *et al.*, 2005; Noblet & Gifford, 2002). Whilst these studies have captured important information for practitioners, sport psychologists and researchers, there are a number of sports underrepresented within the literature. As highlighted by Thelwell *et al.* (2007), exploring alternative sports is important. Such efforts may not only improve the knowledge and understanding of the practitioner and the group of athletes they are working with, but also the subsequent intervention delivered by the practitioner to the athletes. One underrepresented sport in stressors literature is the sport of horseracing, in particular, the athletes aboard the thoroughbred racehorse, jockeys. Despite the fact the sport has been labelled as high risk and demanding (Warrington *et al.*, 2009), there is a dearth of literature examining the stressors experienced by jockeys. Moreover, few sports involve an animal-human dyad, which may contribute unique findings that are

not reported within other team and individual sport studies. As such, the present study sought to explore the stressors experienced by a sample of professional jockeys.

The predominant theory employed by sport psychology researchers when exploring stress is the transactional model (Lazarus & Folkman, 1984). This theory proposes that stress occurs as an interaction between a person and the environment. Specifically, stress in this context has been defined as “an ongoing process that involves individuals transacting with their environments, making appraisals of the situations they find themselves in, and endeavouring to cope with any issues that may arise” (Fletcher *et al.*, 2006, p. 329). Research among figure skaters’ laid the foundations for future examinations surrounding stress in athletes. Indeed, the seminal work of Scanlan *et al.* (1991) and Gould *et al.* (1993) identified that figure skaters stress sources included expectations and pressure to perform, physical and psychological demands of skating, environmental demands, and relationship issues. Developing on this work, a holistic approach to stress research was adopted by Noblet and Gifford (2002), designed to capture a wide range of stressors faced by Australian Rules Footballers. Stressors faced by these athletes included common performance related issues (e.g., poor form), intra- and interpersonal issues (e.g., career development concerns), as well as stressors within the environment in which they operate (e.g., negative aspects of organisational systems). As a result, this work highlighted that athletes face stressors from both the competition and non-competition environment. More recently, researchers have categorised stressors in a sporting context, with it commonly accepted that athletes face competitive (e.g., pressure, risk of injury), organisational (e.g., cultural and team issues), and personal stressors (e.g., family issues; Arnold & Fletcher, 2012; Sarkar & Fletcher, 2014). Although these studies cover a wide range of sports, to the author’s

knowledge, no studies have used interviews using the transactional model of stress as a theoretical framework to identify the sources of stress experienced by jockeys.

Despite a range of studies highlighting the unique nature of a career as a jockey (Warrington *et al.*, 2009; Wilson *et al.*, 2014a) only one study has examined stressors in the jockey population. Landolt *et al.* (2017), using the effort-reward imbalance model (Siegrist, 1996) as a guiding theory, reported five categories of key demands experienced by apprentice jockeys ($n = 35$), which included: time demands (e.g., travelling for long hours); role suppression (e.g., lack of autonomy); workload (e.g., long hours spent working which impacts sleep); weight (e.g., managing weight); cognitive demands (e.g., concentrating for short periods, repeatedly); and ancillary demands such as track work and cleaning out the stables. The authors concluded that despite the multiple demands placed on apprentice jockeys, the stress effects may be buffered via the horse-human dyad, fame and money, and the experience of racing itself. For example, jockeys elicited descriptions highlighting the intrinsic positive emotions associated with being a jockey, largely arising from working with horses. Though the findings highlight the broad nature of stressors experienced by jockeys, the sample was narrow in nature and limited to apprentice jockeys. Apprentice jockeys are younger jockeys, often inexperienced, therefore exploring a broader sample of jockeys may yield further findings to add to the current literature base. Indeed, it is plausible to suggest that jockeys experiences are likely to vary in different racing jurisdictions due to factors such as the geographical landscape of the country (e.g., size), racing legislation and minimum riding weights, amongst others. More recently, perhaps indicative of the demanding nature of the sport of horseracing, research has demonstrated that mental health issues may be prevalent in the sport. Among a sample of 42 professional jockeys, 57% met the criteria for depression, 36% for psychological

distress, and 21% for generalised anxiety (Losty *et al.*, 2019). Understanding the stressors jockeys experience may provide practitioners and researchers with a deeper understanding of the contributing factors towards such figures.

Considering the above, there is a need to develop the research on the jockey population and the sources of stress they experience. Firstly, jockeys take part in a unique sport that is renowned for its tough nature (e.g., high prevalence of injury; body mass requirements; weight manipulation methods), yet there is limited data pertaining to the psychology of jockeys. Secondly, sports involving a horse-human dyad are underrepresented in the athlete stressors literature. A jockey must attempt to maximise not only their own performance, but also that of the horse they are competing aboard. Moreover, jockeys compete on multiple horses daily, each horse with its own unique behavioural patterns and level of ability. This relationship may provide the athlete with a distinctive source of stress and demands that are not faced by those competing in individual or team sports. Thirdly, from an applied perspective, the importance of practitioners having an awareness of the stressor's jockey's face is key if specific support programmes are to be developed. Thus, this study focussed on exploring sources of stress faced by professional jockeys in Ireland.

3.3 Methods

The philosophical assumptions underpinning the study were informed by an interpretive paradigm, ontological relativism, and epistemological constructionism. As such, our assumption is that multiple subjective realities exist, and are dependent on an individual's experiences, values and beliefs (Erlingsson & Brysiewicz, 2013). Moreover, due to this approach, knowledge was co-constructed between the interviewer (researcher) and participants (Willig, 2019).

3.3.1 Participants

Fifteen jockeys took part in the present study including Flat Professional ($n = 4$), Apprentice ($n = 3$), National Hunt Professional ($n = 5$), and Conditional ($n = 3$) jockeys. As male and female jockeys compete against one another under the same competition rules, it was not deemed necessary to separate genders in the data analysis. Further, due to the low number of female jockeys participating in Ireland in comparison to male jockeys, the exact number of female jockeys participating in the study has been withheld to protect anonymity. On average, the jockeys in the present study were 27 years old ($SD = 2.65$; range 22 – 34), had been licenced jockeys for 7.9 years ($SD = 4.1$; range 2 – 16) and had ridden 165 winners ($SD = 152$; range 4 – 500). Adverts on social media, text messages via the regulatory bodies messaging service, and the promotion of the study at the racetrack via the Senior Medical Officer were used as methods to encourage participation from the jockeys. Jockeys were required to contact the researcher expressing their interest in participating in the study.

3.3.2 Procedure

Ethical approval was received from the Waterford Institute of Technology Research Ethics Committee (REF: 18/HSES/06). Jockeys were invited to take part in a semi-structured interview either face-to-face ($n = 8$) or via telephone ($n = 7$). The interviews lasted nearly 30 minutes ($M = 29.13$ minutes; range = 10 - 64 minutes) and were all performed by the researcher. Interviews were semi-structured in nature, giving participants freedom to expand and elaborate on ideas they perceived as important to aid in the collection of deeper, more meaningful data (Smith & Sparks, 2014). Participants read a participant information sheet (Appendix C) and signed an informed consent form (Appendix D) prior to interviews taking place.

3.3.3 Interview Guide

The order of the interview questions was determined by the interview guide, although a flexible approach was implemented to ensure a natural flow of conversation occurred (Appendix E). The interview guide was created based on the research team's experience working with professional jockeys, as well as previous athlete stressors literature (Noblet & Gifford, 2002). Four main questions were asked to participants. Firstly, to facilitate rapport between the interviewer and participant, participants were asked to discuss their career as a jockey to date, including any highlights or rewarding aspects. Secondly, participants were asked to recall stressors they have experienced or were currently experiencing within their careers. Thirdly, each individual stressor were identified in further detail with the participants. Finally, jockeys were asked if there had been any significant points in their career that were particularly difficult that had not been previously discussed within the interview.

3.3.4 Data Analysis

Reflexive thematic analysis was used to analyse qualitative data and explore the experiences, meanings and reality of participants (Braun & Clarke, 2019). Reflexive thematic analysis was selected for the present study due to its flexibility and the desire to identify general patterns across a set of data (Braun & Clarke, 2019). The six-stages of reflexive thematic analysis popularised by Braun and Clarke (2006) was used to analyse data. However, whilst these stages are presented in a linear fashion, the process occurred organically and creatively, in a recursive nature, whereby the lead author often integrated multiple stages, reviewing and refining codes and themes to better develop and understand the data. Firstly, the analysis began with the lead author familiarising themselves with the data by repeatedly reading and re-reading the transcripts. Line by

line coding of the transcripts was then completed with codes relating to what was explicitly stated in the interviews (semantic approach), rather than underlying ideas and interpretations (latent approach). Once coding had been completed across each interview, the analysis occurred more broadly, attempting to identify any common patterns between the codes. Once this had been established, the lead researcher reviewed codes, developed themes and subsequently refined themes into higher order and lower order themes. Theme identification was attributed to “something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set” (Braun & Clarke, 2006, p. 82). In the present study, themes were reported with explicit or surface meanings to ensure they effectively highlighted the essence of the theme. Several theme ideas were collapsed into more appropriate themes and other initial codes were removed from the data analysis as they were deemed irrelevant (e.g. no clear pattern in the data). Themes were then named in a clear manner, so the reader could clearly identify the overarching construct of the theme. Once completed, a written report based on the conclusion of thematic analysis was finalised.

A combination of inductive and deductive methods of analysis were adopted. First, data were analysed inductively whereby codes were generated from the data itself, with pre-existing concepts and ideas withheld from the interpretation process (Chapman *et al.*, 2015). However, the researcher acknowledges that truly “inductive” analysis is not possible to conduct due to the “unconscious application of prior knowledge to the thematic analysis process” (Chapman *et al.*, 2015, p. 204). Deductive analysis was used to aid categorising the raw data themes into higher-order categories that may have previously been identified in the stress in sport literature.

3.3.5 Quality Standards

To facilitate good quality standards in qualitative research, the author employed multiple, flexible methods that were used throughout the research process at times that were determined as the most important, rather than following pre-defined criterion checklists. Critical friends were used to provide a theoretical sounding board that promote reflexivity and encourage alternative interpretations of the data dependant on the individual's interests and experiences (Smith & Sparkes, 2014). In the present study, critical friends (e.g., supervisors) provided feedback on the inductive analysis, promoting discussion surrounding the inclusion and subsequent naming of certain higher-order themes. Moreover, throughout the research process, the author adopted a reflexive approach, frequently documenting their own biases, beliefs and motivations towards the research project (Johnson *et al.*, 2020). The reflexive musings were shared with supervisors in meetings, but also through the process of member reflections. Member reflections were also used as an alternative to the popular member-checking given the recent discussions around its limitations (see Smith & McGannon, 2018). Member reflections in the present study involved engaging with several of the participants ($n = 3$) after interviews had been transcribed and analysed, with further insights gathered around the results and the participants responses to the lead author's interpretations of the data. For example, in one member reflection, the lead author asked further questions on the career and financial uncertainty that coincides with life as a jockey. Although no extra data were collected during the member reflection, the comments from the jockey aided the researcher's understanding on this subject (e.g., a large number of jockeys competing for rides on a relatively small number of horses). Lastly, a substantive report was produced containing thick descriptions of the data that provides not only the participants with a voice to share their experiences, but also for

the reader to summarise and conclude their own individual interpretations of the data (Geertz, 1973). No changes were made to the transcripts from the first interview.

3.4 Results

Analysis of the interviews resulted in the identification of 81 unique sources of stress experienced by jockeys. These were subsequently grouped into 22 categories of stressors. The average number of stressors reported by each jockey was 15, ranging between 9 and 28. Following this, categories of stressors were grouped into four main themes, including: competition-based stressors; racing industry stressors; interpersonal stressors; and career stressors. The findings are predominantly discussed via substantive thick description in the form of direct quotes.

Competition-based stressors

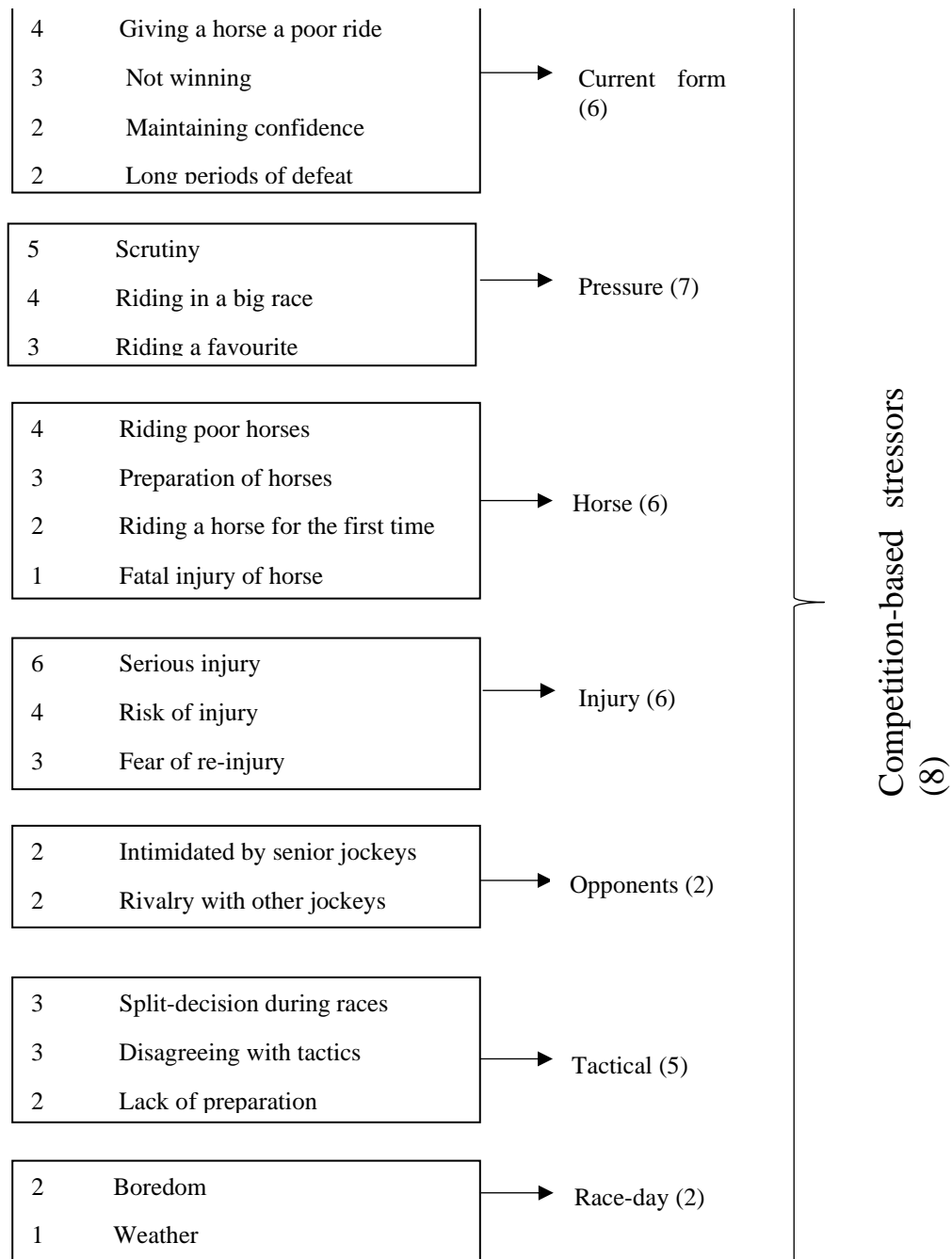
Competition-based stressors ($n = 22$) refers to stressors directly related to the jockey prior to or during competition (Figure 3.1). The higher-order themes within this dimension were: *current form*, *pressure*, *horse*, *injury*, *opponents*, *tactical and race-day*. The most frequently cited theme within *current form* was “lack of form”, which primarily related to being in a slump (e.g., long periods without winning). Jockeys’ negative perceptions of their form in the lead up to a race was a source of stress and impacted their view on the chances of them winning a race. The following quote discusses this notion: “I had plenty of rides, no winners. I hit a very, very low spot...It took me another year to ride another winner which was incredibly hard” (Participant 8).

Figure 3.2

Competition-Based Sources of Stress Experienced by Jockeys.

Figure 3.3

Competition-Based Sources of Stress Experienced by Jockeys.



The participants within the present sample reported the dangers and potential “serious injury” that occurs as a jockey within the theme of *injury*. The following passage highlights an injury a jockey received whilst competing:

...I got a number of bad falls in a row... There was a fall that I got in [names racecourse] a couple of years back and I got a bad concussion. I got the fall and that was all well and good but an oncoming horse kicked me in the head and I got a bad concussion (Participant 11).

The most frequently cited themes within *pressure* referred to “riding in a big race” ($n = 4$) and “riding a favourite” ($n = 3$). Pressure is synonymous with elite sport, though perceptions of pressure altered when riding a horse expected to win a race as illustrated in the following quote from an apprentice jockey: “If you’re riding a favourite you will feel more pressure. If you miss the break on a favourite you are more likely to panic” (Participant 3).

The most frequently cited theme within *horses* was “riding poor horses” which refers to the jockeys’ perception that a horse has a lack of ability and little chance of winning a race. Jockeys’ belief in the animal’s ability appeared to influence motivation towards competition, highlighted in the following quote:

It’s not worth your while riding bad horses because you end up looking bad. It’s a bad loop you are stuck in. Trainers only want you if you are riding winners but you only ride winners if you are put on good horses. It’s an infinite loop (Participant 4).

Within the theme of opponents, some jockeys reported feeling “intimidated by senior jockeys”. This view was expressed predominantly by younger jockeys with one jockey stating: “they (senior jockeys) might try push the boundaries in a race, they

might think they can take your position in a race because they do think you're not mentally tough and will try bully you" (Participant 3). Jockeys highlighted the importance of the *tactical* elements of race, with the most prevalent stressors occurring from "split-decision during races" and "disagreeing with tactical instructions from a trainer". Jockeys were cognisant that decisions during a race can be the difference between winning and losing and it appears that jockeys are often required to change tactics during a race:

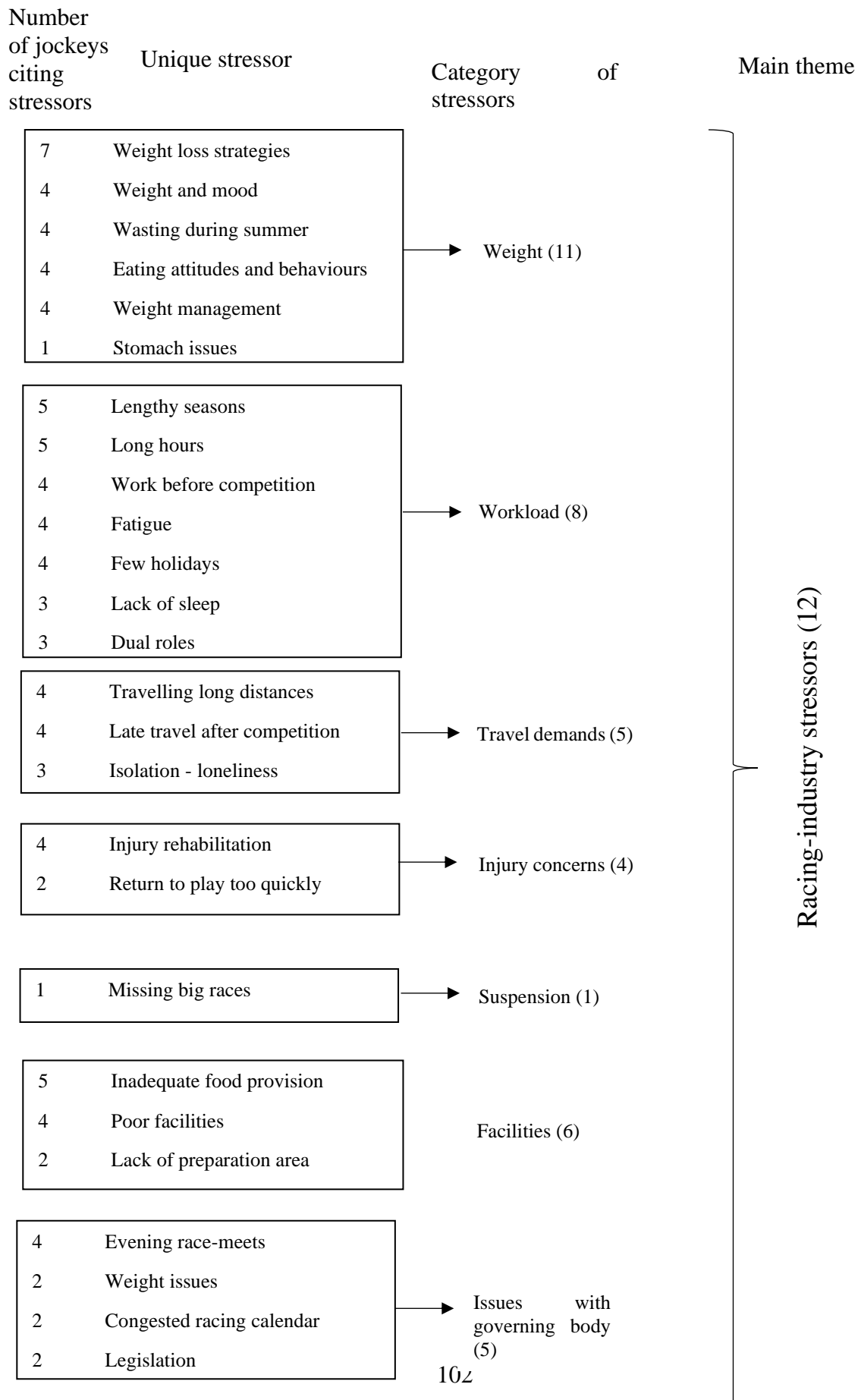
You've got to understand how difficult it is to stick to a game plan. It's all well and good going out there with a plan but they are more guidelines than anything because things change and maybe some horse fell in front of you and hampered you, or maybe you got boxed in (Participant 7).

Racing Industry Stressors

This theme reflects the stressors that arise from the racing industry ($n = 26$), including legislation and rules enforced on the jockeys by the sport's governing body (Figure 3.2). The higher-order themes within this dimension were: *weight, workload, travel demands, injury concerns, suspension, facilities, and issues with governing body*. The most frequently cited theme within *weight* was "weight loss strategies" which in the present sample of jockeys related to wasting. Wasting refers to rapid weight loss techniques whereby jockeys lose at least 5% of their body mass, or more, in less than seven days (Cullen *et al.*, 2015b; Warrington *et al.*, 2009). Methods of wasting employed by jockeys include food restriction, excessive exercise, acute dehydration via sweating (e.g., sauna use, wearing a sweat suit), or the use of prohibited substances (e.g., laxatives/diuretics) (Leydon & Wall, 2002; Wilson *et al.*, 2014a).

Figure 3.5

Racing-Industry Stressors



Jockeys are required to align their weight with that of the horse up to a maximum of fourteen times a day in exceptional circumstances. As such, jockeys may engage in acute weight loss strategies to ensure they are able to compete. The following quote illustrates the demanding nature of regular acute weight loss:

Eight stone seven (119 lbs) is as low as I've got this year. Probably get to eight stone six (118 lbs) at a push but I'd have to sweat a lot. That's tough and you wouldn't feel right for days after...During a race the adrenaline kicks in and you're grand. After that it (process of weight loss) gets you and next day you'd be f**k*d. I wouldn't be able to eat that night even after because your stomach will be tightened up and that's probably the hardest bit (Participant 4).

“Weight loss and mood” was also highlighted as a stressor, with several ($n = 4$) jockeys acknowledging the deleterious impact making and managing weight can have on them as an individual. One jockey expressed “...it's just the weight thing that gets you down more than anything else” (Participant 5). The *workload* experienced by jockeys was reported as vast, which often resulted in “lengthy seasons” although stressors such as “long hours” and “work before competition” was also discussed. The following quote illustrates the workload demands placed upon one jockey:

Well I'm employed in [names trainer] for 39 hours a week which would be 6.30am-11.30am in the morning and then the other two (days) on a Wednesday and a Friday. (I) drive to the races, drive home. This week alone I've spent eight hours a day in the car going to the races to Killarney (and) that's before I even rode a horse. So, you're talking 10 hours away from home racing before you do three hours in

work, so you're talking maybe 13 hours a day. (I) definitely wouldn't be far off 100 hours a week which is mental, colossal (Participant 8).

Contributing to the *workload* of jockeys was the *travel demands*, including “travelling long distances” and “late travel after competition”. Jockeys travel the length and breadth of the country, often in isolation, competing at different racetracks daily:

I'm usually driving a bit. That's another thing, the driving. We take turns but you'd usually end up driving yourself. Riding, get back home at 10, 11 or 12 and then go back and do the same the next day. It's hard going that way. Being on the road is definitely one of the hardest parts (Participant 4).

Among the *injury concerns* higher-order theme, “injury rehabilitation” and the deleterious impact of the inability to compete was prevalent. The following quote highlights the isolation associated upon recovering from an injury: “I just think lads are left alone and you are just in that bubble on your own and it feels like nobody else is around” (Participant 6). Moreover, jockeys felt that further support structures should be available to them whilst injured to negate the impact of the solitude expressed in the quote above. These support structures included an injury rehabilitation hub for all injured jockeys and easier access to sport psychology services.

Suspension resulted in one jockey missing a riding opportunity (due to excessive whip use), which resulted in them missing a valuable, prestigious race:

I missed a big winner in [names country]. I should have won the biggest race in [names country] but I was suspended...I'll never forget that feeling. It was the hardest thing in my racing career...To be so close, yet there's somebody else sitting on him (the horse) receiving all

the praise, all the publicity, the limelight, it was the hardest thing to take. That hit me very very hard (Participant 3).

Facilities at the race-track were largely regarded as poor by jockeys, with particular reference to “inadequate food provision”. One jockey stated “the major problem we have here in Ireland is the quality of food that we get at the track”. Providing jockeys with adequate nutrition was not a priority for racecourses according to a number of jockeys. The most frequently cited theme within *issues with governing body* was “evening race-meets”. Evening race-meets occur throughout the season for both flat and jump jockeys. As discussed previously, jockeys often complete work before competition. Thus, racing in the evening results in jockeys arriving home late, with work early the following day:

I often find as well that coming back from an evening meeting, even though you’ll be going all day, if you are riding in the last you’ll be jacked up on adrenaline and you might not have eaten all day. Eating at nine pm at night and maybe struggling to sleep and staying awake until one and then the next second the alarm is going off at six am and you are off again after five hours sleep (Participant 5).

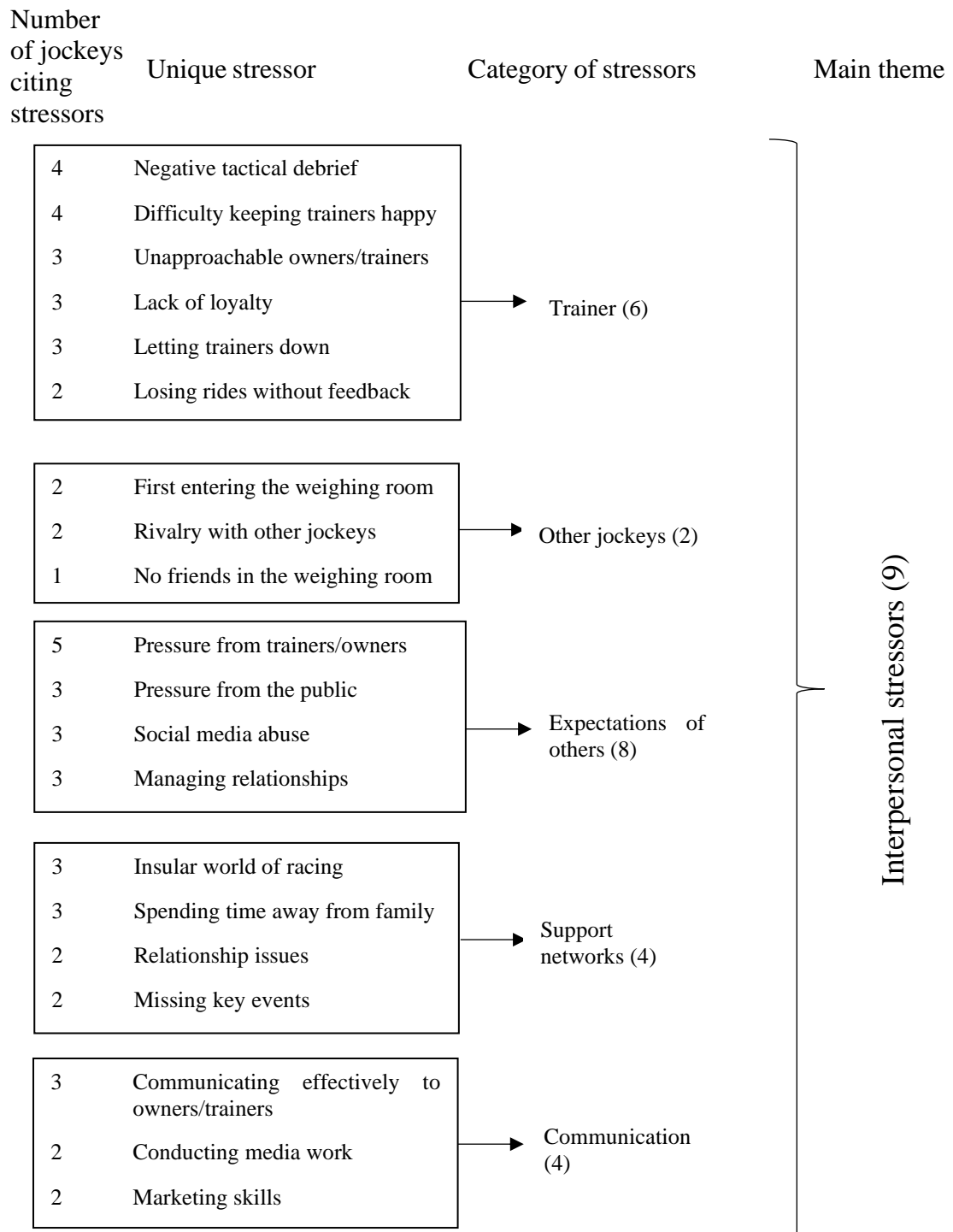
Interpersonal Stressors

Interpersonal stressors ($n = 20$) relate to stressors that arise from relationships with other people (Figure 3.3). The higher-order dimensions identified in this theme were: *trainer, other jockeys, expectations of others, support networks and communication*. The most frequently cited theme within *trainer* was “negative tactical debrief after performance” and “difficulty keeping trainers happy”. Building and managing relationships with trainers and owners is imperative for jockeys, although

this can be demanding as detailed in the following quote: “Keeping trainers happy is a big challenge. When you are riding for loads of different trainers and one day you can’t ride for them, so you have to let them down and ride for someone else” (Participant 7).

Figure 3.8

Interpersonal Sources of Stress Experienced by Jockeys



The theme of *other jockeys* was perceived as a source of stress though it is important to note in the current sample this was unique to apprentice and conditional jockeys when “first entering the weighing room”. Jockeys prepare for competition in a small environment amongst other jockeys which may be intimidating to the younger athletes, with one jockey stating: “it would be senior jockeys to the younger jockeys. There’s a bit of manipulating” (Participant 15). The *expectation of others* was difficult to manage for a number of jockeys, with “pressure from trainers and owners” cited as a source of stress. Managing external pressure is an important aspect of an athlete’s career, especially when holding the expectations of those financially and emotionally invested in a horse’s performance as illustrated in the following quote: “If you get beat, it can cost you to lose a ride on a horse, to lose the owners that you've been riding for, they might not want you anymore” (Participant 12). Jockeys also discussed receiving social media abuse if a horse they were competing aboard did not win. In one case, this resulted in a death threat to the jockey: ‘It’s not funny anymore, you get death threats and everything...I had a bloke messaging me saying he was going to kill me’ (Jockey 13).

The “insular world of horseracing” was reported as a prevalent theme within *support network* where jockeys reported that *support networks* were often small and connected to the racing industry (e.g., jockeys reported that often a small number of fellow jockeys were friends or partners). As such, it appeared that the identity of the jockey was limited to that of their athletic career due to relationships between significant others commonly working within the horseracing industry:

Racing dictates so much of your time that you tend to find it very hard to stay in contact with people outside of racing. You do tend to find that your only

friends are one that are in racing... It's very hard to switch off and find another outlet (Participant 3)

Communication, including “communicating effectively to owners and trainers” was viewed as a challenging aspect involved in the role of a jockey. Jockeys are often required to provide tactical analysis and debrief after a race to a trainer and owner to enhance their understanding of a horse's performance. The following quote highlights the difficulty in achieving this aspect coherently and confidently for some jockeys: “I find dealing with people hard...Even just communicating with my trainer or other colleagues, I find it hard as I'm reserved. I struggle to open up and get myself out there to talk with them” (Participant 15).

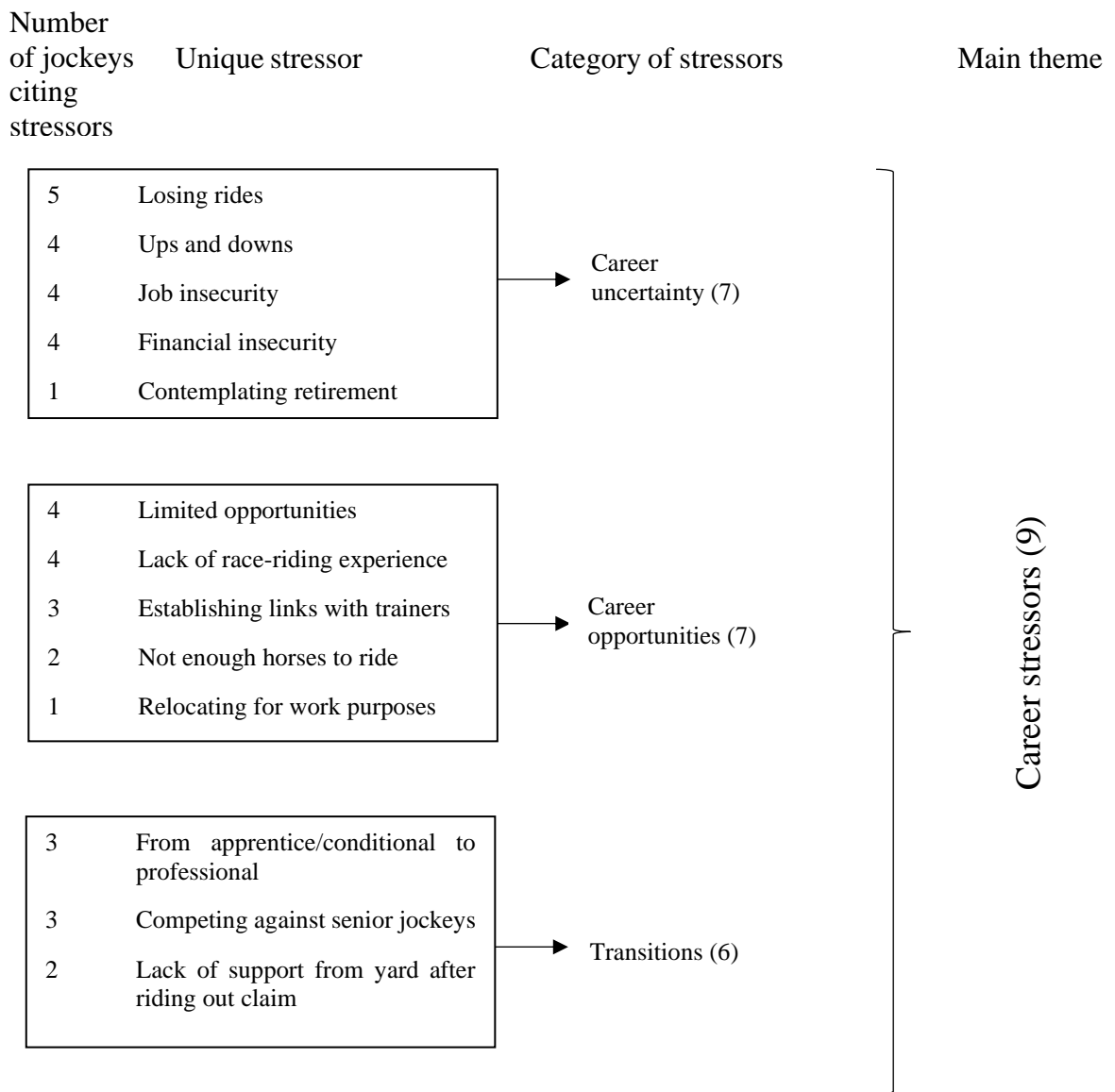
Career Stressors

Career stressors ($n = 13$) relate to general stressors faced by jockeys, largely concerning career progression (Figure 3.4). The following themes were identified, including: *career uncertainty*, *career opportunities*, and *transitions*. The most frequently cited theme within *career uncertainty* was “losing rides”, commonly known as being ‘jocked-off’:

You can be getting jocked off a horse for no reason and people have different opinions...I used to beat myself up about it and it would upset me...If I knew I did something wrong that's fine but if I get jocked off and you know you didn't give it a bad ride it would be a kick in the stones (Participant 9).

Figure 3.11

Career Sources of Stress Experienced by Jockeys.



A prominent stressor discussed by jockeys was *career opportunities*; more specifically “limited opportunities”. This theme refers to the competitive nature of the sport of horseracing whereby jockeys are competing against one another to ride a relatively small pool of horses, as discussed in the following passage: “There are too many jockeys and there’s not enough trainers, there’s not enough horses to go around”.

Linked to the “career uncertainty” was “financial uncertainty” with several jockeys considering retirement from the sport for these reasons. One jockey stated:

I'm probably going to be getting out of racing sooner or later because it's not paying me at all. I'll probably be out of it next year...I've gotten to the age now that I can't be fooling myself and I need to make a proper living. Unless you have a big stable behind you, you're not going to make an awful lot of money (Participant 4).

Transitions occur throughout a jockey's career, however the most frequently cited theme in the current sample was “from apprentice/conditional to professional”. Transitioning from an apprentice/conditional license to a full professional license appeared a precarious period in a jockey's career:

I think the major factor is that when you are losing your claim, coming to that stage in your career, lads are starting to say it is make or break whether you are going to make it as a professional...You lose your claim and then you are more or less on level par with all (of) the senior jockeys (Participant 6).

The most frequently cited theme within *current form* was “lack of form”. Jockey's negative perceptions of their form in the lead up to a race was a source of stress and impacted their view on the chances of them winning a race. The following quote discusses this notion:

My second ride was a winner and I thought it was going to be easy and then the following year I had plenty of rides, no winners. I hit a very, very low spot...It took me another year to ride another winner which was incredibly hard.

3.5 Discussion

The purpose of the present study was to identify the sources of stress experienced by a sample of professional jockeys using the transactional model of stress as a guiding framework. Overall, the findings indicate that jockeys encounter a wide range of stressors relating to competition and non-competition environments. Four general dimensions of stressors were reported, which included competition (e.g., form, pressure), the racing industry (e.g., workload), interpersonal (e.g., maintaining relationships with owners and trainers) and career-related stressors (e.g., career uncertainty). The findings contribute to the limited sport psychology research conducted among professional jockeys, whilst also adding to the ever growing body of literature exploring sources of stress among elite athletes.

The findings revealed unique sources of stress specific to jockeys that have yet to be cited among other individual or team athletes. A novel finding was that jockeys cited stress sources which included their perceptions of the horse's ability they were competing aboard. Specifically, within the present sample, if the jockey felt the horse they were riding did not have a realistic chance of winning a race, this appeared to impact a jockey's preparation towards the race. For example, jockeys illustrated negative perceptions towards travelling to competition and making weight. The importance of the relationship between horse and human has been documented (e.g. Jackman *et al.*, 2017) therefore such findings may be relevant to those working or competing in other equestrian sports such as eventing, polo, dressage, endurance riding, and show jumping. Moreover, other unique stressors reported included the workload and travel demands associated with being a jockey. Whilst jockeys are professional athletes, the life they lead is akin to an amateur athlete, insofar that jockeys often work incredibly long hours, riding work for trainers early in the morning, before driving to

the racetrack to compete in the afternoons/evenings. The data highlighted that jockeys often found balancing such demands a difficult process, with several descriptions corroborating with the dimensions associated with athlete burnout, such as emotional exhaustion, sport devaluation, and a reduced sense of accomplishment. Further qualitative research is needed to better understand athlete burnout among jockeys, including symptoms, antecedents and consequences of the condition. Identifying novel stressors, such as those reported in the present study, is important to continue to develop knowledge and understanding of the athlete stressors literature. This is perhaps emphasised to a greater extent among unique populations of athletes (e.g., jockeys), where limited empirical research exists. In developing the research base, and the subsequent practical application of the findings, it is hoped that refined, bespoke support programmes are designed and implemented for jockeys.

On the other hand, sources of stress reported by jockeys appeared similar to other athlete stressors studies, which included performance concerns, managing professional and personal relationships, spending time away from family, and career progression uncertainty (e.g. Giacobbi *et al.*, 2004; Gould *et al.*, 1993; Hanton *et al.*, 2005; Landolt *et al.*, 2017; Noblet & Gifford, 2002; Scanlan *et al.*, 1991; Thelwell *et al.*, 2007). The findings highlighted competition sources of stress that have been reported elsewhere in the literature such as pressure and injury (Sarkar & Fletcher, 2014). However, the most prominent stressors within the competition domain were linked to a lack of form and not winning. Unlike many other individual sports such as the 100 metre sprint in athletics, whereby the individual with the quickest time wins the race, the best performance from the jockey aboard the racehorse may not result in success (when success is based on winning a race). For context, the champion flat jockey in Ireland throughout the 2018/2019 season rode 111 winners across 416 rides

(HRI, 2018). Thus, the rider, despite statistically being the most successful flat jockey in the country, was riding at a 27% strike rate. Therefore, even the most successful flat jockey in Ireland was not winning 73% of the races they competed in. As such, practitioners working with jockeys may benefit from exploring goal-setting interventions, with an emphasis on developing process or performance goals, rather than outcome goals (Hardy & Jones, 1994). Moreover, the opponent was also considered a competition source of stress particularly if the jockey felt intimidated by other jockeys which aligns with other athlete stressors literature (Campbell & Jones, 2002; Hanton *et al.*, 2005; Noblet & Gifford, 2002; Thelwell *et al.*, 2007). This is an important consideration as horseracing is a rare sport in that the competitors prepare for each race in close proximity to one another (e.g. the weighing room). Although the weighing room is often reported as a place for camaraderie (Vamplew & Kay, 2005) several jockeys within the present sample reported otherwise, especially upon first entering the weighing room as a younger, inexperienced jockey.

The general dimension of racing industry considers the occupation more globally, acknowledging factors that are not directly related to race-day, yet present a significant part of a jockey's athletic career. The most prevalent theme discussed by jockeys was weight. The current findings are consistent with previous qualitative research (McGuane *et al.*, 2019), which illustrates the negative physiological and psychological consequences of wasting, and adds further evidence to the multitude of quantitative studies documenting the impact of weight-making on mood. (Caulfield & Karageorghis, 2008; Leydon & Wall, 2002; Mezey *et al.*, 1987). Thus, wasting on a frequent basis, almost daily in some circumstances, may have a notable impact on jockey health. The repercussions for younger jockeys may be greater as they are required to compete with a claim. Recent research has suggested that many young

jockeys are unable to reach their lowest allocated riding weight (Wilson *et al.*, 2020), therefore further research is required to develop understanding of minimal riding weights for jockeys. The anthropological measurements of humans has gradually increased, yet the minimal riding weights have not followed in the same manner. For instance, over the past 40 years, the average body mass of jockeys entering the trainee jockey programme at the Racing Academy and Centre of Education (RACE) has risen by 47%, from 37kg to 54.5kg. Yet, in the same period, the minimum riding weights for jockeys has increased by just 10%, from 47.7kg to 52.7kg (Cullen *et al.*, 2015a).

This is one of the first studies to identify sources of stress reported by jockeys that related to the organisation under which they compete. In particular, the planning of evening race-meets, which are increasingly popular in the summer months. Although these present an opportunity for organisations and racecourses to increase revenue, they place jockeys and other racing personnel under an intense workload. According to our sample, the congested racing calendar ensures jockeys experience lengthy seasons. For flat jockeys, the domestic programme runs from March to November, with the busiest periods occurring between June and August. During these periods, jockeys may compete every day. Once the domestic season is completed, jockeys will often compete abroad during the winter months in places such as Dubai and Australia. On the other hand, jump jockeys compete throughout the winter months, with the busiest periods occurring in December and between March and May. Similar to flat jockeys, jump jockeys may also compete every day during the busiest periods. However, in Ireland particularly, jump racing is also popular throughout the summer, resulting in very few opportunities for jockeys to take time away from the sport. Similar findings are reported by athletes competing in cricket (Thelwell *et al.*, 2007) and Australian footballers (Noblet & Gifford, 2002). Moreover, the most frequently cited theme within facilities

was inadequate food provision which is a novel finding and yet to be reported among jockey literature. Jockeys felt they were unable to obtain healthy foods at racetracks and instead settled for less than optimal nutrition (e.g. takeaway fast food) once competition had finished. The racecourse is an optimal place to target jockey attitudes and behaviours towards nutrition given the time spent at racetracks throughout the season and the impact that role models may have on other jockey's nutritional habits. For instance, if a senior, successful jockey was seen eating healthy, substantial meals, rather than snacks and drinks commonly used by jockeys (e.g., sweets, fizzy drinks), attitudes and behaviours may begin to change within the jockey community via role modelling and vicarious learning (e.g., Bandura, 1977). The sport's governing body may also consider policy changes to the weight structuring system in place for jockeys given the considerable research highlighting the multitude of unhealthy weight management practices employed. Other sports such as collegiate and high-school wrestling employ the 1.5% rule which ensures wrestlers can only lose up to 1.5% of their body weight per week to discourage rapid weight loss.

Interpersonal stressors were identified in the present sample, with the most prevalent higher-order theme related to trainers. Jockeys reported that some trainers were unapproachable and had received negative tactical debriefs on competitive performances. This dynamic is similar to the coach-athlete relationship, with conflict with a coach reported as a stressor elsewhere (Cosh & Tully, 2015; Hanton *et al.*, 2005; Noblet & Gifford, 2002). However, the relationship between jockey and trainer may be slightly different in comparison to the conventional coach-athlete relationship, particularly for younger jockeys. In this context, the trainer-jockey dynamic often follows the master-servant approach (Vamplew, 2000). Jockeys also felt pressure from the public and reported the level of scrutiny experienced due to social media sites such

as Twitter and Facebook as a source of stress. Social media abuse, which in some cases led to death threats, is a relatively new phenomenon in the sport science literature. Minimal research exists exploring social media use among athletes, however one study found that student-athletes spend almost 32 hours per week on average using mobile phones, with smartphone usage and time spent on social media said to be associated with one another (DesClouds *et al.*, 2018). Further research is needed to identify the impact of smartphone usage among athletes, particularly important due to the links between mental health outcomes and the use of smartphones (Rosen *et al.*, 2013). Although social media can be positive for the athlete's career, such as raising funds for sponsorship or marketing purposes, if these benefits come at the cost of social media abuse then appropriate training and procedures must be employed to ensure the safety and welfare of athletes. A recent article in the Trainer Magazine highlighted the social media abuse that racehorse trainers receive, commonly known as trolling, suggesting that individuals who work or compete within the racing industry may be particularly susceptible (Oliver, 2019).

Career-related stressors were reported by jockeys which related to career uncertainty, career opportunities, and transitions. The most prevalent raw-data themes under career uncertainty was job insecurity and financial insecurity. This corroborates previous research in sport that highlights athletes often feel periods of uncertainty during their careers from both a career and financial perspective (Cosh & Tully, 2015). Financial difficulties were reported in the present study, with one participant citing the stressors as a reason for contemplating retirement from the sport. Previous research exploring the demands of jockeys cited money as a rewarding aspect of the role, with the prospect of future earnings appearing to motivate the individuals (Landolt *et al.*, 2017). In contrast, among the present sample it appeared that opportunities to earn vast

amounts of monies was limited. The differing standpoints in the present study may relate to the type of racing code for which jockeys compete in. In the Australian study (Landolt *et al.*, 2017), all of the participants competed in flat racing, where prize pools are significantly greater than jump racing. Given half of the sample in the study were competing in jump racing, and thus less prize money on offer, this may account for the contrasting financial views.

3.6 Limitations

The present study is not without limitations. The main limitation relates to the application of the transactional model of stress within the study. For example, the present study identified sources of stress, but failed to explore other areas of the stress process. In line with the theory proposed by Lazarus and Folkman (1984), and moving beyond identifying sources of stress, future studies should consider how jockeys appraise specific stressors, identifying whether they are perceived as harmful, threatening, or challenging. For example, the present study identified that pressure from trainers/owners was one of the most frequently reported stressors, however how jockeys responded to such a stressor was not captured. Some jockeys may feel threatened by the perceived pressure from trainers/owners, which may result in certain stress related emotions arising (e.g., anxiety); others may view the perceived pressure in a more positive light (e.g., challenging). Moreover, no single source of stress was reported by all 15 participants, highlighting the individuality of participants perceptions of the stress process (Lazarus & Folkman, 1984; McKay *et al.*, 2008). As such, the stress process among jockeys in the present study is partially presented, whereas a continuous journey exploring the aforementioned segments of the transactional model of stress would have yielded more detailed findings (Neil *et al.*, 2016). Further, despite building on previous research and including senior jockeys, 40% of the sample were apprentice or

conditional jockeys. Finally, data collection occurred midway through the flat jockey's competitive season, which is a period when national hunt jockeys are not competing as regularly. As with the study of Noblet and Gifford (2002), it is possible that participants discussed their most recent experiences of stressors, opposed to stressors that may occur at different times of the year. For instance, travel demands are likely to have been at the forefront of jockeys' minds as an important racing festival had recently taken place.

3.7 Conclusion

In conclusion, the present study was designed to improve understanding of the sources of stress experienced by professional jockeys in Ireland. A wide variety of jockeys were interviewed, extending beyond previous research, which has been limited to younger, inexperienced jockeys. The findings revealed that jockeys experience a wide array of stressors that relate to not only competition but also the unique aspect of the racing industry, interpersonal stressors and career-related concerns. Some of these stressors appeared similar to those reported in other sports (e.g., pressure to perform), whereas unique jockey specific stressors are also presented (e.g., horse-jockey relationship). Practitioners should consider the multitude of stressors experienced by jockeys when developing psychological support programmes and interventions. Future research exploring the whole stress process including appraisal and coping strategies is required to truly understand the stress phenomenon amongst professional jockeys in Ireland.

3.7.1 Practical Applications and Applied Recommendations

The findings presented highlight key considerations for applied practitioners. Specifically, practitioners must have an understanding and appreciation of the unique requirements of a career as a jockey, which is unlike many other athletes from popular

team and individual sports. For instance, one jockey reported the fatal injury of a horse as a source of stress. This is a less common occurrence than an athlete reporting a lack of form or financial concerns, therefore education and contextual understanding of the situation is important for practitioners intervening with athletes in such instances. The findings also highlight the need for a multidisciplinary athlete support team working in an interdisciplinary manner. Many of the stressors reported by jockeys (e.g. weight management, injury rehabilitation) crossover to multiple sports science domains such as sport psychology, nutrition, strength and conditioning, nutrition and career development. Similar suggestions to best support the athlete have been reported elsewhere (e.g., Gouttebargé *et al.*, 2016c). A final consideration for practitioners is the awareness of the language used by jockeys in describing specific situations that may not be common parlance for a practitioner with little experience working with jockeys. Such phrases synonymous with the sport of horseracing were elicited throughout the interviews. For example, being ‘jocked off’, which refers to losing a ride on a horse and being replaced by another jockey. Appreciating, understanding and implementing the language used by jockeys may help develop rapport and facilitate a healthier, more effective relationship between practitioner and jockey.

4 Chapter Four – Common Mental Disorders and Associated Risk-Factors amongst Professional Irish Jockeys

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(Published version of the study is outlined in Appendix F)

4.1 Preface

The review of literature in chapter two highlights the dearth of empirical information in relation to jockey mental health. This chapter addresses calls from researchers with experience both in the field of jockey support and research (e.g., Losty *et al.*, 2019) and outside of horseracing (e.g., Henriksen *et al.*, 2019) to explore factors which may contribute or impact athlete/jockey mental health. Findings from Study One and previous academic literature indicated a number of potential risk factors to jockey mental health which included athlete burnout, career dissatisfaction, social support, and contemplating retirement. Given the mixed-methods nature of the present thesis, adopting a sequential exploratory approach, the qualitative data illuminated in Study One facilitated the development of quantitative assessment (e.g., questionnaire) in Study Two.

4.2 Introduction

Horseracing is widely regarded as a tough and demanding sport for its human competitors, jockeys (Warrington *et al.*, 2009; Wilson *et al.*, 2014a). Jockeys participate in a sport that places the athletes under intense weight demands, with the necessity to ride at low weights throughout the year (Wilson *et al.*, 2014a). This is unique in the world of elite competition, whereby athletes competing in other weight-making sports such as boxing or rowing will attempt to peak towards several targets per season. The antithesis occurs in horseracing with jockeys aligning their weight for competition up to seven times a day, dependent on the horse they are riding (Wilson *et al.*, 2014a). Moreover, jockeys compete in a high-risk dangerous sport, with frequent injury not uncommon (O'Connor *et al.*, 2018a). A recent qualitative study by Landolt *et al.* (2017) was one of the first to shed light on the demands experienced by jockeys

during their careers which included: time demands (e.g., long working hours, travel), role suppression (e.g., restricted roles as an apprentice), physical demands (e.g., maintaining weight), cognitive demands (e.g., intense periods of concentration numerous times per day), and ancillary demands (e.g., washing horses, cleaning stables). Study One built on the findings of Landolt *et al.* (2017) via inclusion of senior jockeys with four core themes identified which included: competition (current form or being in a slump, pressure, horse, injury, opponents, tactical, race day), racing industry (weight, workload, travel demands, injury concerns, suspension, facilities), interpersonal (trainer, other jockeys, expectations of others, support networks, communication) and career (career uncertainty, career opportunities, transitions).

In light of these stressors and career experiences of jockeys, research conducted by Losty *et al.* (2019) explored the prevalence of CMDs amongst a sample of professional jockeys. The authors found that 57% of jockeys met the criteria for depression, 36% for psychological distress, and 21% for generalised anxiety. Findings also identified that as a group, professional jockeys mean scores for each of the mental health conditions assessed were greater than a sample of amateur jockeys. Moreover, injured jockeys were 46 times more likely to meet the criteria for depression in comparison to non-injured jockeys. In comparison to other elite athletes (e.g., Beable *et al.*, 2017; Gulliver *et al.*, 2015), Rugby players (e.g., Du Preez *et al.*, 2017) and soccer players (e.g., Gouttebargue *et al.*, 2015b) prevalence of CMDs may be greater amongst the jockey population. The aforementioned stressors, mental health research and anecdotal experiences of jockeys highlights the importance of exploring the mental health of this subset of elite athletes, with a particular focus on factors which may increase vulnerability to symptoms of CMDs.

Risk factors to athlete mental health have been reported widely amongst the academic literature (Kuettel & Larsen, 2019). Athletes are placed under intense physiological and psychological pressure and compete at an age when prevalence of mental health issues are most likely to occur (Rice *et al.*, 2016). A recent systematic review highlighted a multitude of risk factors to athlete mental health (Kuettel & Larsen, 2019) with the findings highlighting that most of the research to date has focussed on sport-specific stressors, often relating to concepts such as injury and overtraining. Other risk-factors identified included: lower levels of social support, career dissatisfaction, recent adverse life events, performance failure, uncertainty about retirement, extreme athletic identity, perfectionism, and poor general health, amongst others.

In light of the findings in Study One and previous academic research, several risk factors were identified to explore within the present study. This includes athlete burnout, career dissatisfaction, perceived social support, and contemplating retirement.

4.2.1 Athlete Burnout

Athlete burnout has been described as “a multidimensional construct consisting of three dimensions: a) emotional/physical exhaustion which is characterised by feelings of emotional and physical fatigue stemming from the psychosocial and physical demands associated with training and competing; b) reduced sense of accomplishment which is characterised by feelings of inefficacy and a tendency to evaluate oneself negatively in terms of sport performance and accomplishments; and c) sport devaluation which is defined as a negative, detached attitude toward sport, reflected by a lack of concern about sport and performance quality” (Raedeke & Smith, 2009, p. 1). One model of athlete burnout that helps explain the condition is the

integrative model of athlete burnout (Gustafsson *et al.*, 2011). The model highlights various antecedents (excessive training or workload, negative social relationships, poor performance, lack of recovery), early signs, entrapment issues (unidimensional athletic identity, high levels of investment in the sport, performance-based self-esteem), vulnerability factors (low social support, trait anxiety, low levels of autonomy), and major consequences of athlete burnout (dropout, poor performance).

In burnout literature, debate remains regarding the relationship between mental health outcomes such as depression and burnout given the shared symptomology between the two constructs such as loss of interest and difficulty concentrating (Koutsimani *et al.*, 2018). However, whilst some symptoms are similar, they have been reported as distinct constructs (Cresswell & Eklund, 2006). Support for this distinction revolves around situational context in that burnout is work-related and situation-specific whereas depression is global and free from context (Koutsimani *et al.*, 2018). A study of Spanish athletes found significant positive correlations between burnout and depression, with 50% of variance in depression scores accounted for by stress and burnout (De Francisco *et al.*, 2016). The study corroborated with previous literature that greater levels of (perceived) stress increases the likelihood of developing burnout symptoms. Moreover, given burnout has been identified as a predictor of depression and anxiety (Koutsimani *et al.*, 2018), and the number of potentially chronic stressors that jockeys reported in Study One and other jockey literature (Landolt *et al.*, 2017), screening for burnout symptoms may be useful in identifying symptoms of CMDs within the jockey population.

4.2.2 Career Dissatisfaction

Career dissatisfaction relates to the subjective view of an individual's dissatisfaction with their career and has been linked to a variety of negative mental health outcomes. In athletes, several studies have reported that career dissatisfaction increases the likelihood of meeting the criteria for CMD, with calls to adopt career dissatisfaction/satisfaction as a screening tool for early detection of mental health issues amongst this population (Foskett & Longstaff, 2018). In male professional soccer players, greater levels of career dissatisfaction were associated with distress (OR = 0.9 CI 0.9 - 1.0) and anxiety/depression (OR = 0.9 CI 0.9 - 1.0) (Gouttebarga *et al.*, 2015a). Similar findings were reported in a sample of elite athletes from the United Kingdom, with career dissatisfaction identified as an independent predictor of both distress and anxiety/depression (Foskett & Longstaff, 2018). In Study One, stressors were identified that may be linked to career dissatisfaction amongst jockeys. This included concepts related to career and financial uncertainty, as well as career progression concerns for younger jockeys. Given the previous research reporting career dissatisfaction as a risk factor to athlete mental health, and the findings presented in Study One, the variable was assessed in the present study.

4.2.3 Perceived Social Support

Perceived social support “refers to one’s potential access to social support and is a support recipient’s subjective judgement that friends, family, team-mates, and coaches would provide assistance if needed” (Freeman *et al.*, 2011, p. 54). Perceived social support is multidimensional, underpinned by themes relating to emotional, esteem, informational, and tangible types of support (Cutrona & Russell, 1990). Emotional support refers to the feelings of being loved, secure and cared for. Esteem

support relates to the impact other individuals can have on a person's self-esteem or perceptions of competence. Informational support consists of the support from others in providing advice or direction. Tangible support, also known as instrumental assistance, refers to the provision of support relating to financial support, goods, or services (Cutrona & Russell, 1990). During an athlete's career, positive or negative social interactions/support impact an individual's psychological well-being (DeFreese & Smith, 2014). In sport, greater levels of support have been found to buffer the effects of sport-stress on conditions such as athlete burnout (Holt & Hoar, 2006). Conversely, lower levels of social support have been reported to increase the likelihood of meeting the criteria for depressive, anxiety and distress symptoms (Gouttebarga *et al.*, 2015b). Jockeys are individual sport athletes with few formal supports networks (e.g., coaches) available to jockeys. Thus, jockeys may be isolated from professional supports. Informal support from other jockeys may be prevalent due to the tight-knit nature of the jockey community (Case, 1984). To date, no scientific studies have examined or quantified jockeys perceptions of social support, or investigated the relationships between social support and prevalence of symptoms of CMDs.

4.2.4 Contemplating Retirement

Over the past three decades research has started to not only explore the experiences of athletes during their careers, but also the impact of transitions out of competitive sport (Park *et al.*, 2013). Retirement can be a particularly difficult experience for athletes, especially if the retirement is non-voluntarily (e.g., an unexpected injury). Adjustment difficulties for athletes relate to financial, occupational, emotional, and social components (Stambulova *et al.*, 2007). Retirement from sport also represents a significant shift for athletes in their working environment, roles, and set routines (Souter *et al.*, 2018). Retirement for athletes has been associated with a

variety of CMD including depression, anxiety, anger, and substance abuse (Wolanin *et al.*, 2015). Beable *et al.* (2017) identified that athletes in New Zealand who were uncertain on their retirement status over the next 12 months were more likely to meet the criteria for depression. This was one of the first studies that highlighted that pre-retirement may impact an individual's mental health. Contemplating retirement can cause feelings of conflict within the athlete when deciding whether to continue competing or retire, while also creating feelings of worthlessness for the athlete; their identity is shattered (Newman *et al.*, 2016). The world of elite sport is so intense that many athletes do not begin to think about plans for retirement or a career post-athlete until retirement is staring at them directly which creates a host of difficulties (North & Lavalley, 2004). Jockeys participate in a high-risk sport where serious injury is a possibility on an almost daily basis. Moreover, the stressors identified in Study One such as a lack of career opportunities within the sport of horseracing may encourage some jockeys to contemplate exiting the sport and starting a new career elsewhere. The impact of retirement, or thinking about retirement, appears to have profound impacts on athletes. Establishing the number of jockeys thinking about retiring from the sport within the next 12 months, as well as its relationship with CMDs, represents an interesting area of exploration with potential applied implications.

4.3 Aim of the Research

Accordingly, the primary aim of the research project was to explore prevalence of CMDs (distress, depression, generalised anxiety, adverse alcohol use) and their associations with specific risk factors (athlete burnout, career dissatisfaction, low levels of social support, contemplating retirement) amongst a sample of licenced Irish jockeys. The primary hypothesis for the study is that there will be significant associations between those meeting the criteria for CMDs and the presence of risk-factors assessed.

4.4 Methods

4.4.1 Design and Participants

A cross-sectional study design was used. Professional jockeys completed an anonymous and confidential online survey using Survey Monkey (full copy of the questionnaire, participant information sheet, and informed consent form completed by participants is outlined in Appendix G). All professional jockeys over the age of 16 years from both flat and national hunt codes were encouraged to participate ($n = 162$). Participants were recruited via emails and text messages sent by the Irish Horseracing Regulatory Board and racing media outlets. Reminders were sent after two and four weeks. Ethical approval was granted by the Waterford Institute of Technology Research Ethics Committee (REF: 18/HSES/06). At the end of the questionnaire jockeys were provided with links to various mental health charities and helplines should they have experienced any distress or concerns whilst completing the questionnaire.

4.4.2 Measures

Demographic and lifestyle data were collected including gender, age, educational level, years holding a license, number of winners, difficulty making weight and current injury status. Mental health prevalence questionnaires, measured via validated self-report questionnaires, included:

Psychological distress – Psychological distress was measured using the Kessler Psychological Distress Scale (K10) (Kessler *et al.*, 2003) (Appendix G, question 39). The questionnaire included 10 items (e.g., in the past 4 weeks, how often did you feel tired for no good reason?) on a 5-point scale (1-none of the time to 5- all of the time). A total score ranging from 10 to 50 was obtained by summing up all of the answers on

the 10 items. Higher scores indicated higher symptoms levels and a score of 22 or more indicated symptoms of distress. The distress scale was found to be highly reliable (10 items; $\alpha = .90$).

Depression – Depression was measured using the Center for Epidemiological Studies Depression (CES-D) (Radloff, 1977) scale (Appendix G, question 40). The questionnaire consisted of 20 items investigating how an individual felt or behaved in the previous seven days (e.g., I felt everything I did was an effort). Responses were made on a four-point scale (0 - rarely or none of the time to 3 - most or all of the time). The score received was the sum of the 20 questions with a possible range from 0-60, higher scores indicative of higher symptoms levels. In line with previous cut-offs, a score of 16 was considered an expression of symptoms of depression. Cronbach's alphas for the 20 items was .82.

Anxiety – Anxiety was measured over the previous two weeks using the Generalised Anxiety Disorder (GAD) (Spitzer *et al.*, 2006) scale (Appendix G, question 41). The questionnaire consisted of seven items (e.g., over the last two weeks, how often have you not been able to stop or control worrying?) on a four-point scale (0 - not at all to 3 - nearly every day). The GAD-7 score was calculated by adding together the scores for the seven questions (range 0 -21). Higher scores indicated higher symptoms levels and in line with previous research a score of 10 or greater was indicative of generalised anxiety disorder. The anxiety scale was found to be highly reliable (7 items; $\alpha = .91$).

Adverse alcohol use – Alcohol consumption was measured using the three item AUDIT-C (e.g., how many standard drinks do you have on a typical day?) (Dawson *et al.*, 2005) (Appendix G, question 42). Scores measured between 0 and 12 and was

computed by calculating the sum of the three questions, with a score of 5 or more indicative of adverse alcohol use. Cronbach's alpha was measured at 0.74.

Associated risk factor questionnaires were assessed using validated questionnaires and the inclusion of a single item question which emanated from the findings of Study One in relation to retirement. Risk factor questionnaire information detailed below:

Burnout – burnout was measured using the Athlete Burnout Questionnaire (ABQ) (Raedeke & Smith, 2001) (Appendix G, question 43). The ABQ contains 3 subscales with a total of 15 items measuring: (i) physical and emotional exhaustion; (ii) devaluation; and (iii) reduced sense of accomplishment. Scores were measured on a 5-point Likert scale (1 = “almost never” to 5 = almost always). Cronbach's alpha were highly reliable for the physical and emotional exhaustion (5 items; $\alpha = 0.91$), devaluation (5 items; $\alpha = 0.90$) and reduced sense of accomplishment (5 items; $\alpha = 0.84$) sub-scales, respectively.

Career dissatisfaction – career dissatisfaction was measured through the Greenhaus scale (e.g., I am satisfied with the success I have achieved in my career) (Greenhaus *et al.*, 1990) (Appendix G, question 44). Scores were measured on a point scale ranging from extremely to dissatisfied to extremely satisfied. A total score of 5 to 25 was reported by summing up the answers to the five questions, with a lower score indicating higher levels of career dissatisfaction. The career dissatisfaction scale was found to be highly reliable (5 items; $\alpha = 0.89$).

Social support – social support was measured using the Perceived Available Support in Sport Questionnaire (PASS-Q) (Freeman *et al.*, 2011) (Appendix G, question 45). Scoring was completed on a 5-point Likert scale ranging from not at all (0) to extremely (4), with higher scores indicating a higher perception of social support. Scales on the

PASS-Q relate to four types of support including emotional, esteem, informational and tangible. Cronbach's alpha were highly reliable for the sub-scales measuring emotional (4 items; $\alpha = .92$), esteem (4 items; $\alpha = .92$), informational (4 items; $\alpha = .89$), and tangible support (4 items; $\alpha = .83$), respectively.

Contemplating retirement – Contemplating retirement was measured using a single question (are you contemplating retirement from competing in the next 12 months? Yes/no). This variable was subsequently computed into a dichotomous figure (yes and no).

4.4.3 Data Analyses

All data were analysed using the statistical software programme IBM SPSS Statistics 23.0. In line with other mental health epidemiological studies in sport (e.g., Gouttebauge *et al.*, 2015b), only questionnaires with adequate information completed were eligible for analysis: set at 50% of descriptive variables and 50% of prevalence and risk factors measures. Descriptive statistics (mean, standard deviation (SD), frequency, range) were produced for all assessed measures (demographic, prevalence, risk factors). Prevalence of CMDs (psychological distress, generalised anxiety disorder, depression, adverse alcohol use) and risk-factors (social support, career dissatisfaction, burnout, contemplating retirement) were calculated. Tests of normality highlighted that the data was not normally distributed. Univariate regression analysis, expressed as odds ratios (OR) and 95% confidence intervals (CI), was conducted to determine the associations between CMDs and risk-factors.

4.5 Results

4.5.1 Participants

A sample of 162 licenced jockeys were contacted for the study with a total of 84 providing informed consent online to participate in the study (total response rate of 52%). The group of licenced jockeys (93% male; 7% female) were 25.5 years old (SD = 6.55) and had been competing professionally in the sport of horseracing for 7.6 years (SD = 6.59; range = 0 to 31 years). A small proportion of the sample (9.5%) were currently injured and nearly 60% of the sample experienced difficulties making weight. Statistically significant differences in age, gender, and weight making difficulties were observed between flat and national hunt jockeys. Table 4.1 presents all demographic characteristics of the participants.

Table 4.1*Participant Characteristics*

	Total	Flat	National Hunt	p Value	Effect size
n	84	37 (44)	47 (56)	.17	.30
Jockey response rate, %	52	N/A	N/A		
Age in years, M (SD) ^a	25.5 (6.55)	23.5 (7.51)	27 (5.29)	.02	.53
Gender, n (%) †				.58	.06
Male	78 (93)	35 (95)	43 (91)		
Female	6 (7)	2 (5)	4 (9)		
Highest level of education reached, n (%)				0.12	0.29
Primary school,	2 (2)		2 (4)		
Junior Certificate,	45 (56)	21 (57)	24 (51)		
Leaving Certificate,	25 (30)	14 (39)	11 (23)		
Third Level	9 (11)	2 (4)	7 (15)		
Other,	3 (4)		3 (8)		
Years as a jockey, M (SD)	7.56 (6.59)	6.66 (7.55)	8.27 (5.71)	.27	0.24
Range (years)	0-31	0-31	1-21		
Number of winners, M (SD)	182.3 (385.54)	169.27 (271.16)	191.96 (458.94)	.79	0.06
Range (winners)	0-3000	0-1050	0-3000		
Working hours per week, M (SD)	59.67 (17.24)	59.24 (17.6)	60 (17.13)	.84	.04
Currently injured, n (%) †	8 (9.5)	1 (3)	7 (15)	.06	.21
Weight-making difficulties (1-10), M (SD)	4.72 (2.89)	4.94 (2.93)	4.54 (2.88)	.53	.13

* and † indicate statistically significant differences between flat and national hunt jockeys

^a t test, $p < .05$

† The χ^2 test, $p < .05$

Effect size calculated as Phi, Cramers V or Cohen's d.

4.5.2 Prevalence of Symptoms of CMDs

Prevalence of symptoms of CMDs varied from 61% for adverse alcohol use, 35% for depression, 27% for generalised anxiety, and 19% for psychological distress (Table 4.2). In total, 79% of participants met the criteria for at least one CMD, 38% of the sample meeting the criteria for two or more CMDs, and 18% meeting the threshold for three or more CMDs. National hunt jockeys reported significantly higher symptoms of depression ($M = 15.05$) in comparison to flat jockeys ($M = 10.24$) ($p < .05$).

Table 4.2

Prevalence of Symptoms of CMDs and Reported Help-seeking Behaviour among Licenced Jockeys in Ireland

	Total	Flat	National Hunt
Symptom Measure (potential range), mean (SD)			
K10 (10-50),	16.70 (5.96)	17.78 (6.49)	15.85 (5.43)
CES-D (0-60)*,	12.93 (8.23)	10.24 (5.12)	15.04 (9.55)
GAD-7 (0-21),	6.48 (4.51)	6.62 (4.27)	6.36 (4.74)
AUDIT-C (0-12),	5.30 (2.98)	5.16 (2.69)	5.40 (3.22)
Diagnostic cut-off, proportion n (%)			
K10 score ≥ 22 ,	16 (19)	7 (19)	9 (19)
CES-D ≥ 16 ,	29 (35)	7 (19)	22 (46)
GAD-7 ≥ 10 ,	23 (27)	10 (27)	13 (28)
AUDIT-C ≥ 5	51 (61)	23 (62)	28 (60)
Met caseness for any CMD, n (%)	66 (79)	27 (73)	39 (83)
Met caseness for 2 \geq CMD, n (%)	32 (38)	14 (38)	18 (38)
Met caseness for 3 \geq CMD, n (%)	15 (18)	5 (14)	10 (21)
Previous mental health help-seeking history for personal or emotional problems (GHSQ) n (%)			
Any source	28 (33)	14 (38)	14 (30)
Psychologist	8 (1)	4 (11)	4 (9)
Doctor/GP	16 (19)	6 (16)	10 (21)
Psychiatrist	2 (<1)	0	2 (4)
IHRB Senior Medical Officer	8 (1)	2 (5)	6 (13)
Counsellor/sport psychologist	17 (20)	4 (11)	13 (28)

* indicates significant difference between flat and national hunt jockeys (Mann-Whitney U).

Flat jockeys reported greater mean scores on distress ($M = 17.88$) and generalised anxiety ($M = 6.62$) scales in comparison to national hunt jockeys ($M = 15.85$ and $M = 6.36$), although not of statistical significance. Of the 84 participants, 33% had sought help for their personal or emotional problems. The most popular help-seeking source was via a counsellor or sport psychologist (20%).

4.5.3 Risk-Factors for CMDs

As shown in Table 4.3, mean scores for all subscales associated with athlete burnout were within the rare to sometimes range. A total of 24 licenced jockeys (29%) met the threshold for career dissatisfaction. All the subscales for social support indicated jockeys received slight to moderate levels of social support, with greater mean scores reported on the emotional and esteem support scales in comparison to informational and tangible support. In total, 26% of the sample were contemplating retirement from a career as a jockey within the next 12 months. No statistically significant differences were observed between flat and national hunt jockeys.

Table 4.3*Prevalence of Risk Factors among Licenced Jockeys in Ireland*

<i>Symptom Measure (potential range)</i>	Total	Flat	National Hunt
ABQ (0-5), <i>M (SD)*</i>			
EE	2.8 (1.01)	2.70 (1.06)	2.87 (0.97)
D	2.20 (0.97)	2.06 (1.02)	2.31 (0.92)
PA	2.79 (0.86)	2.82 (0.77)	2.77 (0.93)
Career dissatisfaction (5-25), <i>M (SD)</i>	16.24 (5.08)	16.22 (5.21)	16.26 (5.03)
<i>n (%)</i>	24 (29)	10 (27)	14 (30)
Social support, <i>M (SD)*</i>			
Emotional support,	2.30 (1.23)	2.09 (1.28)	2.46 (1.17)
Esteem support,	2.05 (1.17)	1.97 (1.27)	2.10 (1.08)
Informational support,	1.98 (1.17)	2.08 (1.11)	1.89 (1.21)
Tangible support,	1.76 (1.17)	1.86 (1.13)	1.68 (1.11)
Contemplating retirement, <i>n (%)</i>	22 (26)	8 (27)	14 (30)
<i>M (age), SD</i>	28.3 (6.93)	26.75 (9.3)	29.21 (5.36)
Range (age)	19-47	19-47	21-37

*cut-offs not provided for Athlete Burnout Questionnaire (ABQ) or social support questionnaires. ABQ – Athlete Burnout Questionnaire; EE – Emotional exhaustion; D – Devaluation; PA – Reduced sense of personal accomplishment.

4.5.4 Associations between Prevalence of Symptoms of CMDs and Risk-Factors

Table 4.4 highlights results from univariate analysis assessing associations between prevalence of symptoms of CMDs and risk-factors. Amongst professional jockeys, for each one unit increase on the ABQ, odds of meeting the criteria for psychological distress (EE OR = 5.3 CI 2.3 - 12.4; D OR = 7.9 CI 2.9 - 21.7; PA OR = 8.0 CI 2.8 - 23.1); depression (EE OR = 1.17 CI 0.75 - 1.84; D OR = 1.3 CI 0.82 - 2.07; PA OR = 1.03 CI 0.60 - 1.74), generalised anxiety (EE OR = 4.7 CI 2.2 - 10.1; D OR = 3.0 CI 1.7 - 5.6; PA OR = 2.9 CI 1.5 - 5.8) and adverse alcohol use (EE OR = 1.3 CI 0.83 - 2.04; D OR = 1.33 CI 0.83 - 2.13; PA OR = 1.18 CI 0.7 - 1.97) increased between 1.03 to 8 times. Associations between burnout dimensions were significant for psychological distress and generalised anxiety ($p < .05$), but not for depression or adverse alcohol use.

Table 4.4*Odds Ratios and 95% CI between CMDs and assessed risk factors*

	Psychological distress (68:16)			Depression (55:29)			Generalised anxiety (61:23)			Adverse alcohol use (33:51)		
	OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>
Burnout												
EE	5.3	2.3-12.4	<.001	1.17	0.75-1.84	.492	4.7	2.2-10.1	<.001	1.30	0.83-2.04	.248
D	7.9	2.9-21.7	<.001	1.3	0.82-2.07	.270	3.0	1.7-5.6	<.001	1.33	0.83-2.13	.235
PA	8.0	2.8-23.1	<.001	1.03	0.60-1.74	.913	2.9	1.5-5.8	.002	1.18	0.70-1.97	.538
Career dissatisfaction	0.8	0.7-0.9	.003	1.01	0.93-1.10	.782	0.9	0.8-1.0	.025	0.94	0.86-1.03	.201
Social support												
ES	1.0	0.6-1.5	.854	1.15	0.80-1.68	.451	0.9	0.6-1.4	.702	1.12	0.78-1.60	.533
ESTS	0.9	0.6-1.5	.718	1.26	0.85-1.88	.248	1.0	0.7-1.5	.942	1.28	0.87-1.88	.209
IS	0.8	0.5-1.3	.409	1.01	0.69-1.49	.958	0.9	0.6-1.5	.860	0.95	0.65-1.39	.797
TS	0.7	0.4-1.2	.240	1.14	0.76-1.71	.526	0.9	0.6-1.5	.853	1.14	0.77-1.70	.515
CR	0.13	0.04-0.4	.001	0.69	0.25-1.88	.465	0.24	0.1-0.7	.008	0.65	0.23-1.81	.406

Abbreviations: Emotional Exhaustion (EE); Devaluation (D); Reduced Sense of Personal Accomplishment (PA); Emotional Support (ES); Esteem Support (ESTS); Informational Support (IS); Tangible Support (TS); Contemplating Retirement (CR).

Note: Numbers in brackets indicate number of individuals which did not meet the threshold for the specific CMD versus the number which did.

Greater levels of career dissatisfaction were associated with meeting the criteria for distress (OR = 0.8 CI 0.8 CI 0.7 - 0.9) and generalised anxiety (OR = 0.9 CI 0.8 - 1.0). Contemplating retirement was also associated with distress (OR = 1.1 CI 1.0 - 1.2), depression (OR = 1.45 CI 0.53 - 3.96) and generalised anxiety (OR = 1.2 CI 1.0 - 1.3).

4.6 Discussion

This study builds on previous research exploring the mental health of jockeys in Ireland (Losty *et al.*, 2019), and extends our knowledge via the use of a larger sample of licenced jockeys, and the inclusion of risk factors. Findings revealed that nearly four out of five jockeys in the current sample met the criteria for at least one of adverse alcohol use (61%), depression (35%), generalised anxiety (27%) or distress (19%). 38% of the sample met the criteria for two or more CMDs, with 18% meeting the threshold for the presence of three or more CMDs. Moreover, burnout dimensions (emotional and physical exhaustion, sport devaluation, reduced sense of accomplishment), career dissatisfaction and contemplating retirement all independently predicted meeting the criteria for distress and generalised anxiety.

In comparison to the study of Losty *et al.* (2019), presence of at least one CMD is similar (79% vs 76%), with distress (distress 19% vs 36%) and depression (35% vs 57%) reported less in the present sample of professional jockeys, and generalised anxiety prevalence reported at a greater rate (27% vs 21%). Mean scores for CMDs varied between the two studies for depression ($M = 12.93$ vs 20.29) and distress ($M = 16.7$ vs 21.12), although scores for generalised anxiety were comparable ($M = 6.48$ vs 6.29). In comparison to other research, it appears that prevalence rates of symptoms of CMDs reported by jockeys may be greater than athletes from other sports. For instance, prevalence of depression and anxiety appear greater among jockeys than multi-sport

studies from New Zealand and Australia (depression = 15-27%, anxiety = 7 - 14.6%) (Beable *et al.*, 2017; Du Preez *et al.*, 2017; Gulliver *et al.*, 2015). However, whilst prevalence of adverse alcohol use among jockeys is comparable to a sample of NRL players in season (61 vs 63%; Du Preez *et al.*, 2017) these figures are inflated when exploring athletes from Gaelic sports (23%; Gouttebarga *et al.*, 2016c), European soccer players (14%; Gouttebarga *et al.*, 2017a), and Dutch elite athletes (6%; Gouttebarga *et al.*, 2017b). Whilst these comparisons are useful in identifying sports whereby prevalence of symptoms of CMDs are greater than others, accurate comparison is not without limitation due to a variety of methodological issues such as selection bias, differing assessments methods, the nature of self-reported data, and the diverse array of mental health conditions not assessed. Although the concept of mental health is often nuanced and individualised, future research projects exploring athlete mental health may attempt to use similar, athlete-specific measures to facilitate comparisons between sports. Such attempts have been developed in recent years, such as the athlete psychological strain questionnaire (APTSQ) (Rice *et al.*, 2020a). The APTSQ is one of the first athlete-specific psychometric measure developed, with cut-off scores developed to indicate moderate, high, and very high levels of psychological distress among elite athletes (Rice *et al.*, 2020b).

Burnout dimensions were identified as independent predictors of psychological distress and generalised anxiety ($p < .05$). Regression models highlighted emotional exhaustion as an independent predictor of meeting the criteria for both psychological distress and generalised anxiety, with a reduced sense of accomplishment and devaluation also contributing significantly to meeting the psychological distress clinical cut-off. Indeed, greater levels on each burnout dimension resulted in a 2.9 to 8-fold increase in meeting the criteria for symptoms of distress and generalised anxiety.

Emotional exhaustion is underpinned by the emotional and physical fatigue experienced as a result of training and competition, with reduced sense of accomplishment associated with feelings of inadequacy in relation to sporting performance and accomplishments. A multitude of factors may contribute to the development of burnout symptomology in jockeys although these relationships are yet to be established empirically. However, possible explanations for these associations may relate to the long hours associated with the occupation. Jockeys often work extremely long hours (60 per week in the present sample) and compete across lengthy seasons, with no defined season end-point due to the 2007 introduction of an all-weather racetrack in Ireland, popular national hunt racing festivals in the summer months, and winter racing in the southern hemisphere. Previous research has reported that having very few days off from either training and/or competition contributed to the development of burnout symptoms in athletes (Gustafsson *et al.*, 2008). Notwithstanding, physical and emotional exhaustion is only one part of the burnout syndrome. Future research using novel burnout theory, such as the integrated model of athlete burnout (Gustafsson *et al.*, 2011) may help develop understanding of burnout symptomology amongst this population. The model states that antecedents (excessive training, negative performance demands, lack of recovery), feelings of entrapment (unidimensional athletic identity, performance based self-esteem), and personality, coping and the environment (perfectionism, low social support, low autonomy), all contribute to the development of the early signs of athlete burnout which has the potential to result in a wide variety of impairments.

Over a quarter of jockeys were contemplating retirement from the sport within the next 12 months. Our finding, alongside the study of Beable and colleagues (2017), are one of the first to report the potential link between those contemplating retirement

and the presence of symptoms of CMDs. From the current study it was not possible to detect the direction of this association, wherein the development of CMD symptoms occur via the uncertainty surrounding contemplating retirement, or CMD symptoms facilitate thoughts of contemplating retirement. From an applied perspective it is critical to acknowledge and understand jockeys' transitions throughout their careers, not only in relation to retirement, but also non-normative transitions (Wylleman *et al.*, 2004), such as an apprentice jockey riding out their claim quickly. Similar parallels can be drawn to the academy soccer player who unexpectedly begins playing with the first team at a young age. Understanding these transitions, as well as ensuring support is available for athletes during these periods, is of paramount importance to not only aid performance but also psychological health (Schinke *et al.*, 2018). Organisations should also be aware of the impact they can have on the individuals during transitional periods and designated programmes to support these athletes are recommended.

Nearly 30% of the jockeys reported dissatisfaction with their careers, with higher levels of dissatisfaction associated with meeting the criteria for distress and generalised anxiety. Similar findings occurred amongst professional athletes in the United Kingdom (Foskett & Longstaff, 2018) and professional soccer players (Gouttebarga *et al.*, 2015a). Such findings indicate that career satisfaction scales may be a useful screening measure in the early identification of CMDs. Adverse alcohol use was found in 61% of jockeys in the present study, considerably greater than in a recent meta-analysis which reported adverse alcohol use at 19% amongst elite athletes (Gouttebarga *et al.*, 2019). However, this figure is similar to NRL players in-season (63%) (Du Preez *et al.*, 2017) with the findings from the present study also collected in-season, therefore comparison may be appropriate. Nevertheless, the context is different, given that jockeys have loosely defined seasons, with no specific beginning

or end points. Previous research among jockeys reported that alcohol accounted for a large proportion (5%) of daily energy intake (Dolan *et al.*, 2011). According to the WHO, Ireland is one of the largest consumers of alcohol in Europe, suggesting that the culture and attitudes of the country towards alcohol may play a role in this statistic (WHO, 2004). Indeed, Alcohol Action Ireland contend that 54% of the Irish population are classified as harmful drinkers (Alcohol Facts, 2020). The prevalence of adverse alcohol use in the present sample is of concern, given the deleterious effects of alcohol on not only physical, psychological health, and athletic performance (Brien & Lyons, 2014), but also the safety of jockeys whilst competing aboard horses running up to 65 km/h. Jockeys also reported slight to moderate levels of perceived social support, with the greatest mean score occurring on the emotional support scale, and lowest mean scores on the tangible support scale. Our findings corroborate previous research indicating that lower levels of social support may be associated with the development of symptoms of CMDs (Gouttebauge *et al.*, 2017b).

Lastly, despite nearly 80% of the sample meeting the threshold for a CMD, only 33% of jockeys had previously sought help from a mental health professional. The findings suggest that, given the high prevalence of symptoms of CMDs within the sample, mental health support services may be required for jockeys throughout their careers. Previously, athletes have reported a multitude of barriers to help-seeking which include: the culture of sport; low MHL; stigma; fear of losing their place on a team; treatment ambivalence; confidentiality and trust concerns; a lack of time; difficulty in or not willing to express emotion; denial of an issue; and, not sure who to ask for help (Castaldelli-Maia *et al.*, 2019; Gulliver *et al.*, 2012a; López & Levy, 2013). Further research exploring the disparity between symptoms of CMD prevalence and lack of formal help-seeking may be fruitful among the jockey population.

4.6.1 Limitations

As with any cross-sectional study, the analysis does not allow for causal relationships to be identified between prevalence of CMDs and potential risk factors. Moreover, the recruitment procedures were blinded to the researcher and were conducted by the Irish Horseracing Regulatory Board (IHRB), therefore non-response analysis could not be conducted. The project was designed as such to ensure privacy and confidentiality of the participants. Another point to consider is the role of selection bias wherein those who completed the online questionnaire perhaps have experience with psychological morbidity, therefore increasing the prevalence rates found amongst the population of jockeys. On the other hand, mental health amongst jockeys remains a subject with stigma attached to it, so it is plausible prevalence rates may be under-reported. However, as the questionnaires were confidential and anonymous, it is believed that these potential effects were limited. The researcher acknowledges that the use of validated questionnaires does not provide an individual with a diagnosis of depression, anxiety, distress or adverse alcohol use. For instance, the International Statistical Classification of Diseases and Related Health Problems (ICD) requires ≥ 2 week's duration of symptoms to diagnose depression. Thus, an instrument such as the Patient Health Questionnaire (PHQ-9) may have been more useful in detecting depressive symptoms amongst jockeys. However, the CES-D was chosen (which assesses symptoms over the preceding one-week period) as this questionnaire has been used in a plethora of athlete mental health studies and the only jockey mental health study to date, allowing some comparison between studies. Moreover, a diagnostic interview or clinical assessment sets the gold standard for diagnosis of psychological morbidity, but this was ruled out due to concerns around confidentiality, engagement with the study, and the time demands placed upon both researcher and participants.

4.7 Conclusion

This study was one of the first to investigate the prevalence rates and risk factors associated with CMDs among professional jockeys. Nearly four out of five met the criteria for one of psychological distress, depression, generalised anxiety, or adverse alcohol use, with adverse alcohol use (61%) and depression the most commonly reported (35%). Burnout dimensions, career dissatisfaction, and contemplating retirement were associated with meeting the criteria for CMDs. In total, 26% of the sample was contemplating retirement within the next 12 months. Future research is required to explore the mental health of jockeys, in particular the utilisation of questionnaires such as the Patient Health Questionnaire or clinical interviews to more accurately determine the prevalence of diagnosed mental illnesses. Moreover, research exploring concepts such as help-seeking attitudes and stigma may also help develop understanding of mental health amongst this unique population of athletes.

4.8 Practical Applications

The present study highlights the value in screening jockeys frequently to promote the detection of CMDs and risk factors, which has the potential to increase access to professional psychological support services at preventative or early intervention stages for jockeys. Screening at critical stages of a jockey's career, such as transitioning from an apprentice or conditional to a full professional, or throughout injury rehabilitation, also appears key. Given this applied recommendation, there is a need for the design of specific psychological inventories and screening methods to screen for psychological morbidity among jockeys. The profession is a unique one and the validated screening assessments may not reflect the nuances associated with the career. Moreover, as per a recent mental health in sport consensus statement (Henriksen

et al., 2019) it would be beneficial for broaden the scope of assessment in examining factors related to mental health and wellbeing. Multiple factors impact mental health which current measurement tools do not consider. Indeed, mental health is more than the absence or presence of symptoms associated with conditions such as depression and anxiety and awareness of such is paramount for the development of theory driven research and application. The present study is one of very few studies to research mental health amongst jockeys, and the first to explore risk factors to jockey mental health and addresses a gap in the literature. It is hoped that the research can be utilised by organisations associated within the sport to raise awareness of mental health issues, inform policy, and assist in developing bespoke support programmes.

5 Chapter Five – Exploring Barriers and Facilitators towards Help-Seeking for Common Mental Disorders among Professional Jockeys

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5.1 Preface

The previous chapter highlighted that almost 80% of jockeys met the threshold for at least one CMD. Despite this, only 33% of jockeys had previously sought psychological support from professional services. The findings indicate that mental health support services and evidence-based programmes may be necessary for jockeys given the high prevalence of symptoms of CMDs. Previous research has identified that athletes may be reluctant to reach out for help (Castaldelli-Maia *et al.*, 2019; Gulliver *et al.*, 2012a; López & Levy, 2013) and the findings from the previous chapter suggest this may also be prominent among jockeys. As such, the following chapter explored barriers and facilitators to help-seeking within the jockey population.

5.2 Introduction

In recent years, the attention placed upon elite athlete mental health by the media, researchers and practitioners has grown considerably. A recent meta-analysis of 34 athlete mental health studies, comprising of 2895 to 5555 elite athletes, and a multitude of team and individual sports, indicated that prevalence of CMDs among elite athletes may be marginally greater than in comparison to the general population (Gouttebauge *et al.*, 2019). Specifically, the meta-analysis identified 19% of athletes met the threshold indicative of alcohol misuse, and 34% for symptoms associated with anxiety and depression. Elite athletes experience stressors that may exacerbate, or contribute to, the onset of CMDs, including performance pressures, substantial time away from loved ones, severe injury, early retirement, and financial uncertainty, among others (Arnold & Fletcher, 2012; Hanton *et al.*, 2005; Noblet & Gifford, 2002). Thus, identifying how best to understand and contextualise mental health among elite athletes,

whilst also developing effective preventative and sport-specific interventions or programmes, have become increasingly important (Gorczynski *et al.*, 2020a).

Symptoms of CMDs have been reported among professional jockeys (Losty *et al.*, 2019). Jockeys participate in a high risk sport, and experience a wide variety of stressors throughout their careers (Landolt *et al.*, 2017). As elicited in Study One, this includes making weight all year round, a limited off-season, career and financial uncertainty, and managing performance slumps, among others. Study Two demonstrated that almost eight in ten jockeys met the threshold for at least one CMD which included adverse alcohol use, depression, psychological distress or generalised anxiety based on self-reported validated questionnaires. Another study found that 57% of jockeys met the cut-off for depression based on self-report measures (Losty *et al.*, 2019). Despite this, help-seeking among professional jockeys appears low (33%), relative to the percentage of jockeys meeting the threshold for a CMD (79%).

There are a myriad of reasons why athletes may not seek help for CMDs. Athletes may hold more negative attitudinal views towards help-seeking in comparison to non-athletes (Watson, 2005). Athletes are fearful over teammates' (López & Levy, 2013) and coaches' (Gulliver *et al.*, 2012a) views upon seeking help. Seeking help may involve the athlete losing their place in the starting team or even removal of their contract altogether (Bauman, 2016). Athletes may also present themselves in a positive manner, masking insecurities or illness, due to the constant performance requirements placed on them (Breslin *et al.*, 2019a). Stigma, both public and self, have also been reported as a barrier towards seeking help for CMDs among athletes and has been reported to be greater among athletes than non-athletes (Bauman, 2016; Castaldelli-Maia *et al.*, 2019; Gulliver *et al.*, 2012a; Kaier *et al.*, 2015; Souter *et al.*, 2018). Other barriers reported include low levels of MHL (Gulliver *et al.*, 2012a), denial of an issue

(Schwenk, 2000; Uphill *et al.*, 2016), lack of accessible services (e.g., time, travel; López & Levy, 2013; Gulliver *et al.*, 2012a), and a difficulty or lack of willing to express emotions (Gulliver *et al.*, 2012a).

Several perceived facilitators that promote help-seeking have also been identified among athletes although these have been reported to a lesser extent in comparison to the perceived barriers. In young elite athletes, this includes social support, encouragement, accessible services (e.g., online support), health relationships with service staff and emotional competence (Gulliver *et al.*, 2012a). Other facilitators reported include gender (Moreland *et al.*, 2018) and education (e.g., higher levels of MHL; Chow *et al.*, 2020).

As highlighted within the literature review (see Chapter 2), and the current chapter, a number of barriers and facilitators to help-seeking have been identified within athletic (Bird *et al.*, 2018; Castaldelli-Maia *et al.*, 2019; Chow *et al.*, 2020; Gulliver *et al.*, 2012a; López & Levy, 2013; Moreland *et al.*, 2018; Rice *et al.*, 2016) and general populations (Clement *et al.*, 2015; Gulliver *et al.*, 2010). However, to date, barriers and facilitators to help-seeking have yet to be identified and explored among professional jockeys. This is of concern given findings presented in Study Two and also the study of Losty *et al.* (2019) which indicated a prevalence of symptoms of CMDs among jockeys that may be greater than other elite athletes. Evidence-based mental health programmes and support pathways are necessary for jockeys, thus the development of knowledge and understanding related to barriers and facilitators may help inform such endeavours. Therefore, the aim of the present study was to explore the barriers and facilitators to help-seeking for CMDs among professional jockeys.

5.3 Methods

The overall study design was informed by relativist ontology and a constructionist epistemology, underpinned by an interpretive paradigm (Scotland, 2012). The author adopted the view that meaning is subjective and realities are multiple, and knowledge is constructed through social interactions between the participants and researcher. Due to the qualitative methods adopted in the present study, multiple realities from participants' experiences of barriers to, and facilitators of help-seeking, were illustrated and examined. The qualitative study adopted an exploratory approach due to the lack of data present in the area of help-seeking among jockeys. The study was approved by the Waterford Institute of Technology Research Ethics Committee (REF: WIT2020REC0006).

5.3.1 Participants

Twelve professional jockeys participated in the present study which involved both male and female participants. The precise breakdown of male and female participants is withheld to ensure confidentiality and anonymity of female participants due to the low number of female jockeys competing in Ireland. Male and female jockeys experience the same racing demands and compete against one another in the sport of horseracing. Participants were on average 28 years old ($SD = 2.9$) and had competed for 9 years ($SD = 4.2$). Five of the sample (42%) had previously sought help for a CMD from a mental health professional. Participants were recruited via online unpaid advertisements on social media (e.g., Twitter) and word of mouth by a gatekeeper in the form of the Irish Horseracing Regulatory Board (IHRB) Senior Medical Officer to jockeys at racecourses. Participants were able to contact the researcher via social media, telephone, or email to express an interest in participating in the study.

5.3.2 Procedure

Semi-structured interviews were employed as the data collection tool, with a typical interview 35 minutes on average. The interviewer (researcher) prepared a list of pre-set questions to be asked throughout the interview (Appendix H). In semi-structured interviews, the interview takes on a more informal, conversational approach (Longhurst, 2010). A semi-structured interview is flexible in nature, which allowed participants to elaborate and expand on experiences or ideas they perceived as important (Smith & Sparkes, 2014). Semi-structured interviews were chosen over both unstructured and structured interviews because, whilst the conversation was largely focussed on factors related to help-seeking, it was important to allow participants a safe space to feel comfortable to discuss matters that are often highly personal. This method also assisted in developing rapport between participants and interviewer. Due to the coronavirus pandemic, all interviews took place via telephone. Although there are limitations with telephone interviews such as identifying specific visual cues from individuals and potential misinterpretation of responses (Novick, 2008), they are also highly beneficial for a number of reasons. Participants may feel more relaxed and comfortable sharing highly personal information, such as their experiences of help-seeking for CMDs. Moreover, telephone interviews are also extremely convenient for jockeys. Jockeys spend a considerable number of hours each day driving to and from racecourses, therefore they were able to participate in the study at a time which suited them best. The phone call was scheduled after interaction (predominantly via text messages) between the researcher and participants to organise a call at a time that suited the participant best. Interviews were conducted by the researcher. All but two interviews took place at the scheduled time due to telephone signal difficulties. The remaining two interviews took place at a later time during the same day of the initial

planned interviews. After reading a participant information sheet (Appendix I), and participant's informed consent obtained (Appendix J), interviews were recorded via a Dictaphone.

5.3.3 Interview Guide

An interview guide was developed based on previous research in the field of help-seeking among athletes (e.g., Gulliver *et al.*, 2012a). Prior to the first interview taking place, a pilot interview was conducted with a retired jockey who had expressed interest in the study. Following the pilot interview, specific questions were removed due to unsuitability (e.g., repetition) and small changes were made to the wording of several questions in or to provide greater clarity. The interview began with the interviewer reading a definition of mental health to the participant: “a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to his or her community” (WHO, 2004). Following on from the definition, questions were asked which related to the jockeys' background in the sport, including most significant moments within their careers, to help develop rapport between interviewer and participant. The participant was then asked if they had previously visited a mental health professional, before progressing on to questions related to barriers and facilitators of help-seeking. Definitions of barriers (e.g., things that make it harder or stop you from getting help) and facilitators (e.g., things that make it easier to seek help) were provided to participants before asking questions related to each area (Gulliver *et al.*, 2012a). A mental health professional was defined by the interviewer to the participant as any professional whereby the primary purpose of visiting the individual was to discuss or improve their mental health. Examples such as general practitioner, psychologist, psychiatrist and counsellor were provided. Mental health difficulties

(MHDs) was used as a term throughout the interview process as the author felt this term was less stigmatising than phrases such as ‘common mental disorders’ or ‘mental health issues’, and is commonly used in academic literature (e.g., Wood *et al.*, 2017).

5.3.4 Data Analyses

Reflexive thematic analysis was used to provide a detailed analysis of qualitative data and explore the experiences, meanings, and reality of participants (Braun & Clarke, 2019). As the name suggests, the process of thematic analysis was reflexive, and although the often cited six-stages of thematic analysis described by Braun and Clarke (2006) is presented in a linear fashion, the researcher moves backwards and forwards throughout stages of the analysis, and multiple stages often overlapped with one another. These stages included: data familiarisation, generating codes, theme development, reviewing themes, defining themes, and writing the manuscript. Throughout data familiarisation, the lead researcher transcribed interview data, read and re-read transcripts becoming immersed in the data and writing initial codes on each transcript as they worked their way through the document. The researcher transcribed each interview immediately after each interview had taken place. Codes related to what was reported by the participant (e.g., ‘help-seeking viewed as a weakness by other jockeys’ or ‘difficulty finding a suitable mental health professional’). Generated codes were placed together in a document to begin the search for themes. Theme identification was attributed to “something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set” (Braun & Clarke, 2006, p. 82). Due to the topic under examination in the present study, overarching themes (e.g., barriers and facilitators) are reported at a semantic level. That is, the data within the themes captures the essence of what was reported by the participant. Latent coding, which is more interpretive in

nature, was used for development of the higher-order themes. For instance, a higher-order theme of ‘masculinity’ and ‘self-reliance’ was categorised under the theme of ‘cultural norms’. Themes were read and re-read to ensure that the name of the theme captured the nature of the coded data included within it. Data was initially analysed inductively (e.g., codes generated from the data itself) although once higher-order themes were developed it was evident that some themes aligned to previous literature exploring help-seeking barriers and facilitators. As such, deductive analysis was utilised in naming higher-order themes (e.g., stigma; self-reliance; low mental health literacy). Themes were then listed in a document, with respected sub-themes, codes, and participants quotes attached. Quotes were checked to ensure they accurately represented each theme and sub-theme. Themes were refined and reviewed with some initial themes integrated into broader themes or disregarded altogether. For instance, the sub-theme of ‘minimisation of CMDs’ was initially placed under the theme of ‘cultural norms’, however, after further inspection of the data, it was better represented under the theme ‘low mental health literacy’. Lastly, a report (this article) was developed, with data integrated throughout the results and discussion section to highlight the participants’ narratives and subjective experiences of barriers to, and facilitators of, help-seeking for CMDs.

5.3.5 Quality Standards

A number of methods were used to ensure trustworthiness of the qualitative findings presented which included: member reflections; critical friends; and, thick descriptions.

Member reflections have been suggested as a method of enhancing rigor and an alternative of the popular member checking concept, where issues have been

highlighted (Smith & McGannon 2018). Member reflections involve gathering further insight from participants after the data has been transcribed and analysed. That said, the process is not about verification, but understanding in greater detail the subject in question, where participant and researcher can share similarities or differences within the interpretation of the findings (Schinke *et al.*, 2013). In the present study, this provided the researcher with a further opportunity to work with the participants and deepen understanding of their own interpretations and analysis. For instance, one higher order theme related to not knowing where to seek help. The researcher contacted the participant to discuss this further after the interview had been transcribed. The researcher explored this concept as they were curious about whether it truly was not knowing where to turn for help or an aspect related to not wanting to look for professional help or denial of an issue. The participant stated that it was not knowing where to seek help (e.g., lack of awareness of available support services), rather than an intrinsic desire to avoid help-seeking resources. No changes were made to the findings of the study, but the member reflections ensured the lead researcher understood the deeper context to specific quotes included within the analysis.

The use of critical friends in qualitative research provided supervisors in the present study with an opportunity to lend a critical eye over multiple aspects of the research project. Within the present study, supervisors provided critical comment on factors related to interview guides, interpretation of specific themes, and write up of the full document. As such, throughout multiple stages of the research process, certain elements were altered and refined due to frequent conversations with critical friends.

According to Geertz (1973), a method of ensuring credibility within qualitative research is through thick description. In this context, thick description shows the reader that the researcher understands the complexities of the data, and the deeper meaning

and understanding behind the quotes presented. In the present study, although data is presented at a semantic level (e.g., surface meaning), the thick descriptive quotes presented throughout the results section highlight detailed, rich accounts from participants alongside narrative and interpretation from the lead researcher.

5.4 Results and Discussion

Thematic analysis resulted in identification of multiple barriers to, and facilitators of help-seeking for CMDs. Within each category (e.g., barriers and facilitators), overarching themes and their related higher-order themes and sub-themes were generated. For barriers, overarching themes included the negative perception of others, cultural norms, and low mental health literacy. For facilitators, overarching themes included education, social support, and media campaigns. Participants' verbatim quotes are intertwined throughout the section. Higher-order themes and sub-themes are italicised throughout the text.

Barriers

The following section describes the barriers associated with help-seeking for CMDs among professional jockeys (Table 5.1).

Negative perception of others

This theme generated relates to the anticipated or perceived negative perceptions of others for seeking help for CMDs. The theme was underpinned by the higher-order theme of *stigma*. Jockeys reported descriptions that aligned to both public perceived stigma and self-stigma. The findings corroborate previous research reporting stigma as one of the key barriers to help-seeking among general and athlete populations (Clement *et al.*, 2015; Gulliver *et al.*, 2012a; López & Levy, 2013; Schnyder *et al.*,

2017). Jockeys described that due to the characteristics often associated with a career as a jockey, such as being tough and strong, there would be concerns about seeking help due to how others may view them, and that it may indicate a weakness within the individual:

They (jockeys) have this persona of being tough and hardy, they feel they kind of have to maintain this persona to everyone else and the public because they might be singled out as being weak if they come out and said anything (Jockey 3).

Table 5.1

Barriers to Help-Seeking among Professional Jockeys

Themes	Higher-order themes	Sub-themes
Negative perception of others	Stigma	Career implications From other jockeys From trainers Previous help-seeking experience
Cultural norms	Masculinity Self-reliance	Weakness Conformity to sports norms Control Independence
Low mental health literacy	Not knowing where to seek help Minimisation of CMDs	Physical health versus mental health
	Negative perceptions of treatment	CMDs heal themselves Treatment equals antidepressants Consequences of treatment
	Recognising symptoms	Confidentiality concerns Difficulty differentiating between stressors associated with a career as a jockey and CMD Fatigue Burnout

Jockeys also reported concerns around how other jockeys would view them which is similar to research published among other athletes who were fearful over teammates or coaching staff perceptions of them for seeking help (López & Levy, 2013). One jockey stated:

I just think people would refer to it (help-seeking) as a sign of weakness...in the weighing room it's very much a tough man life and between the broken bones and lads would ride even if they had a broken bone and get away with it so the fact of admitting there's something wrong in their head I suppose it's a sign that they are soft. That's what a lot of them might think. That they are soft and they can't handle it (Jockey 1).

Stigma was not solely present at the public level, as a number of jockeys reported shame, embarrassment, and perceptions of weakness, due to a need to visit a mental health professional. Similar self-stigmatising attitudes have been reported among other athletic (López & Levy, 2013) and general populations (Corrigan & Watson, 2002b). The impact of self-stigma on help-seeking attitudes is significant, with greater levels of self-stigma negatively associated with attitudes towards help-seeking within athletic samples (Martin *et al.*, 2020). One jockey said: "I was kind of a strong person and felt that I could do everything on my own but to realise I couldn't made me feel weak...I always felt like I was just feeling sorry for myself" (Jockey 8).

Jockeys were concerned about *career implications* if they sought help for CMDs. Specifically, how a racehorse trainer would view them. A career as a jockey is an uncertain one, with inconsistent career opportunities and financial challenges reported in Study One, therefore jockeys discussed not providing a trainer with an

opportunity to select another jockey for competition. Jockeys in the present study reported that seeking help may be used by trainers as such an opportunity. Racehorse trainers play an important role in a jockey's career, particularly at a younger age. Trainers provide jockeys with competitive opportunities (e.g., rides) and successful relationships between jockeys and trainers are known to last the length of a jockey's career. One participant also discussed that trainers may view them differently if they sought help, as highlighted in the following passage:

They (trainers) might think my jockeys not right in the head...I'm sure in the back of their minds they'll be thinking they're just not right in the head...I don't think it would be great for them to know too much. It might be an excuse for them to maybe get rid or try someone new.

However, these views were anticipated, rather than experienced, with no jockeys reporting that trainers had reduced riding opportunities because of CMDs or negative perceptions towards help-seeking. Nevertheless, jockeys were overwhelmingly in favour of a trainer not finding out their potential or actual experiences of help-seeking for CMDs. Similar findings have been reported within the concussion literature, where 84% of jockeys reported riding with a suspected concussion due to the pressure of potential deselection if they missed a race (O'Connor *et al.*, 2018b). The racehorse trainer-jockey relationship is akin to the coach-athlete relationship, therefore comparisons between the two concepts are warranted. Castaldelli-Maia *et al.* (2019) suggested that coaches can encourage and support athletes to acknowledge CMDs and create an environment where CMDs are not seen in a stigmatising light. Racehorse trainers are in a similar position due to frequent contact with jockeys (jockeys often exercise horses in the early morning for racehorse

trainers each day), which may also help to alleviate the concerns related to the *negative career implications* anticipated by jockeys as illustrated in the present study.

Cultural norms

An important barrier to help-seeking that was identified within the interviews was the *cultural norms* associated with the sport of horseracing. These appeared to be underpinned by characteristics that are widely associated with *masculinity* such as toughness, strength, and an ability to cope and endure physical and mental hardship. This finding aligns with the work of Butler and Charles (2012) who reported that the sport of horseracing is gendered masculine whereby characteristics such as toughness, fitness, assertiveness, strength and stamina are pre-requisites to work in the sport. However, for jockeys in our study, help-seeking appeared to be perceived as the antithesis of such human qualities, with particular reference to weakness. Jockey 1 stated:

...you have to show you're just as strong, just as tough, (that) you're physically and mentally able to handle (it)... it's very hardcore, physically demanding, you have to be strong, you have to bounce from your falls, you get broken bones all the time. I suppose you want to come across as if you are hard and that you don't have any kind of weakness (Jockey 3).

The perception of certain role models to jockeys appeared to further entrench these views:

It's one of those sports where you need to be seen to be grafting every day. You're driving miles and miles each week and you're dieting, it's madness. You're throwing a horse over a fence...It's kind of a thing where people expect jockeys to be kicking hard and that they never have a weakness. Look

at Tony McCoy, he never had a weakness, and he never showed weakness either and so all jockeys kind of want to be like him. They never want to be open and speak about mental health problems to like a counsellor or somebody like that (Jockey 1).

Research suggests that the sport of horseracing is not unique in this aspect, and these attitudes are reflective of sport in general, where an emphasis is placed on hiding vulnerabilities, overtly displaying toughness, and minimising injuries (Bauman, 2016; Doherty *et al.*, 2016). As described in a recent article “the culture in sport is one where there is stigma associated with athlete mental health issues, and therefore any desire to obtain professional help is undermined by the fear of being labelled ‘mentally weak’” (Gucciardi *et al.*, 2017, p. 307).

The higher order theme of *self-reliance* was underpinned by feelings of independence and control which appeared to serve as a barrier to help-seeking. Jockeys often drew parallels between the nature of their occupation, and how that inhibited help-seeking behaviours, as illustrated in the following quote:

Racing is such a one man game. You are paddling your own canoe, and the knock on when it comes to your mental health...you think I must be strong by myself, I'll just keep it to myself. I handle everything else, I drive myself everywhere, I sort all of my rides, I sort my finances...you just become really independent because you absolutely have to be and I think it drips in to the psychological side (Jockey 7).

Participants often attempted to cope independently with specific challenging situations (e.g., career suspension) or more harmful thoughts (e.g., suicide ideation). For some jockeys, they appeared to seek help once they felt they had exhausted all of

the other options available to them (e.g., crisis point). Jockey 5 reported: “It was kind of like a boiling pot, it just gradually started to simmer, simmer, simmer, and then eventually it got to a boiling point and I just gave in and broke down”. Another jockey reported: “I think there's a lot of people who don't think they are in a bad enough way if you get me. Like they (jockeys) think they nearly need to be on suicide watch to be ringing up one of them (mental health professional)” (Jockey 4). Self-reliant attitudes towards help-seeking appeared to develop due to the parallels associated with the career which involved being a self-employed, often isolated, individual athlete. Contrary to other individual sports, few jockeys have coaches or formal support networks, which may result in a lack of opportunity to share personal experiences of CMDs with appropriate individuals.

Low mental health literacy

MHL contains multiple factors including the ability to recognise signs and symptoms of CMDs, knowledge of risk factors and causes of CMDs, understanding self-help mechanisms, knowledge of professional treatments, positive attitudes which promote recognition and help-seeking, and knowledge of where to seek information on CMDs (Jorm, 2000). Therefore, low levels of MHL are partially presented in the present study, with further investigation into each specific component of MHL required. Jockeys discussed *not knowing where to seek help*, which is surprising given the sport's governing bodies attempts to raise awareness of specific support services for jockeys such as consulting sport psychologists or counsellors. Participants reported difficulty *recognising symptoms* with one participant stating that a lack of education and understanding on CMD symptoms delayed the behaviour of seeking help:

I think a lot of people are uneducated (on CMDs) and I think that's a massive factor. The lack of knowledge or even the lack of education to say 'God I'm kind of weak, I think I'll get some help'. (Jockey 3)

Another jockey discussed similar notions in relation to *recognising symptoms*. Jockey 2, who had previously sought help for depression, reported: "...depression wasn't really mentioned at the time, or anything...I hadn't a clue about depression or what it was either and it's only kind of now that the word depression is known". Contributing to the challenges in *recognising symptoms* for jockeys was differentiating between the day-to-day stressors and workload of a life as a jockey, and what constitutes as a CMD. Jockey 1 described this concept in the following passage:

I think burnout is a big thing in racing and that's something different from mental health issues because with burnout you're just completely exhausted and you're on a ferris wheel, you're on a rat race the whole time...I think burnout is a massive thing and you're gonna have similar symptoms...I suppose with mental health issues you're constantly down and you're constantly upset and tired so it is hard to differentiate between the two.

Participant's quotes highlighted the *minimisation of CMDs* which reduced an individual's propensity to seek help, with less emphasis placed on the importance of seeking help for CMDs. One jockey who had sought help, but discussed the lengthy process involved in reaching that decision, demonstrated this in the following quote: "I felt like I was making a bigger deal out of things...I should have had a thicker skin and

should have manned up about things” (Jockey 5). Another jockey highlighted a *minimisation of CMDs* in comparison to reaching out for help for a physical illness:

I suppose there's the other side of it then where they (jockeys) just feel like this is just a small bump in the road. 'I'll get over it next week' but it drags on to the following week and the following month and the next thing you're depressed for six months... You know like if you had a pain in your chest today, you might say oh it will be gone tomorrow, but obviously if it progresses for two or three days you would be very quick to go to a hospital to get it checked out. Maybe with a mental health issue you're kind of inclined to leave it to roll for a longer period of time before you get it sorted (Jockey 6).

Jockeys also reported *negative perceptions towards treatment*. One jockey anticipated a negative response if they spoke to a mental health professional, and stated: “I didn't really know who to talk to and then if you went to speak to someone they'd go 'oh Jesus there's nothing wrong with you' (Jockey 10). The efficacy of treatment and the uncertainty around treatment outcomes was also questioned as reported in the following passage:

... if I get help then will it work? Will be back to the same as I am now?... Like is there any point in it because will it work? Or if I do reach out and speak to someone will it work? Will I be a different person after the whole experience? (Jockey 3)

Some jockeys appeared to hold more negative views towards mental health professionals in comparison to other support services such as a sport psychologist. Meeting a sport psychologist appeared to carry less stigma than visiting a psychologist:

“Like [names sport psychologist] is a sport psychologist, that’s what they’re titled, that’s a big help. It’s not ‘I’m going to see a psychologist. That’s a big help’ (Jockey 4). Other studies have documented similar views from athletes, where discussions around performance with a sport psychologist, may feel more comfortable in comparison to talking to a psychologist (Gulliver *et al.*, 2012a). This may be due to issues such as competitive anxiety being less stigmatised than CMDs such as depression.

Participants also discussed issues relating to pharmacological treatment, with the common consensus that treatment involved drugs, mainly antidepressants. Jockey 3 stated ‘if I am bad, do I have to take tablets?’ with another jockey talking about their experiences of taking antidepressants illustrating that it made them feel like a failure: ‘to be honest I half felt like I’d failed a little bit...I was hoping I’d be able to beat it without having to resort to something like that’ (Jockey 6). Many of the participants felt that *confidentiality* was an important barrier for help-seeking. In Ireland, the Industry Assistance Programme provides free 24-hour confidential support for all individuals working within the industry, although several jockeys expressed confidentiality concerns and a reluctance to use such services: “I’d never ring any of them (helplines) but maybe some of the guys feel like those helplines aren’t completely confidential...If they feel like they are being run by a racing person or something like that, that it might get out” (Jockey7).

Educating jockeys to provide them with tools to identify, recognise, and seek help for certain symptoms of CMDs appears important. The present sample appeared to hold negative views towards treatment, therefore improving knowledge among jockeys on what treatment for CMDs may include is an important consideration. MHL has been found to positively predict attitudes towards help-seeking, which suggests that

improving knowledge via psychoeducational programmes may be a beneficial method to improving attitudes towards help-seeking and subsequent help-seeking behaviours (Cheng *et al.*, 2018; Kola-Palmer *et al.*, 2020). Future studies among jockeys would benefit from quantifying jockeys' levels of MHL. By doing so, bespoke education programmes can be developed to target specific areas for improvement (e.g., identifying symptoms of CMDs; improving attitudes towards treatment). However, psychoeducational programmes must be appreciative of the contextual factors that are often unique to each sport or group of athletes (Gorczyński *et al.*, 2019). Within horseracing, this may relate to injury, rehabilitation, or challenging some of the stereotypes (e.g., help-seeking is a weakness) that have been presented.

Facilitators

Facilitators to help seeking for CMDs among professional jockeys included education, support, and media (Table 5.2).

Table 5.2

Facilitators to Help-Seeking among Professional Jockeys

Themes	Higher-order themes	Sub-themes
Education	Exposure to psychological support at a younger age	Licensing courses
Support	Support from professionals, jockeys, friends and family	Close friendships Patient-professional relationships
Media	High profile disclosures from other jockeys	Normalising CMDs and help-seeking Role models

Education

Jockeys described that education, which included *exposure to psychological support at a younger age*, may facilitate individuals accessing professional psychological support. Participants discussed that this could be enacted upon on licensing courses for jockeys. In Ireland, jockeys are provided with free sport science support from an industry-funded programme (Jockey Pathway) which includes access to sport psychology services. Upon entering the sport, two sport psychology consultations are mandatory for jockeys to obtain their professional license. One jockey stated:

I know when I was getting my jockey license it (psychoeducational content) wasn't really ever a part of it. They probably have it included now but maybe a bit of a chat from someone like [names industry sport psychologist] who explained to them that this is a very tough role, its high pressure situations you're going to be in, you have to come for help if you need it (Jockey 4)

This finding aligns with the research of Martin *et al.* (2017) who reported a need for industry education for jockeys, particularly at the early stages of their career. Jockeys are able to turn professional from the age of 16, however, up until that age, they compete predominantly in pony racing. Unlike other sports where athletes are integrated into elite systems from a young age such as tennis and swimming, and as such are exposed to sport science supports such as sport psychologists, it is likely that the first time a jockey is educated on sport psychology principles is via the licensing course. Reaching

out and providing services to younger jockeys may be facilitated by contacting relevant racing organisations.

Support

Participants felt that strong social support networks facilitate help-seeking among jockeys, particularly the role of *support from professionals, jockeys, friends, and family*. Jockey 7 discussed their experience of help-seeking which was facilitated by discussions with a family member, and then a doctor: “I was very lucky that I had some very good people around me...I went to see my sister and she kind of sorted it with the Doctor about getting help”. Indeed, recent research indicated that athletes were more willing to talk to a mental health professional after referral from a family member in comparison to a coach, team-mate or the individual themselves (Wahto *et al.*, 2016). Another jockey spoke about discussing their experiences of CMDs with another jockey and the benefits of doing so. They stated: “I broke down in [names other jockey] house, it was a huge weight off my shoulders” (Jockey 8). Accessing informal supports such as those from friends and family appear common within the jockey population. For instance, in a study examining concussion reporting attitudes and behaviours, O’Connor *et al.* (2018b) reported that if a professional jockey suspected they had experienced a concussion on race day, 64% would tell a family member. For a medicalised formal concussion diagnosis, this number increased, where 82% of professional jockeys stated that they would tell a family member. Developing close relationships with medical officers was also important for participants. Close links with medical officers who work with the jockeys on a day to day basis appeared to promote help-seeking behaviours as the following quote demonstrates:

I'm sure if they (jockeys) ever had a problem they'd to talk [names medical officers]. I think the docs, [names medical officers], are not like your normal doctors. They're absolute legends and great at their jobs. They're great to talk to and (provide) support (Jockey 9)

Jockeys also discussed that finding a suitable professional who understood the horseracing industry and the certain nuances that comes with it, is a key component of an effective patient-professional relationship.

Media Campaigns

Participants described that *high-profile disclosures of CMDs from jockeys* would help normalise help-seeking within the jockey community and remove existing taboos. One jockey said:

I think kinda hearing about it more from other jockeys...the doctors and stuff are brilliant but if we could get more jockeys to talk about what they have been through then people would realise it more and it would probably make them think that everyone kinda goes through the same thing (Jockey 8).

Jockeys have reported learning from others within the industry (Martin *et al.*, 2017; Moore *et al.*, 2002), therefore the use of role-models to endorse certain behaviours (e.g., help-seeking) may promote more positive attitudes towards help-seeking. Indeed, several jockeys over the past five years have spoken publicly about their experiences of depression, and participants agreed that it had a significant impact on their attitudes towards CMDs and help-seeking as illustrated in the following quote:

I think it opened a new door. I think it made people very aware that this is happening under people's noses...I think it was a great thing because he felt he could come out and talk about it and he didn't have to hide it...I think that gave other people, the kind of, the right to feel that they might be going through the same thing (Jockey 1).

In recent years, several professional athletes from a multitude of sports have spoken publicly about their own experiences of CMDs which may have helped other athletes seek help. Research in the United States examined the media discourse surrounding two high profile elite athletes, DeMar DeRozan and Kevin Love's, public disclosure of mental illness (Parrott *et al.*, 2019). Findings revealed universally positive responses to their stories by journalists, with particular focus on the strength shown by the athletes to publicly disclose their experiences. Moreover, as social cognitive theory (Bandura, 2001) suggests, the disclosures modelled the commonality of mental illness and help-seeking which may influence other athletes to normalise their own experiences and seek help themselves.

Social media campaigns were also reported as a method to facilitate help-seeking and encourage jockeys to feel comfortable enough to seek help for CMDs. The jockeys were aware of social media campaigns on Twitter such as the 'It's Okay Not to be Okay' hashtag which they felt normalised CMDs. One jockey illustrated this in the following passage:

I think social media has been great over the last few years because when I look and see a jockey donating towards one of the mental health charities, I automatically think Jesus, I'm not alone. You don't feel isolated...Then I was saying to myself it's okay to talk (Jockey 3)

In the United Kingdom, a number of videos have been posted online by the charity Jockeys Employment and Training Scheme (JETS), which have reported on real life stories by jockeys on a number of topics including substance abuse and recovery, depression, injury, and resilience, amongst others. Similar concepts may be created for each racing jurisdiction, due to the importance of familiarity and relatedness for the viewer with individuals participating in each video.

5.4.1 Limitations

Whilst this study presents a unique examination of help-seeking barriers and facilitators among jockeys, the studies limitations must be addressed. Firstly, five participants (42%) had previously sought help from a mental health professional. Thus, individuals participating in the study may hold more favourable attitudes towards help-seeking in comparison to those who have not previously sought help. Despite this, a wide variety of barriers and facilitators towards help-seeking that are consistent with literature among both athletes and general populations were reported. Secondly, although male and female jockeys took part in the study, the exact number of male and female jockeys was withheld due to both genders experiencing similar racing demands and competing against one another. Previous research has identified that females hold more positive attitudes towards help-seeking than males (Nam *et al.*, 2010), therefore future research may yield differing results if males and female interviews were analysed separately. Nevertheless, this could be difficult for researchers due to the low number of female jockeys currently competing in Ireland which may raise confidentiality and anonymity concerns.

5.5 Conclusion

This study is one of the first studies to explore the perceived barriers and facilitators to help-seeking among professional jockeys. This is important given the recent research which has highlighted a prevalence of symptoms of CMDs among jockeys (Losty *et al.*, 2019) and the findings presented in Study Three. Key barriers to help-seeking for jockeys include stigma and the potential implications help-seeking may have to a jockey's career. The cultural norms of the sport, underpinned by values of dominant masculinity and self-reliance also appear to serve as barriers. Several facilitators of help-seeking were reported and included education from a young age, strong social support networks, and media campaigns. Previous studies have often examined barriers and facilitators among student-athletes and young elite athletes; therefore our findings advance the breadth of athletes that the research area has explored. This is important as athletes from different ages and sports may report unique barriers and facilitators to help-seeking. Although this was not identified in the present study, researchers and practitioners should consider the nuances of each age group or sport under investigation to improve the support delivered. Individuals working with professional jockeys, and the organisations under which the jockeys compete, should consider the specific barriers and facilitators identified when developing support programmes for jockeys. Further research examining the relationship between factors such as stigma and MHL on attitudes towards help-seeking represent interesting future areas of inquiry.

5.5.1 Implications for Clinical Practice

The results of the present study offer unique insights into the barriers to, and facilitators of, help-seeking for CMDs among professional jockeys. Thus, the findings

may help inform practitioners working with jockeys moving forward. First, an awareness of the cultural norms (e.g., strength, toughness) embedded within the sport are necessary when developing programmes or interventions designed to support jockeys. One method may be to consider the language used in reaching out to jockeys. For instance, the term ‘mental health’ often carries negative connotations (Coyle *et al.*, 2017), whilst also jockeys reported that help-seeking may be viewed as a weakness. Framing supports and programmes in a more positive light such as ‘mental fitness’ may serve as one such method in encouraging jockeys to seek help. Indeed, Breslin *et al.* (2018) suggest that the term ‘mental fitness’ may be viewed as less stigmatising, whilst being relatable to the athlete with a focus on fitness.

Second, bespoke MHL programmes, specific to jockeys, appear a potential avenue to help address a number of the barriers (e.g., low MHL; stigma; self-reliance) and facilitators (e.g., education) identified within the study. Of critical importance within these programmes are the accessibility and timely nature in which they are delivered. Jockeys compete across lengthy, unstructured seasons, with very little time off in a calendar year as highlighted in Study One. Thus, programmes should be short in length which may facilitate participation from jockeys. Previous research has reported on the beneficial effects of shorter MHL in sporting environments (Hurley *et al.*, 2018; Liddle *et al.*, 2019). Content included in the programme might focus on the unique and nuanced challenges jockeys face throughout their careers (e.g., Landolt *et al.*, 2017; Study One) whilst also integrating important generic MHL information (e.g., symptoms of depression/anxiety). For jockeys, such unique challenges may include emotional responses to injury, involuntary retirement, and managing a heavy workload as an athlete, amongst others. These considerations are critical for practitioners given

recent findings that the most successful MHL interventions are tailored to specific populations (Brijnath *et al.*, 2016).

Third, improving the relationships and team dynamics of jockey support services may serve as a useful method of minimising the barriers and maximising facilitators to help-seeking among jockeys. In Ireland, the Jockey Pathway functions as an interdisciplinary team (sport psychology, nutrition, physiotherapy, strength and conditioning) designed to deliver sport science services to jockeys. However, often interdisciplinary teams work in silos, supporting only one part of the athlete (Fletcher *et al.*, 2017). Integrating an effective community of practice within the support staff network may function as a potential solution. Communities of practice are underpinned by four key characteristics in which members interact with one another in formal and informal settings, share knowledge, collaborate to create and share new knowledge, and promote a shared identity between group members (Li *et al.*, 2009). Improving communication and integration between the support team may help enhance the precision and depth of case formulation, increase early recognition of symptoms of CMDs and promote further referral to mental health support services for jockeys if required (Buran *et al.*, 2019). Moreover, the visibility of Jockey Pathway services should be magnified. Jockeys in the present study discussed close relationships with medical officers as a facilitator to help-seeking, therefore increasing contact between Jockey Pathway team and jockeys appears a logical step. This could be achieved via the interdisciplinary team attending racecourses throughout the season to increase familiarity between support staff and jockeys.

**6 Chapter Six - Mental Health Literacy, Stigma and
Attitudes towards Help-Seeking within Irish Jockeys**

6.1 Preface

The previous chapter identified multiple factors that may influence a jockeys attitudes towards help-seeking. Two of the most significant constructs elicited within Study Three and within the wider athlete help-seeking literature (Barnard, 2016; Castaldelli-Maia *et al.*, 2019; Gulliver *et al.*, 2012a; Kola-Palmer *et al.*, 2020; Wood *et al.*, 2017), are mental health literacy (MHL) and stigma. As such, the present chapter examined the relationships between MHL, stigma, and attitudes towards help-seeking.

6.2 Introduction

Emergent research has indicated that most jockeys do not seek help for CMDs, concerning given recent evidence in Study Two and the work of Losty *et al.* (2019) which suggests that symptoms of CMDs may be greater amongst the jockey population in comparison to other elite athletes. Study Two highlighted a prevalence of symptoms associated with adverse alcohol use (61%), depression (35%), generalised anxiety (27%), and psychological distress (19%) in a sample of 84 jockeys. Losty *et al.* (2019) highlighted a prevalence of depression (57%), perceived stress (52%), social phobia (38%), distress (36%), and generalised anxiety (21%) (Losty *et al.*, 2019). Study Two also found that although 80% of jockeys met the threshold for a CMD, only 33% had previously sought help from a mental health professional (Study Two, Table 4.2). Excluding the services of sport psychology consultants, this figure may be considerably lower. Jockeys may be reluctant to seek help for a number of reasons. In Study Three, qualitative inquiry identified factors related to the negative perceptions of others, with fears around stigma (public and self), and how seeking help may result in less competitive rides. The cultural norms associated with the sport, dominated by masculinity, also appeared to serve as key barriers. Thus, help-seeking appears

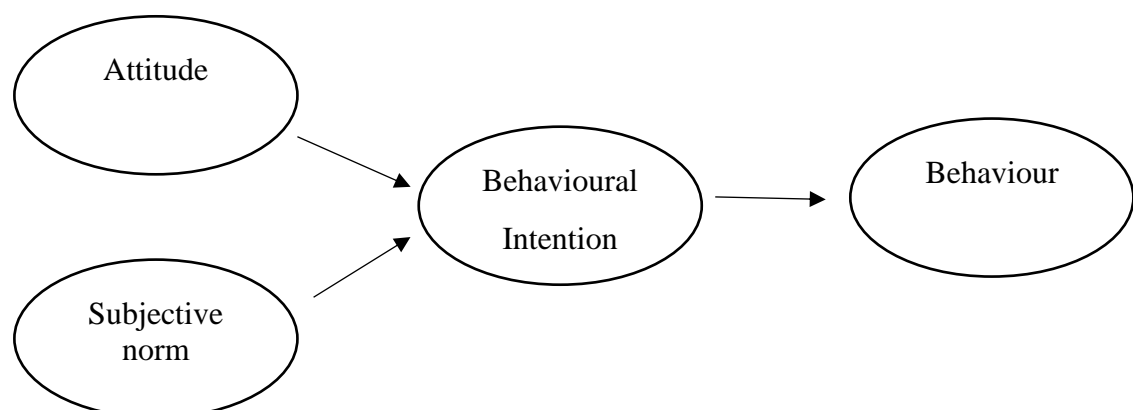
antithetical to such norms given its associations with emotional openness and vulnerability (Addis & Mahalik, 2003). Indeed, perhaps indicative of the masculine culture and the need to appear strong, a recent study examining jockeys attitudes towards concussion reporting found that many jockeys may not report concussions for fear of being perceived as weak (O'Connor *et al.*, 2018b). Lastly, low levels of MHL were identified, which included a minimisation of CMDs, negative perceptions of treatment, and difficulty recognising symptoms. To date, no studies have assessed the relationships between specific barriers towards help-seeking (e.g., stigma, MHL) and attitudes towards help-seeking among professional jockeys. One theory used to explore help-seeking for CMDs is the theory of reasoned action (TRA) (Fishbein & Azjen, 1975).

6.2.1 Theory of Reasoned Action

The TRA (Figure 6.1; Fishbein & Azjen, 1975) has provided a framework in the exploration of health-related behaviour areas such as smoking, alcohol abuse, condom use and HIV, amongst others (Taylor *et al.*, 2006). The TRA proposes that an individual's attitudes and subjective norms contribute to the likelihood of an individual performing a specific behaviour.

Figure 6.2

Theory of Reasoned Action



The model postulates that humans make rational decisions, using the resources and information available to them, to consider whether to engage or not in a behaviour. In this model, attitudes are framed by personal and social concepts. Personal elements refer to the actual belief held by the individual, whereas the social concept, coined as subjective norms, relate to the perceived perception of others (e.g., family, friend, partner) towards a specific behaviour. Attitude has been defined as a “learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object” (Fishbein & Azjen, 1975, p.6). Previous research has found that attitudes towards help-seeking are a key predictor of help-seeking intentions (Azjen & Fishbein, 1980), where help-seeking intentions are one of the most important predictors of actual behaviour, and as such are often used as an outcome variable in studies exploring help-seeking (e.g., Cheng *et al.*, 2018; Jung *et al.*, 2017; Mackenzie *et al.*, 2006; Mojtabai *et al.*, 2016; Nam *et al.*, 2010; Schnyder *et al.*, 2017). Researchers found that the strongest predictor of help-seeking intentions were attitudes towards help-seeking ($r = .46$) (Li *et al.*, 2014). Therefore, improving help-seeking attitudes can be considered an important component of increasing behavioural intention and actual behaviour.

The TRA framework has recently been applied in a sporting domain with a study exploring the associations between demographic and psychological predictors of mental health stigma amongst a sample ($n = 471$) of club level athletes (Breslin *et al.*, 2019a). Attitudinal (knowledge of mental-health related stigma amongst the general population; familiarity/recognition of multiple mental illnesses), subjective norms (individual’s level of exposure of socialising or engaging with those with a mental illness), and demographic variables (gender; age; sport; training) were assessed. These variables and their associations were tested for relationships with intentions to mix with

people with a mental health problem. The findings highlighted that level of mental health knowledge predicted intentions to mix with those with a mental illness, therefore increasing athletes level of knowledge regarding mental illness conditions may help reduce stigma within this population (Jorm, 2000). Exposure to mental illness positively predicted intentions to engage with individuals with a mental illness, supporting previous research that highlighted the impact exposure may have on stigmatising attitudes (Griffiths *et al.*, 2008). Type of sport played by the athletes produced a significant relationship with intentions to mix with people with a mental illness. The authors suggest that the greater degree of acceptance displayed by team sport athletes over individual sport athletes demonstrates the presence of sport-specific cultural norms, with team sport athletes more likely to seek help for mental health concerns (Breslin *et al.*, 2019a). This is contrary to previous research, where perceptions of team-mates has been viewed as a barrier to seeking help (López & Levy, 2013). The study was one of the first to utilise the TRA in a sport setting, with findings highlighting the usefulness of applying theory-based models to mental health research in sport.

6.2.2 Examining Relationships with Attitudes towards Help-Seeking

A multitude of factors have been linked to help-seeking attitudes including MHL (Cheng *et al.*, 2018; Gulliver *et al.*, 2012a; Jung *et al.*, 2017; Kola-Palmer *et al.*, 2020), stigma (Castaldelli-Maia *et al.*, 2019; Clement *et al.*, 2015; Mendoza *et al.*, 2015; Nam *et al.*, 2010, 2013), current levels of psychological distress (Obasi & Leong, 2009) and previous help-seeking history (Chang, 2008; Kilinc & Granello, 2003). However, to date, research exploring the relationship between these factors and help-seeking attitudes has yet to be conducted among the jockey population.

6.2.2.1 Mental Health Literacy

MHL relates to the “knowledge and beliefs about mental disorders which aid their recognition, management, or prevention” (Jorm *et al.*, 1997, p 183). Within the TRA, behavioural beliefs are an important component which contribute to the general attitudes towards help-seeking, therefore aligns with MHL. The concept consists of multiple components, including: a) ability to recognise symptoms associated with CMDs; b) knowledge and understanding of risk factors and causes of CMDs; c) an understanding of both self-help and professional help sources; d) attitudes which encourage recognition of CMDs and help-seeking; e) knowledge of how to seek mental health information; and, f) knowledge of first aid skills to assist others experiencing CMDs (Jorm, 2012). Knowledge related to mental illness, including the causes related to mental illness, are associated with help-seeking for CMDs (Gulliver *et al.*, 2010). Greater positive attitudes towards help-seeking for CMDs are found when individuals believe that mental health treatment is helpful and effective (Givens *et al.*, 2007; Gonzalez *et al.*, 2011; Jang *et al.*, 2011; Jung *et al.*, 2017). Among athletes, improving MHL has been suggested as a mechanism to improve help-seeking attitudes and behaviours (Bu *et al.*, 2020; Henriksen *et al.*, 2019; Kola-Palmer *et al.*, 2020; Wood *et al.*, 2017). Conversely, low levels of MHL have been identified as a key barrier in accessing professional support services in the athletic population (Castaldelli-Maia *et al.*, 2019; Gouttebarga *et al.*, 2019; Gulliver *et al.*, 2012a; Wood *et al.*, 2017).

6.2.2.2 Stigma

Stigma has been reported as one of the most significant barriers to accessing support from professional services for CMDs (Clement *et al.*, 2015; Gulliver *et al.*, 2010). Within the TRA, stigma aligns with the subjective norm component of the

framework, given stigmas' emphasis on the perceptions of approval or disapproval of a particular behaviour (e.g., help-seeking). Public stigma is related to the general population's perceptions that those seeking help for CMDs are viewed negatively, undesirable or socially unacceptable (Vogel *et al.*, 2014). Indeed, the broad nature of public stigma can cause specific groups (e.g., those seeking help for CMDs) to experience stereotyping, discrimination, and prejudice (Corrigan, 2004). Self-stigma is related to the internalisation of public stigma, such as an individual feeling ashamed for experiencing a CMDs or seeking help from professional psychological support services, which can reduce an individual's self-esteem and/or self-worth (Corrigan *et al.*, 2006). Multiple studies have reported that self-stigma negatively predicts attitudes towards help-seeking (Cheng *et al.*, 2018; Jung *et al.*, 2017; Topkaya, 2014; Vogel *et al.*, 2007, 2011).

6.2.3 Exploring the Relationships between Mental Health Literacy, Stigma, and Attitudes towards Help-Seeking

The TRA proposed that an individual's beliefs and subjective norms influence attitudes towards performing a specific behaviour (Fishbein & Azjen, 1975). Thus, one's beliefs (e.g., MHL), and one's subjective norms (e.g., stigma) may play a role in an individual's attitudes towards help-seeking. Jung *et al.* (2017) were one of the first to explore the relationship between personal stigma, self-stigma, and attitudes towards help-seeking. The general population study found a statistically significant direct effect between MHL and attitudes towards help-seeking ($\beta = .62$), although self-stigma and personal stigma did not mediate the relationship between MHL and attitudes towards help-seeking. Partial mediation was found between MHL and self-stigma ($\beta = .11$) which suggested that the greater an individual's MHL, the lower an individual would report self-stigmatising beliefs ($p > .05$). Nevertheless, the study employed a single-

item measure to examine self-stigma, therefore it is possible that the true essence of the construct was not captured. Kim *et al.* (2020) also reported a significant direct effect between MHL and attitudes towards help-seeking ($\beta = .23, p < .05$) among a sample of Korean students. Moreover, MHL was negatively associated with self-stigma ($\beta = -.43, p < .05$). The study also found a full mediated effect between MHL and attitudes towards help-seeking through self-stigma. Further studies exploring the relationship between these variables is required. Although MHL is reported to significantly predict help-seeking attitudes, self-stigma may reduce the influence of this effect through feelings of shame or embarrassment towards help-seeking.

6.2.3.1 The Influence of Current Levels of Psychological Distress and Previous Help-Seeking History on Attitudes towards Help-Seeking

Current levels of psychological distress may influence help-seeking attitudes although findings are mixed. Greater levels of psychological distress have predicted more positive help-seeking attitudes (Cepeda-Benito & Short, 1998), however negative associations between psychological distress and help-seeking attitudes have also been observed (Obasi & Leong, 2009). Moreover, previous research has identified a relationship between previous help-seeking history and attitudes towards help-seeking (Cheng *et al.*, 2018). Individuals who have previously sought help from professionals such as a psychologist, psychiatrist, or a counsellor are likely to have more positive attitudes towards help-seeking (Fischer & Farina, 1995; Fischer & Turner, 1970). Previous research highlighted the importance of using co-variables when exploring attitudes towards help-seeking to provide clarity on the unique influence on the primary variables (Cheng *et al.*, 2018; Yee *et al.*, 2020).

6.3 The Present Study

Multiple athlete mental health review articles have demonstrated that stigma and MHL are two significant barriers to help-seeking for elite athletes (Castaldelli-Maia *et al.*, 2019; Gouttebarga *et al.*, 2019; Rice *et al.*, 2016). Recently, individual studies amongst elite athletes have also highlighted the importance of stigma and MHL and its role in help-seeking for CMDs (Åkesdotter *et al.*, 2020; Kola-Palmer *et al.*, 2020; Wood *et al.*, 2017). Further, Study Three indicated that MHL and stigma may serve as significant barriers to help-seeking for jockeys, yet the relationship between these variables has yet to be quantitatively assessed amongst jockeys. Identifying the relationships between help-seeking related variables may help stakeholders and practitioners minimise barriers to help-seeking for jockeys, but also to inform support programmes designed to improve help-seeking attitudes. Therefore, the aim of the present study was to explore the relationships between MHL and stigma on attitudes towards help-seeking among professional jockeys underpinned by the TRA. The hypothesis for this aim was that MHL and stigma would significantly predict attitudes towards help-seeking above and beyond control variables. Secondary aims of the study were to: a) examine individual differences between jockey license type (flat professional, flat apprentice, national hunt professional, national hunt conditional) and attitudes towards help-seeking, MHL, and stigma; and b) to determine the most significant barriers to help-seeking for CMDs among jockeys. The secondary aims are exploratory in nature so no a-priori hypothesis was set.

6.4 Methods

6.4.1 Study Design

A cross-sectional study design was implemented and data were collected from 119 jockeys through questionnaire completion. Questionnaires were omitted from data analysis if they included 50% or less of descriptive statistics and outcome variables (Gouttebarga *et al.*, 2015a). Thus, 32 jockeys were removed from data analysis which resulted in a total sample of 87 jockeys (response rate = 54%).

6.4.2 Procedures

All licenced professional jockeys in Ireland ($n = 162$) were invited to complete an anonymous and confidential online survey hosted on SurveyMonkey, which took between 10-15 minutes to complete. Participants were recruited via social media adverts, text messages sent to jockeys via the sport's governing body (Irish Horseracing Regulatory Board), and the use of a gatekeeper at the racetrack in the form of a Senior Medical Officer who promoted the study. Reminders were sent to jockeys via text message at two and four week intervals. Jockeys provided informed consent and upon completion of the questionnaire, information to various mental health charity helplines (e.g., Aware, Pieta House) and industry specific support programmes were outlined. The study was approved by the Waterford Institute of Technology Research Ethics Committee (REF: WIT2020REC0006). Prior to completing the questionnaire, participants read a participant information sheet and provided informed consent by entering the questionnaire. Full details of the participant information sheet, informed consent form, and the full questionnaire are provided in Appendix K.

6.4.3 Measures

Participants completed a number of measures. Demographic information was collected and included age, gender, jockey license type, highest level of education reached and years competing as a jockey. This was followed by a number of questionnaires, previously used in the literature as described below:

6.4.3.1 Psychological Distress

Psychological distress was assessed via the Kessler psychological distress scale (K10; Kessler *et al.*, 2002). The scale measures anxiety and depressive symptoms over the previous 30 days with scores ranging from 1 (none of the time) to 5 (all of the time). Total scores range from 10-50. Greater scores indicate greater levels of psychological distress. Scores over 22 indicate that the individual may be experiencing psychological distress. The 10-item scale was found to be highly reliable ($\alpha = .94$). The scale can be found in Appendix G, question 39.

6.4.3.2 Previous Treatment History

Previous treatment history was assessed via one question: whether they had previously sought help for a CMD from a mental health professional at any time (yes/no). A mental health professional was defined for participants as at least one of a general practitioner/doctor, psychologist, psychiatrist, or counsellor.

6.4.3.3 Attitudes towards Help-Seeking for CMDs

Attitudes towards help-seeking were measured using the attitudes towards seeking professional psychological help scale – short form (ATSPPH-SF; Fischer & Farina, 1995) (Appendix K, question 13). The scale includes 10 items, measured via a 4-point Likert scale ranging from 0 (disagree) to 3 (agree). Items 2, 4, 8, 9, and 10 are

reverse scored. Scores range from 0-30, where greater scores indicated more positive attitudes towards seeking professional psychological help. The scale was found to be of acceptable reliability ($\alpha = .75$).

6.4.3.4 Mental Health Literacy

MHL was measured using the MHL scale (MHLS; O'Connor & Casey, 2015) (Appendix K, question 14). The scale assesses the recognition of CMDs, help-seeking knowledge, understanding of risk factors and causes of mental health disorders, knowledge of professional treatment for mental health disorders, and general attitudes towards the promotion of mental health and help-seeking. Scores range from 35-160, with greater scores indicative of greater levels of MHL. Previous research has found the MHLS to have good internal consistency (Cronbach alpha = 0.873) and test-retest reliability ($r = .797$, $p < .001$) (O'Connor & Casey, 2015). For the present study, questions 9 and 10 were altered to include "Ireland", instead of "Australia". The 35-item scale had good reliability ($\alpha = .85$).

6.4.3.5 Self-Stigma

Self-stigma was measured using the self-stigma of seeking help scale (SSOSH; Vogel *et al.*, 2006) (Appendix K, question 15). The 10-item scale implements a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Scores ranged from 10-50. Greater scores indicated greater levels of self-stigma. Items 2, 4, 5, 7 and 9 are reverse scored. Cronbach's alpha showed the questionnaire to reach good reliability ($\alpha = .84$).

6.4.3.6 Public Stigma

Public stigma was assessed via the perception of stigmatisation by others for seeking help scale (PSOSH; Vogel *et al.*, 2009) (Appendix K, question 16). The scale measures anticipated perceptions of stigma from those that the individual interacts with. Scores range from 5-25 with greater scores indicative of greater levels of public stigma. The 5-item scale reported good reliability ($\alpha = .86$).

6.4.3.7 Barriers to Help-Seeking

A barriers to help-seeking among jockeys list (Appendix K, question 17) was developed via examination of the findings from Study Three and previous literature (e.g., Gulliver *et al.*, 2012a; L6pez & Levy, 2013). Each barrier was assessed via a 5-point Likert scale ranging from not at all (1) to very much so (5), where higher scores indicated a greater barrier towards help-seeking.

6.4.4 Data Analysis

Data were analysed via SPSS 24. Data were screened visually to assess for missing cases, normality, and outliers. Attitudes towards help-seeking, public stigma, and self-stigma were non-normally distributed. MHL scores were normally distributed. Thus, parametric (one-way ANOVA; independent samples t-test) and non-parametric tests were employed (Kruskal-Wallis; Mann-Whitney U) to compare differences between groups in the study. Prior to conducting a hierarchical multiple regression, assumptions associated with the statistical analysis were tested. No multicollinearity was observed between independent variables, with tolerance ranges (0.56 - 0.99) and variance inflation factor (VIF; 1.00 - 1.77) figures within accepted limits. Examinations of residuals and scatterplots highlighted that assumptions of normality, linearity and

homoscedasticity were satisfied. Statistical significance for the hierarchical multiple regression model was set at an adjusted p value of 0.01 after the application of the Bonferroni correction technique. An a priori power analysis conducted using G*Power3 (Faul *et al.*, 2007) indicated that to detect a medium effect size ($f^2 = .15$), an alpha of .05, and a power of .80, a minimum sample size of 78 participants was required. Thus, a two-step hierarchical multiple regression model was conducted with attitudes towards seeking psychological help as the dependent variable. In step one, previous help-seeking from a mental health professional (no/yes) and current levels of psychological distress (continuous) were entered as control variables (Cheng *et al.*, 2018). In step two, MHL, public stigma and self-stigma were entered to explore whether these variables predicted attitudes towards help-seeking over control variables. Next, a mediation analysis was conducted via the PROCESS macro (Hayes, 2013) to further explore the relationship between MHL, stigma, and attitudes towards help-seeking for CMDs. Previous help-seeking history and current levels of psychological distress were controlled for in the model.

6.5 Results

Descriptive data for participants are reported in Table 6.1. Participants were predominantly male (94%) and had competed professionally for 8.6 years ($SD = 7.6$). Thirty-seven percent of participants had experienced or were currently experiencing a CMD based on a self or professional diagnosis. One quarter (26%) of participants had previously sought help at any time from a mental health professional. Almost 70% of participants knew of an individual who had previously sought support from a mental health professional. Thirty-one per cent of participants met the threshold indicative of psychological distress (scores above 22). The following sub-section also examined each variable and their differences in relation to jockey license type.

Table 6.1*Participant Demographic Information*

	Total
Total number of participants,	87
Jockey response rate (%)	54
Age in years, M (SD)	26.1 (7.3)
Gender, n (%)	
Male	82 (94)
Female	5 (6)
License type, n (%)	
Flat Professional ^a	20 (23)
Flat Apprentice ^b	23 (26.4)
National Hunt Professional ^c	22 (25.3)
National Hunt Conditional ^d	22 (25.3)
Highest level of education reached, n (%)	
Primary school	4 (5)
Junior certificate	43 (49)
Leaving certificate	32 (36)
Third level education	5 (5)
Other	4 (5)
Number of years as a professional jockey, M (SD)	8.58 (7.6)
Range	1 - 35
Currently experiencing or previously experienced a mental health difficulty (self or professional diagnosis), n (%)	32 (37)

^a Flat professional jockeys compete in races between 1km and 4.8km with no obstacles; ^b Flat apprentice jockeys are newly licenced, inexperienced flat jockeys, competing with a weight allowance, required to win a certain number of races (95) before classification as a flat professional; ^c National hunt professional jockeys compete in races between 3.2km and 6.9km jump over obstacles, described as either hurdles or fences ^d National hunt conditional jockeys are newly licenced, inexperienced national hunt jockeys, required to win a certain number of races (95) and compete with a weight allowance, before classification as a national hunt professional. Data expressed as Mean \pm SD

6.5.1 Individual Differences between Jockey License Type and Variables

No statistically significant differences were observed between jockey license type and attitudes towards help-seeking, MHL, self-stigma of seeking psychological

help, and public stigma of seeking psychological help. See Table 6.2 for further breakdown of means and standard deviations for each license type and the variables assessed.

Table 6.2

Means and Standard Deviations for Each License Type and the Variables Assessed

	Total sample (<i>n</i> = 87)	Flat professional (<i>n</i> = 20)	Flat apprentice (<i>n</i> = 23)	National professional (<i>n</i> = 22)	Hunt conditional (<i>n</i> = 22)
	M±SD	M±SD	M±SD	M±SD	M±SD
Attitudes	21.06 ± 5.31	21.75 ± 5.99	19.65 ± 5.07	20.95 ± 5.34	21.95 ± 5.01
MHL	121.43 ± 13.09	119.15 ± 13.65	120.69 ± 16.35	121.59 ± 10.84	125.00 ± 10.31
SS	25.47 ± 5.95	26.00 ± 6.79	25.56 ± 5.10	24.17 ± 6.62	26.22 ± 5.44
PS	9.62 ± 4.09	9.70 ± 3.45	10.60 ± 5.05	8.31 ± 3.46	9.81 ± 4.04

Abbreviations: Attitudes (attitudes towards help-seeking); MHL (mental health literacy); SS (Self-stigma of seeking psychological help); PS (Public stigma of seeking psychological help)

6.5.2 The Relationships between MHL and Stigma on Attitudes towards Help-Seeking among Jockeys

6.5.2.1 Hierarchical Regression

The hierarchical regression model revealed that at step one, distress and previous help-seeking history at any time contributed significantly to the regression model ($R = .36$, $F = 6.38$, $p = .003$, $R^2 = .13$), and accounted for 13% of the variation in attitudes towards seeking psychological help (Table 6.3). In step two, the introduction of MHL, self-stigma and public stigma explained an additional 31% of variance (44% total) in attitudes towards seeking psychological help. MHL and self-stigma were significant predictors in the final model ($p < .001$). The final model was statistically significant ($R_{\text{model}2} = .66$, $F_{\text{change}}(3, 81) = 14.59$, $p = .000$, $R^2_{\text{change}} = .31$).

Table 6.3*Summary of Hierarchical Regression Analyses Examining Attitudes Towards Help-Seeking*

Independent variables	<i>R</i>²	<i>ΔR</i>²	<i>R</i>² <i>change</i>	<i>F change</i>	<i>B</i>	<i>p</i>
<i>Step 1 Control variables</i>	.13	.11	.13	6.38		.003
Distress					-.23	.001
Previous help-seeking history at any time					1.43	.254
<i>Step 2 Predictors</i>	.44	.40	.31	14.59		.000
MHL					.15	.000
Self-stigma					-.28	.006
Public stigma					-.02	.896

6.5.2.2 Mediation Analysis

Given the findings reported in the hierarchical regression, a mediation analysis was conducted to further explore the relationship between MHL, self-stigma, and attitudes towards help-seeking. As the association between public stigma and attitudes towards help-seeking was not significant, public stigma was not included in the model. Previous help-seeking history and current levels of psychological distress were controlled for in the model. Previous research has identified effects between MHL and attitudes towards help-seeking, and MHL and stigma (Cheng *et al.*, 2018; Kim *et al.*, 2020). Using the PROCESS macro (Hayes, 2013), the predictor variable of attitudes towards help-seeking and the mediator variable of self-stigma were regressed on to the dependent variable of attitudes towards help-seeking. A 95% bias-corrected confidence interval based on 5,000 bootstrap samples indicated a partial mediation between MHL and attitudes towards help-seeking, through self-stigma (Figure 6.2). A significant indirect effect (ab path) from MHL to self-stigma to attitudes towards help-seeking was

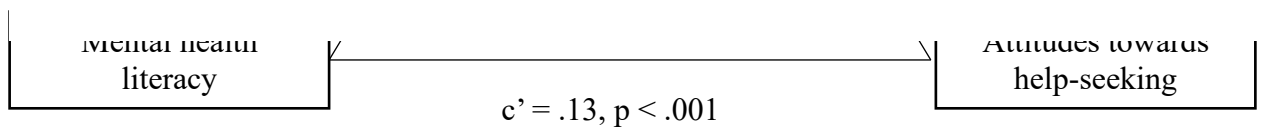
demonstrated: = *effect bias corrected* .057, 95% CI [.020 – .098]. Statistical significance was met as the confidence interval did not cross zero. The direct effect (c' path) from MHL to attitudes towards help-seeking remained significant with the indirect path in the model: $b = .133$, $t(82) = 3.453$, $p < .01$.

Figure 6.5

Mediation Model of the Relationship between MHL, Self-Stigma, and Attitudes towards Help-Seeking for CMDs among Professional Jockeys.

Figure 6.6

Mediation Model of the Relationship between MHL, Self-Stigma, and Attitudes towards Help-Seeking for CMDs among Professional Jockeys.



6.5.3 Barriers

Participants reported the most significant barrier to help-seeking included fear of owners and/or trainers finding out they were seeking professional psychological support ($M = 2.52$, $SD = 1.21$), a limited time to engage with support services ($M = 2.36$, $SD = 1.30$), and difficulty understanding when support from a mental health professional is required ($M = 2.34$, $SD = 1.14$). Table 6.4 highlights the mean scores for the barriers assessed.

Table 6.4

Barriers to Accessing Professional Psychological Support Services among Professional Jockeys

Rank	Barrier	Mean	SD
1	Fear of owners and/or trainers finding out	2.52	1.21
2	Limited time to engage in services	2.36	1.30
3	Difficulty understanding when support from a mental health professional is required	2.34	1.14
4	Fear of being perceived as weak	2.08	0.94
5	Uncertainty around what treatment from a mental health professional looks like	2.03	1.14
6	A social stigma of being viewed negatively for accessing mental health services	2.01	0.89
7	Lack of confidentiality	1.99	0.99
8	Concerns about how much support would cost	1.81	1.16
9	Not knowing where to get help	1.67	1.03

6.6 Discussion

The current study is the first to explore attitudes towards help-seeking among professional jockeys via an adapted version of the TRA. The findings support the TRA where beliefs (MHL) and subjective norms (public stigma and self-stigma) predicted attitudes towards the behaviour (attitudes towards help-seeking) over control variables (psychological distress and previous help-seeking history). In fact, the inclusion of MHL and stigma accounted for an additional 31% of variance (44% total) in attitudes towards help-seeking. With regards to MHL, our findings indicated that jockeys with greater MHL reported more positive attitudes towards help-seeking, whereas jockeys with greater levels of self-stigma were likely to report more negative attitudes towards help-seeking. Public stigma did not uniquely contribute to the variance in attitudes towards help-seeking. No significant differences were identified between license types and the variables assessed. Key barriers to help-seeking included the fear of owners and

trainers finding out jockeys were seeking help for CMDs, limited time to engage with professional services, and difficulty understanding when support from a professional was required.

A direct association between MHL and attitudes towards help-seeking ($r = .19$, $p < .001$) was reported which is in line with other research suggesting greater levels of MHL result in more positive attitudes towards help-seeking (Cheng *et al.*, 2018). Moreover, MHL and attitudes towards help-seeking was partially mediated by self-stigma. MHL was negatively associated with self-stigma ($r = -.19$, $p < .001$), whilst self-stigma was negatively associated with attitudes towards help-seeking ($r = -.30$, $p < .005$). In other words, less mental health knowledge (MHL) was related to the shame and embarrassment in relation to seeking psychological help (self-stigma), which resulted in more negative attitudes towards help-seeking. Among the general population, previous research exploring the relationship of self-stigma on MHL and attitudes towards help-seeking is inconsistent. Kim *et al.* (2020) reported a full mediated effect of self-stigma on MHL and attitudes towards help-seeking whereas a study by Jung *et al.* (2017) reported no direct or indirect effects of self-stigma on MHL and attitudes towards help-seeking.

Such inconsistencies in the relationship between MHL and attitudes via self-stigma (and the partial mediation highlighted in the present study) may be attributed to the multifaceted nature of stigma, as well as other mediating factors such as self-compassion, social support, and demographic variables (e.g., age, gender, education) (Griffiths *et al.*, 2008; Heath *et al.*, 2018; Talebi *et al.*, 2016). Athletic identity may also be a mediating factor, with higher levels of athletic identity associated with greater levels of stigma towards seeking help for CMDs (Steinfeldt *et al.*, 2009). Although no studies have explicitly examined athletic identity among jockeys, it may be that high

levels of athletic identity are prevalent. Previous research has reported that jockeys are ultra-committed to their sport, with a career as a jockey tied closely to their athletic identity (McGuane *et al.*, 2019). Many aspects of a jockey's career contribute to such ultra-commitment, such as weight management and the constant necessity to ride at low weights, all year round, with no off-season, arguably one of the most prominent examples. Social relationships for jockeys are often limited to those also working within the racing industry and there are few opportunities to take time away from the sport (Landolt *et al.*, 2017). Jockeys may also specialise in the sport from an early age. Early sport specialisation can be described as participating in one sport, for greater than eight months per year, and quitting other sports to focus on one specific sport (Myer *et al.*, 2015). Lastly, due to the high time commitment associated with a career as a jockey, this may result in a lack of dual career development (e.g., combining an athletic career and education or other work). These factors can contribute to an individual limiting their experiences of other activities and the development of social relationships, facilitating a unidimensional identity (Coakley, 1992; Wiersma, 2000). Further research examining the athletic identity construct among jockeys is therefore required.

Public stigma did not uniquely predict attitudes towards help-seeking in the regression analysis. That is, the perceptions of others towards seeking psychological help did not contribute to the variance in attitudes towards seeking help for jockeys. This is consistent with other findings that suggests self-stigma, not public stigma, may be of greater importance to reduce if attempting to enhance an individual's attitudes towards help-seeking (Topkaya, 2014). Changing levels of public stigma is likely to be a greater challenge than reducing self-stigma given public stigma is representative of the wider society's views of help-seeking. On the other hand, self-stigma can be altered at the individual level with mental health professionals or programmes normalising the

help-seeking process and giving an explanation for an individual's symptoms of CMDs (Schreiber & Hartrick, 2002; Vogel *et al.*, 2007). The result does however contradict the fact that jockeys self-reported the fear of racehorse trainers and/or owners finding out they were seeking help as the most significant barrier to help-seeking ($M = 2.52$). Study Three also highlighted that jockeys illustrated concerns around help-seeking for fear of losing rides and the negative impact help-seeking may have on their athletic career.

The findings may be indicative of the questionnaire used to assess public stigma. The scale used within the study (PSOSH) assessed the perceptions of stigma by others within an individual's social network towards help-seeking (e.g., to what degree do you think the people you interact with would react negatively to you if you sought help?). Jockeys may not have perceived trainers to be an integral part of their social network, and the public stigma scores may be more reflective of traditional social support networks (e.g., family; friends). Thus, in future, studies should specify individuals within the questionnaire separately (e.g., to what degree do think your parents/close friends/racehorse trainer would react negatively to you if you sought help?). Jockeys also often work with multiple racehorse trainers, therefore it is possible that they perceive public stigma for seeking help greater from some trainers in comparison to others. Lastly, this finding represents a possible avenue to collaborate with jockeys and racehorse trainers and owners in examining misperceptions of stigma. For instance, in the military, one of the key barriers to help-seeking is the perception that military members view those who seek help as weak, yet findings reported that 88% of military members would not perceive an individual as weak if they sought help (Kulesza *et al.*, 2015). If similar information was found within the racing industry, it may begin to reduce the perceived stigma reported by jockeys in relation to help-seeking.

Whilst MHL in the jockey population was comparable to studies examining university students ($M = 122.88 - 123.50$; Gorczynski *et al.*, 2017b, 2020b), it appears lower than student-athletes post-MHL intervention ($M = 133.45$; Chow *et al.*, 2020). From a practical perspective, programmes designed to improve jockeys MHL, whilst also attempting to reduce self-stigma, such as normalising help-seeking, and dispelling myths associated with help-seeking (e.g., shame, embarrassment, weakness), appear a potential avenue for future research and thereby providing an evidenced based approach to such interventions. A recent meta-analysis reported successful MHL programmes should be structured, bespoke to the specific sample (e.g., jockeys), include an array of activities, experiential learning, and underpinned by an up-to-date evidence base (Brijnath *et al.*, 2016). Addressing contextual and cultural issues within MHL programmes are also key and should be designed by psychologically informed professionals (e.g., sport psychiatrists; sport psychologists; clinical psychologists) (Bu *et al.*, 2020; Gorczynski *et al.*, 2020a). Previous research in Australia identified that 45-minute Mental Health First Aid workshops with adolescents reported significant increases in knowledge and symptoms associated with CMDs, intentions to help a friend who may be experiencing a CMD, and attitudes towards help-seeking in comparison to a waitlist control (Liddle *et al.*, 2019). Similar programmes appear more accessible for jockeys who compete almost 365 days a year and reported that a lack of time was one of the key barriers to accessing professional psychological services in the present study. Nevertheless, MHL interventions within athletic populations are still in their infancy. Whilst early indications suggest positive impacts to help-seeking attitudes and intentions, mental health knowledge, and reduced stigma, further theory-based interventions using validated psychometric measures are needed to develop the research

base and improve applied future recommendations (Breslin *et al.*, 2017; Breslin & Leavey, 2019; Bu *et al.*, 2020).

6.6.1 Limitations

The present study is not without limitations. The study was guided by an adapted version of the TRA where attitudes was employed as an outcome variable. Future research should examine actual help-seeking behaviour to fully explore the relationships between MHL and stigma on help-seeking among jockeys. The study is based on self-report data from jockeys in Ireland and findings may not be generalisable or representative of other jockeys in differing racing jurisdictions. Most of the participants who participated in the study were male. Whilst this reflects the wider jockey population, it is well established that females hold more positive attitudes towards help-seeking and are more likely to seek help if experiencing CMDs (Nam *et al.*, 2013). Thus, further research is required to explore attitudes towards, and predictors of, help-seeking for CMDs among the female jockey population. Cross-sectional data were used, which ensures causality cannot be confirmed between predictors and outcome variables. Longitudinal studies exploring the role of stigma, MHL and attitudes towards help-seeking among jockeys should be encouraged. As highlighted by Cheng *et al.* (2018), increases in MHL over time may reduce self-stigma, which may influence help-seeking attitudes and behaviours. A proportion of jockeys ($n = 32$) failed to complete the online questionnaire, with most participants exiting the questionnaire during the demographic section. Thus, it may be the case that jockeys with more negative attitudes towards help-seeking, or less interest in the research area, failed to complete the questionnaire. However, our findings are largely consistent with previous research. Non-response analysis was not possible due to the anonymous and confidential nature of the online questionnaire.

6.7 Conclusion

To the authors knowledge, this study is the first to explore the relationships between MHL, self-stigma, public stigma on the attitudes towards help-seeking among professional jockeys. A strength of the present study is that over half (54%) all professional jockeys in Ireland participated. Findings indicated that MHL, self-stigma and public stigma uniquely predicted attitudes towards help-seeking above and beyond current levels of psychological distress and previous help-seeking history. Of particular note, greater levels of MHL was positively associated with attitudes towards help-seeking, which suggests that increasing jockeys' MHL and its multiple components, may serve as a method to enhance help-seeking attitudes. Self-stigma was negatively associated with help-seeking attitudes, whereby greater levels of self-stigma was associated with negative attitudes towards help-seeking. The effect of MHL on attitudes towards help-seeking was partially mediated by self-stigma. Addressing self-stigma for seeking psychological help at a personal level, or via campaigns which help normalise seeking help for CMDs are recommended for those working with jockeys or governing bodies under which the jockeys compete. Key barriers to help-seeking for CMDs among jockeys include fear of owners and/or trainers finding out, limited time to engage in services, and difficulty understanding when support from a professional is required.

6.8 Future Research Recommendations

On the basis of the findings from the present study, a number of future research recommendations are proposed. Research exploring associations of, and attitudes to, help-seeking for CMDs among jockeys from other countries would enhance the research area given the established literature of cultural influences on attitudes to help-

seeking and its correlates among general populations. Research may also seek to include other factors that may play a role in the development of attitudes towards help-seeking which includes conformity to masculine norms, the impact of social support, attitudes towards online psychological treatment, and the racehorse trainer-jockey relationship. Moving beyond attitudes, examining actual help-seeking behaviour also represents an important step in the research area, as highlighted by Kola-Palmer *et al.* (2020) in a recent study with a sample of Rugby league players. Lastly, the paucity of qualitative research among the jockey population is striking, thus, interviews or focus groups may harness more detailed information on the variables assessed in the present study and extend the findings presented in Study Three.

7 General Discussion, Summary, Conclusion and Future

Recommendations

7.1 Preface



This thesis aimed to investigate the mental health of jockeys and employed a sequential exploratory mixed-methods approach split into distinct two phases. The first phase consisted of two studies. Study One qualitatively explored the stressors experienced by jockeys throughout their careers using the transactional model of stress as a guiding framework. Study Two examined the prevalence of CMDs and associated risk factors for jockeys in a cross-sectional study. The second phase explored help-seeking among professional jockeys across two studies. Study Three explored barriers and facilitators via semi-structured interviews, whilst Study Four quantitatively examined the relationship between MHL and stigma on attitudes towards help-seeking using the TRA. The four empirical studies provide a detailed, novel insight into the mental health of jockeys, with an emphasis on providing considerations for organisations, governing bodies, researchers, and practitioners working with jockeys. Key findings, strengths, limitations, future recommendations, and applied recommendations are presented in the following sub-sections.

7.2 Main Findings of the Thesis

Athletes are not immune to mental health issues, and awareness of athlete mental health has continued to grow in recent years with widespread recognition from both media and academic outlets. Despite this growing interest, the review within the present thesis identified a dearth of research in relation to jockey mental health, concerning giving preliminary findings which suggested a prevalence of CMD symptoms among jockeys greater than many other elite athlete studies (e.g., Losty *et al.*, 2019).

Figure 7.2

Summary of Key Findings

Study One: Stressors Experienced by Jockeys			
Sample		Professional jockeys (<i>n</i> = 15)	
Overarching themes and sub-themes - Stressors			
Competition	Racing-industry	Interpersonal	Career
Current form	Weight	Trainer	Uncertainty
Pressure	Workload	Other jockey	Opportunities
Horse	Travel demands	Expectations	Transitions
Injury	Injury concerns	Support networks	
Opponents	Suspension	Communication	
Tactical	Facilities		
Race-day	Governing body		
			
Study Two: CMDs and Associated Risk Factors among Jockeys			
Sample		Professional jockeys (<i>n</i> = 84)	
Findings:			
Prevalence		Risk factors	
Adverse alcohol use – 61%		Athlete burnout, career satisfaction and contemplating retirement increased the likelihood of meeting the threshold for anxiety and distress	
Depression – 35%			
Anxiety – 27%			
Psychological distress – 19%			
			
Study Three: Barriers and Facilitators to Help-Seeking among Professional Jockeys			
Qualitative			
Sample		Professional jockeys (<i>n</i> = 12)	
Findings:			
Barriers		Facilitators	
Negative perception of others		Education	
Cultural norms		Social support	
Low MHL		Media campaigns	
Study Four: MHL, Stigma, and Attitudes towards Seeking Psychological Help among Professional Jockeys			
Sample		Professional jockeys (<i>n</i> = 12)	
Findings:			
<ul style="list-style-type: none"> - MHL and stigma predicted attitudes towards help-seeking above and beyond psychological distress and previous help-seeking history - The relationship between MHL and attitudes towards help-seeking was partially mediated by self-stigma - The most significant barrier to help-seeking was the fear of owner/trainer finding out 			

Evidently, further research was needed which the present thesis has attempted to address. The main findings of each study are reported in their respective chapters (Chapters Three – Six), although key contributions are discussed below. An overview of the key findings are also demonstrated in Figure 7.1.

7.3 Study One – Stressors Experienced by Professional Jockeys

Study One sought to address the research objective presented at the outset of the thesis which was to explore the stressors experienced by professional jockeys. The first study of the thesis investigated the stressors experienced by professional jockeys throughout their careers via a partial representation of the transactional model of stress (Lazarus & Folkman, 1984). In total, four overarching themes (Figures 3.1 to 3.4) were identified and included stressors related to: competition (e.g., current form; pressure; the horse; injury; opponents; tactical; and, race-day); the racing-industry (weight; workload; travel demands; injury concerns; suspension; facilities; and, issues with governing body), interpersonal challenges (trainer; other jockeys; expectations of others; support networks; and, communication); and, career concerns (career uncertainty; career opportunities; and, transitions). The number and variety of stressors reported was vast. Most stressors aligned with those reported by other elite athletes such as the pressure to perform and financial uncertainty (e.g., Sarkar & Fletcher, 2014), however unique stressors were also discussed. This included the horse-jockey relationship and the manner in which the jockey's perceptions of the horse's ability (likelihood to win a race) impacted motivation to make weight or travel to racecourses. Another unique stressor included one jockey witnessing the fatality of a horse during competition. Despite corroboration between jockeys on a number of stressors, not all jockeys reported one specific stressor, indicating the differences in perceptions towards stressors between jockeys in the study. Findings indicated a multitude of potential risk

factors to jockey mental health, and thus, provided a rationale for their inclusion in the next study.

7.4 Study Two – Common Mental Disorders and Associated Risk Factors among Professional Jockeys

Study Two sought to address research objective two which was outlined as: to identify the prevalence of distress, depression, generalised anxiety and adverse alcohol use amongst professional jockeys and to identify potential associations between those CMDs and specific risk-factors. Risk factors for CMDs, identified via the stressors study (Study One) and athlete mental health literature, included athlete burnout, career satisfaction, social support, and the contemplation of retirement. The study sought to obtain a larger sample than previous jockey research (e.g., Losty *et al.*, 2019), which was achieved. Over 50% of the jockey population in Ireland participated in the study ($n = 84$), and findings indicated a prevalence of symptoms associated with CMDs. Almost eight in ten jockeys met the threshold for at least one CMD. Specifically, adverse alcohol use (61%), depression (35%), generalised anxiety (27%), and psychological distress (19%) (Table 4.2). In comparison to other athlete mental health studies using similar validated questionnaires (e.g., Gouttebarga *et al.*, 2019) it appears that jockeys report a greater prevalence of symptoms of CMDs in relation to adverse alcohol use, depression, and distress. For instance, six in ten jockeys met the threshold for adverse alcohol use, considerably greater than a prevalence of 19% amongst all athlete studies (Gouttebarga *et al.*, 2019). Although the total prevalence rate for symptoms of depression was lower in Study Two (35%) than previously reported within the jockey population (57%; Losty *et al.*, 2019), the figure remains significantly greater than reported elsewhere (e.g., Beable *et al.*, 2017; Gulliver *et al.*, 2015). Scores for depression were significantly greater in the study of Losty *et al.* (2019) in comparison

to Study Two ($M = 20$ versus 13), with Losty and colleagues sample reporting a mean value greater than the cut-off score of 16 as determined by the CES-D. A comparable prevalence of generalised anxiety symptoms was identified between Study Two (27%) and Losty *et al.* (2019) (21%), although greater among jockeys in relation to other athlete studies using similar assessment methods (Åkesdotter *et al.*, 2020; Du Preez *et al.*, 2017). Psychological distress prevalence amongst jockeys (19%) was largely comparable to a recent meta-analysis amongst 3335 male and female athletes (20%) across multiple sports (Gouttebarga *et al.*, 2019).

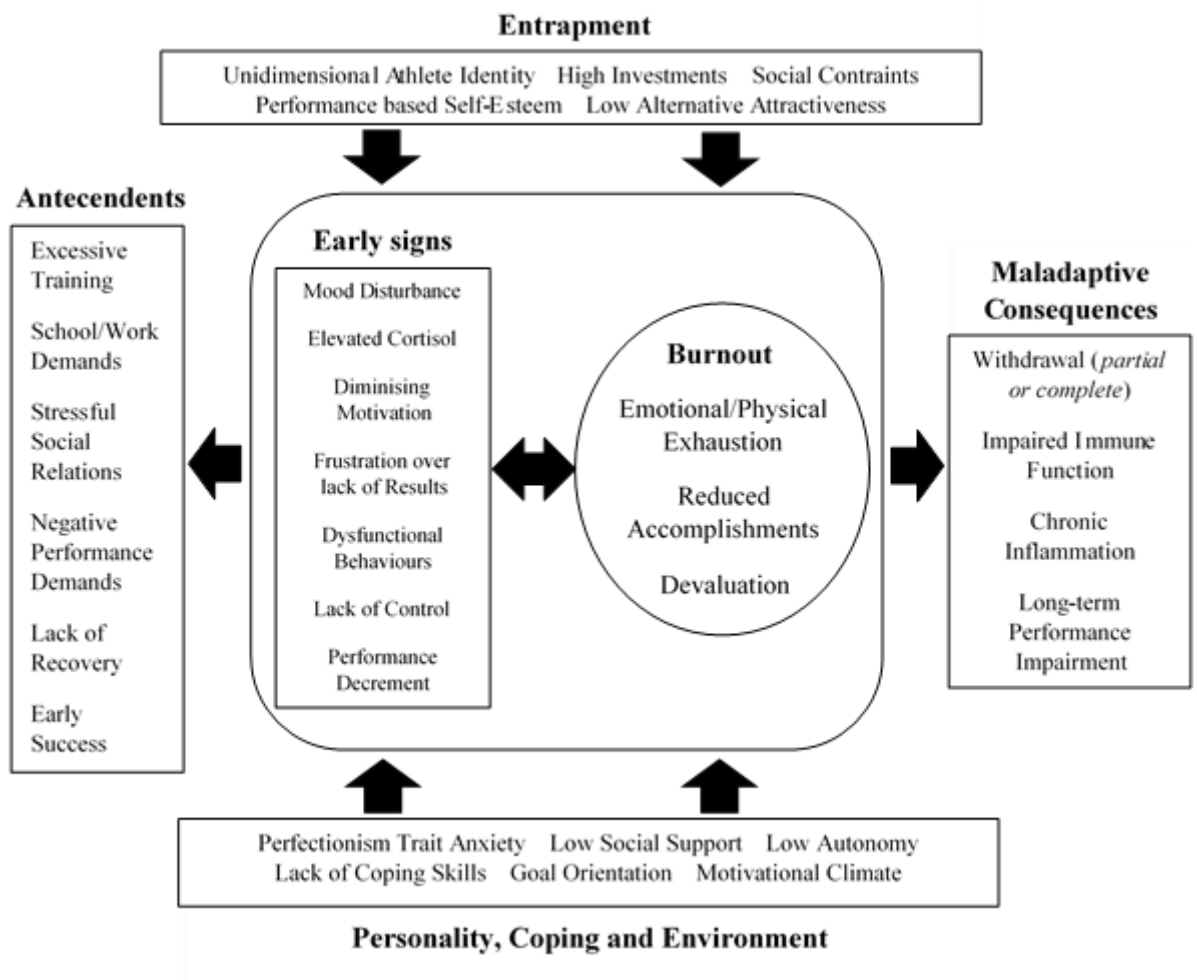
Risk factors were also examined in Study Two (Table 4.3). In total, moderate levels of athlete burnout and social support were reported, 29% of jockeys were classified as dissatisfied with their careers, and 26% of jockeys indicated they were contemplating retirement from the sport within the next 12 months. Athlete burnout, career satisfaction, and the contemplation of retirement were significantly associated with generalised anxiety and psychological distress ($p < .05$).

Athlete burnout. Athlete burnout is a response to chronic stress and consists of emotional exhaustion, devaluation, and a reduced sense of accomplishment (Raedeke & Smith, 2001). In Study Two, jockeys reported moderate levels of athlete burnout, with athlete burnout symptoms increasing the likelihood of meeting the threshold for generalised anxiety and psychological distress between 2.9 and 8 times, per one unit increase on the athlete burnout questionnaire (Raedeke & Smith, 2001) ($p < .05$). Burnout theory has evolved over time from a cognitive-affective model (Smith, 1986) to commitment based models (Raedeke, 1997) although recently an integrated model of athlete burnout (Gustafsson *et al.*, 2011) encompassing all aspects of previous models including antecedents, early signs, and consequences of athlete burnout has been proposed (Figure 7.2). A number of findings presented within Study One and Two

suggests jockeys may be at risk of developing symptoms of athlete burnout due to the requirements of the sport, with potential implications to CMD prevalence. The relentless nature of a career as a jockey that is documented throughout the thesis exposes jockeys to many of the antecedents in Figure 7.2 which includes large work demands, work stress, a unidimensional identity, limited time for recovery due to lengthy protracted seasons whilst maintaining low riding weights, and ultimately a large number of jockeys reporting contemplation of retirement from the sport.

Figure 7.5

Integrated Model of Athlete Burnout (Taken from Gustafsson et al., 2011)



Developing risk profiles (e.g., high and low) based on the interactions between specific variables as conducted in other studies (Granz *et al.*, 2019; Gustafsson *et al.*, 2018) may facilitate early detection of burnout symptoms which could be valuable to practitioners working with jockeys.

Career satisfaction. The findings in Study Two indicated negative associations between career satisfaction and CMDs (generalised anxiety; psychological distress). Our findings are consistent with elite athlete literature that shows career satisfaction, or lack of, as a risk factor for CMDs (Foskett & Longstaff, 2018; Gouttebauge *et al.*, 2015a, 2016b, 2016c, 2017; Rice *et al.*, 2019; Schuring *et al.*, 2017). These associations may be linked to the uncertainty associated with a career as a jockey related to both financial and career uncertainty, as well as career progression concerns as illuminated in Study One although further research is needed. Measuring career satisfaction may be a useful tool to facilitate early identification of symptoms associated with symptoms of CMDs within jockeys. Conversely, seven in ten jockeys a reported satisfaction with their careers, therefore identifying factors that may contribute to such satisfaction is necessary and may help to identify protective factors for CMDs within jockeys. Landolt *et al.* (2017) reported that working with horses may serve as a stress-buffer for jockeys. In another study amongst equestrian athletes (e.g., dressage, show jumping, eventing, polo, horseracing), it was found that engagement in equestrian sports can develop resilience, enhance self-esteem, and enables individuals to experience the unique horse-rider therapeutic relationship (Butler-Coyne *et al.*, 2019).

Contemplating retirement. Athlete retirement is often cited as a potentially stressful and challenging aspect of an athletes career (Park *et al.*, 2013). In Study Two, over one in four jockeys were contemplating retirement from the sport within the next 12 months, with jockeys contemplating retirement between four to seven times more

likely to meet the threshold for generalised anxiety and psychological distress ($p < .05$). Due to the study design employed within the study the direction of this association was not possible to detect. The findings within Study One potentially highlight why jockeys may be considering early retirement from the sport. This includes factors related to the inability to make weight, career dissatisfaction, a lack of success, financial and career uncertainty, as well as difficulty obtaining competitive rides due to the plethora of jockeys in Ireland. The findings add to recent research which suggests uncertainty around retirement may increase susceptibility to a prevalence of symptoms of CMDs (Beable *et al.*, 2017). Supporting jockeys pre-retirement is critical. Jockeys are often engaged in horseracing from a young age and choose to exit the educational system at an early age to focus on the career with only one in ten (highlighted in Table 4.1) and one in seventeen (highlighted in Table 6.1) obtaining third level (university) degrees. Moreover, involuntary retirement is a real possibility for jockeys due to the daily risk of riding racehorses and subsequent injuries. Encouraging jockeys to engage in further education or occupation-specific qualifications via dual career pathways funded by the sport's governing body or jockeys associations may facilitate healthier adjustments upon exiting the sport (Tshube & Feltz, 2015). The benefits of dual career processes include improvements to coping with adversity, allow the athlete to maintain perspective, and potential protective effects to mental health and burnout (Aquilina, 2013; Morris *et al.*, 2021). Notwithstanding, dual careers are challenging for athletes, and may be difficult for jockeys given the hours required to work in the sport outside of race-riding (Kiely *et al.*, 2020), therefore careful consideration of the layout and logistical nature of the qualifications on offer is required.

No significant risk factors were identified for depression and adverse alcohol use. Previous research has identified a plethora of risk factors to depression within elite

athletes (e.g., Wolanin *et al.*, 2015) which may provide insight into the contributory factors associated with a significant proportion of jockeys meeting the threshold for depression in Study Two and the work of Losty *et al.* (2019). Alarming, six in ten jockeys met the threshold for adverse alcohol use based on the AUDIT-C, therefore education on the deleterious effects of alcohol consumption are needed by jockey support staff and organisations. Increasing alcohol breath testing at racetracks may also serve as a deterrent for jockeys, with alcohol testing occurring at only 19 racetracks throughout the course of 2019 (Irish Horseracing Regulatory Board, 2019). Moreover, beyond testing, understanding why such a high prevalence of jockeys met the threshold for adverse alcohol is necessary. Motives may include coping with the demands of the sport or conformity to social norms (Pitts *et al.*, 2019), although further research is needed.

Although almost eight in ten jockeys met the threshold on one of the four CMDs assessed, help-seeking was comparatively low with only a third of jockeys seeking professional help for personal or emotional problems. Such rates of help-seeking may be lower when removing sport psychology as a source of support given jockeys may have accessed support for performance issues, rather than seeking support for mental health concerns. The findings presented in Study Two suggest that support from mental health professionals is inevitable for some jockeys throughout their careers, yet limited data existed on jockeys attitudes towards help-seeking.

7.5 Study Three – Barriers and Facilitators to Help-Seeking for CMDs among Jockeys

Study Three addressed research objective three which was to examine the barriers and facilitators towards help-seeking for CMDs among professional jockeys.

Previous research has identified that most individuals do not seek help for CMDs. Indeed, around only one in four individuals who reported a CMD over a 12-month period had sought professional support in Europe (Alonso *et al.*, 2004). A similar reluctance to seek help has also been reported with elite athlete samples where significant barriers include stigma and MHL (Castaldelli-Maia *et al.*, 2019). Due to the low rates of help-seeking reported by jockeys (33%), relative to the number who met the threshold for any CMD (79%), Study Three examined the barriers to, and facilitators of, help-seeking for CMDs. The study was one of the first to explore barriers and facilitator among the Irish jockey population. Twelve jockeys participated in semi-structured interviews with a number of barriers and facilitators identified.

Barriers to help-seeking for jockeys appeared to be underpinned by three core themes: the negative perception of others (stigma, career implications); the cultural norms of the sport (masculinity, self-reliance); and, low MHL (not knowing where to seek help, minimisation of CMDs, negative perceptions of treatment, recognising symptoms) (Table 5.1).

Negative perceptions of others. Stigma, both public and self, appeared key barriers to help-seeking with jockeys reporting concerns that help-seeking may be viewed as a weakness. Public stigma perceptions arose from jockeys concerns that help-seeking could be viewed negatively within the industry which could have implication to their athletic careers. A primary concern was that jockeys will lose competitive rides with trainers opting to choose individuals not seeking help or experiencing CMDs. Self-stigma for jockeys was also evident with participants reporting feelings of shame, embarrassment, and perceptions of failure for seeking help. The findings corroborate research that has identified stigma as one of the greatest barriers to help-seeking in athletes (Bird *et al.*, 2018; Castaldelli-Maia *et al.*, 2019). Evidently, reducing stigma

appears a potential mechanism in minimising barriers to help-seeking for jockeys. Recently, an intervention study reported significant increases in knowledge and attitudes towards CMDs and help-seeking amongst a sample of college student-athletes (Kern *et al.*, 2017). The intervention consisted of contact and educational components. Future research adopting similar principles within the jockey population may be fruitful, particularly interventions that are brief in nature given the lack of free time available to jockeys.

Cultural norms. The cultural norms embedded within the sport of horseracing also served as barriers to help-seeking for jockeys which included concepts related to masculinity and self-reliance. Masculine characteristics are often prevalent in sport, where an emphasis on strength, toughness, and resilience are celebrated (Hickey, 2008). Thus, to seek help or experience symptoms of CMDs may be viewed as the opposite of such characteristics (e.g., weakness) (Addis & Mahalik, 2003). Previous research has identified negative relationships between conformity to masculine norms/hypermasculinity and willingness to seek professional psychological support in athletes (Delenardo & Terrion, 2014; Jones, 2016; Steinfeldt & Steinfeldt, 2012a). Self-reliance relates to an individual's desire to cope with situations on their own (Jennings *et al.*, 2015). Whilst self-reliant attitudes may not be inherently negative (e.g., coping effectively throughout difficult circumstances), they are potentially problematic. Consequences may include worsened symptoms of CMDs if the individual chooses not to seek professional support (Picco *et al.*, 2018), whilst another study found individuals with a self-reliant attitudes were 50% less likely to access mental health services (Ortega & Alegria, 2002). Jockeys in the present study presented self-reliant attitudes due to comparisons between other areas of a jockey's career. Unlike many other individual and team sport athletes, most jockeys do not have a professional support

network. Therefore jockeys are largely isolated, self-employed athletes. A preference for self-reliance may also be indicative of the stigma associated with seeking help as highlighted previously.

Low MHL. MHL is a multifaceted construct which consists of the ability to recognise symptoms of CMDs, knowledge of preventative and self-help strategies, knowing where to seek help and the multiple treatment types available, and possess the skills to support others via mental health first aid (Jorm, 2012). For jockeys, low levels of MHL were underpinned by not knowing where to seek help, negative perceptions towards treatment, a minimisation of CMDs, and difficulty recognising symptoms. The research aligns with previous studies that report low MHL as a significant barrier to help-seeking in elite athletes (Bu *et al.*, 2020; Castaldelli-Maia *et al.*, 2019; Coyle *et al.*, 2017; Gorczynski *et al.*, 2020a; Gulliver *et al.*, 2012a; Wood *et al.*, 2017) and the general population (Jorm, 2000; Jorm *et al.*, 2006). Jockeys in the present study displayed negative perceptions towards treatment, particularly in relation to pharmacological intervention (e.g., antidepressants), but also concerns on what treatment might look like and the impact it will have on them as an individual. Treatment concerns for mental health issues are not uncommon (e.g., Vogel *et al.*, 2007), therefore education on treatment protocols are paramount. Educational content should include an overview of the different types of treatment available to jockeys including popular talking therapies (e.g., cognitive behavioural therapy; acceptance commitment therapy; solution focussed therapy) and medication options. Contact (e.g., interacting with individuals with experience of treatment for CMDs) may also serve as a method to improve jockeys attitudes towards treatment.

A minimisation of CMDs and difficulty recognising symptoms appear to be linked to a lack of problem recognition. That is, jockeys reported that they did not

identify there was a mental health issue, with awareness raised once they had reached a crisis point. Other jockeys discussed that individuals may feel their problem is not appreciable enough to reach out for help which consequently delayed help-seeking. This notion was compounded by the fact that jockeys felt mental health issues would gradually improve over time or get better on their own. Problem recognition may be particularly difficult for jockeys given the demands placed upon jockeys throughout their careers. For instance, in Study One, jockeys displayed quotes that aligned with athlete burnout literature, yet in Study Three discussed challenges differentiating between burnout and depression. Jockeys also engage in disordered eating practices as part of norms embedded within the sport for performance purposes (e.g., making weight; Martin *et al.*, 2017). In other studies, research has found that self-recognition of CMDs and lack of perceived need are negatively influenced by an individual's level of knowledge and stigma related concerns (Schomerus *et al.*, 2019). Thus, increasing a jockey's ability to recognise symptoms of CMDs may reduce some of the barriers presented, although consideration of the unique requirements of the sport are necessary.

Facilitators of help-seeking reported by jockeys included education (exposure to psychological support at a younger age), social support (from professionals, jockeys, family, friends), and media campaigns (high profile disclosures from jockeys) (Table 5.2).

Education. Education, akin to MHL as identified in the barriers sub-section, was identified as a facilitator to help-seeking. Jockeys reported that exposure to psychological support at a younger age may increase a jockeys awareness on the challenges associated with the sport, whilst also facilitating integration for jockeys into sport science services. In essence, jockeys felt that having a greater degree of knowledge in relation to mental health would be beneficial to them. As highlighted

previously, MHL is an effective method in enhancing a number of mental health related variables. This includes improvements to knowledge and understanding of mental health and CMDs, lower levels of stigma, and identification of help-seeking resources and services (Brijnath *et al.*, 2016). Links between MHL and actual help-seeking behaviour have also been found, where athletes with greater levels of MHL were more likely to seek help than those with lower levels of MHL (Kola-Palmer *et al.*, 2020).

Social support. Social support from professionals, other jockeys, family, and friends facilitated help-seeking for jockeys. In some instances, other jockeys, family members, and friends encouraged jockeys to seek help highlighting the importance of close informal support networks. Previous research has suggested that jockeys may be more likely to use informal support sources, such as other jockeys, due to the camaraderie within the jockey community, as well as jockeys having a deep understanding of what others within the industry may be experiencing (McGuane *et al.*, 2019). Support from these informal support sources appeared to encourage jockeys to speak openly about their challenging experiences, with the support network either making the initial call to a mental health professional on behalf of the jockey, or ensuring the jockey is comfortable to make the call themselves. The benefits of informal support have also been proposed elsewhere such as with male farmers (Roy *et al.*, 2014) and in the overlapping waves of action model (Jorm *et al.*, 2004), whilst also previous research has reported a high level of informal help-seeking from athletes (Gulliver *et al.*, 2012b). Relationships with professionals such as the Senior Medical Officer were also deemed important, potentially due to the sense of trust and familiarity in which they support jockeys on an almost daily basis at racetracks. Importantly, jockeys are cognisant that the Medical Officers have an advanced understanding of what a career as a jockey entails, whilst also having a significant amount of experience of working

directly with jockeys. Support from Medical Officers to jockeys is primarily based around physical injuries (e.g., after a fall) although the quotes presented in Study Three highlight the close relationships between jockeys and Medical Officers. The benefits of strong relationships between the two parties are two-fold. Firstly, Medical Officers may be able to better detect at risk individuals and provide professional care. Secondly, jockeys may be more likely to confide in Medical Officers rather than seek help from an individual they are yet to build a relationship with.

Media campaigns. Jockeys reported media campaigns, particularly high profile disclosures from other jockeys, may facilitate help-seeking. In other sports, high profile disclosures from athletes such as Jonny Wilkinson and Michael Phelps have taken place in recent years. For jockeys, seeing other jockeys discuss mental health concerns could help to normalise their own experiences, bring a sense of connectedness, and reduce the stigma associated with CMDs and help-seeking. Media campaigns may also increase mental health knowledge amongst athletes, with authors in a recent study in Ireland suggesting that a media campaign which focussed predominantly on depression and help-seeking may have been a contributory factor to the high levels of mental health knowledge elicited by athletes in the study (Breslin *et al.*, 2018). In Ireland, a small number of jockeys have spoken publicly about their experiences of depression, with jockeys displaying positive responses to their disclosures in Study Three. Research on the quantifiable impact of athlete disclosure on the potential outcomes presented is sparse, although public, fan, and media reaction to an athlete's disclosure of CMDs is largely positive. In one study, it was found that media responses to NBA basketball players DeMar DeRozan and Kevin Love disclosure of CMDs sought to reduce the stigma associated with mental health by encouraging individuals they are not alone and to talk to important others if needed (Parrott *et al.*, 2019). Another study examining the

same athletes and their mental health stories found that from a sample of 3366 fan responses, fans were overwhelmingly positive, eliciting responses that were accepting, not rejecting, of the individuals experiences (Parrott *et al.*, 2020).

Study Three provided a deeper understanding of the barriers and facilitators to help-seeking for jockeys. Whilst many of the themes within both barriers and facilitators are reported separately it is likely they interact with one another. Addressing one single barrier or facilitator does not complete the missing part of the puzzle in relation to jockey help-seeking. Thus, an approach from organisations and practitioners that considers a holistic view of the barriers and facilitators reported within Study Three is necessary. Specific considerations to barriers are also paramount. Jockeys reported concerns about help-seeking for fear of trainers becoming aware of their help-seeking activities and also demonstrated low levels of MHL which included a lack of problem recognition, a minimisation of CMDs, and negative attitudes towards treatment. The cultural norms embedded within the sport ensures that jockeys overtly display perceptions of toughness, strength and resilience, therefore jockeys may feel that seeking help is a weakness due to stigma-related concerns, even with a greater degree of MHL. Unpacking the accumulative impact of these barriers to help-seeking for jockeys appears a significant step in understanding help-seeking among jockeys.

7.6 Study Four – MHL, Stigma, and Attitudes towards Help-Seeking for CMDs among Jockeys

The final research objective proposed for the thesis was to examine the relationships between identified barriers in Study Three (MHL, stigma) and attitudes towards help-seeking among professional jockeys. According to the TRA, attitudes towards help-seeking for CMDs are one of the most significant predictors of help-

seeking intention, where behavioural intention is a significant predictor of actual behaviour (Ajzen & Fishbein, 1980). Thus, attitudes are often used as an outcome variable in academic studies. Previous research has identified positive association between MHL and attitudes towards help-seeking (Cheng *et al.*, 2018; Jung *et al.*, 2017), whilst findings from Study Three indicated that jockeys reported low levels of MHL which may result in jockeys not accessing professional psychological support services. Stigma is well documented as a significant barrier to help-seeking in athlete (Castaldelli-Maia *et al.*, 2019; Kaier *et al.*, 2015; Moreland *et al.*, 2018; Rice *et al.*, 2016; Souter *et al.*, 2018; Wahto *et al.*, 2016) and general population samples (Clement *et al.*, 2015). Amongst jockeys, findings from Study Three also suggested that stigma related concerns, both public and self, may serve as barriers to help-seeking. Thus, Study Four aimed to explore the influence of these specific variables on attitudes towards help-seeking using the TRA as a theoretical framework. An additional aim of the study was to quantify barriers to help-seeking for jockeys with barriers taken from the qualitative findings in Study Three.

Eighty seven jockeys, 54% of all professional jockeys in Ireland, completed a series of validated questionnaires which explored attitudes towards help-seeking, stigma (public and self), and MHL. Results demonstrated that the aforementioned variables predicted attitudes towards help-seeking above and beyond control variables (previous help-seeking history, current levels of psychological distress) (Table 6.3). Moreover, MHL positively predicted attitudes towards help-seeking whilst self-stigma negatively predicted attitudes towards help-seeking. Such findings are consistent with previous research among general (Cheng *et al.*, 2018) and athletic populations (Gulliver *et al.*, 2012c). Public stigma did not contribute statistically significant variance to the attitudes towards help-seeking which contradicts findings presented in Study Three and

Study Four where jockeys illustrated concerns about seeking help for fear of negative perceptions from trainers/owners and implications to their athletic career. As reported in Study Four, the finding may be attributed to the questionnaire used which assessed perceptions of public stigma from individuals within a person's social network. Thus, jockeys may not have viewed trainers within their social circle and findings may be more representative traditional social support networks (e.g., close family and friends). Further research exploring public stigma among jockeys should specify individuals within the questionnaire (e.g., to what degree would your racehorse trainer/family/friends react negatively to you if you sought help?). Given the findings within the individual regression analysis, a mediation analysis was conducted between MHL, self-stigma (the mediator), and attitudes towards help-seeking. Results revealed a partial mediation between MHL and attitudes towards help-seeking, via self-stigma (Figure 6.3).

Findings suggest that educational interventions within the jockey population should target improving MHL, although further research on the specific components to target (e.g., symptom recognition, attitudes towards treatment) are required. Nevertheless, currently, an absence of methodologically sound MHL intervention programmes have been reported therefore moving forward MHL programmes with jockeys must be underpinned via theory (e.g., behaviour change), consider the nature of delivery (e.g., face-to-face versus online), utilise randomised study designs when possible, and assess MHL via athlete/sport specific MHL measures (Breslin *et al.*, 2017; Bu *et al.*, 2020). Reducing self-stigma is also critical to help normalise the prevalence of CMDs and help-seeking. Given the qualitative findings presented in Study Three, this may be implemented via the use of MHL programmes, media campaigns, and high profile disclosures from jockeys.

7.7 Strengths and Limitations

The strengths and limitations of each study are proposed within each study's respective chapter. However, the predominant strengths and limitations are presented below:

7.7.1 Strengths

A major strength of the thesis is the novelty of the research topic within the jockey population. Predominantly, research exploring jockeys has often examined factors related to weight-making, nutrition, or strength and conditioning. Few studies have reported on jockey mental health. The literature examining the mental health of elite athletes continues to grow, and the present research contributes to that with a novel sample of athletes.

The mixed-methods approach underpinning the thesis is regarded as a strength. The specific type of MMR adopted, a sequential exploratory design, underpinned via a pragmatic research philosophy, promoted a deeper exploration of the research topic than possible via solely quantitative or qualitative approaches. Thus, the focus throughout the thesis was on answering the research questions developed from each study, rather than lengthy debates surrounding the nature of reality or the development of knowledge. A benefit of this approach is that weaknesses of each method are limited, with each method complimenting the others potential shortcomings. Each study presented throughout the thesis is built upon findings from the previous inquiry. In Study One, potential risk factors to jockey mental health were identified and examined in Study Two (career dissatisfaction, athlete burnout, social support, contemplation of retirement). The findings helped shape Study Three, data and variables which may have been missed had the sequential exploratory design not been utilised. Moreover, due to

the personal and sensitive nature of the research area, it was important to give the jockeys a voice, beyond quantitative data. The qualitative data includes thick description, feelings, and personal experiences of jockeys, all of which have largely been overlooked within the literature due to the predominance of quantitative research methods. In Study One, the quotes provide a detailed insight into the challenges experienced by jockeys throughout their careers. Whilst in Study Three, the quotes highlighted a multitude of barriers and facilitators that may shape a jockeys help-seeking attitudes or behaviour.

The use of the TRA to explore help-seeking amongst jockeys was also a strength of the thesis. The TRA has been adopted and utilised across multiple different populations, yet sparingly in elite sport. In Study Four, an adapted version of the TRA was used in which beliefs (e.g., MHL) and subjective norms (e.g., stigma) were assessed to predict attitudes (e.g., attitudes towards help-seeking). Our findings corroborate recent work by Breslin *et al.* (2019a) which suggests that the TRA is a useful theory in providing evidence-based strategies to mental health research in sport.

Finally, the studies conducted within the thesis were obtained from a high quality sample of elite athletes with a large percentage of professional jockeys in Ireland participating in the two quantitative studies (Studies Two and Four). Only one study has previously attempted to examine jockey mental health in Ireland which obtained a sample of 42 professional jockeys (Losty *et al.*, 2019). Our studies built on that with 84 participants in Study Two and 87 participants in Study Four. This represents a figure between 52% and 54% of jockeys in Ireland who participated in the study. Other similar studies in the area often report participation rates of around 30% (e.g., Gouttebauge *et al.*, 2015a).

7.7.2 Limitations

The present thesis is not without limitations. Firstly, participants self-selected to participate in the studies presented in the thesis via social media links, text messages sent via the Irish Horseracing Regulatory Board (governing body), and the promotion of the study from the Senior Medical Officer. Thus, self-selection bias may have occurred, where those with a greater interest in, or experience of, mental health issues, may have participated in the study. Whilst attempts were maximised to ensure that a representative sample was achieved, perhaps highlighted in the large proportion of jockeys who engaged with the studies, future research should attempt to adopt random selection sampling methods. Due to the limited number of professional jockeys in Ireland this may be difficult to achieve. Few female jockeys participated in the present study and although representative of the wider racing industry, further research is needed. The findings presented, particularly in Studies Two and Four, may be more representative of male jockeys, therefore further consideration is needed in developing programmes or providing support for female jockeys.

Study One examined the stressors experienced by professional jockeys throughout their careers with the transactional model of stress (Lazarus & Folkman, 1984) utilised as a guiding framework. Whilst the findings of the study identified a number of stressors that have yet to be reported specifically amongst jockeys, the stress process was partially presented. Stress, as examined through the lens of transactional model, contains environmental stimuli (stressors), primary appraisal, secondary appraisal, stress, and coping related factors (problem focussed and emotion focussed). Thus, our examination explored the initial step within the stress process (i.e. sources of stress), yet failed to explore how jockeys appraise and cope with stressors. Although in our study we have reported a plethora of stressors, it is likely that individual differences

occur in a jockeys interpretation of the stressors presented (e.g., positive, dangerous, irrelevant). For instance, some jockeys may perceive pressure to perform as a challenge, whereas others may view it as a threat. For Lazarus and Folkman (1984), coping strategies centre on two components: problem focussed (e.g., resolving or altering the source of stress) and emotion focussed (managing the emotions related to the stressor). Yet currently there is no information related to coping strategies adopted by jockeys which limits evidence based intervention programmes for practitioners such as sport psychologists working with jockeys. Future research should attempt to address the limitations presented in Study One by exploring the whole stress process as outlined in the transactional model.

In Studies Two and Four, self-report measures were used. The potential issues associated with self-report measures are well-documented with primary concerns related to social desirability response bias (i.e. underreporting culturally under desirable attitudes or behaviours and vice versa) (van de Mortel, 2008). Participants were aware that questionnaires were anonymous and confidential, therefore hopefully such responses were avoided. Another issue related to self-response measures is the nature of introspective ability. That is, participants may not be able to accurately score themselves on the chosen questionnaire. Nevertheless, the self-report measures resulted in a large sample of jockeys participating in each study, whilst also providing important data that had yet to be documented previously.

7.8 Practical Applications and Applied Recommendations

The findings illustrated throughout the thesis have important implications for practitioners working with jockeys:

- Bridging the gap between research and practice is key if the findings from the thesis are to be disseminated and applied to have a real world impact for professional jockeys. As such, organisations and stakeholders may consider the work of Brocherie and Beard (2021) who emphasise the integration paradigm, where research informs practice, and practice informs research. The authors propose a number of considerations to improve the connection between research and practice which includes: a positive work environment; effective communication channels (e.g., avoid silos); information dissemination; staff development; critical thinking; creation of innovative solutions to problems via inter/multi-disciplinary team; researchers embedded within organisations/stakeholders; academic practices including educational content and conferences; novel evidence based decisions to inform athlete support; and, consistent sport science support for the athlete (p. 4). Employing these principles into practice enhances the opportunity for the research to truly make a difference in the applied world (Collins *et al.*, 2019).
- The sport psychologist, of which there is currently one employed by the sport's governing body, may play an important role in jockeys accessing support for CMDs. As noted in Study Three, visiting a sport psychologist was deemed less stigmatising than visiting a psychologist, which corroborates research with other athletes (Gulliver *et al.*, 2012a; van Raalte *et al.*, 1996). Thus, the sport psychologist may serve as a potential facilitator to help-seeking behaviours by encouraging discussions that involve a sense of personal vulnerability and

emotional openness. Jockeys in Study Three also discussed difficulty in accessing professionals with an understanding of the nuanced nature of horseracing therefore familiarity of the sporting subculture and demands placed upon jockeys is key for practitioners.

- In relation to the above point, an improved visibility of services is also necessary. For instance, in Ireland, jockeys are able to access free sport science services all year round via the Jockey Pathway. The multidisciplinary team, if highly visible and utilised by jockeys, may encourage or refer jockeys to access support for their mental health. Case formulation from the Jockey Pathway member staff (a multi-interdisciplinary approach) may enhance understanding of a jockey's situation or concerns, resulting in greater precision when referring on to mental health professionals. Careful consideration is required to ensure confidentiality protocols are not breached which may further perpetuate feelings of stigma and lack of trust from the individual (Vella *et al.*, 2021). Promotion of services should also occur online via social media sources and industry newspapers. Both sources are often used by jockeys for competition purposes (e.g., checking the form of the horse they are competing aboard and other competitors).
- The development of MHL programmes are recommended for jockeys as the participants in the present thesis reported constructs (e.g., stigma, negative attitudes towards treatment, not knowing where to seek help) that are consistent with low MHL. Moreover, given the direct effect between MHL and attitudes towards help-seeking found in the final study of the thesis, improving MHL appears a mechanism of potentially enhancing help-seeking attitudes. For practitioners designing MHL programmes, considerations should be made to

the length of the course and content included. Jockeys reported a lack of time as one of the most significant barriers to help-seeking, therefore online courses that are no longer than one hour are recommended. Previous research has found that 45 minute MHL sessions improve knowledge and symptoms of CMDs, intentions to help others who may be experiencing a CMD, and attitudes towards help-seeking (Liddle *et al.*, 2019). Contextual considerations are also necessary, avoiding a one-size fits all protocol (Gorczyński *et al.*, 2020a). Jockeys experience differing stressors to other athletes and members of the general population, and findings within this thesis have also reported specific areas whereby further attention is required (e.g., attitudes towards treatment). An awareness of the barriers and facilitators reported in Study Three are also important in developing, recruiting, and delivering an effective programme. For instance, stigma is reported as a significant barrier in both the research presented within the thesis, but also the wider athlete mental health literature (e.g., Castaldelli-Maia *et al.*, 2019; Gouttebauge *et al.*, 2019; Rice *et al.*, 2016), and should be addressed within MHL programmes accordingly.

- Creating an environment within the sport of horseracing that considers the broad nature of mental health is also recommended. This may be facilitated via a top-down approach, beginning with organisations developing a culture that is accepting of CMDs and help-seeking, but also one that emphasises positive personal development. One method may be to educate those working in the sport who interact with jockeys frequently. Very few jockeys have coaches, which is the antithesis of many other individual and team sport athletes. Coaches can be a safe space for athletes to share their concerns, but also help improve an athlete's resilience, self-compassion, and other performance-related factors

(e.g., competitive anxiety) (Reardon *et al.*, 2019). For jockeys, these important interactions are largely absent. The closest comparison to a coach in the sport of horseracing is a racehorse trainer, who is often responsible, particularly at an early age, for the opportunities afforded to a jockey. Thus, educating trainers on providing a safe, destigmatised environment, that recognises the challenges associated with the career, may help to alleviate jockeys concerns around trainers finding out they were seeking help (the most prominent barrier found in Study Three). The racetrack also appears a place to facilitate such change. Jockeys work closely with canteen staff and valets who have a deep understanding of the sport, and what a life as a jockey entails. Throughout the course of a race day, there may be multiple opportunities for canteen staff and valets to converse with jockeys, which may include conversations around mental health. The mantra ‘every interaction is an intervention’ as popularised by psychologist Dr Karen Treisman rings true for the recommendations above. Nevertheless, the emphasis is on organisations to facilitate change by providing those within the industry the necessary tools to do so (e.g., psychoeducational programmes).

- Lastly, the development of a jockey mental health and well-being framework is required to promote the standardised care of jockeys who may be experiencing a CMD, but also to promote early intervention and prevention strategies. In Figure 7.3, a framework is proposed by Purcell *et al.* (2019), with many of the considerations raised in the above bullet points. Naturally, each iteration of this framework may look and serve differently dependent on the organisation, therefore this framework may be used as a scaffold, rather than a set pyramid. Table 7.1 highlights practical examples of how the mental health and wellbeing

framework may be implemented for jockeys. Due to the small geographical landscape of Ireland, a multi-sport approach to elite athlete mental health may yield positive outcomes. This may provide organisations with low budgetary constraints the opportunity to share, design and improve resources in a collaborative manner. However, conscious consideration should be made to minimise barriers and maximise facilitators of help-seeking as highlighted in Studies Three and Four.

Figure 7.8

Elite Athlete Mental Health Framework Proposed by Purcell et al. (2019)

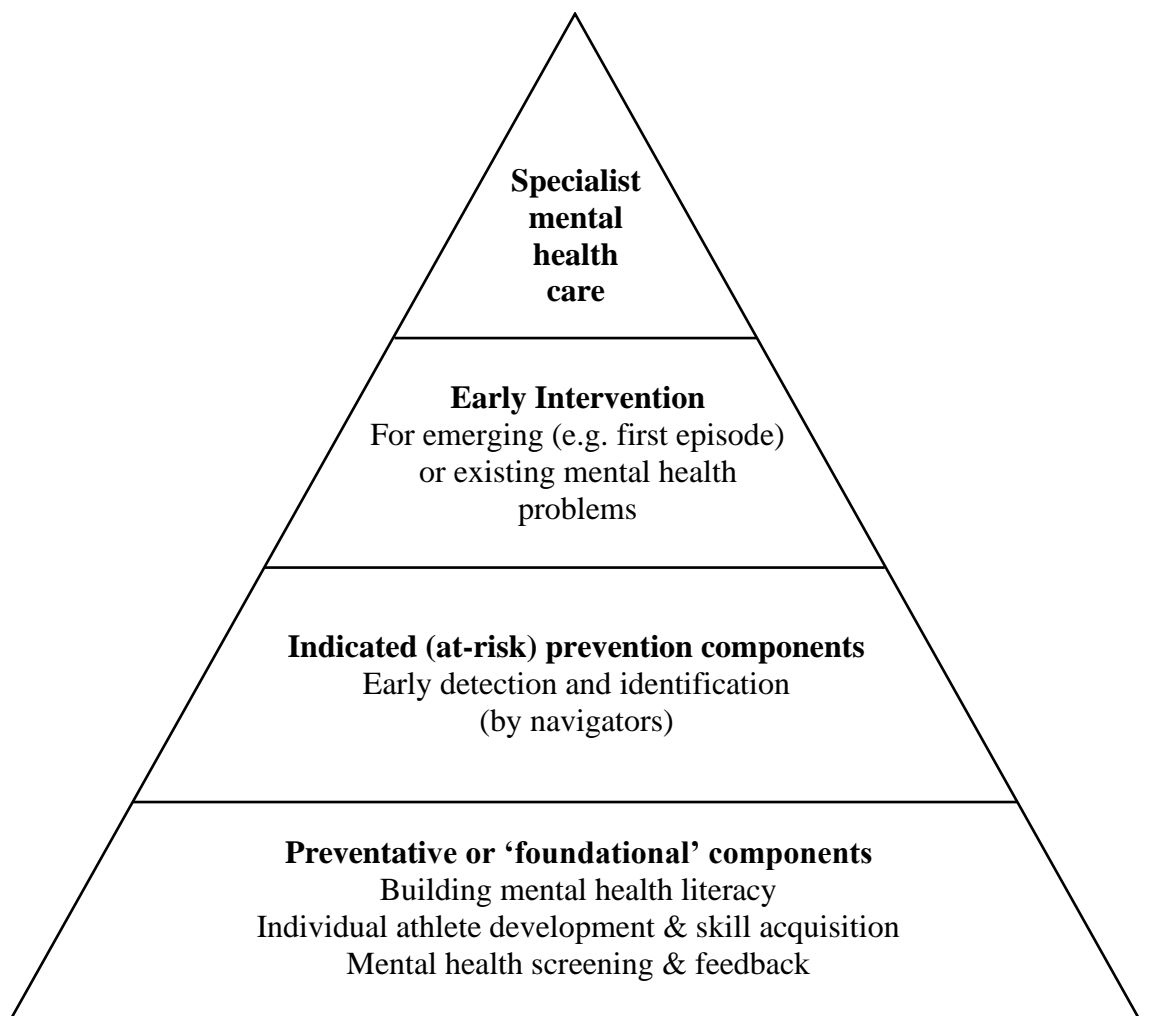


Table 7.1

Jockey Mental Health and Wellbeing Framework (Adapted from Purcell et al., 2019)

Stage	Recommendation
Preventative	<ul style="list-style-type: none">- Mental health screening on licensing courses for jockeys, and at regular periods throughout the season that may increase the risk for MHDs such as injury or a loss of competitive rides.- Athlete development. Develop awareness for jockeys outside of the sport of horseracing, important given jockeys unidimensional identity (McGuane <i>et al.</i>, 2019). This could involve programmes related to dual career and planning for life after a career as a jockey.- Development of bespoke, MHL programmes. Given jockeys workload and time constraints, programmes may be delivered online and shorter in length (e.g. one hour)
At risk - prevention	<ul style="list-style-type: none">- Increase visibility of services that may increase the likelihood of a referral to mental health professionals. This may occur from members of a multidisciplinary team (e.g., strength and conditioning coach, nutritionist, sport psychologist, physios, medical officers). Organisations can also play a role by promoting services at racetracks and through jockey support networks (e.g., jockey associations).
Early intervention	<ul style="list-style-type: none">- Within organisation supports are preferred, such as sport or clinical psychologists, or medical officers. If other professionals are required, in-house supports should refer on to external services. Careful consideration should be made to the type of professional contacted given the unique, nuanced nature of a career as a jockey. Given the current climate in the Covid-19 pandemic, online or telephone support services may be most appropriate.
Specialist mental health care	<ul style="list-style-type: none">- A standardised mental health emergency plan should be in place, with agreement between support staff as to what does and does not constitute as a mental health emergency. Moreover, it is paramount that procedures are in place for the jockey if a mental health emergency occurs. A return to riding plan should also be created to promote a safe and healthy return to the sport.

7.9 Future Directions

Recommendations for future research include:

- Longitudinal studies examining stressors that may heighten symptom prevalence or increase the likelihood of CMD prevalence are encouraged. For jockeys, these stressors may include competing during intense parts of the season in valuable races, injury, losing competitive rides, transitioning to retirement, or an apprentice/conditional ‘riding out’ their claim. Although within the present study many of the stressors reported related to sport-specific factors, future research may also consider generic stressors experienced by jockeys given the relationships between concepts such as adverse life events, daily hassles, and an increase in symptoms of CMDs (Beable *et al.*, 2017; Purcell *et al.*, 2020). Identifying the coping strategies adopted by jockeys and how they acquired such strategies would also assist in informing future support services. Currently, limited literature exists surrounding the psychological skills employed by jockeys and the mechanisms used to maintain or enhance performance. Moreover, although Study One captured a range of stressors, categorising stressors (e.g., competitive, organisational, personal) as other researchers have proposed (e.g., Hanton *et al.*, 2005) may enhance the understanding of how to best support jockeys in the future. Such research may also explore if stressors are experienced differently between successful/less successful jockeys and how they are interpreted by the individual (e.g. facilitative versus debilitating).
- Currently there are limited sport/athlete-specific screening tools available to practitioners. Whilst the self-report measures used in the present study (and most other athlete mental health studies) have been utilised extensively, they

may not fully capture the nuances associated with athletic life. As such, the development, testing, and implementation of jockey-specific measures are proposed. Development of these measures should consider aspects related to the career itself (e.g., weight-making; extensive travel; career uncertainty), but also broader concepts such as organisational (e.g., fixture scheduling) and personal factors (e.g., financial concerns). Over time, this may facilitate a deeper understanding of the factors that impact jockey mental health and improve early identification of CMDs.

- In Study Four, the findings indicated a partial mediation between MHL and attitudes towards help-seeking via self-stigma. Studies may seek to explore other areas that influence the relationship between MHL and attitudes towards help-seeking which may include self-compassion, resilience, athletic identity or social support.
- Research pertaining to female jockeys is limited. This is true not only in the present thesis but also in other jockey related studies (Cullen *et al.*, 2015; O'Connor *et al.*, 2018b; Wilson *et al.*, 2015). Whilst this is representative of the wider jockey population, differences between genders may be prevalent. In mental health research among the general population, these differences are well established, with a greater prevalence of depression, more positive help-seeking attitudes, and a greater number accessing support from mental health professionals apparent among females than males (Nam *et al.*, 2010). In sport, a recent study reported that female athletes reported a greater rate of symptoms associated with CMDs, although those meeting the threshold of certain validated measures was comparable to male athletes in the study (Walton *et al.*, 2021). Anecdotally, it appears that the number of female jockeys entering the

sport continues to grow year on year. Given the recent high profile successes of Rachael Blackmore (Ireland) and Holly Doyle (UK) in the sport it may be expected that the increase in female jockeys continues. Thus, the research should follow suit, as gender specific approaches to mental health provision may be required.

- As the definition of mental health suggests, mental health is greater than the absence of mental ill-health (Breslin *et al.*, 2019b; WHO, 2004). Whilst the present thesis produced valuable findings, further research among jockeys should consider the concept of mental health at a broader level. This may be achieved by exploring aspects related to the two-continua model of mental health proposed by Keyes (2002). The author suggests that mental health and mental illness exist on two continuums, distinct but related, with mental health the interaction between such constructs. The mental health continuum ranges from languishing (poor mental health) to flourishing (optimal mental health). The mental illness continuum ranges from absence to presence of mental illness. In this model, one can report poor mental health, but an absence of mental illness, and vice versa. Adopting such a model may promote understanding and identification of other factors to optimise or enhance the mental health of jockeys. Thus, moving beyond the absence of symptoms as a determinant for good mental health.
- The present thesis explored a narrow range of CMDs and risk factors. Further exploration of factors such as weight issues, sleep, eating disorders, post-traumatic stress disorder, concussion, gambling disorder, and suicide would widen the breadth of mental health research among jockeys.

7.10 Conclusion

Although athlete mental health research has continued to grow in recent years, to date, limited research has attempted to comprehensively explore the mental health of jockeys. The research presented within this thesis addressed this issue by examining the mental health of jockeys via a mixed-methods approach. The first phase of the thesis (Phase One; Studies One and Two) examined the stressors experienced by jockeys, and the prevalence of symptoms of CMDs and associated risk factors. A vast array of stressors were identified. Some of the stressors (athlete burnout, social support, career satisfaction, contemplating retirement) were adopted as risk factors in the following study, with symptoms of CMDs (psychological distress, depression, generalised anxiety, adverse alcohol use) also assessed. Findings indicated that almost eight in ten jockeys met the threshold for at least one CMD, with adverse alcohol use (61%) and depression (35%) the most prevalent. Emerging evidence from the present thesis and the work of Losty *et al.* (2019) suggests a greater prevalence of symptoms of CMDs among jockeys in comparison to other elite athletes. A novel finding of thesis was the identification of potential risk factors to jockey mental health which included athlete burnout, career dissatisfaction, and the contemplation of retirement. An additional key finding from Study Two included a low level of formal help-seeking for CMDs from jockeys (33%), relative to the number of jockeys meeting the threshold for a CMD (79%). Thus, phase two explored help-seeking for CMDs among jockeys; a unique research area within the jockey population. Study Three identified a number of barriers (negative perception of others, cultural norms, low MHL) and facilitators (education, social support, media campaigns) to help-seeking which helped inform Study Four. Study Four examined the relationships between MHL, stigma (public and self), and attitudes towards help-seeking. Results indicated that MHL and stigma significantly

predicted attitudes towards help-seeking above and beyond control variables. MHL and self-stigma uniquely predicted attitudes towards help-seeking, whilst public stigma did not significantly contribute to the variance in attitudes towards help-seeking. A partial mediation was found between MHL and attitudes towards help-seeking via self-stigma.

The thesis contributes to the literature in a number of ways. Qualitative methods exploring the jockey population are largely absent within the literature, therefore the thesis is novel in producing two studies (Studies One and Three) that utilised qualitative inquiry as a research method. Giving jockeys a voice to share sensitive and personal stories in relation to mental health illuminated the research project and added rich data to the thesis, subsequently further explored within the quantitative studies. The research presented within the thesis is also one of the first to empirically examine risk factors for jockey mental health based on the stressors reported by jockeys. Consideration of these risk factors may aid early detection of symptoms of CMDs among jockeys but also help inform practitioners working with jockeys of the multiple challenges jockeys face throughout their careers. Help-seeking for jockeys may be a challenging process due to the findings presented in Studies Three and Four, with a number of significant barriers identified. Acknowledgement of these factors is critical in developing campaigns, support programmes, and interventions designed to minimise barriers to help-seeking. Moreover, Study Four is also one of the first studies to adopt the TRA to examine attitudes towards help-seeking among an elite athlete sample. The findings suggest that increasing MHL and reducing self-stigma are important factors in enhancing attitudes towards help-seeking within the jockey population. To finish, the research examining jockey mental health is still in its infancy although the present thesis significantly contributes to the understanding of a wide range of factors related to the mental health of jockeys. Given the importance of the research topic it is hoped that

organisations, stakeholders, researchers, and practitioners consider the research documented throughout the thesis to attempt to understand, support, and maximise jockey welfare.

8 References

- Aarresola, O., Itkonen, H., & Laine, K. (2017). Young athletes' significant experiences in sport: critical sociological reflections on athlete development. *European Journal for Sport and Society*, 14(3), 265–285. <https://doi.org/10.1080/16138171.2017.1349067>
- Abramson, L. Y., Metalsky, G. I., & Alloy, L. B. (1989). Hopelessness depression: A theory-based subtype of depression. *Psychological Review*, 96(2), 358–372. <https://doi.org/10.1037/0033-295X.96.2.358>
- Adam, K. E., Baillie, S., & Rushton, J. (2019). Clients. Outdoors. Animals. ': Retaining vets in UK farm animal practice-thematic analysis of free-text survey responses. *Veterinary Record*, 184(4), 121. <https://doi.org/10.1136/vr.105066>
- Addis, M. E., & Mahalik, J. R. (2003). Men, masculinity, and the contexts of help seeking. *American Psychologist*, 58(1), 5–14. <https://doi.org/10.1037/0003-066X.58.1.5>
- Åkesdotter, C., Kenttä, G., Eloranta, S., & Franck, J. (2020). The prevalence of mental health problems in elite athletes. *Journal of Science and Medicine in Sport*, 23(4), 329–335. <https://doi.org/10.1016/j.jsams.2019.10.022>
- Alcohol Facts*. (2020). AlcoholAction Ireland. <https://alcoholireland.ie/facts/how-much-do-we-drink/>
- Ali, K., Farrer, L., Fassnacht, D. B., Gulliver, A., Bauer, S., & Griffiths, K. M. (2017). Perceived barriers and facilitators towards help-seeking for eating disorders: A systematic review. *International Journal of Eating Disorders*, 50(1), 9–21. <https://doi.org/10.1002/eat.22598>

- Alonso, J., Angermeyer, M. C., Bernert, S., Bruffaerts, R., Brugha, T. S., Bryson, H., De Girolamo, G., De Graaf, R., Demyttenaere, K., Gasquet, D., Haro, J. M., Katz, S. J., Kessler, R. C., Kovess, Y., Lépine, J. P., Ormel, J., Polidori, G., Russo, L. J., Vilagut, G., ... Vollebergh, W. A. M. (2004). Prevalence of mental disorders in Europe: Results from the European Study of the Epidemiology of Mental Disorders (ESEMeD) project. *Acta Psychiatrica Scandinavica, Supplement, 109*(420), 21–27. <https://doi.org/10.1111/j.1600-0047.2004.00327.x>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.).
- Appaneal, R. N., Levine, B. R., Perna, F. M., & Roh, J. L. (2009). Measuring postinjury depression among male and female competitive athletes. *Journal of Sport & Exercise Psychology, 31*(1), 60–76. <https://doi.org/10.1123/jsep.31.1.60>
- Aquilina, D. (2013). A study of the relationship between elite athletes' educational development and sporting performance. *International Journal of the History of Sport, 30*(4), 374–392. <https://doi.org/10.1080/09523367.2013.765723>
- Arnold, R., & Fletcher, D. (2012). A research synthesis and taxonomic classification of the organizational stressors encountered by sport performers. *Journal of Sport and Exercise Psychology, 34*(3), 397–429. <https://doi.org/10.1123/jsep.34.3.397>
- Arnold, R., Wagstaff, C. R. D., Steadman, L., & Pratt, Y. (2017). The organisational stressors encountered by athletes with a disability. *Journal of Sports Sciences, 35*(12), 1187–1196. <https://doi.org/10.1080/02640414.2016.1214285>
- Azjen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Prentice-Hall.

- Baille, P., Davis, H., & Ogilvie, B. (2014). Working with elite athletes. In J. Van Raalte & B. Brewer (Eds.), *Exploring Sport and Exercise Psychology* (3rd ed., pp. 401–425). American Psychological Association.
- Baker, J., Cobley, S., & Fraser-Thomas, J. (2009). What do we know about early sport specialization? Not much! *High Ability Studies*, 20(1), 77–89. <https://doi.org/10.1080/13598130902860507>
- Balendra, G., Turner, M., & McCrory, P. (2008). Career-ending injuries to professional jockeys in British horse racing (1991-2005). *British Journal of Sports Medicine*, 42(1), 22–24. <https://doi.org/10.1136/bjism.2007.038950>
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215. [https://doi.org/10.1016/0146-6402\(78\)90002-4](https://doi.org/10.1016/0146-6402(78)90002-4)
- Bandura, A. (2001). Social cognitive theory of mass communication. In B. Zillman (Ed.), *Media Effects: Advances in Theory and Research* (2nd ed., pp. 121–153). Lawrence Erlbaum.
- Barnard, J. D. (2016). Student-athletes' perceptions of mental illness and attitudes toward help-seeking attitudes toward help-seeking. *Journal of College Student Psychotherapy*, 30(3), 161–175. <https://doi.org/10.1080/87568225.2016.1177421>
- Bauman, N. J. (2016). The stigma of mental health in athletes: are mental toughness and mental health seen as contradictory in elite sport? *British Journal of Sports Medicine*, 50(3), 135–136. <https://doi.org/10.1136/bjsports-2015-095570>
- Beable, S., Fulcher, M., Lee, A. C., & Hamilton, B. (2017). SHARPSports mental health awareness research project: Prevalence and risk factors of depressive

- symptoms and life stress in elite athletes. *Journal of Science and Medicine in Sport*, 20(12), 1047–1052. <https://doi.org/10.1016/j.jsams.2017.04.018>
- Beck, T. (1987). Cognitive models of depression. *Journal of Cognitive Psychology*, 14(1), 5–38.
- Ben-Porath, D. D. (2002). Stigmatization of individuals who receive psychotherapy: An interaction between help-seeking behavior and the presence of depression. *Journal of Social and Clinical Psychology*, 21(4), 400–413. <https://doi.org/10.1521/jscp.21.4.400.22594>
- Berkman, N. D., Davis, T. C., & McCormack, L. (2010). Health literacy: What is it? *Journal of Health Communication*, 15(2), 9–19. <https://doi.org/10.1080/10810730.2010.499985>
- Biddle, S. (2016). Physical activity and mental health: Evidence is growing. *World Psychiatry*, 15(2), 177–178. <https://doi.org/10.1002/wps.20332>
- Biggin, I. J. R., Burns, J. H., & Uphill, M. (2017). An investigation of athletes' and coaches' perceptions of mental ill-health in elite athletes. *Journal of Clinical Sport Psychology*, 11(2), 126–147. <https://doi.org/10.1123/jcsp.2016-0017>
- Bird, M. D., Chow, G. M., Meir, G., & Freeman, J. (2018). Student-athlete and student non-athletes' stigma and attitudes toward seeking online and face-to-face counseling. *Journal of Clinical Sport Psychology*, 12(3), 347–364. <https://doi.org/10.1123/jcsp.2017-0010>
- Bonabi, H., Müller, M., Ajdacic-Gross, V., Eisele, J., Rodgers, S., Seifritz, E., Rössler, W., & Rüsch, N. (2016). Mental health literacy, attitudes to help seeking, and perceived need as predictors of mental health service use: A longitudinal study.

Journal of Nervous and Mental Disease, 204(4), 321–324.
<https://doi.org/10.1097/NMD.0000000000000488>

Braam, C., Van Oostrom, S. H., Terluin, B., Vasse, R., De Vet, H. C. W., & Anema, J. R. (2009). Validation study of a distress screener. *Journal of Occupational Rehabilitation*, 19(3), 231–237. <https://doi.org/10.1007/s10926-009-9178-z>

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
<https://doi.org/10.1017/CBO9781107415324.004>

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11(4), 589–597.
<https://doi.org/10.1080/2159676X.2019.1628806>

Brenner, J. S., LaBotz, M., Sugimoto, D., & Stracciolini, A. (2019). The psychosocial implications of sport specialization in pediatric athletes. *Journal of Athletic Training*, 54(10), 1021–1029. <https://doi.org/10.4085/1062-6050-394-18>

Breslin, G., Haughey, T., O'Brien, W., Robertson, A., Caulfield, L., & Lawlor, M. (2018). Increasing athlete knowledge of mental health and intentions to seek help: The state of mind Ireland (SOMI) pilot program. *Journal of Clinical Sport Psychology*, 12(1), 39–56. <https://doi.org/10.1123/jcsp.2016-0039>

Breslin, G., & Leavey, G. (2019). *Mental Health and Well-Being Interventions in Sport*. Routledge.

Breslin, G., Shannon, S., Ferguson, K., Devlin, S., Haughey, T., & Prentice, G. (2019a). Predicting athlete mental health stigma using the theory of reasoned action framework. *Journal of Clinical Sport Psychology*, 13(1), 103–115.

<https://doi.org/10.1123/jcsp.2017-0055>

Breslin, G., Shannon, S., Haughey, T., Donnelly, P., & Leavey, G. (2017). A systematic review of interventions to increase awareness of mental health and well-being in athletes, coaches and officials. *Systematic Reviews*, 6(1), 177. <https://doi.org/10.1186/s13643-017-0568-6>

Breslin, G., Smith, A., Donohue, B., Donnelly, P., Shannon, S., Haughey, T. J., Vella, S. A., Swann, C., Cotterill, S., Macintyre, T., Rogers, T., & Leavey, G. (2019b). International consensus statement on the psychosocial and policy-related approaches to mental health awareness programmes in sport. *BMJ Open Sport & Exercise Medicine*, 5(e000585), 1–7.

Brewer, B., & Petrie, T. A. (1995). A comparison between injured and uninjured football players on selected psychosocial variables. *Academic Athletic Journal*, 10(1), 11–18.

Brewer, B. W., Van Raalte, J. L., & Linder, D. E. (1993). Athletic identity: Hercules' muscles or Achilles heel? *International Journal of Sport Psychology*, 24(2), 237–254.

Brien, C. P. O., & Lyons, F. (2014). *Alcohol and the Athlete*. September. <https://doi.org/10.2165/00007256-200029050-00001>

Brijnath, B., Protheroe, J., Mahtani, K. R., & Antoniadis, J. (2016). Do Web-based Mental Health Literacy Interventions Improve the Mental Health Literacy of Adult Consumers? Results From a Systematic Review. *Journal of Medical Internet Research*, 18(6), e165. <https://doi.org/10.2196/jmir.5463>

Brocherie, F., & Beard, A. (2021). All alone we go faster, together we go further: The

- necessary evolution of professional and elite sporting environment to bridge the gap between research and practice. *Frontiers in Sports and Active Living*, 2(631147), 1–6. <https://doi.org/10.3389/fspor.2020.631147>
- Brown, A., Rice, S. M., Rickwood, D. J., & Parker, A. G. (2016). Systematic review of barriers and facilitators to accessing and engaging with mental health care among at-risk young people. *Asia-Pacific Psychiatry*, 8(1), 3–22. <https://doi.org/10.1111/appy.12199>
- Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? *Qualitative Research*, 6(1), 97–113. <https://doi.org/10.1177/1468794106058877>
- Bu, D., Chung, P. K., Zhang, C. Q., Liu, J., & Wang, X. (2020). Mental health literacy intervention on help-seeking in athletes: A systematic review. *International Journal of Environmental Research and Public Health*, 17(19), 1–18. <https://doi.org/10.3390/ijerph17197263>
- Bullock, B., Critchley, C., Davis, H., Tirlea, L., Fitzgerald, K., & Farmer, J. (2019). Sleep and psychological wellbeing of racehorse industry workers: A survey of Australian trainers. *Australian Journal of Psychology*, 71(2), 146–153. <https://doi.org/10.1111/ajpy.12230>
- Buran, M., Alexander, J., Roddam, H., Leather, M., & Rhodes, D. (2019). An exploratory study in to the development of a multidisciplinary team in elite level cricket: A thematic analysis. *Journal of Research in Sports Medicine*, 4(2), 1–10.
- Burns, R. A., & Machin, M. A. (2013). Psychological wellbeing and the diathesis-stress hypothesis model: The role of psychological functioning and quality of relations in promoting subjective well-being in a life events study. *Personality and Individual Differences*, 54(3), 321–326.

<https://doi.org/10.1016/j.paid.2012.09.017>

- Butler, D., & Charles, N. (2012). Exaggerated femininity and tortured masculinity: Embodying gender in the horseracing industry. *Sociological Review*, *60*(4), 676–695. <https://doi.org/10.1111/j.1467-954X.2012.02129.x>
- Butler-Coyne, H., Shanmuganathan-Felton, V., & Taylor, J. (2019). Mental health in equestrian sport. *Journal of Clinical Sport Psychology*, *13*(3), 405–420. <https://doi.org/10.1123/jcsp.2018-0002>
- Cabrera, N. L. (2011). Using a sequential exploratory mixed-method design to examine racial hyperprivilege in higher education. In K. A. Griffin & S. D. Museus (Eds.), *Using mixed-methods approaches to study intersectionality in higher education* (Eds, pp. 77–91). Jossey-Bass.
- Campbell, E., & Jones, G. (2002). Sources of stress experienced by elite male wheelchair basketball players. *Adapted Physical Activity Quarterly*, *19*(1), 100–108. <https://doi.org/https://doi.org/10.1123/apaq.19.1.82>
- Case, C. (1984). Argot roles in horseracing. *Journal of Contemporary Ethnography*, *13*(2), 271–288. <https://doi.org/10.1177/0098303984013002007>
- Castaldelli-Maia, J. M., Gallinaro, J. G. D. M. E., Falcão, R. S., Gouttebarga, V., Hitchcock, M. E., Hainline, B., Reardon, C. L., & Stull, T. (2019). Mental health symptoms and disorders in elite athletes: A systematic review on cultural influencers and barriers to athletes seeking treatment. *British Journal of Sports Medicine*, *53*(11), 707–721. <https://doi.org/10.1136/bjsports-2019-100710>
- Caulfield, M. J., & Karageorghis, C. I. (2008). Psychological effects of rapid weight loss and attitudes towards eating among professional jockeys. *Journal of Sports*

Sciences, 26(9), 877–883. <https://doi.org/10.1080/02640410701837349>

- Cecić Erpič, S., Wylleman, P., & Zupančič, M. (2004). The effect of athletic and non-athletic factors on the sports career termination process. *Psychology of Sport and Exercise*, 5(1), 45–59. [https://doi.org/10.1016/S1469-0292\(02\)00046-8](https://doi.org/10.1016/S1469-0292(02)00046-8)
- Cepeda-Benito, A., & Short, P. (1998). Self-concealment, avoidance of psychological services, and perceived likelihood of seeking professional help. *Journal of Counseling Psychology*, 45(1), 58–64. <https://doi.org/10.1037/0022-0167.45.1.58>
- Chang, H. (2008). Help-seeking for stressful events among Chinese college students in Taiwan: Roles of gender, prior history of counseling, and help-seeking attitudes. *Journal of College Student Development*, 49(1), 41–51. <https://doi.org/10.1353/csd.2008.0003>
- Chapman, A. L., Hadfield, M., & Chapman, C. J. (2015). Qualitative research in healthcare: An introduction to grounded theory using thematic analysis. *Journal of the Royal College of Physicians of Edinburgh*, 45(3), 201–205. <https://doi.org/10.4997/JRCPE.2015.305>
- Cox, C. E., Ross-Stewart, L., & Foltz, B. D. (2017). Investigating the prevalence and risk factors of depression symptoms among NCAA division I collegiate athletes. *Journal of Sports Science*, 5(1). <https://doi.org/10.17265/2332-7839/2017.01.002>
- Cheng, H. L., Wang, C., McDermott, R. C., Kridel, M., & Rislin, J. L. (2018). Self-stigma, mental health literacy, and attitudes toward seeking psychological help. *Journal of Counseling and Development*, 96(1), 64–74. <https://doi.org/10.1002/jcad.12178>
- Chow, G. M., Bird, M. D., Gabana, N., Cooper, B. T., & Swanbrow Becker, M. (2020).

- Student-athletes' mental health help-seeking experiences: A mixed methodological approach. *Journal of College Student Psychotherapy*, 34(1), 59–77. <https://doi.org/10.1080/87568225.2018.1523699>
- Clement, S., Schauman, O., Graham, T., Maggioni, F., Evans-Lacko, S., Bezborodovs, N., Morgan, C., Rüsch, N., Brown, J. S. L., & Thornicroft, G. (2015). What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. *Psychological Medicine*, 45(1), 11–27. <https://doi.org/10.1017/S0033291714000129>
- Coakley, J. (1992). Burnout among adolescent athletes: A personal failure or social problem? *Sociology of Sport Journal*, 9(3), 271–285. <https://doi.org/10.1123/ssj.9.3.271>
- Collins, D., MacNamara, Á., & Cruickshank, A. (2019). Research and Practice in Talent Identification and Development—Some Thoughts on the State of Play. *Journal of Applied Sport Psychology*, 31(3), 340–351. <https://doi.org/10.1080/10413200.2018.1475430>
- Connor, K. M., Davidson, J. R., Churchill, L. E., Sherwood, A., Weisler, R. H., & Foa, E. (2000). Psychometric properties of the Social Phobia Inventory (SPIN): New self-rating scale. *The British Journal of Psychiatry*, 176(4), 379–386. <https://doi.org/10.1192/bjp.176.4.379>
- Conner, K., Copeland, V., Grote, N., Koeske, G., Rosen, D., Reynolds III, C., & Brown, C. (2010). Mental health treatment seeking among older adults with depression: The impact of stigma and race. *American Journal of Geriatric Psychiatry*, 18(6), 531–543. <https://doi.org/10.1038/jid.2014.371>
- Corrigan, P. W. (2004). How stigma interferes with mental health care. *American*

- Psychologist*, 59(7), 614–625. <https://doi.org/10.1037/0003-066X.59.7.614>
- Corrigan, P. W., & Rao, D. (2012). On the self-stigma of mental illness: Stages, disclosure, and strategies for change. *Canadian Journal of Psychiatry*, 57(8), 464–469. <https://doi.org/10.1177/070674371205700804>
- Corrigan, P. W., & Watson, A. C. (2002a). The paradox of self-stigma and mental illness. *Clinical Psychology: Science and Practice*, 9(1), 35–53. <https://doi.org/10.1093/clipsy.9.1.35>
- Corrigan, P. W., & Watson, A. C. (2002b). Understanding the impact of stigma on people with mental illness. *World Psychiatry*, 1(1), 16–20.
- Corrigan, P. W., Watson, A. C., & Barr, L. (2006). The self-stigma of mental illness: Implications for self-esteem and self-efficacy. *Journal of Social and Clinical Psychology*, 25(8), 875–884. <https://doi.org/10.1521/jscp.2006.25.8.875>
- Cosh, S., & Tully, P. J. (2015). Stressors, coping, and support mechanisms for student athletes combining elite sport and tertiary education: Implications for practice. *The Sport Psychologist*, 29(2), 120–133. <https://doi.org/10.1123/tsp.2014-0102>
- Cotugna, N., Snider, O. S., & Windish, J. (2011). Nutrition assessment of horse-racing athletes. *Journal of Community Health*, 36(2), 261–264. <http://10.0.3.239/s10900-010-9306-x>
- Courtenay, W. H. (2000). Constructions of masculinity and their influence on men's well-being: a theory of gender and health. *Social Science & Medicine*, 50(10), 1385–1401. [https://doi.org/10.1016/S0277-9536\(99\)00390-1](https://doi.org/10.1016/S0277-9536(99)00390-1)
- Coyle, M., Gorczynski, P., & Gibson, K. (2017). “You have to be mental to jump off a board any way”: Elite divers’ conceptualizations and perceptions of mental health.

Psychology of Sport & Exercise, 29, 10–18.

<https://doi.org/10.1016/j.psychsport.2016.11.005>

Cresswell, S. L., & Eklund, R. C. (2006). The convergent and discriminant validity of burnout measures in sport: A multi-trait/multi-method analysis. *Journal of Sports Sciences*, 24(2), 209–220. <https://doi.org/10.1080/02640410500131431>

Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed method research* (2nd ed.). Sage.

Crisp, A. H., Gelder, M. G., Rix, S., Meltzer, H. I., & Rowlands, O. J. (2000). Stigmatisation of people with mental illnesses. *British Journal of Psychiatry*, 177, 4–7. <https://doi.org/10.1192/bjp.177.1.4>

Cullen, S., Donohoe, A., McGoldrick, A., McCaffrey, N., Davenport, C., Byrne, B., Donaghy, C., Tormey, W., Smith, D., & Warrington, G. (2015a). Musculoskeletal health, kidney and liver function in retired jockeys. *International Journal of Sports Medicine*, 36(12), 968–973. <https://doi.org/10.1055/s-0035-1548889>

Cullen, S., Dolan, E., MCGoldrick, A., Brien, K. O., Brian, P., & Warrington, G. (2015b). The impact of making-weight on cognitive performance in apprentice jockeys. *Journal of Sport Sciences*, 33(15), 1589–1595. <https://doi.org/10.1080/02640414.2014.1002104>

Cutrona, C., & Russell, D. (1990). Type of social support and specific stress: Toward a theory of optimal matching. In B. Sarason, G. Sarason, & G. Pierce (Eds.), *Wiley series on personality processes. Social support: An interactional view* (pp. 319–366). John Wiley & Sons.

Davies, E., & James, S. (2018). The psychological responses of amateur riders to their

- horses' injuries. *Comparative Exercise Physiology*, 14(2), 135–142.
<https://doi.org/10.3920/CEP180009>
- Dawson, D. A., Grant, B. F., Stinson, F. S., & Zhou, Y. (2005). Effectiveness of the derived Alcohol Use Disorders Identification Test (AUDIT-C) in screening for alcohol use disorders and risk drinking in the US general population. *Alcoholism: Clinical and Experimental Research*, 29(5), 844–854.
<https://doi.org/10.1097/01.ALC.0000164374.32229.A2>
- de Diego-Adeliño, J., Portella, M. J., Puigdemont, D., Pérez-Egea, R., Álvarez, E., & Pérez, V. (2010). A short duration of untreated illness (DUI) improves response outcomes in first-depressive episodes. *Journal of Affective Disorders*, 120(1–3), 221–225. <https://doi.org/10.1016/j.jad.2009.03.012>
- De Francisco, C., Arce, C., Vílchez, M. del P., & Vales, Á. (2016). Antecedents and consequences of burnout in athletes: Perceived stress and depression. *International Journal of Clinical and Health Psychology*, 16(3), 239–246.
<https://doi.org/10.1016/j.ijchp.2016.04.001>
- DeFreese, J. D., & Smith, A. L. (2014). Athlete social support, negative social interactions and psychological health across a competitive sport season. *Journal of Sport & Exercise Psychology*, 36(6), 619–630.
<https://doi.org/10.1123/jsep.2014-0040>
- Delenardo, S., & Terrion, J. L. (2014). Suck it up: Opinions and attitudes about mental illness stigma and help-seeking behaviour of male varsity football players. *Canadian Journal of Community Mental Health*, 33(3), 43–56.
<https://doi.org/10.7870/cjcmh-2014-023>
- DeLongis, A., Coyne, J., Dakof, G., Folkman, S., & Lazarus, R. (1982). Relationship

of daily hassles, uplifts, and major life events to health status. *Health Psychology*, 1(2), 119–136. <https://doi.org/10.1037/0278-6133.1.2.119>

Denscombe, M. (2008). Communities of practice: A research paradigm for the mixed methods approach. *Journal of Mixed Methods Research*, 2(3), 270-283. <https://doi.org/10.1177%2F1558689808316807>

DesClouds, P., Laamarti, F., Durand-Bush, N., & El Saddik, A. (2018). Developing and testing an application to assess the impact of smartphone usage on well-being and performance outcomes of student-athletes. *International Conference on Information Theoretic Security*, 883–896.

Dillon, D. R., O'Brien, D. G., & Heilman, E. E. (2000). Literacy research in the next millennium: From paradigms to pragmatism and practicality. *Reading Research Quarterly*, 35(1), 10–26. <https://doi.org/10.1598/rrq.35.1.2>

Doherty, S., Hannigan, B., Campbell, M. J., Ringland, A., Arvinen-Barrow, M., Doherty, S., Hannigan, B., Campbell, M. J., Ringland, A., Doherty, S., Hannigan, B., Campbell, M. J., Ringland, A., & Arvinen-Barrow, M. (2016). The experience of depression during careers of elite male athletes. *Frontiers in Psychology*, 7, 1–11. <https://doi.org/10.3389/fpsyg.2016.01069>

Dolan, E., Connor, H. O., Mcgoldrick, A., Loughlin, G. O., Lyons, D., & Warrington, G. (2011). Nutritional, lifestyle, and weight control practices of professional jockeys. *Journal of Sports Sciences*, 29(8), 791–799. <https://doi.org/10.1080/02640414.2011.560173>

Dolan, E., Cullen, S. J., McGoldrick, A., & Warrington, G. D. (2013). The impact of making weight on physiological and cognitive processes in elite jockeys. *International Journal of Sport Nutrition and Exercise Metabolism*, 23(4), 399–

408. <https://doi.org/10.1123/ijsnem.23.4.399>

- Du Preez, E., Graham, K. S., Gan, T. Y., Moses, B., Ball, C., & Kuah, D. E. (2017). Depression, anxiety, and alcohol use in elite rugby league players over a competitive season. *Clinical Journal of Sport Medicine*, 27(6), 530–535. <https://doi.org/10.1016/j.jsams.2017.09.338>
- Ericsson, K. A., Krampe, R., & Tesch-Romer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review*, 100(3), 363–406. <https://doi.org/10.4324/9780203109427>
- Erlingsson, C., & Brysiewicz, P. (2013). Orientation among multiple truths: An introduction to qualitative research. *African Journal of Emergency Medicine*, 3(2), 92–99. <https://doi.org/10.1016/j.afjem.2012.04.005>
- Erzberger, C., & Kelle, U. (2003). Making Inferences in Mixed Methods: The Rules of Integration. In *Handbook of Mixed Methods in Social and Behavioural Research* (eds, pp. 457–490). Sage.
- Evans, L., Wadey, R., Hanton, S., & Mitchell, I. (2012). Stressors experienced by injured athletes. *Journal of Sports Sciences*, 30(9), 917–927. <https://doi.org/10.1080/02640414.2012.682078>
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behaviour Research Methods*, 39(2), 175–191.
- Feilzer, M. Y. (2010). Doing mixed methods research pragmatically: Implications for the rediscovery of pragmatism as a research paradigm. *Journal of Mixed Methods Research*, 4(1), 6–16. <https://doi.org/10.1177/1558689809349691>

- Fischer, E. H., & Farina, A. (1995). Attitudes toward seeking professional psychological help: A shortened form and considerations for research. *Journal of College Student Development, 36*(4), 368–373.
- Fischer, E. H., & Turner, J. I. (1970). Orientations to seeking professional help: Development and research utility of an attitude scale. *Journal of Consulting and Clinical Psychology, 35*(1), 79–90. <https://doi.org/10.1037/h0029636>
- Fishbein, M., & Azjen, I. (1975). *Belief, Attitude, Intention and Behaviour: An introduction to theory and research*. Addison-Wiley Publishing Company.
- Fletcher, D., Hanton, S., & Mellalieu, S. (2006). An organizational stress review: Conceptual and theoretical issues in competitive sport. In S. Hanton & S. Mellalieu (Eds.), *Literature reviews in sport psychology* (pp. 321–374). Nova Science.
- Fletcher, S., Breitbach, A. P., & Reeves, S. (2017). Interprofessional collaboration in sports medicine: Findings from a scoping review. *Health & Interprofessional Practice, 3*(2), 1128. <https://doi.org/10.7710/2159-1253.1128>
- Fletcher, D., Hanton, S., & Wagstaff, C. R. D. (2012). Performers' responses to stressors encountered in sport organisations. *Journal of Sports Sciences, 30*(4), 349–358. <https://doi.org/10.1080/02640414.2011.633545>
- Foskett, R. L., & Longstaff, F. (2018). The mental health of elite athletes in the United Kingdom. *Journal of Science and Medicine in Sport, 21*(8), 765–770. <https://doi.org/10.1016/j.jsams.2017.11.016>
- Frank, R., Nixdorf, I., & Beckmann, J. (2017). Analyzing the relationship between burnout and depression in junior elite athletes. *Journal of Clinical Sport Psychology, 11*(4), 287–303. <https://doi.org/10.1123/JCSP.2017-0008>

- Freeman, P., Coffee, P., & Rees, T. (2011). The PASS-Q: The Perceived Available Support in Sport Questionnaire. *Journal of Sport & Exercise Psychology*, 33(1), 54–74. <https://doi.org/10.1123/jsep.33.1.54>
- Fung, K. M. T., Tsang, H. W. H., Corrigan, P. W., Lam, C. S., & Cheng, W. M. (2007). Measuring self-stigma of mental illness in China and its implications for recovery. *International Journal of Social Psychiatry*, 53(5), 408–418. <https://doi.org/10.1177/0020764007078342>
- Gagnon, M. M., Gelinias, B. L., & Friesen, L. N. (2017). Mental health literacy in emerging adults in a university setting: Distinctions between symptom awareness and appraisal. *Journal of Adolescent Research*, 32(5), 642–664. <https://doi.org/10.1177/0743558415605383>
- Gariépy, G., Honkaniemi, H., & Quesnel-Vallée, A. (2016). Social support and protection from depression: Systematic review of current findings in western countries. *British Journal of Psychiatry*, 209(4), 284–293. <https://doi.org/10.1192/bjp.bp.115.169094>
- Garner, D., Olmsted, M., Bohr, Y., & Garfinkel, P. (1982). The Eating Attitudes Test: psychometric features and clinical correlates. *Psychological Medicine*, 12, 871–878. <https://doi.org/10.1017/s0033291700049163>
- Geertz, C. (1973). Thick description: toward an interpretive theory of culture. In C. Geertz (Ed.), *The interpretation of cultures* (Eds). Basic Books.
- Gervis, M., & Dunn, N. (2004). The emotional abuse of elite child athletes by their coaches. *Child Abuse Review*, 13(3), 215–223. <https://doi.org/10.1002/car.843>
- Giacobbi, P. R., Lynn, T. K., Wetherington, J. M., Jenkins, J., Bodendorf, M., &

- Langley, B. (2004). Stress and coping during the transition to university for first-year female athletes. *Sport Psychologist*, 18(1), 1–20. <https://doi.org/10.1123/tsp.18.1.1>
- Giacobbi, P. R., Poczwadowski, A., & Hager, P. (2005). A pragmatic research philosophy for applied sport psychology. *Sport Psychologist*, 19(1), 18–31. <https://doi.org/10.1123/tsp.19.1.18>
- Givens, J. L., Katz, I. R., Bellamy, S., & Holmes, W. C. (2007). Stigma and the acceptability of depression treatments among African Americans and whites. *Journal of General Internal Medicine*, 22(9), 1292–1297. <https://doi.org/10.1007/s11606-007-0276-3>
- Goldberg, D. P., Gater, R., Sartorius, N., Ustun, T. B., Piccinelli, M., Gureje, O., & Rutter, C. (1997). The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychological Medicine*, 27(1), 191–197. <https://doi.org/10.1017/S0033291796004242>
- Golding, L., Gillingham, R. G., & Perera, N. K. P. (2020). The prevalence of depressive symptoms in high-performance athletes: a systematic review. *Physician and Sportsmedicine*, 1–12. <https://doi.org/10.1080/00913847.2020.1713708>
- Gonzalez, J. M., Alegría, M., Prihoda, T. J., Copeland, L. A., & Zeber, J. E. (2011). How the relationship of attitudes toward mental health treatment and service use differs by age, gender, ethnicity/race and education. *Social Psychiatry and Psychiatric Epidemiology*, 46(1), 45–57. <https://doi.org/10.1007/s00127-009-0168-4>
- Gorczynski, P., Coyle, M., & Gibson, K. (2017a). Depressive symptoms in high-performance athletes and non-athletes: A comparative meta-analysis. *British*

Journal of Sports Medicine, 51(18), 1348–1354. <https://doi.org/10.1136/bjsports-2016-096455>

Gorczyński, P., Currie, A., Gibson, K., Gouttebauge, V., Hainline, B., Castaldelli-Maia, J. M., Mountjoy, M., Purcell, R., Reardon, C. L., Rice, S., & Swartz, L. (2020a). Developing mental health literacy and cultural competence in elite sport. *Journal of Applied Sport Psychology*, 1–30. <https://doi.org/10.1080/10413200.2020.1720045>

Gorczyński, P., Gibson, K., Thelwell, R., Papatthomas, A., Harwood, C., & Kinnafick, F. (2019). The BASES expert statement on mental health literacy in elite sport. *The Sport and Exercise Scientist*, 59, 6–7. https://marjon.repository.guildhe.ac.uk/17381/1/The BASES Expert Statement on Mental Health Literacy in Elite Sport_Gibson.pdf

Gorczyński, P., Sims-Schouten, W., Hill, D., & Wilson, C. (2017b). Examining mental health literacy, help seeking behaviours, and mental health outcomes in UK university students. *The Journal of Mental Health Training, Education and Practice*, 12(2), 111–120.

Gorczyński, P., Sims-Schouten, W., & Wilson, C. (2020b). Evaluating mental health literacy and help-seeking behaviours in UK university students: a country wide study. *Journal of Public Mental Health*. <https://doi.org/10.1108/JPMH-10-2019-0086>

Gould, D., Jackson, S., & Finch, L. (1993). Sources of stress in national champion figure skaters. *Journal of Sport and Exercise Psychology*, 15, 134–159. <https://doi.org/10.1123/jsep.15.2.134>

Gould, D., Tuffey, S., Udry, S., & Loehr, J. (1996). Burnout in Competitive Junior

Tennis Players. *Sport Psychologist*, 10, 322–340.

Gouttebarga, V., Aoki, H., Ekstrand, J., Verhagen, E., & Kerkhoffs, G. (2016a). Are severe musculoskeletal injuries associated with symptoms of common mental disorders among male European professional footballers? *Knee Surgery, Sports Traumatology, Arthroscopy: Official Journal of the ESSKA*, 24(12), 3934–3942. <https://doi.org/10.1007/s00167-015-3729-y>

Gouttebarga, V., Aoki, H., & Kerkhoffs, G. (2015a). Symptoms of common mental disorders and adverse health behaviours in male professional soccer players. *Journal of Human Kinetics*, 49(1), 277–286. <https://doi.org/10.1515/hukin-2015-0130>

Gouttebarga, V., Aoki, H., Verhagen, E., & Kerkhoffs, G. (2017a). A 12-month prospective cohort study of symptoms of common mental disorders among European professional footballers. *Clinical Journal of Sport Medicine*, 27(5), 487–492. <https://doi.org/10.1097/JSM.0000000000000388>

Gouttebarga, V., Aoki, H., Verhagen, E., & Kerkhoffs, G. (2018). A 12-month prospective cohort study of symptoms of common mental disorders among professional rugby players. *European Journal of Sport Science*, 18(7), 1004–1012. <https://doi.org/10.1080/17461391.2018.1466914>

Gouttebarga, V., Castaldelli-Maia, J. M., Gorczynski, P., Hainline, B., Hitchcock, M. E., Kerkhoffs, G., Rice, S. M., & Reardon, C. L. (2019). Occurrence of mental health symptoms and disorders in current and former elite athletes: A systematic review and meta-analysis. *British Journal of Sports Medicine*, 53(11), 700–706. <https://doi.org/10.1136/bjsports-2019-100671>

Gouttebarga, V., Frings-Dresen, M. H. W., & Sluiter, J. K. (2015b). Mental and

- psychosocial health among current and former professional footballers. *Occupational Medicine*, 65(3), 190–196. <https://doi.org/10.1093/occmed/kqu202>
- Gouttebarga, V., Jonkers, R., Moen, M., Verhagen, E., Wylleman, P., & Kerkhoffs, G. (2017b). The prevalence and risk indicators of symptoms of common mental disorders among current and former Dutch elite athletes. *Journal of Sports Sciences*, 35(21), 2148–2156. <https://doi.org/10.1080/02640414.2016.1258485>
- Gouttebarga, V., Kerkhoffs, G., & Lambert, M. (2016b). Prevalence and determinants of symptoms of common mental disorders in retired professional rugby union players. *European Journal of Sport Science*, 16(5), 595–602. <https://doi.org/10.1080/17461391.2015.1086819>
- Gouttebarga, V., Tol, J. L., & Kerkhoffs, G. (2016c). Epidemiology of symptoms of common mental disorders among elite Gaelic athletes: a prospective cohort study. *The Physician and Sportsmedicine*, 44(3), 283–289. <https://doi.org/10.1080/00913847.2016.1185385>
- Granz, H. L., Schnell, A., Mayer, J., & Thiel, A. (2019). Risk profiles for athlete burnout in adolescent elite athletes: A classification analysis. *Psychology of Sport and Exercise*, 41, 130–141. <https://doi.org/10.1016/j.psychsport.2018.11.005>
- Greenhaus, J. H., Parasuraman, S., & Wormley, W. M. (1990). Effects of race on organizational experiences, job performance evaluations, and career outcomes. *Academy of Management Journal*, 33(1), 64–86.
- Gregoire, A. (2002). The mental health of farmers. *Occupational Medicine*, 52(8), 471–476. <https://doi.org/10.1093/occmed/52.8.471>
- Griffiths, K. M., Christensen, H., & Jorm, A. F. (2008). Predictors of depression stigma.

BMC Psychiatry, 8(1), 25. <https://doi.org/10.1186/1471-244X-8-25>

Gucciardi, D. F., Hanton, S., & Fleming, S. (2017). Are mental toughness and mental health contradictory concepts in elite sport? A narrative review of theory and evidence. *Journal of Science and Medicine in Sport*, 20(3), 307–311. <https://doi.org/10.1016/j.jsams.2016.08.006>

Gulliver, A., Griffiths, K. M., & Christensen, H. (2010). Perceived barriers and facilitators to mental health help-seeking in young people: a systematic review. *BMC Psychiatry*, 10(1), 113. <https://doi.org/10.1186/1471-244X-10-113>

Gulliver, A., Griffiths, K. M., & Christensen, H. (2012a). Barriers and facilitators to mental health help-seeking for young elite athletes: A qualitative study. *BMC Psychiatry*, 12(1), 157. <https://doi.org/10.1186/1471-244x-12-157>

Gulliver, A., Griffiths, K. M., Christensen, H., & Brewer, J. L. (2012b). A systematic review of help-seeking interventions for depression, anxiety and general psychological distress. *BMC Psychiatry*, 12. <https://doi.org/10.1186/1471-244X-12-81>

Gulliver, A., Griffiths, K. M., Christensen, H., Mackinnon, A., Calear, A. L., Parsons, A., Bennett, K., Batterham, P. J., & Stanimirovic, R. (2012c). Internet-based interventions to promote mental health help-seeking in elite athletes: An exploratory randomized controlled trial. *Journal of Medical Internet Research*, 14(3), e69. <https://doi.org/10.2196/jmir.1864>

Gulliver, A., Griffiths, K. M., Mackinnon, A., Batterham, P. J., & Stanimirovic, R. (2015). The mental health of Australian elite athletes. *Journal of Science and Medicine in Sport*, 18(3), 255–261. <https://doi.org/10.1016/j.jsams.2014.04.006>

- Gunasekare, U. (2015). Mixed research method as the third research paradigm: A literature review. *International Journal of Science and Research*, 4(8), 361–367.
- Gustafsson, H., Hassmén, P., Kenttä, G., & Johansson, M. (2008). A qualitative analysis of burnout in elite Swedish athletes. *Psychology of Sport and Exercise*, 9(6), 800–816. <https://doi.org/10.1016/j.psychsport.2007.11.004>
- Gustafsson, H., Kenttä, G., & Hassmén, P. (2011). Athlete burnout: An integrated model and future research directions. *International Review of Sport and Exercise Psychology*, 4(1), 3–24. <https://doi.org/10.1080/1750984X.2010.541927>
- Gustafsson, H., Martinent, G., Isoard-Gautheur, S., Hassmén, P., & Guillet-Descas, E. (2018). Performance based self-esteem and athlete-identity in athlete burnout: A person-centered approach. *Psychology of Sport and Exercise*, 38, 56–60. <https://doi.org/10.1016/j.psychsport.2018.05.017>
- Hagiwara, G., Iwatsuki, T., Isogai, H., Van Raalte, J. L., & Brewer, B. W. (2017). Relationships among sports helplessness, depression, and social support in American college student-athletes. *Journal of Physical Education and Sport*, 17(2), 753–757. <https://doi.org/10.7752/jpes.2017.02114>
- Hallberg, L. (2008). *Walking the way of the horse: Exploring the power of the horse-human relationship*. iUniverse.
- Halter, M. J. (2004). The stigma of seeking care and depression. *Archives of Psychiatric Nursing*, 18(5), 178–184. <https://doi.org/10.1016/j.apnu.2004.07.005>
- Hammersley, M. (1996). The relationship between qualitative and quantitative research: Paradigm loyalty versus methodological eclecticism. In J. T. E. Richardson (Ed.), *Handbook of qualitative research methods for psychology and*

the social sciences (Ed., pp. 159–174). British Psychological Society Books.

Hammond, T., Gialloredo, C., Kubas, H., & Davis IV, H. (Hap). (2013). The prevalence of failure based depression among elite athletes. *Clinical Journal of Sport Medicine*, 23(4), 273–277. <https://doi.org/10.1097/JSM.0b013e318287b870>

Han, J., Batterham, P. J., Callear, A. L., & Randall, R. (2018). Factors Influencing Professional Help-Seeking for Suicidality. *Crisis*, 39(3), 175–196. <https://doi.org/10.1027/0227-5910/a000485>

Hanton, S., Fletcher, D., & Coughlan, G. (2005). Stress in elite sport performers : A comparative study of competitive and organizational stressors. *Journal of Sports Sciences*, 23(10), 1129–1141. <https://doi.org/10.1080/02640410500131480>

Hardy, L., & Jones, G. (1994). Current issues and future directions for performance. *Journal of Sports Sciences*, 12, 61–92. <https://doi.org/10.1080/02640419408732158>

Hassmén, P., & Blomstrand, E. (1995). Mood state relationships and soccer team performance. *The Sport Psychologist*, 9(3), 297–308. <https://doi.org/10.1123/tsp.9.3.297>

Hayes, A. F. (2013). *An Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression Based Approach*. Guilford Press.

Heath, P. J., Brenner, R. E., Lannin, D. G., & Vogel, D. L. (2018). Self-compassion moderates the relationship of perceived public and anticipated self-stigma of seeking help. *Stigma and Health*, 3(1), 65–68. <https://doi.org/10.1037/sah0000072>

Henn, M., Weinstein, M., & Foard, N. (2006). *A short introduction to social research*. Sage.

- Henriksen, K., Schinke, R., Moesch, K., McCann, S., Parham, W. D., Larsen, C. H., & Terry, P. (2019). Consensus statement on improving the mental health of high performance athletes. *International Journal of Sport and Exercise Psychology*, 1–8. <https://doi.org/10.1080/1612197x.2019.1570473>
- Hickey, C. (2008). Physical education, sport and hyper-masculinity in schools. *Sport, Education and Society*, 13(2), 147–161. <https://doi.org/10.1080/13573320801957061>
- Hilliard, R. C., Redmond, L. A., & Watson, J. C. (2019). The relationships among self-compassion, stigma, and attitudes toward counseling in student-athletes. *Journal of Clinical Sport Psychology*, 13(3), 374–389. <https://doi.org/10.1123/jcsp.2018-0027>
- Holt, N. L., & Hoar, S. (2006). The multidimensional construct of social support. In S. Hanton & S. Mellalieu (Eds.), *Literature reviews in sport psychology* (Eds., pp. 199–225). Nova.
- Howe, K. R. (1988). Against the quantitative-qualitative incompatibility thesis or dogmas die hard. *Educational Researcher*, 17(8), 10–16. <https://doi.org/10.3102/0013189X017008010>
- HRI. (2018). *Horse Racing Ireland Factbook 2018*. [https://www.hri.ie/hri/2019/Factbook 2018 FINAL.pdf](https://www.hri.ie/hri/2019/Factbook%202018%20FINAL.pdf)
- Hurley, D., Allen, M. S., Swann, C., Okely, A. D., & Vella, S. A. (2018). The development, pilot, and process evaluation of a parent mental health literacy intervention through community sports clubs. *Journal of Child and Family Studies*, 27(7), 2149–2160. <https://doi.org/10.1007/s10826-018-1071-y>

- Irish Horseracing Regulatory Board. (2019). *2019 Integrity Racing Statistics*.
<https://www.ihrb.ie/general-press-releases/irish-horseracing-regulatory-board-announce-2019-integrity-racing-statistics>
- Jackman, P., Van Hout, M. C., & Fitzpatrick, G. (2017). Exploring bodily sensations experienced during flow states in professional national hunt jockeys: a connecting analysis. *Qualitative Research in Sport, Exercise and Health*, *91*, 92–105.
<https://doi.org/10.1017/CBO9781107415324.004>
- Jang, Y., Chiriboga, D. A., Herrera, J. R., Martinez Tyson, D., & Schonfeld, L. (2011). Attitudes toward mental health services in hispanic older adults: The role of misconceptions and personal beliefs. *Community Mental Health Journal*, *47*(2), 164–170. <https://doi.org/10.1007/s10597-009-9274-8>
- Jayanthi, N., Pinkham, C., Dugas, L., Patrick, B., & LaBella, C. (2013). Sports Specialization in Young Athletes: Evidence-Based Recommendations. *Sports Health*, *5*(3), 251–257. <https://doi.org/10.1177/1941738112464626>
- Jennings, K. S., Cheung, J. H., Britt, T. W., Goguen, K. N., Jeffirs, S. M., Peasley, A. L., & Lee, A. C. (2015). How are perceived stigma, self-stigma, and self-reliance related to treatment-seeking? A three-path model. *Psychiatric Rehabilitation Journal*, *38*(2), 109–116. <https://doi.org/10.1037/prj0000138>
- Jensen, S. N., Ivarsson, A., Fallby, J., Dankers, S., & Elbe, A.-M. (2018). Depression in Danish and Swedish elite football players and its relation to perfectionism and anxiety. *Psychology of Sport and Exercise*, *36*, 147–155.
<https://doi.org/10.1016/j.psychsport.2018.02.008>
- Johnson, J. L., Adkins, D., & Chauvin, S. (2020). A review of the quality indicators of rigor in qualitative research. *American Journal of Pharmaceutical Education*,

84(1), 138–146. <https://doi.org/10.5688/ajpe7120>

Johnson, R., Onwuegbuzie, A. J., & Turner, L. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research, 1*(2), 112–133. <https://doi.org/10.1177/1558689806298224>

Jones, T. V. (2016). Predictors of perceptions of mental illness and averseness to help: a survey of elite football players. *Journal of Mental Health, 25*(5), 422–427. <https://doi.org/10.3109/09638237.2015.1124384>

Jorm, A. F. (2000). Mental health literacy. *British Journal of Psychiatry, 177*(5), 396–401. <https://doi.org/10.1192/bjp.177.5.396>

Jorm, A. F. (2012). Mental health literacy; empowering the community to take action for better mental health. *American Psychologist, 67*(3), 231–243. <https://doi.org/10.1037/a0025957>

Jorm, A. F., Barney, L. J., Christensen, H., Highet, N. J., Kelly, C. M., & Kitchener, B. A. (2006). Research on mental health literacy: What we know and what we still need to know. *Australian and New Zealand Journal of Psychiatry, 40*, 3–5. <https://doi.org/10.1111/j.1440-1614.2006.01734.x>

Jorm, A. F., Griffiths, K. M., Christensen, H., Parslow, R. A., & Rogers, B. (2004). Actions taken to cope with depression at different levels of severity: A community survey. *Psychological Medicine, 34*(2), 293–299. <https://doi.org/10.1017/S003329170300895X>

Jorm, A. F., Korten, A. E., Jacomb, P. A., Christensen, H., Rodgers, B., & Pollitt, P. (1997). “Mental health literacy”: A survey of the public’s ability to recognise mental disorders and their beliefs about the effectiveness of treatment. *Medical*

Journal of Australia, 166(4), 182–186. <https://doi.org/10.5694/j.1326-5377.1997.tb140071.x>

Judd, F., Komiti, A., & Jackson, H. (2008). How does being female assist help-seeking for mental health problems? *Australian and New Zealand Journal of Psychiatry*, 42(1), 24–29. <https://doi.org/10.1080/00048670701732681>

Jung, H., von Sternberg, K., & Davis, K. (2017). The impact of mental health literacy, stigma, and social support on attitudes toward mental health help-seeking. *International Journal of Mental Health Promotion*, 19(5), 252–267. <https://doi.org/10.1080/14623730.2017.1345687>

Junge, A., & Feddermann-Demont, N. (2016). Prevalence of depression and anxiety in top-level male and female football players. *BMJ Open Sport & Exercise Medicine*, 2(1), e000087. <https://doi.org/10.1136/bmjsem-2015-000087>

Kaier, E., Cromer, L. D., Johnson, M. D., Strunk, K., & Davis, J. L. (2015). Perceptions of mental illness stigma: Comparisons of athletes to nonathlete peers. *Journal of College Student Development*, 56(7), 735–739. <https://doi.org/10.1353/csd.2015.0079>

Kantor, V., Knefel, M., & Lueger-Schuster, B. (2017). Perceived barriers and facilitators of mental health service utilization in adult trauma survivors: A systematic review. *Clinical Psychology Review*, 52, 52–68. <https://doi.org/10.1016/j.cpr.2016.12.001>

Kaushik, V., & Walsh, C. A. (2019). *Pragmatism as a Research Paradigm and Its Implications for Social Work Research*.

Kendrick, T., & Pilling, S. (2012). Common mental health problems: Identification and

pathways to care clinical guideline: NICE clinical guideline. *British Journal of General Practice*, 62(594), 47–49.

Kern, A., Heininger, W., Klueh, E., Salazar, S., Hansen, B., Meyer, T., & Eisenberg, D. (2017). Athletes connected: Results from a pilot project to address knowledge and attitudes about mental health among college student-athletes. *Journal of Clinical Sport Psychology*, 11(4), 324–336. <https://doi.org/10.1123/JCSP.2016-0028>

Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S. L. T., Walters, E. E., & Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine*, 32(6), 959–976. <https://doi.org/10.1017/S0033291702006074>

Kessler, R. C., Barker, P. R., Colpe, L. J., Epstein, J. F., Gfroerer, J. C., Hiripi, E., Howes, M. J., Normand, S. L. T., Manderscheid, R. W., Walters, E. E., & Zaslavsky, A. M. (2003). Screening for serious mental illness in the general population. *Archives of General Psychiatry*, 60(2), 184–189. <https://doi.org/10.1001/archpsyc.60.2.184>

Kessler, R. C., Chiu, W., Demler, O., Merikangas, K., & Walters, E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the national comorbidity survey replication. *JAMA Psychiatry*, 62(6), 590–592. <https://doi.org/doi:10.1001/archpsyc.62.6.617>

Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, 43(2), 207. <https://doi.org/10.2307/3090197>

- Kiely, M., Warrington, G., McGoldrick, A., & Cullen, S. (2020). Physical preparation strategies of professional jockeys. *Journal of Strength and Conditioning Research, Ahead of P.*
- Kilic, O., Aoki, H., Haagensen, R., Jensen, C., Johnson, U., Kerkhoffs, G., & Gouttebauge, V. (2017). Symptoms of common mental disorders and related stressors in Danish professional football and handball. *European Journal of Sport Science, 17*(10), 1328–1334. <https://doi.org/10.1080/17461391.2017.1381768>
- Kilinc, A., & Granello, P. F. (2003). Overall life satisfaction and help-seeking attitudes of Turkish college students in the United States: Implications for college counselors. *Journal of College Counseling, 6*(1), 56–68. <https://doi.org/10.1002/j.2161-1882.2003.tb00227.x>
- Kim, E. J., Yu, J. H., & Kim, E. Y. (2020). Pathways linking mental health literacy to professional help-seeking intentions in Korean college students. *Journal of Psychiatric and Mental Health Nursing, 27*(4), 393–405. <https://doi.org/10.1111/jpm.12593>
- King, L., Cullen, S. J., O'Connor, S., McGoldrick, A., Pugh, J., Warrington, G., Woods, G., Nevill, A., & Losty, C. (2020). Common mental disorders among Irish jockeys: Prevalence and risk factors. *The Physician and Sportsmedicine, 49*(2), 1–7. <https://doi.org/10.1080/00913847.2020.1808435>
- King, L., Cullen, S. J., McGoldrick, A., Pugh, J., Warrington, G., & Losty, C. (2021). Stressors experienced by professional jockeys. *The Sport Psychologist, 35*(2), 142–154. <https://doi.org/10.1123/tsp.2020-0128>
- King, L., Cullen, S. J., McGoldrick, A., Pugh, J., Warrington, G., Woods, G., & Losty, C. (2021). Mental health difficulties among professional Jockeys: A narrative

- review. *BMJ Sport Exercise & Medicine*, 7(e001078), 1-13.
<http://dx.doi.org/10.1136/bmjsem-2021-001078>
- King, L., Cullen, S. J., O'Connor, S., McGoldrick, A., Pugh, J., Warrington, G., & Losty, C. (2021). Racehorse trainer mental health: Prevalence and risk factors. *Journal of Equine Veterinary Science*, 101, 103423.
<https://doi.org/10.1016/j.jevs.2021.103423>
- King, P. T., Newton, F., Osterlund, B., & Baber, B. (1973). A counseling center studies itself. *Journal of College Student Personnel*, 14(4), 338–344.
- Kohls, E., Coppens, E., Hug, J., Wittevrongel, E., Audenhove, C., Van, Koburger, N., Arensman, E., Székely, A., Gusmao, R., & Hegerl, U. (2017). Public attitudes toward depression and helpseeking: Impact of the OSPI-Europe depression awareness campaign in four European regions. *Journal of Affective Disorders*, 217, 252–259. <https://doi.org/10.1016/j.jad.2017.04.006>
- Kola-Palmer, S., Lewis, K., Rodriguez, A., & Kola-Palmer, D. (2020). Help-seeking for mental health issues in professional rugby league players. *Frontiers in Psychology*, 11(570690). <https://doi.org/10.3389/fpsyg.2020.570690>
- Komiya, N., Good, G. E., & Sherrod, N. B. (2000). Emotional openness as a predictor of college students' attitudes toward seeking psychological help. *Journal of Counseling Psychology*, 47(1), 138–143. <https://doi.org/10.1037/AJ022-0167>
- Kotera, Y., Van Laethem, M., & Ohshima, R. (2020). Cross-cultural comparison of mental health between Japanese and Dutch workers: relationships with mental health shame, self-compassion, work engagement and motivation. *Cross Cultural and Strategic Management*, 27(3), 511–530. <https://doi.org/10.1108/CCSM-02-2020-0055>

- Koutsimani, P., Montgomery, A., & Georganta, K. (2018). The relationship between burnout, depression, and anxiety: A systematic review and meta-analysis. *Frontiers in Psychology, 10*, 284. <https://doi.org/10.3389/fpsyg.2019.00284>
- Kristiansen, E. (2017). Walking the line: how young athletes balance academic studies and sport in international competition. *Sport in Society, 20*(1), 47–65. <https://doi.org/10.1080/17430437.2015.1124563>
- Kristiansen, E., & Roberts, G. C. (2010). Young elite athletes and social support: Coping with competitive and organizational stress in “Olympic” competition. *Scandinavian Journal of Medicine and Science in Sports, 20*(4), 686–695. <https://doi.org/10.1111/j.1600-0838.2009.00950.x>
- Kroenke, K., & Spitzer, R. L. (2002). The PHQ-9: A new depression diagnostic and severity measure. *Psychiatric Annals, 32*(9), 509–515. <https://doi.org/10.3928/0048-5713-20020901-06>
- Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine, 16*(9), 606–613. <https://doi.org/10.1046/j.1525-1497.2001.016009606.x>
- Kuettel, A., & Larsen, C. H. (2019). Risk and protective factors for mental health in elite athletes: a scoping review. *International Review of Sport and Exercise Psychology, 13*(1), 231–265. <https://doi.org/10.1080/1750984X.2019.1689574>
- Kulesza, M., Pedersen, E. R., Corrigan, P. W., & Marshall, G. N. (2015). Help-seeking stigma and mental health treatment seeking among young adult veterans. *Military Behavioral Health, 3*(4), 230–239. <https://doi.org/10.1080/21635781.2015.1055866>

- Kunde, L., Kőlves, K., Kelly, B., Reddy, P., & De Leo, D. (2017). Pathways to suicide in Australian farmers: A life chart analysis. *International Journal of Environmental Research and Public Health*, 14(4).
<https://doi.org/10.3390/ijerph14040352>
- Labadarios, D., Kotze, J., Momberg, D., & Kotze, T. J. (1993). Jockeys and their practices in South Africa. *World Review of Nutrition and Dietetics*, 71, 97–114.
<https://doi.org/10.1159/000422352>
- Labouliere, C. D., Kleinman, M., & Gould, M. S. (2015). When self-reliance is not safe: Associations between reduced help-seeking and subsequent mental health symptoms in suicidal adolescents. *International Journal of Environmental Research and Public Health*, 12(4), 3741–3755.
<https://doi.org/10.3390/ijerph120403741>
- Landolt, K., O'Halloran, P., Hale, M. W., Horan, B., Kinsella, G., Kingsley, M., & Wright, B. J. (2017). Identifying the sources of stress and rewards in a group of Australian apprentice jockeys. *Qualitative Research in Sport, Exercise and Health*, 9(5), 583–599. <https://doi.org/10.1080/2159676X.2017.1340329>
- Lavallée, L., & Flint, F. (1996). The relationship of stress, competitive anxiety, mood state, and social support to athletic injury. *Journal of Athletic Training*, 31(4), 296–299.
- Lazarus, R. S. (2000). How emotions influence performance in competitive sports. *The Sport Psychologist*, 14, 229–252.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal, and Coping*. Springer.
- Legg, K., Cochrane, D., Gee, E., & Rogers, C. (2020). The external workload of

- thoroughbred horse racing jockeys. *Sustainability*, 12(18), 1–10.
<https://doi.org/10.3390/su12187572>
- Leong, F. T. L., & Zachar, P. (1999). Gender and opinions about mental illness as predictors of attitudes toward seeking professional psychological help. *British Journal of Guidance and Counselling*, 27(1), 123–132.
<https://doi.org/10.1080/03069889908259720>
- Leydon, M. A., & Wall, C. (2002). New Zealand jockeys dietary habits and their potential impact on health. *International Journal of Sport Nutrition and Exercise Metabolism*, 12(2), 220–237. <https://doi.org/10.1017/CBO9781107415324.004>
- Li, L. C., Grimshaw, J. M., Nielsen, C., Judd, M., Coyte, P. C., & Graham, I. D. (2009). Evolution of Wenger's concept of community of practice. *Implementation Science*, 4(1), 1–8. <https://doi.org/10.1186/1748-5908-4-11>
- Li, W., Dorstyn, D. S., & Denson, L. A. (2014). Psychosocial correlates of college students' help-seeking intention: A meta-analysis. *Professional Psychology: Research and Practice*, 45(3), 163–170. <https://doi.org/10.1037/a0037118>
- Liddle, S. K., Deane, F. P., Batterham, M., & Vella, S. A. (2019). A brief sports-based mental health literacy program for male adolescents: A cluster-randomized controlled trial. *Journal of Applied Sport Psychology*, 0(0), 000.
<https://doi.org/10.1080/10413200.2019.1653404>
- Link, B. G., & Phelan, J. C. (2001). Conceptualizing stigma. *Annual Review of Sociology*, 27(1), 363–385. <https://doi.org/10.1146/annurev.soc.27.1.363>
- Longhurst, R. (2010). Semi-structured interviews and focus groups. In N. Clifford & G. Valentine (Eds.), *Key Methods in Geography* (Eds, pp. 103–116). Sage.

- López, R. L., & Levy, J. J. (2013). Student athletes' perceived barriers to and preferences for seeking counseling. *Journal of College Counseling, 16*(1), 19–31. <https://doi.org/10.1002/j.2161-1882.2013.00024.x>
- Losty, C., Warrington, G., Mcgoldrick, A., Murphy, C., Burrows, E., & Cullen, S. (2019). Mental health and wellbeing of jockeys. *Journal of Human Sport & Exercise, 14*(1), 147–158. <https://doi.org/10.14198/jhse.2019.141.12>
- Löwe, B., Decker, O., Müller, S., Brähler, E., Schellberg, D., Herzog, W., & Herzberg, P. Y. (2008). Validation and standardization of the generalized anxiety disorder screener (GAD-7) in the general population. *Medical Care, 46*(3), 266–274. <https://doi.org/10.1097/MLR.0b013e318160d093>
- Mackenzie, C. S., Gekoski, W. L., & Knox, V. J. (2006). Age, gender, and the underutilization of mental health services: The influence of help-seeking attitudes. *Aging and Mental Health, 10*(6), 574–582. <https://doi.org/10.1080/13607860600641200>
- Mackenzie, C. S., Knox, V. J., Gekoski, W. L., & Macaulay, H. L. (2004). An adaptation and extension of the attitudes toward seeking professional psychological help scale. *Journal of Applied Social Psychology, 34*(11), 2410–2433. <https://doi.org/10.1111/j.1559-1816.2004.tb01984.x>
- MacKinnon, A. L., Jackson, K., Kuznik, K., Turner, A., Hill, J., Davies, M. A. M., Jones, M. E., Delmestri, A., Sanchez-Santos, M. T., & Newton, J. (2019). Increased risk of musculoskeletal disorders and mental health problems in retired professional jockeys: A cross-sectional study. *International Journal of Sports Medicine, 40*(11), 732–738. <https://doi.org/10.1055/a-0902-8601>
- Mahalik, J. R., Good, G. E., & Englar-Carlson, M. (2003). Masculinity scripts,

- presenting concerns, and help seeking: Implications for practice and training. *Professional Psychology: Research and Practice*, 34(2), 123–131. <https://doi.org/10.1037/0735-7028.34.2.123>
- Maisel, N. C., & Gable, S. L. (2009). The paradox of received social support: The importance of responsiveness. *Psychological Science*, 20(8), 928–932. <https://doi.org/10.1111/j.1467-9280.2009.02388.x>
- Mancine, R. P., Gusfa, D. W., Moshrefi, A., & Kennedy, S. F. (2020). Prevalence of disordered eating in athletes categorized by emphasis on leanness and activity type - A systematic review. *Journal of Eating Disorders*, 8(1), 1–9. <https://doi.org/10.1186/s40337-020-00323-2>
- Manos, R. C., Rusch, L. C., Kanter, J. W., & Clifford, L. M. (2009). Depression self-stigma as a mediator of the relationship between depression severity and avoidance. *Journal of Social and Clinical Psychology*, 28(9), 1128–1143. <https://doi.org/10.1521/jscp.2009.28.9.1128>
- Martin, D., Wilson, G., Morton, J. P., Close, G. L., & Murphy, R. C. (2017). The horseracing industry's perception of nutritional and weight-making practices of professional jockeys. *Qualitative Research in Sport, Exercise and Health*, 9(5), 568–582. <https://doi.org/10.1080/2159676X.2017.1340330>
- Martin, S. J., Saulnier, K. G., Horvath, S. A., & Anderson, T. (2020). Increasing help-seeking for eating pathology among collegiate athletes: An examination of a novel, customized intervention. *Psychology of Sport and Exercise*, 50, 101731. <https://doi.org/10.1016/j.psychsport.2020.101731>
- McCabe, T., Peirce, N., Gorczynski, P., & Heron, N. (2021). Narrative review of mental illness in cricket with recommendations for mental health support. *BMJ Open*

Sport & Exercise Medicine, 7(1), e000910. <https://doi.org/10.1136/bmjsem-2020-000910>

McConn-Palfreyman, W., Littlewood, M., & Nesti, M. (2019). “A lifestyle rather than a job” A review and recommendations on mental health support within the British horse racing industry. The Racing Foundation. <https://www.racingfoundation.co.uk/storage/app/media/downloads/A-lifestyle-rather-than-a-job.pdf>

McGuane, T., Shannon, S., Sharp, L.-A., Dempster, M., & Breslin, G. (2019). “You Wanna Ride, Then You Waste”: The psychological impact of wasting in national hunt jockeys. *The Sport Psychologist*, 33(2), 129–136. <https://doi.org/10.1123/tsp.2018-0059>

McKay, J., Niven, A. G., Lavalley, D., & White, A. (2008). Sources of strain among elite UK track athletes. *Sport Psychologist*, 22(2), 143–163. <https://doi.org/10.1123/tsp.22.2.143>

McLoughlin, E., Fletcher, D., Slavich, G. M., Arnold, R., & Moore, L. J. (2021). Cumulative lifetime stress exposure, depression, anxiety, and well-being in elite athletes: A mixed-method study. *Psychology of Sport and Exercise*, 52, 101823. <https://doi.org/10.1016/j.psychsport.2020.101823>

McNair, D., Lorr, M., & Droppleman, L. (1971). *Manual for the profile of mood states*. Educational and Industrial Testing Services.

Mellalieu, S. D., Neil, R., Hanton, S., & Fletcher, D. (2009). Competition stress in sport performers: Stressors experienced in the competition environment. *Journal of Sports Sciences*, 27(7), 729–744. <https://doi.org/10.1080/02640410902889834>

- Mendoza, H., Masuda, A., & Swartout, K. M. (2015). Mental health stigma and self-concealment as predictors of help-seeking attitudes among Latina/o College Students in the United States. *International Journal for the Advancement of Counselling*, 37(3), 207–222. <https://doi.org/10.1007/s10447-015-9237-4>
- Mezey, G., King, M., & Mezey, G. (1987). Brief communication eating behaviour of male racing jockeys. *Psychological Medicine*, 17(1), 249–253. <https://doi.org/10.1017/S0033291700013131>
- Moesch, K., Kenttä, G., Kleinert, J., Quignon-fleuret, C., Cecil, S., & Bertollo, M. (2018). FEPSAC position statement: Mental health disorders in elite athletes and models of service provision. *Psychology of Sport & Exercise*. <https://doi.org/10.1016/j.psychsport.2018.05.013>
- Mojtabai, R., Evans-Lacko, S., Schomerus, G., & Thornicroft, G. (2016). Attitudes toward mental health help seeking as predictors of future help-seeking behavior and use of mental health treatments. *Psychiatric Services*, 67(6), 650–657. <https://doi.org/10.1176/appi.ps.201500164>
- Monroe, S. M., & Simons, A. D. (1991). Diathesis-stress theories in the context of life stress research: implications for the depressive disorders. *Psychological Bulletin*, 110(3), 406–425. <https://doi.org/10.1037/0033-2909.110.3.406>
- Moore, J., Timperio, A., Crawford, D., Burns, C., & Cameron-Smith, D. (2002). Weight management and weight loss strategies of professional jockeys. *International Journal of Sport Nutrition and Exercise Metabolism*, 12, 1–13. <https://doi.org/10.1017/CBO9781107415324.004>
- Moore, Z. E., & Bonagura, K. (2017). Current opinion in clinical sport psychology: from athletic performance to psychological well-being. *Current Opinion in*

Psychology, 16, 176–179. <https://doi.org/10.1016/j.copsyc.2017.05.016>

Moran, A. P., Matthews, J. J., & Kirby, K. (2011). Whatever happened to the third paradigm? Exploring mixed methods research designs in sport and exercise psychology. *Qualitative Research in Sport, Exercise and Health*, 3(3), 362–369. <https://doi.org/10.1080/2159676X.2011.607843>

Moreland, J. J., Coxe, K. A., & Yang, J. (2018). Collegiate athletes' mental health services utilization: A systematic review of conceptualizations, operationalizations, facilitators, and barriers. *Journal of Sport and Health Science*, 7(1), 58–69. <https://doi.org/10.1016/j.jshs.2017.04.009>

Morgan, D. L. (1998). Practical strategies for combining qualitative and quantitative methods: Applications to health research. *Qualitative Health Research*, 8(3), 362–376. <https://doi.org/10.1177/104973239800800307>

Morgan, D. L. (2014). Pragmatism as a paradigm for social research. *Qualitative Inquiry*, 20(8), 1045–1053. <https://doi.org/10.1177/1077800413513733>

Morgan, J. F., Reid, F., & Lacey, J. H. (1999). The SCOFF questionnaire: assessment of a new screening tool for eating disorders. *BMJ*, 319(7223), 1467-1468. <https://doi.org/10.1136/bmj.319.7223.1467>

Morris, R., Cartigny, E., Ryba, T. V., Wylleman, P., Henriksen, K., Torregrossa, M., Lindahl, K., & Erpič, S. C. (2021). A taxonomy of dual career development environments in European countries. *European Sport Management Quarterly*, 21(1), 134–151. <https://doi.org/10.1080/16184742.2020.1725778>

Myer, G. D., Jayanthi, N., Difiori, J. P., Faigenbaum, A. D., Kiefer, A. W., Logerstedt,

- D., & Micheli, L. J. (2015). Sport specialization, Part I: Does early sports specialization increase negative outcomes and reduce the opportunity for success in young athletes? *Sports Health*, 7(5), 437–442. <https://doi.org/10.1177/1941738115598747>
- Nadeem, E., Lange, J. M., Edge, D., Fongwa, M., Belin, T., & Miranda, J. (2007). Does stigma keep poor young immigrant and U.S.-born black and Latina women from seeking mental health care? *Psychiatric Services*, 58(12), 1547–1554. <https://doi.org/10.1176/ps.2007.58.12.1547>
- Nam, S. K., Choi, S. I., Lee, J. H., Lee, M. K., Kim, A. R., & Lee, S. M. (2013). Psychological factors in college students' attitudes toward seeking professional psychological help: A meta-analysis. *Professional Psychology: Research and Practice*, 44(1), 37–45. <https://doi.org/10.1037/a0029562>
- Nam, S. K., Chu, H. J., Lee, M. K., Lee, J. H., Kim, N., & Lee, S. M. (2010). A meta-analysis of gender differences in attitudes toward seeking professional psychological help. *Journal of American College Health*, 59(2), 110–116. <https://doi.org/10.1080/07448481.2010.483714>
- Neil, R., Bowles, H. C. R., Fleming, S., & Hanton, S. (2016). The experience of competition stress and emotions in cricket. *Sport Psychologist*, 30(1), 76–88. <https://doi.org/10.1123/tsp.2014-0077>
- Newman, H. J. H., Howells, K. L., & Fletcher, D. (2016). The dark side of top level sport: An autobiographic study of depressive experiences in elite sport performers. *Frontiers in Psychology*, 7(868), 1–12. <https://doi.org/10.3389/fpsyg.2016.00868>
- Nicholls, A. R., Madigan, D. J., Fairs, L. R. W., & Bailey, R. (2020). Mental health and psychological well-being among professional rugby league players from the UK.

BMJ Open Sport and Exercise Medicine, 6(1), 1–5.
<https://doi.org/10.1136/bmjsem-2019-000711>

Nixdorf, I., Frank, R., & Beckmann, J. (2016). Comparison of athletes' proneness to depressive symptoms in individual and team sports: Research on psychological mediators in junior elite athletes. *Frontiers in Psychology*, 7, 1782.
<https://doi.org/10.3389/fpsyg.2016.01782>

Nixdorf, I., Frank, R., Hautzinger, M., & Beckmann, J. (2013). Prevalence of depressive symptoms and correlating variables among German elite athletes. *Journal of Clinical Sport Psychology*, 7(4), 313–326.
<https://doi.org/10.1123/jcsp.7.4.313>

Noblet, A. J., & Gifford, S. M. (2002). The sources of stress experienced by professional Australian footballers. *Journal of Applied Sport Psychology*, 14(1), 1–13. <https://doi.org/10.1080/10413200209339007>

North, J., & Lavalley, D. (2004). An investigation of potential users of career transition services in the United Kingdom. *Psychology of Sport and Exercise*, 5(1), 77–84.
[https://doi.org/doi.org/10.1016/S1469-0292\(02\)00051-1](https://doi.org/doi.org/10.1016/S1469-0292(02)00051-1)

Novick, G. (2008). Is there a bias against telephone interviews in qualitative research? *Research in Nursing and Health*, 31(4), 391–398.
<https://doi.org/10.1002/nur.20259>

Obasi, E. M., & Leong, F. T. L. (2009). Psychological distress, acculturation, and mental health-seeking attitudes among people of African descent in the United States: A preliminary investigation. *Journal of Counseling Psychology*, 56(2), 227–238. <https://doi.org/10.1037/a0014865>

- O'Brien, C. P., & Lyons, F. (2000). Alcohol and the athlete. *Sports Medicine*, 29(5), 295–300. <https://doi.org/10.2165/00007256-200029050-00001>
- O'Connor, M., & Casey, L. (2015). The mental health literacy scale (MHLS): A new scale-based measure of mental health literacy. *Psychiatry Research*, 229(1–2), 511–516.
- O'Connor, S., Warrington, G., McGoldrick, A., & Cullen, S. (2017a). Epidemiology of injury due to race-day jockey falls in professional flat and jump horse racing in Ireland, 2011 -2015. *Journal of Athletic Training*, 52(12), 1140–1146. <https://doi.org/10.4085/1062-6050-52.12.17>
- O'Connor, S., Warrington, G., McGoldrick, A., & Cullen, S. (2017b). Race day concussion incidence in Irish professional flat and jump horse racing from 2011 to 2016. *Journal of Science and Medicine in Sport*, 20, 20–21. <https://doi.org/10.1016/j.jsams.2017.09.228>
- O'Connor, S., Warrington, G., McGoldrick, A., & Cullen, S. (2018a). A 9-year epidemiologic study (2007-2015) on race-day jockey fall and injury incidence in amateur irish horse racing. *Journal of Athletic Training*, 53(10), 950–955. <https://doi.org/10.4085/1062-6050-339-17>
- O'Connor, S., Warrington, G., Whelan, G., MCGoldrick, A., & Cullen, S. (2018b). Concussion history, reporting behaviors, attitudes, and knowledge in jockeys. *Clinical Journal of Sport Medicine*, 30(6), 578–584. <https://doi.org/10.1097/jsm.0000000000000658>
- OECD/EU. (2018). *Health at a Glance : Europe 2018: State of Health in the EU Cycle*. OECD Publishing.

- Oliver, L. (2019). *Trainer welfare - what can be done to help trainers combat “trolling” online?* Trainer. <https://trainermagazine.com/european-trainer-articles/trainer-welfare-what-can-be-done-to-help-trainers-combat-trolling-online/2019/7/11>
- Olusoga, P., Butt, J., Hays, K., & Maynard, I. (2009). Stress in elite sports coaching: Identifying stressors. *Journal of Applied Sport Psychology*, 21(4), 442–459. <https://doi.org/10.1080/10413200903222921>
- Ortega, A., & Alegria, M. (2002). Self-reliance, mental health need, and the use of mental healthcare among island Puerto Ricans. *Mental Health Services Research*, 4(3), 131–141. <https://doi.org/10.1023/A>
- Pansiri, J. (2005). Pragmatism: A methodological approach to researching strategic alliances in tourism. *Tourism and Hospitality, Planning and Development*, 2(3), 191–206. <https://doi.org/10.1080/14790530500399333>
- Park, S., Lavalley, D., & Tod, D. (2013). Athletes’ career transition out of sport: A systematic review. *International Review of Sport and Exercise Psychology*, 6(1), 22–53. <https://doi.org/10.1080/1750984X.2012.687053>
- Parrott, S., Billings, A. C., Buzzelli, N., & Towery, N. (2019). “We all go through it”: Media depictions of mental illness disclosures from star athletes DeMar DeRozan and Kevin Love. *Communication & Sport*, 9(1), 33–54. <https://doi.org/10.1177/2167479519852605>
- Parrott, S., Billings, A. C., Hakim, S. D., & Gentile, P. (2020). From #endthestigma to #realman: Stigma-challenging social media responses to NBA players’ mental health disclosures. *Communication Reports*, 33(3), 148–160. <https://doi.org/10.1080/08934215.2020.1811365>

- Picco, L., Abidin, E., Pang, S., Vaingankar, J. A., Jeyagurunathan, A., Chong, S. A., & Subramaniam, M. (2018). Association between recognition and help-seeking preferences and stigma towards people with mental illness. *Epidemiology and Psychiatric Sciences*, 27(1), 84–93. <https://doi.org/10.1017/S2045796016000998>
- Pitts, M., Chow, G. M., & Donohue, B. (2019). Relationship between general and sport-related drinking motives and athlete alcohol use and problems. *Substance Use and Misuse*, 54(1), 146–155. <https://doi.org/10.1080/10826084.2018.1512624>
- Plano Clark, V. L., & Ivankova, N. V. (2015). *Mixed methods research: a guide to the field*. SAGE mixed methods research series. SAGE Publications.
- Purcell, R., Gwyther, K., & Rice, S. M. (2019). Mental health in elite athletes: Increased awareness requires an early intervention framework to respond to athlete needs. *Sports Medicine - Open*, 5(1), 1–8. <https://doi.org/10.1186/s40798-019-0220-1>
- Purcell, R., Rice, S., Butterworth, M., & Clements, M. (2020). Rates and correlates of mental health symptoms in currently competing elite athletes from the Australian national high-performance sports system. *Sports Medicine*, 50(9), 1683–1694. <https://doi.org/10.1007/s40279-020-01266-z>
- Putukian, M. (2016). The psychological response to injury in student athletes: a narrative review with a focus on mental health. *British Journal of Sports Medicine*, 50(3), 145–148. <https://doi.org/10.1136/bjsports-2015-095586>
- Quintana, D. S. (2015). From pre-registration to publication: a non-technical primer for conducting a meta-analysis to synthesize correlational data. *Frontiers in Psychology*, 6(1549). <https://doi.org/https://doi.org/10.3389/fpsyg.2015.01549>
- Radloff, L. (1977). The CES-D Scale: A self-report depression scale for research in the

- general population. *Applied Psychological Measurement*, 1(3), 385–401.
<https://doi.org/https://doi.org/10.1177%2F014662167700100306>
- Raedeke, T. D. (1997). Is athlete burnout more than just stress? A sport commitment perspective. *Journal of Sport and Exercise Psychology*, 19(4), 396–417.
<https://doi.org/10.1123/jsep.19.4.396>
- Raedeke, T. D., & Smith, A. L. (2001). Development and preliminary validation of an athlete burnout measure. *Journal of Sport & Exercise Psychology*, 23(4), 281–306.
<https://doi.org/10.1123/jsep.23.4.281>
- Raedeke, T. D., & Smith, A. L. (2009). *The Athlete Burnout Questionnaire Test Manual*. Fitness Information Technology.
- Ramaeker, J., & Petrie, T. A. (2019). “Man up!”: Exploring intersections of sport participation, masculinity, psychological distress, and help-seeking attitudes and intentions. *Psychology of Men & Masculinities*, 20(4), 515–527.
<https://doi.org/10.1037/men0000198>
- Reardon, C. L., & Factor, R. M. (2010). Sport Psychiatry. *Sports Medicine*, 40, 961–980.
- Reardon, C. L., Hainline, B., Aron, C. M., Baron, D., Baum, A. L., Bindra, A., Budgett, R., Campriani, N., Castaldelli-Maia, J. M., Currie, A., Derevensky, J. L., Glick, I. D., Gorczynski, P., Gouttebarga, V., Grandner, M. A., Han, D. H., McDuff, D., Mountjoy, M., Polat, A., ... Engebretsen, L. (2019). Mental health in elite athletes: International Olympic Committee consensus statement (2019). *British Journal of Sports Medicine*, 53(11), 667–699. <https://doi.org/10.1136/bjsports-2019-100715>
- Rehman, A. A., & Alharthi, K. (2016). An introduction to research paradigms in

- distance education. *International Journal of Educational Investigations*, 3(8), 51–59.
- Rice, S. M., Gwyther, K., Santesteban-Echarri, O., Baron, D., Gorczynski, P., Gouttebarga, V., Reardon, C. L., Hitchcock, M. E., Hainline, B., & Purcell, R. (2019). Determinants of anxiety in elite athletes: a systematic review and meta-analysis. *British Journal of Sports Medicine*, 53(11), 722–730. <https://doi.org/10.1136/bjsports-2019-100620>
- Rice, S. M., Parker, A. G., Mawren, D., Clifton, P., Harcourt, P., Lloyd, M., Kountouris, A., Smith, B., McGorry, P. D., & Purcell, R. (2020a). Preliminary psychometric validation of a brief screening tool for athlete mental health among male elite athletes: the Athlete Psychological Strain Questionnaire. *International Journal of Sport and Exercise Psychology*, 18(6), 850–865. <https://doi.org/10.1080/1612197X.2019.1611900>
- Rice, S. M., Purcell, R., De Silva, S., Mawren, D., McGorry, P. D., & Parker, A. G. (2016). The mental health of elite athletes: A narrative systematic review. *Sports Medicine*, 46(9), 1333–1353. <https://doi.org/10.1007/s40279-016-0492-2>
- Rice, S., Olive, L., Gouttebarga, V., Parker, A. G., Clifton, P., Harcourt, P., Lloyd, M., Kountouris, A., Smith, B., Busch, B., & Purcell, R. (2020b). Mental health screening: severity and cut-off point sensitivity of the Athlete Psychological Strain Questionnaire in male and female elite athletes. *BMJ Open Sport & Exercise Medicine*, 6(1), e000712. <https://doi.org/10.1136/bmjsem-2019-000712>
- Rickwood, D., Deane, F. P., Wilson, C. J., & Ciarrochi, J. V. (2005). Young people's help-seeking for mental health problems. *Australian E-Journal for the Advancement of Mental Health*, 4(3), 1–34.

www.auseinet.com/journal/vol4iss3suppl/rickwood.pdf

- Riley, S. (2021). *Rich, poor or somewhere in between: how much does a trainer really earn?* Racing Post. <https://www.racingpost.com/news/rich-poor-or-somewhere-in-between-how-much-does-a-trainer-really-earn/381621>
- Ritchie, H., & Roser, M. (2020). *Mental Health*. Our World In Data. <https://ourworldindata.org/mental-health>
- Rochlen, A. B., Beretvas, S. N., & Zack, J. S. (2004). The online and face-to-face counseling attitudes scales: A validation study. *Measurement and Evaluation in Counseling and Development*, 37(2), 95–111. <https://doi.org/10.1080/07481756.2004.11909753>
- Rosen, L. D., Whaling, K., Rab, S., Carrier, L. M., & Cheever, N. A. (2013). Is Facebook creating “iDisorders”? The link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety. *Computers in Human Behavior*, 29(3), 1243–1254. <https://doi.org/10.1016/j.chb.2012.11.012>
- Rothi, D. M., & Leavey, G. (2006). Mental health help-seeking and young people: A review. *Pastoral Care in Education*, 24(3), 4–13. <https://doi.org/10.1111/j.1468-0122.2006.00373.x>
- Roy, P., Tremblay, G., & Robertson, S. (2014). Help-seeking among male farmers: Connecting masculinities and mental health. *Sociologia Ruralis*, 54(4), 460–476. <https://doi.org/10.1111/soru.12045>
- Rüsch, N., Evans-Lacko, S., Henderson, C., Flach, C., & Thornicroft, G. (2011). Knowledge and attitudes as predictors of intentions to seek help for and disclose a mental illness. *Psychiatric Services*, 62(6), 675–678.

<https://doi.org/10.1176/appi.ps.62.6.675>

Ryan, G. (2018). Introduction to positivism, interpretivism, and critical theory. *Nurse Researcher*, 25(4), 41–49. <https://doi.org/10.7748/nr.2018.e1466>

Sarkar, M., & Fletcher, D. (2014). Psychological resilience in sport performers: a review of stressors and protective factors. *Journal of Sports Sciences*, 32(15), 1419–1434. <https://doi.org/10.1080/02640414.2014.901551>

Scanlan, T. K., Stein, G. L., & Ravizza, K. (1991). An in-depth study of former elite figure skaters: III. Sources of stress. *Journal of Sport and Exercise Psychology*, 13(2), 103–120. <https://doi.org/10.1123/jsep.13.2.103>

Schaal, K., Tafflet, M., Nassif, H., Thibault, V., Pichard, C., Alcotte, M., Guillet, T., El Helou, N., Berthelot, G., Simon, S., & Toussaint, J.-F. (2011). Psychological balance in high level athletes: gender-based differences and sport-specific patterns. *PloS One*, 6(5), e19007. <https://doi.org/10.1371/journal.pone.0019007>

Shear, M. K., Brown, T. A., Barlow, D. H., Money, R., Sholomskas, D. E., Woods, S. W., ... & Papp, L. A. (1997). Multicenter collaborative panic disorder severity scale. *American Journal of Psychiatry*, 154(11), 1571-1575. <https://doi.org/10.1176/ajp.154.11.1571>

Schinke, R., Smith, B., & McGannon, K. R. (2013). Pathways for community research in sport and physical activity: Criteria for consideration. *Qualitative Research in Sport, Exercise and Health*, 5(3), 460–468.

Schinke, R. J., Stambulova, N. B., Si, G., & Moore, Z. (2018). International society of sport psychology position stand: Athletes' mental health, performance, and development. *International Journal of Sport and Exercise Psychology*, 16(6),

622–639. <https://doi.org/10.1080/1612197X.2017.1295557>

Schinke, R. J., Yukelson, D., Bartolacci, G., Battochio, R. C., & Johnstone, K. (2011). The challenges encountered by immigrated elite athletes. *Journal of Sport Psychology in Action*, 2(1), 10–20. <https://doi.org/10.1080/21520704.2011.556179>

Schnyder, N., Panczak, R., Groth, N., & Schultze-Lutter, F. (2017). Association between mental health-related stigma and active help-seeking: Systematic review and meta-analysis. *British Journal of Psychiatry*, 210(4), 261–268. <https://doi.org/10.1192/bjp.bp.116.189464>

Schomerus, G., Stolzenburg, S., Freitag, S., Speerforck, S., Janowitz, D., Evans-Lacko, S., Muehlan, H., & Schmidt, S. (2019). Stigma as a barrier to recognizing personal mental illness and seeking help: a prospective study among untreated persons with mental illness. *European Archives of Psychiatry and Clinical Neuroscience*, 269(4), 469–479. <https://doi.org/10.1007/s00406-018-0896-0>

Schreiber, R., & Hartrick, G. (2002). Keeping it together: How women use the biomedical explanatory model to manage the stigma of depression. *Issues in Mental Health Nursing*, 23(2), 91–105. <https://doi.org/10.1080/016128402753542749>

Schuring, N., Aoki, H., Gray, J., Kerkhoffs, G., Lambert, M., & Gouttebauge, V. (2016). Osteoarthritis is associated with symptoms of common mental disorders among former elite athletes. *Knee Surgery, Sports Traumatology, Arthroscopy*, Aug(10), 1–7. <https://doi.org/10.1007/s00167-016-4255-2>

Schuring, N., Kerkhoffs, G., Gray, J., & Gouttebauge, V. (2017). The mental wellbeing of current and retired professional cricketers : an observational prospective cohort

- study. *The Physician and Sportsmedicine*, 45(4), 463–469.
<https://doi.org/10.1080/00913847.2017.1386069>
- Schwenk, T. L. (2000). The stigmatisation and denial of mental illness in athletes. *British Journal of Sports Medicine*, 34(1), 4–5.
<https://doi.org/10.1136/bjism.34.1.3>
- Scotland, J. (2012). Exploring the philosophical underpinnings of research: Relating ontology and epistemology to the methodology and methods of the scientific, interpretive, and critical research paradigms. *English Language Teaching*, 5(9), 9–16. <https://doi.org/10.5539/elt.v5n9p9>
- Scott, J., Eccleston, D., & Boys, R. (1992). Can we predict the persistence of depression? *British Journal of Psychiatry*, 161, 633–637.
<https://doi.org/10.1192/bjp.161.5.633>
- Sibicky, M., & Dovidio, J. F. (1986). Stigma of psychological therapy. Stereotypes, interpersonal reactions, and the self-fulfilling prophecy. *Journal of Counseling Psychology*, 33(2), 148–154. <https://doi.org/10.1037/0022-0167.33.2.148>
- Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology*, 1(1), 27–41. <https://doi.org/10.1037/1076-8998.1.1.27>
- Simpson, D., & Elbert, L. P. (2018). A phenomenological study: Experiencing the unexpected death of a teammate. *Journal of Clinical Sport Psychology*, 12(2), 97–113. <https://doi.org/10.1123/jcsp.2017-0026>
- Smith, B., & McGannon, K. R. (2018). Developing rigor in qualitative research: problems and opportunities within sport and exercise psychology. *International*

- Review of Sport and Exercise Psychology*, 11(1), 101–121.
<https://doi.org/10.1080/1750984X.2017.1317357>
- Smith, B., & Sparkes, A. (2014). *Qualitative research methods in sport, exercise and health: From process to product* (Eds). Routledge.
- Smith, R. (1986). Toward a cognitive-affective model of athletic burnout. *Journal of Sport Psychology*, 8, 36–50.
- Souter, G., Lewis, R., & Serrant, L. (2018). Men, mental health and elite sport: A narrative review. *Sports Medicine - Open*, 4(1), 1–8.
<https://doi.org/10.1186/s40798-018-0175-7>
- Speed, H. D., & Andersen, M. B. (2008). *The Health and Welfare of Thoroughbred Horse Trainers and Stable Employers*. Victoria University.
- Spielman, A. J., Caruso, L. S., & Glovinsky, P. B. (1987). A behavioral perspective on insomnia treatment. *Psychiatric Clinics of North America*, 10(4), 541–553.
[https://doi.org/10.1016/s0193-953x\(18\)30532-x](https://doi.org/10.1016/s0193-953x(18)30532-x)
- Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The Gad-7. *Archives of Internal Medicine*, 166(10), 1092–1097. <https://doi.org/10.1001/archinte.166.10.1092>
- Stallones, L., Leff, M., Garrett, C., Criswell, L., & Gillan, T. (1995). Depressive symptoms among Colorado farmers. *Journal of Agricultural Safety and Health*, 1(1), 37–43. <https://doi.org/10.13031/2013.19454>
- Stambulova, N., Stephan, Y., & Jäphag, U. (2007). Athletic retirement: A cross-national comparison of elite French and Swedish athletes. *Psychology of Sport and Exercise*, 8(1), 101–118. <https://doi.org/10.1016/j.psychsport.2006.05.002>

- Steinfeldt, J. A., Steinfeldt, M. C., England, B., & Speight, Q. L. (2009). Gender role conflict and stigma toward help-seeking among college football players. *Psychology of Men & Masculinity, 10*(4), 261–272. <https://doi.org/10.1037/a0017223>
- Steinfeldt, J. A., & Steinfeldt, M. C. (2012a). Profile of masculine norms and help-seeking stigma in college football. *Sport, Exercise, and Performance Psychology, 1*(1), 58–71. <https://doi.org/10.1037/a0024919>
- Steinfeldt, M. C., & Steinfeldt, J. A. (2012b). Athletic identity and conformity to masculine norms among college football players. *Journal of Applied Sport Psychology, 24*(2), 115–128. <https://doi.org/10.1080/10413200.2011.603405>
- Swann, C., Moran, A., & Piggott, D. (2015). Defining elite athletes: Issues in the study of expert performance in sport psychology. *Psychology of Sport and Exercise, 16*, 3–14. <https://doi.org/10.1016/j.psychsport.2014.07.004>
- Talebi, M., Matheson, K., & Anisman, H. (2016). The stigma of seeking help for mental health issues: mediating roles of support and coping and the moderating role of symptom profile. *Journal of Applied Social Psychology, 46*(8), 470–482. <https://doi.org/10.1111/jasp.12376>
- Tamres, L. K., Janicki, D., & Helgeson, V. S. (2002). Sex differences in coping behavior: A meta-analytic review and an examination of relative coping. *Personality and Social Psychology Review, 6*(1), 2–30. https://doi.org/10.1207/S15327957PSPR0601_1
- Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches*. Applied Social Research Methods Series (Vol. 46). Sage.

- Tashakkori, A., & Teddlie, C. (2008). Quality of inferences in mixed methods research: Calling for an integrative framework. In M. M. Bergman (Ed.), *Advances in Mixed Methods Research: Theories and Applications* (pp. 101–119). Sage.
- Tashakkori, A., & Teddlie, C. (2010). *SAGE Handbook of Mixed Methods in Social and Behavioral Research* (2nd ed.). Sage.
- Taylor, D., Bury, M., Campling, N., Carter, S., Garfied, S., Newbould, J., & Rennie, T. (2006). A review of the use of the Health Belief Model (HBM), the theory of reasoned action (TRA), the theory of planned behaviour (TPB) and the trans-theoretical model (TTM) to study and predict health related behaviour change. In *National Institute for Health and Clinical Excellence*.
- Teagasc. (2017). *Agriculture in Ireland*. Teagasc - Agriculture and Food Development Authority. <https://www.teagasc.ie/rural-economy/rural-economy/agri-food-business/agriculture-in-ireland/#:~:text=Overall 2017 was a a good,price and higher milk deliveries.>
- ten Have, M., de Graaf, R., Ormel, J., Vilagut, G., Kovess, V., & Alonso, J. (2010). Are attitudes towards mental health help-seeking associated with service use? Results from the European study of epidemiology of mental disorders. *Social Psychiatry and Psychiatric Epidemiology*, 45(2), 153–163. <https://doi.org/10.1007/s00127-009-0050-4>
- Tenenbaum, G., & Eklund, R. (2007). *Handbook of sport psychology*. Wiley.
- Terluin, B., van Marwijk, H. W. J., Adèr, H. J., de Vet, H. C. W., Penninx, B. W. J. H., Hermens, M. L. M., van Boeijen, C. A., van Balkom, A. J. L. M., van der Klink, J. J. L., & Stalman, W. A. B. (2006). The Four-Dimensional Symptom Questionnaire (4DSQ): A validation study of a multidimensional self-report

- questionnaire to assess distress, depression, anxiety and somatization. *BMC Psychiatry*, 6, 30–40. <https://doi.org/10.1186/1471-244X-6-34>
- Terry, P. C., Lane, A. M., Lane, H. J., & Keohane, L. (1999). Development and validation of a mood measure for adolescents. *Journal of Sports Sciences*, 17(11), 861–872. <https://doi.org/10.1017/CBO9781107415324.004>
- Thelwell, R. C., Weston, N. J. V., & Greenlees, I. A. (2007). Batting on a sticky wicket: Identifying sources of stress and associated coping strategies for professional cricket batsmen. *Psychology of Sport and Exercise*, 8(2), 219–232. <https://doi.org/10.1016/j.psychsport.2006.04.002>
- Thomas, H. V., Lewis, G., Thomas, D. R., Salmon, R. L., Chalmers, R. M., Coleman, T. J., Kench, S. M., Morgan-Capner, P., Meadows, D., Sillis, M., & Softley, P. (2003). Mental health of British farmers. *Occupational and Environmental Medicine*, 60(3), 181–185. <https://doi.org/10.1136/oem.60.3.181>
- Thornicroft, G. (2007). Most people with mental illness are not treated. *Lancet*, 370(9590), 807–808. [https://doi.org/10.1016/S0140-6736\(07\)61392-0](https://doi.org/10.1016/S0140-6736(07)61392-0)
- Topkaya, N. (2014). Gender, self-stigma, and public stigma in predicting attitudes toward psychological help-seeking. *Educational Sciences: Theory and Practice*, 14(2), 480–487. <https://doi.org/10.12738/estp.2014.2.1799>
- Trojian, T. (2016). Depression is under-recognised in the sport setting : time for primary care sports medicine to be proactive and screen widely for depression symptoms. *British Journal of Sports Medicine*, 50(3), 137–139. <https://doi.org/10.1136/bjsports-2015-095582>
- Tshube, T., & Feltz, D. L. (2015). The relationship between dual-career and post-sport

- career transition among elite athletes in South Africa, Botswana, Namibia and Zimbabwe. *Psychology of Sport and Exercise*, 21, 109–114.
<https://doi.org/10.1016/j.psychsport.2015.05.005>
- Uphill, M., Sly, D., & Swain, J. (2016). From mental health to mental wealth in athletes: Looking back and moving forward. *Frontiers in Psychology*, 7(JUN), 935.
<https://doi.org/10.3389/fpsyg.2016.00935>
- Vamplew, W. (2000). Still crazy after all those years: Continuity in a changing labour market for professional jockeys. *Contemporary British History*, 14(2), 115–145.
<https://doi.org/10.1080/13619460008581584>
- Vamplew, W., & Kay, J. (2005). *Encyclopaedia of British horseracing*. Routledge.
- van de Mortel, T. F. (2008). Faking it: Social desirability response bias in self-report research. *Australian Journal of Advanced Nursing*, 25(4), 40–48.
- van Raalte, J. L., Brewer, B. W., Brewer, D. D., & Matheson, H. (1996). British athletes' perceptions of sport and mental health practitioners. *Journal of Applied Sport Psychology*, 8(1), 102–108. <https://doi.org/10.1080/10413209608406311>
- Van Raalte, J. L., Cornelius, A. E., Andrews, S., Diehl, N. S., & Brewer, B. W. (2015). Mental health referral for student-athletes: Web-based education and training. *Journal of Clinical Sport Psychology*, 9(3), 197–212.
<https://doi.org/10.1123/jcsp.2015-0011>
- Vella, S. A., Schweickle, M. J., Sutcliffe, J. T., & Swann, C. (2021). A systematic review and meta-synthesis of mental health position statements in sport : Scope, quality and future directions. *Psychology of Sport & Exercise*, 55, 101946.
<https://doi.org/10.1016/j.psychsport.2021.101946>

- Vernacchia, R. A., Reardon, J. P., & Templin, D. P. (1997). Sudden death in sport: Managing the aftermath. *Sport Psychologist*, *11*(2), 223–235. <https://doi.org/10.1123/tsp.11.2.223>
- Vidourek, R. A., King, K. A., Nabors, L. A., & Merianos, A. L. (2014). Students' benefits and barriers to mental health help-seeking. *Health Psychology and Behavioral Medicine*, *2*(1), 1009–1022. <https://doi.org/10.1080/21642850.2014.963586>
- Vogel, D. L., Heimerdinger-Edwards, S. R., Hammer, J. H., & Hubbard, A. (2011). “Boys don’t cry”: Examination of the links between endorsement of masculine norms, self-stigma, and help-seeking attitudes for men from diverse backgrounds. *Journal of Counseling Psychology*, *58*(3), 368–382. <https://doi.org/10.1037/a0023688>
- Vogel, D. L., Wade, N. G., & Ascheman, P. L. (2009). Measuring perceptions of stigmatization by others for seeking psychological help: Reliability and validity of a new stigma scale with college students. *Journal of Counseling Psychology*, *56*(2), 301–308. <https://doi.org/10.1037/a0014903>
- Vogel, D. L., Wade, N. G., & Haake, S. (2006). Measuring the self-stigma associated with seeking psychological help. *Journal of Counseling Psychology*, *53*(3), 325–337. <https://doi.org/10.1037/0022-0167.53.3.325>
- Vogel, D. L., Wade, N. G., & Hackler, A. H. (2007). Perceived public stigma and the willingness to seek counseling: The mediating roles of self-stigma and attitudes toward counseling. *Journal of Counseling Psychology*, *54*(1), 40–50. <https://doi.org/10.1037/0022-0167.54.1.40>
- Vogel, D. L., Wester, S. R., Hammer, J. H., & Downing-Matibag, T. M. (2014).

- Referring men to seek help: The influence of gender role conflict and stigma. *Psychology of Men and Masculinity*, 15(1), 60–67.
<https://doi.org/10.1037/a0031761>
- Wahto, R. S., Swift, J. K., & Whipple, J. L. (2016). The role of stigma and referral source in predicting college student-athletes' attitudes toward psychological help-seeking. *Journal of Clinical Sport Psychology*, 10(2), 85–98.
<https://doi.org/10.1123/JCSP.2015-0025>
- Walton, C. C., Rice, S., Gao, C. X., Butterworth, M., Clements, M., & Purcell, R. (2021). Gender differences in mental health symptoms and risk factors in Australian elite athletes. *BMJ Open Sport & Exercise Medicine*, 7, e000984.
<https://doi.org/10.1136/bmjsem-2020-000984>
- Wang, P. S., Angermeyer, M., Borges, G., Bruffaerts, R., Chiu, W. T., De Girolamo, G., Fayyad, J., Gureje, O., Haro, J. M., Huang, Y., Kessler, R. C., Kovess, V., Levinson, D., Nakane, Y., Oakley Browne, M. A., Ormel, J. H., Posada-Villa, J., Aguilar-Gaxiola, S., Alonso, J., ... Ustun, T. B. (2007). Delay and failure in treatment seeking after first onset of mental disorders in the World Health Organization's World Mental Health Survey Initiative. *World Psychiatry*, 6(12), 177–185.
- Warrington, G., Dolan, E., McGoldrick, A., McEvoy, J., MacManus, C., Griffin, M., & Lyons, D. (2009). Chronic weight control impacts on physiological function and bone health in elite jockeys. *Journal of Sports Sciences*, 27(6), 543–550.
<https://doi.org/10.1080/02640410802702863>
- Watson, J. C. (2005). College student-athletes' attitudes toward help-seeking behavior and expectations of counseling services. *Journal of College Student Development*,

46(4), 442–449. <https://doi.org/10.1353/csd.2005.0044>

Wendt, D., & Shafer, K. (2014). Gender and attitudes about mental health help seeking: Results from national data. *Health and Social Work, 41*(1), e20–e28. <https://doi.org/10.1093/hsw/hlv089>

WHO. (2001). *Strengthening mental health promotion*. World Health Organisation.

WHO. (2004). *Promoting Mental Health : concepts, emerging evidence, practice (Summary Report)*. World Health Organisation. https://www.who.int/mental_health/evidence/en/promoting_mhh.pdf

WHO. (2018). *Mental health: strengthening our response*. <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>

Wienke Totura, C. M., Fields, S. A., & Karver, M. S. (2018). The role of the therapeutic relationship in psychopharmacological treatment outcomes: A meta-analytic review. *Psychiatric Services, 69*(1), 41–47. <https://doi.org/10.1176/appi.ps.201700114>

Wiersma, L. D. (2000). Risks and benefits of youth sport specialization: Perspectives and recommendations. *Pediatric Exercise Science, 12*(1), 13–22. <https://doi.org/10.1123/pes.12.1.13>

Willig, C. (2019). What can qualitative psychology contribute to psychological knowledge? *Psychological Methods, 24*(6), 796–804. <https://doi.org/10.1037/met0000218>

Wilson, G., Chester, N., Eubank, M., Crighton, B., Drust, B., Morton, J. P., & Close, G. L. (2012). An alternate dietary strategy to make weight improves mood, decreases body fat and removes the necessity for dehydration: A case-study from

- a professional jockey. *International Journal of Sport Nutrition and Exercise Metabolism*, 22(3), 225–231.
- Wilson, G., Drust, B., Morton, J. P., & Close, G. L. (2014a). Weight-making strategies in professional jockeys: Implications for physical and mental health and well-being. *Sports Medicine*, 44(6), 785–796. <https://doi.org/10.1007/s40279-014-0169-7>
- Wilson, G., Fraser, W. D., Sharma, A., Eubank, M., Drust, B., Morton, J. P., & Close, G. L. (2013). Markers of bone health, renal function, liver function, anthropometry and perception of mood: A comparison between flat and national hunt jockeys. *International Journal of Sports Medicine*, 34(5), 453–459. <https://doi.org/10.1055/s-0032-1321898>
- Wilson, G., Hawken, M., Poole, I., Sparks, A., Bennett, S., Drust, B., Morton, J., & Close, G. L. (2014b). Rapid weight-loss impairs simulated riding performance and strength in jockeys: implications for making-weight. *Journal of Sports Sciences*, 32(4), 383–391. <https://doi.org/10.1080/02640414.2013.825732>
- Wilson, G., Hill, J., Martin, D., Morton, J. P., & Close, G. L. (2020). GB apprentice jockeys do not have the body composition to make current minimum race weights: Is it time to change the weights or change the jockeys? *International Journal of Sport Nutrition & Exercise Metabolism*, 1–4.
- Wilson, G., Pritchard, P. P., Papageorgiou, C., Phillips, S., Kumar, P., Langan-Evans, C., Routledge, H., Owens, D. J., Morton, J. P., & Close, G. L. (2015). Fasted exercise and increased dietary protein reduces body fat and improves strength in jockeys. *International Journal of Sports Medicine*, 36(12), 1008–1014. <https://doi.org/10.1055/s-0035-1549920>

- Wittchen, H. U., & Jacobi, F. (2005). Size and burden of mental disorders in Europe - A critical review and appraisal of 27 studies. *European Neuropsychopharmacology*, *15*(4), 357–376. <https://doi.org/10.1016/j.euroneuro.2005.04.012>
- Wolanin, A., Gross, M., & Hong, E. (2015). Depression in athletes: Prevalence and risk factors. *Current Sports Medicine Reports*, *14*(1), 56–60. <https://doi.org/10.1249/JSR.0000000000000123>
- Wolanin, A., Hong, E., Marks, D., Panchoo, K., & Gross, M. (2016). Prevalence of clinically elevated depressive symptoms in college athletes and differences by gender and sport. *British Journal of Sports Medicine*, *50*(3), 167–171. <https://doi.org/10.1136/bjsports-2015-095756>
- Wong, K., Chan, A. H. S., & Ngan, S. C. (2019). The effect of long working hours and overtime on occupational health: A meta-analysis of evidence from 1998 to 2018. *International Journal of Environmental Research and Public Health*, *16*(12), 13–19. <https://doi.org/10.3390/ijerph16122102>
- Wood, S., Harrison, L. K., & Kucharska, J. (2017). Male professional footballers' experiences of mental health difficulties and help-seeking. *The Physician and Sportsmedicine*, *45*(2), 120–128. <https://doi.org/10.1080/00913847.2017.1283209>
- Wylleman, P., Alfermann, D., & Lavallee, D. (2004). Career transitions in sport: European perspectives. *Psychology of Sport and Exercise*, *5*(1), 7–20. <https://doi.org/http://dx.doi.org/10.1016/S1469->
- Yee, T., Ceballos, P., & Diaz, J. (2020). Examining the psychological help-seeking attitudes of Chinese immigrants in the U.S. *International Journal for the Advancement of Counselling*, *42*(3), 307–318. <https://doi.org/10.1007/s10447->

020-09403-z

Zakrajsek, R., Martin, S., & Zizzi, S. (2011). American high school football coaches' attitudes toward sport psychology consultation and intentions to use sport psychology services. *International Journal of Sports Science and Coaching*, 6(3), 461–478. <https://doi.org/10.1260/1747-9541.6.3.461>

Zimet, G. D., Dahlem, N. W., Zimet, S. G., Gordon, K., & Farley, G. K. (2010). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52(1), 37–41. <https://doi.org/10.1207/s15327752jpa5201>

9 Appendices

9.1 List of Appendices

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Appendix A

Published Version of Literature Review Examining Mental Health Difficulties among Professional Jockeys

Introduction

Horse racing is a high-risk sport that places exacting physical (Cullen *et al.*, 2015a; O'Connor *et al.*, 2017a; Warrington *et al.*, 2009; Wilson *et al.*, 2014a, 2020) and psychological (Caulfield & Karageorghis, 2008; King *et al.*, 2020, 2021; Landolt *et al.*, 2017; Losty *et al.*, 2019; McGuane *et al.*, 2019) demands on jockeys. There is increasing evidence to indicate that jockeys experience significant levels of mental health difficulties (MHDs), possibly as a result of their distinctive lifestyles and the stresses particular to their profession (King *et al.*, 2020; Losty *et al.*, 2019). King *et al.* (2021) identified four core categories of stressors experienced by jockeys, related to: competition (e.g., performance slumps, pressure, injury and opponents); the wider racing industry (e.g., making weight, workload and travel demands); interpersonal challenges (e.g., relationships with trainers, other jockeys and expectations of others); and, career stressors (e.g., career uncertainty, career opportunities and transitions). A recent study examined jockey mental health using validated screening questionnaires and highlighted that almost 80% of jockeys in Ireland met the threshold for at least one of the MHDs assessed (depression, generalised anxiety, psychological distress and adverse alcohol use (2)). Moreover, 87% of 105 jockeys who participated in an industry-wide survey in the UK reported experiencing 'stress, anxiety or depression' during the previous 12 months, with the profession's loneliness, financial uncertainty and relentless workload highlighted as key stressors (McConn-Palfreyman *et al.*, 2019). While a previous review article specifically explored the physical and psychological implications of jockeys' weight-making strategies (Wilson *et al.*, 2014a), there has not

yet been an attempt to review and consolidate the findings of the expanding wider mental health literature. The current review therefore aims to examine professional jockey mental health beyond the deleterious effects of making weight, with a focus on the following: mood; anxiety; distress; disordered eating; substance misuse; and help-seeking.

Methodological Aspects

A computer-based literature search was undertaken independently by two of the authors (LK and GW), comprising of PubMed and Google Scholar databases, as well as grey literature (e.g., industry-funded reports) from inception to January 2021. Keywords searched included ‘jockey’ OR ‘horse racing’ AND ‘common mental disorder’ OR ‘mental health’ OR ‘mental health difficulties’ OR ‘depression’ OR ‘mood’ OR ‘anxiety’ OR ‘eating disorder’ OR ‘substance misuse’ OR ‘help seeking’ OR ‘psychology’ OR ‘psychiatry’. A manual search of reference lists was also conducted.

Study inclusion and exclusion criteria

LK and GW independently screened articles and abstracts for eligibility. Studies were required to have met the following inclusion criteria:

1. Professional jockeys
2. Quantitative or qualitative data on symptoms of MHDs or help-seeking
3. Written in English

Studies were excluded from the review article if they met the following criteria:

1. Non-professional jockey status (e.g. amateur jockeys)
2. Review articles
3. Book chapters
4. Conference abstracts

5. Full text available of the article was not available

Review Terminology

An outline of the explanations of the terms used throughout the review article are included in Table 1.

Table 1: Review terminology

Term	Definition
Mental health	Mental health has been defined as a “state of well-being in which every individual realises his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community” (WHO, 2004).
Mental health difficulties (MHDs)	Throughout this review article, we refer to MHDs, often labelled as common mental disorders, which encompass depression, generalised anxiety disorder, panic disorder, phobias, social anxiety disorders, obsessive-compulsive disorder and post-traumatic stress disorder (Kendrick & Pilling, 2012).
Prevalence	The present review article explores prevalence of MHDs among professional jockeys. Many of the studies discussed feature self-report data, thus, the term prevalence relates to a prevalence of symptoms, rather than prevalence of a diagnosed mental health disorder obtained via a clinical interview with a mental health professional. The percentages elicited throughout the review article refer to the number of jockeys who met the threshold indicative of MHDs based on a validated cut-off score for each self-report questionnaire.
Flat jockeys	Flat jockeys compete in often short races (1-4km) with no obstacles. Minimum competitive riding weights for flat jockeys vary between each racing jurisdiction. In Ireland, minimum and maximum riding weights are set at 8st 4lbs (52.6kg/116lbs) and 9st 12lbs (62.6kg/138lbs), respectively.
National hunt jockeys	National hunt jockeys, often referred to as jump jockeys, compete in longer races (3.2-7.2km) with obstacles known as hurdles or fences. Minimum and maximum riding weights for national hunt jockeys are set at 9st 10lbs (61.7kg/136lbs) and 11st 12lbs (75.3kg/166lbs), respectively.

Results

In total, 16 studies were included in the review. The studies were published between 1987 and 2020 and included jockeys from the United Kingdom (UK) ($n = 8$), Ireland ($n = 4$), South Africa ($n = 1$), New Zealand ($n = 1$), Australia ($n = 1$) and the USA ($n =$

1). A variety of study designs were employed to collect data, including cross-sectional ($n = 9$), experimental ($n = 2$), semi-structured interviews and focus groups ($n = 2$), mixed-methods ($n = 2$), and a case-study ($n = 1$). Studies utilised either male ($n = 7$) or mixed-gender ($n = 8$) participants. One study did not state the gender of participants. Studies explored mood (Caulfield & Karageorghis, 2008; King *et al.*, 2020; Losty *et al.*, 2019; Wilson *et al.*, 2012, 2015), anxiety (King *et al.*, 2020; Losty *et al.*, 2019), distress (King *et al.*, 2020; Losty *et al.*, 2019; Wilson *et al.*, 2015), disordered eating (Caulfield & Karageorghis, 2008; Dolan *et al.*, 2011; Labadarios *et al.*, 1993; Leydon & Wall, 2002; Martin *et al.*, 2017; Moore *et al.*, 2002; Wilson *et al.*, 2015), substance misuse (King *et al.*, 2020; McGuane *et al.*, 2019) and help-seeking (King *et al.*, 2020; McConn-Palfreyman *et al.*, 2019). Full details of the studies are reported in Table 2.

Table 2: Synthesis of studies included in the review

Study, year, country	Study type	Participant characteristics, <i>n</i> (male:female)	Flat:national hunt	Data collection tool	Summary of main findings
Caulfield <i>et al.</i> (2008), UK	Experimental design	41 (41:0)	Not specified	EAT-26 BRUMS	Jockeys mood profiles lower when making minimal weight in comparison to optimal or relaxed weight ($p < .05$). Significant difference in attitudes to eating when making minimal weight than at optimal weight or relaxed weight. Depression, fatigue, and confusion scores greater on BRUMS when making minimal weight ($p < .05$).
Cotugna <i>et al.</i> (2011), UK	Mixed-methods	20 (19:1)	20:0	Diet assessment tool and interviews	Jockeys reported a variety of disordered eating practices to make weight which included fluid restriction, food restriction and flipping (throwing up).
Dolan <i>et al.</i> (2011), Ireland	Cross-sectional	27 (27:0)	17:10	59-item nutrition, lifestyle, and health questionnaire	Weight loss strategies – sauna (86%), exercise to sweat (81%), restrict food intake (71%), not eating between meals (67%), exercise to use up calories (48%), excessive exercise (38%), vomit after meals (14%). Negative impact of weight loss – reduced mood (33%), decreased libido (24%), tension (19%) and irritation (14%).
Labadorias <i>et al.</i> (1993), South Africa	Cross-sectional	93 (gender not stated)	Not stated	Health and nutrition questionnaire	Rapid weight loss strategies reported by jockeys included the use of saunas (70%) and hot baths (27%). Drug use via diuretics (70%), laxatives (27%), and appetite suppressants (48%) reported.
Leydon and Wall (2002), New Zealand	Cross-sectional	20 (6:14) Senior (4:5) Apprentice (2:9)	20:0	EAT-26	Mean scores for all jockeys was 13.5 (9.3). 20% of jockeys reported scores of 20 or greater on EAT, indicative of an eating disorder. Mean scores greater for male ($M = 16, SD = 7.3$) than female jockeys ($M = 12.4, SD = 10.3$) ($p > .05$).

King <i>et al.</i> (2020), Ireland	Cross-sectional	84 (78:6)	37:47	K10 CES-D GAD-7 AUDIT-C ABQ Greenhaus Scale	Prevalence of jockeys meeting the threshold for adverse alcohol use (61%), depression (35%), generalised anxiety (27%), and distress (19%) reported. Statistically significant risk factors for generalised anxiety were athlete burnout (EE OR = 4.7; D OR = 3.0; PA OR = 2.9), career dissatisfaction (OR = 0.9 CI 0.8 - 1.0), and contemplating retirement (OR = 0.24 CI 0.1 – 0.7). Associations were reported between distress and athlete burnout (EE OR = 5.3; D = 7.9; PA OR = 8.0) (p < .05), career dissatisfaction (OR = 0.8 CI 0.7 – 0.9) (p < .05), and contemplating retirement (OR = 0.13 CI 0.04 – 0.4) (p < .05).
Losty <i>et al.</i> (2019), Ireland	Cross-sectional	42 (37:5)	21:21	K10 CES-D GAD-7 SPIN PSS RSES	Jockeys reported symptoms of MHDs: depressive symptoms (57%), stress symptoms (52%), social phobia symptoms (38%), self-esteem symptoms (31%), distress symptoms (36%) and generalised anxiety symptoms (21%). Injured jockeys were 46 times more likely to meet the criteria for depression than those without a current injury. Being at or above the established threshold score for social phobia resulted in 6.82 times increase in the likelihood of reporting depression (95% CI=1.491, 31.191), and exceeding the threshold score for stress resulted in a 14.44 times increase in the likelihood of reporting depression (95% CI=.694, 17.610).
Martin <i>et al.</i> (2017), UK	Qualitative	10 (8:2)	Not stated	Semi-structured interview	Disordered eating pathology discussed by jockeys, often used to make weight. One jockey referred to using laxatives on a daily basis. Other jockeys discussed induced vomiting (known as ‘flipping’ within the racing industry) as a last resort to make weight. Food restriction was popular to make weight.
McConn-Palfreyman,	Cross-sectional	15 (not stated)	Not stated	Self-made questionnaire	Over the past 12 months, 87% of jockeys reported experiencing stress, anxiety or depression, 13% reported problems due to alcohol use, and 5%

Littlewood, & Nesti (2019), UK				examining prevalence of MHDs over the past year and barriers to help-seeking.	stated problems due to illegal drug use. Most significant barriers to help-seeking included the need to appear 'strong' in front of colleagues (55%), social stigma of being viewed negatively for accessing mental health services (41%), and limited time to engage in services (34%),
McGuane <i>et al.</i> (2019), Ireland	Qualitative	6 (6:0)	Not stated	Semi-structured interviews	Wasting (rapid weight loss) was routine for jockeys with negative implications for physical and mental health. Self-induced vomiting and the use of diuretics were also reported as methods of losing weight for competition.
Mezey, King, & Mezey (1987), UK	Mixed-methods	10 (10:0)	10:0	EAT-26 Clinical interview schedule Symptom rating test	EAT scores (14.9) reported greater than another male groups. Weights reported 21% lower than anticipated for age group. One jockey met ICD (version not stated) criteria for phobic anxiety state. No jockeys met the criteria for a mental health disorder on clinical interview. Sig increase in irritability when wasting.
Moore <i>et al.</i> (2002), Australia	Cross-sectional	116 (91:25)	Not stated	Questionnaire related to weight-loss attitudes, weight-loss strategies and weight maintenance strategies	Weight loss strategies – all jockeys – skip meals (75%), sauna use – race-day only (28%), daily (11%), 2-3 times per week (15%), weekly (5%), never (41%). Laxatives – all jockeys – race-day only (12%), daily (5%), weekly (4%), monthly (2%), never (77%). Diuretics – race-day only (21%), daily (4%), weekly (3%), monthly (9%), never (63%). Induced vomiting – 9%
Wilson <i>et al.</i> (2012), UK	Case study	1 (1:0)	0:1	BRUMS	Diet and exercise intervention strategy developed for one professional jockey with an emphasis on diet and exercise. Pre-intervention, the jockey

					displayed above average levels of anger, depression, and fatigue, with lower than average vigour. Post-intervention, increases in vigour and a reduction of fatigue were observed.
Wilson <i>et al.</i> (2013), UK	Cross-sectional	37 (37:0)	19:18	BRUMS	Both flat and national hunt jockeys reported impaired mood profiles, with flat jockeys reporting significantly greater scores for anger and fatigue.
Wilson <i>et al.</i> (2014b), UK,	Experimental design	8 (8:0)	2:6	Questionnaire related to weight-making methods	Jockeys reported a variety of weight-making methods. This included: exercising in a sweat suit (100%), gradual dieting (100%), sauna use (75%), fluid restriction (62%), food restriction (62%), other methods such as exercising in a bin liner and extra clothes, laxative tablets, and drinking Epsom salts in water (50%), salt bath (37%), hot bath (37%), and fasting (25%).
Wilson <i>et al.</i> (2015), UK	Experimental design	10 (9:1)	9:0	GHQ (GHQ-12) EAT-26	Six-week exercise and diet programme. Pre-intervention mean GHQ-12 was 10.3 (<i>SD</i> = 4.3), which reduced post-intervention to 8.9 (<i>SD</i> = 3.8) (<i>p</i> > .05). Findings indicated that 29% of jockeys met the threshold indicative of an eating disorder. The mean EAT-26 score pre-intervention was 14.8 (<i>SD</i> = 9.6), which decreased post-intervention to 11.0 (<i>SD</i> = 5.6) (<i>p</i> > .05)

Abbreviations: Emotional Exhaustion (EE); Devaluation (D); Reduced Sense of Personal Accomplishment (PA); Athlete Burnout Questionnaire (ABQ); Brunel Mood Scale (BRUMS); General Health Questionnaire (GHQ-12); Eating Attitudes Test (EAT-26); Kessler Psychological Distress Scale (K10); Center for Epidemiologic Studies Depression Scale (CES-D); Generalised Anxiety Disorder Scale (GAD-7); Alcohol Use Disorders Identification Test (AUDIT-C); Social Phobia Inventory (SPIN); Perceived Stress Scale (PSS); Rosenberg's Self-Esteem Scale (RSES); International Classification of Diseases (ICD)

Main Text

Mood

Two studies have comprehensively examined professional jockeys for the prevalence of depressive symptoms. Losty *et al.* (2019) explored depressive symptoms using the Center for Epidemiologic Studies Depression Scale (CES-D) and found that 57% of professional jockeys met the questionnaire's caseness for depression based on a cut-off score of 16 or greater. No difference was observed between professional flat and national hunt jockeys. Building on the previous study by Losty *et al.* (2019), King *et al.* (2020), using the CES-D, and same cut-off score, found that 29 of 84 jockeys (35%) met the threshold indicative of a depressive disorder. However, in contrast to the work of Losty *et al.* (2019), a greater prevalence of symptoms of depression was found in national hunt jockeys (46%) in comparison to flat jockeys (19%). A greater risk and prevalence of injury among national hunt jockeys may begin to explain this finding, given the links between injury and MHDs with other athlete samples (Cox *et al.*, 2017; Gouttebauge *et al.*, 2016a; Rice *et al.*, 2019), although further research is needed. In comparison to flat jockeys, national hunt jockeys report a greater number of falls per 1000 rides (49.5 versus 3.8) and a higher frequency of injuries per 1000 rides (10.1 versus 1.4) (O'Connor *et al.*, 2017a). In contrast, previous research has reported poorer mood profiles for flat jockeys, possibly due to their need to reach lower competitive riding weights (Wilson *et al.*, 2013). Differences in depression prevalence between the two studies (King *et al.*, 2020; Losty *et al.*, 2019) may be partially explained by the sample sizes. Losty *et al.* (2019) gathered data from 42 professional jockeys (27% response rate), whilst King *et al.* (2020) obtained data from 84 professional jockeys (52% response rate). Jockeys appear to report depressive symptoms more commonly than athletes in other sports. Within two recent Australasian studies of elite athletes

(multiple team and individual sport athletes) using the CES-D, 27.2% of Australian athletes met depression caseness (Gulliver *et al.*, 2015), while 21% of a New Zealand sample (multiple team and individual sport athletes) reported symptoms consistent with depression (Beable *et al.*, 2017). A recent comparative meta-analysis of high performance athlete data reported rates of depressive symptoms ranging from 3.7%-26.7% and 9.8%-36.5% for male and female athletes respectively (Gorczyński *et al.*, 2017a). The gender ratio observed is largely in keeping with the general adult population, where females have long been noted to be diagnosed with depression twice as commonly as males (Alonso *et al.*, 2004). In this context, the findings of Losty *et al.* (2019) and King *et al.* (2020) are even more striking, given that the vast majority of their sample populations were male (76% and 93% respectively) and therefore expected to be less likely to report depressive symptoms than their female counterparts. Further studies exploring depression would benefit from the use of diagnostic clinical interviews, although these may ultimately prove impractical and jockeys may be reluctant to participate, fearing a loss of anonymity. In the absence of interviews, the use of screening tools such as the Patient Health Questionnaire (PHQ-9) (Kroenke & Spitzer, 2002) may more accurately predict the prevalence of depression, given that it better reflects the International Classification of Diseases-10 (ICD-10) diagnostic criteria for the disorder, which requires a minimum symptom duration of two weeks.

Specific risk factors for depression have also been documented among the jockey population. Given the sport's high risk nature, Losty *et al.* (2019) examined associations between injury status (e.g., currently injured versus not injured) and prevalence of depressive symptoms. The study found that injured jockeys were 46 times more likely to meet the threshold for depression. This aligns with other research with elite athletes which has identified injury as a potential risk factor for depression

(Gouttebarga *et al.*, 2017, 2019; Kilic *et al.*, 2017). Moreover, social anxiety or high levels of perceived stress increased the likelihood of reporting depressive symptoms by 6.82 and 14.44 times respectively. These associations indicate the importance of mental health support strategies with a specific focus on stress management and coping with injury. The study of King *et al.* (2020) also examined risk factors for depression including athlete burnout, social support, career satisfaction and contemplating retirement. No statistically significant associations were observed. Further research is required to clearly identify specific risk factors for depression among jockeys. The exploration of sport-specific risk factors, such as those related to weight and weight-making strategies, or trauma symptoms after witnessing a fatal injury to a horse (King *et al.*, 2021) are required. Previous research has suggested that the loss or injury of a horse can have profound psychological effects on riders, with responses such as devastation, feeling cheated, restlessness, and isolation all significantly impacted by the severity of a horse's injury among young equestrian riders (Davies & James, 2018). Among jockeys however, data is limited.

Multiple studies have examined the mood of jockeys, often in the context of making weight. The sport of horseracing places jockeys under relentless pressure to maintain low competition weights throughout the competitive season, with qualitative research highlighting that weight related factors are all consuming for jockeys (King *et al.*, 2021.; Martin *et al.*, 2017; McConn-Palfreyman *et al.*, 2019). Unlike other weight classification sports such as boxing or wrestling, jockeys are required to weigh a specific weight before each race, which can be challenging given a jockey may compete multiple times per day. This is due to a process called handicapping, with weight restrictions placed upon horses, which the jockey must align their weight with to increase the competitiveness of a race. Given these demands, jockeys often engage in

rapid weight loss strategies, with the use of a sauna and food/fluid restriction the most common weight loss methods utilised by jockeys (Wilson *et al.*, 2014a). Most studies in this area have typically examined weight and mood via utilisation of the Brunel Mood Scale (BRUMS) (Terry *et al.*, 1999), a self-report 24-item abridged version of the Profile of Mood States (McNair *et al.*, 1971). The BRUMS' measures include five negative mood states (depression, anger, tension, fatigue and confusion) and one positive mood state (vigour), and research suggests that making low riding weights are associated with more negative mood profiles. A 2008 study of 41 professional jockeys found that participants' mood profiles were significantly different at minimum weights (achieved via rapid weight loss) than at optimal (not excessively restricting weight; feeling healthy) and relaxed (no rides at light weights in the near future or no rides at all) (Caulfield & Karageorghis, 2008). That is, when making minimum weights, jockeys reported significantly greater scores for depression, anger and fatigue, whilst vigour was observed to be reduced. No significant differences were found between optimal and relaxed weights. Wilson *et al.* (2013) reported on the mood profiles of UK flat and national hunt jockeys. Abnormal mood profiles for all measures were reported on the BRUMS except for tension. Flat jockeys reported significantly poorer scores for anger and fatigue variables in comparison to national hunt jockeys, perhaps due to the need to reach lower competitive riding weights.

Given these findings, several studies have highlighted the effects of making weight without the need for dehydration and food restriction with promising results. A case study which included a jockey engaging in a structured exercise and diet plan found that the individual reported a switch from above-average anger and depression BRUMS score pre-intervention to below average scores post-intervention, with vigour scores moving in the opposite direction (Wilson *et al.*, 2012). Positive findings were also

reported in larger scale intervention via a six-week individually tailored diet plan in UK jockeys. ($n = 10$). Jockeys mean General Health Questionnaire scores (Goldberg *et al.*, 1997) scores, a measure of psychological distress, reduced from 10.3 ($SD = 4.3$) pre-intervention, to 8.9 ($SD = 3.8$) post-intervention (Wilson *et al.*, 2015). The number of jockeys who met the threshold indicative of psychiatric caseness also dropped from two to one post-intervention. The findings suggest that further educational programmes or support from practitioners on effective weight-making practices are required for jockeys. Moreover, as highlighted by Martin *et al.* (2017), further research may also seek to explore the apparent reluctance to adopt a healthier approach to riding by jockeys, as currently a reliance on older, less effective methods appear dominant.

Anxiety

Several of the studies examining jockeys' mental health also attempted to assess anxiety. A study by Losty *et al.* (2019) investigating 42 Irish jockeys found that 21.4% of jockeys (flat - 14.3%; national hunt - 28.6%) met caseness for generalised anxiety based on self-report measures via the Generalised Anxiety Disorder – 7 (GAD-7) questionnaire. Comparable rates were demonstrated in the study of King *et al.* (2020), who found that 27% of professional jockeys (flat – 27%; national hunt – 28%) met the threshold using the same questionnaire. Individual studies examining the prevalence of generalised anxiety among Swedish elite athletes (multiple individual and team sport athletes) (12.6%) (Åkesdotter *et al.*, 2020), Rugby league players (14.6%) (Du Preez *et al.*, 2017), and elite soccer players (1.4%) (Junge & Feddermann-Demont, 2016) suggest that prevalence of generalised anxiety symptoms are greater among professional jockeys than other athletes. Given that generalised anxiety is often comorbid with symptoms of other anxiety disorders such as panic disorder, social anxiety disorder, and posttraumatic stress disorder (Löwe *et al.*, 2008), screening measures

designed to assess generalised anxiety symptoms among jockeys may aid early identification of other potential MHDs.

Specific risk factors for generalised anxiety symptoms among jockeys include athlete burnout, career dissatisfaction, and contemplating retirement (King *et al.*, 2020). Athlete burnout is characterised by three components: emotional exhaustion (EE), sport devaluation (D), and a reduced sense of personal accomplishment (PA) (Raedeke & Smith, 2001). A one unit increase on the athlete burnout questionnaire increased the odds of professional jockeys meeting the threshold for generalised anxiety by 4.7 (EE), 3 (D), and 2.9 (PA) times, respectively (King *et al.*, 2020). A recent qualitative study identified several factors that may contribute to burnout symptomology in professional jockeys such as intense working hours, career uncertainty, and lengthy competitive seasons (King *et al.*, 2021). The study by King *et al.* (2020) also explored career satisfaction and the contemplation of retirement as risk factors for MHDs within jockeys. Lower levels of career satisfaction increased the odds of meeting the threshold for generalised anxiety by 1.11 for each one unit decrease on the career satisfaction scale (Greenhaus *et al.*, 1990). Moreover, 29% of jockeys were classified as dissatisfied with their careers. This research corroborates other studies which have highlighted career satisfaction, or lack of, as a risk factor for MHDs (Foskett & Longstaff, 2018). Exploration of the factors which contribute to the career dissatisfaction of a jockeys is necessary which may begin to shed further insight to other risk factors for MHDs. This may include elevated levels of stress, vast workloads, lack of job security, or financial uncertainty (King *et al.*, 2021; McConn-Palfreyman *et al.*, 2019). Finally, 26% of jockeys reported the contemplation of retirement from the sport within the next 12 months, indicative of the uncertainty associated with the career cited elsewhere (King *et al.*, 2021; Landolt *et al.*, 2017). Contemplating retirement increased the odds of

meeting the criteria for generalised anxiety by 4.16. Research examining retirement within athletes has often described the transitional process from athlete to retired athlete as one that may have implications to their mental health, however the findings presented, alongside other research in New Zealand (Beable *et al.*, 2017), suggest that supporting athletes prior to retirement is equally as important.

Distress

Three studies explored distress among professional jockeys (King *et al.*, 2020; Losty *et al.*, 2019; Wilson *et al.*, 2015). Losty *et al.* (2019) reported a prevalence of symptoms of distress among 36% of jockeys, with a mean score for the group ($M = 21.12$, $SD = 7.33$) approaching the clinical-cut off of 22, based on the Kessler Psychological Distress scale (K10) (Kessler *et al.*, 2003). No significant differences were observed between flat and national hunt jockeys. In the study of King *et al.* (2020), using the same measure, 19% of professional jockeys met the caseness for distress, whilst the mean score for symptoms of distress reported by professional jockeys was significantly lower than previously reported ($M = 16.7$, $SD = 6.0$). Flat jockeys reported greater symptoms of distress in comparison to national hunt jockeys ($M = 17.8$, $SD = 6.5$ versus $M = 15.9$, $SD = 5.4$), although no significant difference was identified. Prevalence of distress was significantly associated with athlete burnout (EE – OR = 5.3, 95% CI 2.3 – 12.4; D – OR = 7.9, 95% CI 2.9 – 21.7; PA – OR = 8.0 95% CI 2.8 – 23.1), career satisfaction (OR = 0.8, 95% CI 0.7 – 0.9), and the contemplation of retirement (OR = 0.13, 95% CI 0.04 – 0.4). Among Australian elite athletes, prevalence of distress has been reported between 17% and 35% (Gulliver *et al.*, 2015; Purcell *et al.*, 2020), suggesting that prevalence of distress among professional jockeys may be similar to other elite athletes. Another study examined distress symptoms among professional jockeys using the General Health Questionnaire (Goldberg *et al.*, 1997),

and found that 21% of jockeys could be classified as ‘likely’ to be experiencing distress symptoms that require support from a professional. Accurate comparisons of distress are often challenging due to the multiple measures used with elite athlete samples, with many studies using the shorter form Distress Screener (Braam *et al.*, 2009), comprising only three questions. Moving forward, employing the use of a sport-specific distress scale with elite athletes may be advantageous in allowing comparisons between groups of athletes and also increasing detection of subclinical distress symptoms. The recently developed Athlete Psychological Strain Questionnaire (APSQ) (Rice *et al.*, 2020a) represents a potential solution to such issues. The questionnaire consists of three factors related to self-regulation (e.g., I found it difficult to do what I needed to do), performance (e.g., I could not stop worrying about injury or my performance), and external coping (e.g., I needed alcohol or other substances to relax). As highlighted in a recent review examining the mental health of cricketers (McCabe *et al.*, 2021), the APSQ could be integrated into screening measures adopted by medical teams. For professional jockeys, the APSQ may be delivered upon renewing their jockey licence every two years, whilst also integrated into common practice throughout the competitive season, at potentially high-risk periods (e.g., intense parts of the season), during injury rehabilitation programmes, and post-concussion assessments. As such, multiple data points would improve precision of when and where professional jockeys require support, and what specific types of support are more useful (e.g., developing coping strategies during injury rehabilitation).

Disordered Eating

Jockeys may be more susceptible to disordered eating behaviours and attitudes than other weight-making athletes as a result of them being required to ride at low weights throughout their careers (Caulfield & Karageorghis, 2008). This struggle to

make weight has been compounded by gradual anthropometric changes among the general population (increased mean height and body mass) not being mirrored by equivalent adjustments to riding weights (Cullen *et al.*, 2015a). Cullen *et al.* (2015a) observed that the average trainee jockey's weight entering the Racing Academy and Centre of Education (RACE) had increased by 47% in the preceding 30 years compared with only a 10% increase of the minimum riding weight. Disordered eating practices employed by jockeys to make weight include food and/or fluid restriction, abstinence (i.e. starvation), over exercising, the use of saunas or sweat suits, drinking fluids to feel full and smoking cigarettes (Cotugna *et al.*, 2011; Dolan *et al.*, 2011; Labadarios *et al.*, 1993; Mezey *et al.*, 1987; Wilson *et al.*, 2014a, 2014b). Studies have also identified forced vomiting (known as 'flipping' within the racing industry) as an additional strategy (Dolan *et al.*, 2011; Martin *et al.*, 2017; Mezey *et al.*, 1987; Moore *et al.*, 2002). Martin *et al.* (2017) concluded that self-induced vomiting is typically performed as a function to attempt to promote weight loss, rather than evidence of a desire for thinness or a disturbance of body image, as seen in some eating disorders. The use of laxatives, appetite suppressants and diuretics have also been described, although all three have been prohibited among jockeys worldwide since 1999 (Dolan *et al.*, 2011; Labadarios *et al.*, 1993; Martin *et al.*, 2017; McGuane *et al.*, 2019; Mezey *et al.*, 1987; Moore *et al.*, 2002; Wilson *et al.*, 2014a).

Much of the research examining jockeys' psychological relationships with food has used the Eating Attitudes Test (EAT-26), a 26-item self-report questionnaire that screens for possible eating disorders (Garner *et al.*, 1982). King and Mezey (1987) were the first to use the tool to report mean scores of jockeys ($M = 14.9$), with none of the participants meeting the diagnostic criteria for an eating disorder during an additional clinical interview. In the study of Caulfield and Karageorghis (2008), findings

demonstrated the negative influence of weight-making on attitudes towards eating. That is, jockeys scored poorer on the EAT-26 when making their minimum weight than at optimal weight or relaxed weight. A total of six jockeys (from a sample of 41) scored 20 or more on the scale, the threshold deemed indicative of the potential presence of an eating disorder. The findings suggest that jockeys' attitudes towards eating may become more disordered while trying to reach minimum riding weights. Moreover, within a six-week diet and exercise intervention programme, 28.6% of jockeys at baseline exceeded the EAT-26 threshold for a potential eating disorder diagnosis (Wilson *et al.*, 2015). Reassessment post-intervention found a non-significant improvement in eating attitudes (14.8 to 11.0). Jockeys attitudes towards eating appear to be influenced by four key themes according to Martin *et al.* (2017). Firstly, a reluctance to change, particularly among older jockeys, due to routine practices developed throughout their careers. Second, a lack of identification as an athlete, with disparities reported between the life and career of a jockey and other elite athletes. Third, denial and bargaining of current eating practices (e.g., current practices are not too bad for the jockey). Lastly, the horse is the athlete, with the jockey placing greater emphasis on the horse's performance than their own athletic performance. The findings indicate that not only are nutritional educational programmes necessary for jockeys, but a shift in the culture towards a career as a jockey itself.

Substance misuse

Jockeys are subject to alcohol and drug testing, focused primarily on performance impairing substances (e.g., cocaine, cannabis), in order to provide a safe environment for competition. Riding under the influence of alcohol or drugs not only poses a serious risk to the individual jockey, but also to other jockeys in the race and their horses. Few studies have attempted to ascertain levels of substance misuse

although King *et al.* (2020) reported that 61% of jockeys met the clinical threshold for adverse alcohol use based on the Alcohol Use Disorders Identification Test (AUDIT-C) (Dawson *et al.*, 2005) questionnaire. These figures are concerning given a recent meta-analysis examining the prevalence of MHD among elite athletes found that 19% of athletes met the threshold for alcohol misuse (Gouttebarga *et al.*, 2019). Incidence for substance misuse do however appear to vary considerably between sports. Jockey alcohol misuse is significantly greater than that reported among soccer players (Gouttebarga *et al.*, 2015b) and Dutch elite athletes (Gouttebarga *et al.*, 2017) but comparable to recent figures published for Rugby league players (Du Preez *et al.*, 2017). In the UK, 13.33% and 5.33% of jockeys reported problems due to alcohol and illegal drug use respectively (McConn-Palfreyman *et al.*, 2019). The disparity between reported prevalence rates of alcohol misuse identified in Ireland and the UK suggests that further research is required in this field. It may be the case that jockeys typically underreport alcohol and substance misuse for fear of losing career opportunities or risking suspension from competition.

Help-seeking

Despite an estimated 38% of the European population experiencing a MHD each year (Wittchen & Jacobi, 2005), most people do not seek help from professional psychological services, or the process of accessing services is often substantially delayed (Wang *et al.*, 2007). Consequences may include worsened symptoms over time, interpersonal problems, and lower life expectancy (Schnyder *et al.*, 2017). For athletes, help-seeking is also low (Castaldelli-Maia *et al.*, 2019), with similar findings reported among professional jockeys. King *et al.* (2020) found that whilst almost 80% of jockeys met the threshold for at least one MHD, only 33% of the sample had sought professional help. Moreover, the rates of help-seeking observed are likely inflated due

to many jockeys reporting a sport psychologist as professional psychological support, where seeking help may have been solely related to performance issues, rather than for MHD. Empirical research pertaining to help-seeking among jockeys is limited, although a survey in the UK highlighted several factors that may promote a reluctance to seek help (McConn-Palfreyman *et al.*, 2019). The most prominent barriers included a need to appear strong in front of others and a stigma towards accessing support services. These findings corroborate other research with athletic samples that identified stigma as a key barrier to accessing professional support (Castaldelli-Maia *et al.*, 2019; Gulliver *et al.*, 2012; López & Levy, 2013). Other barriers in the study included a lack of time, ambivalence towards treatment, confidentiality concerns, and difficulty finding local support. Anti-stigma campaigns, focussing on reducing both public and self-stigma, may be effective among jockeys. Moreover, programmes that focus on mental health literacy may also be considered due to the need to educate jockeys about specific symptoms of MHD, reduce stigma, and increase awareness of sources of help.

Recommendations and future directions in brief

Given the findings reported through the review, a number of recommendations and future directions are proposed. First, longitudinal studies that examine lifestyle and sport-specific stressors are required to determine the prominent factors in the development of MHDs among jockeys. Particular attention to weight making and weight management may be fruitful given the magnitude of its importance throughout a jockey's career. Yet, the long term impacts of such aspects on MHDs are unknown. Recent research has suggested that depressive and anxiety symptoms are greater among retired jockeys in comparison to other populations (MacKinnon *et al.*, 2019) and the relentless necessity to compete at low weights throughout a career may be a factor. Also, despite a number of contemporary studies exploring the prevalence of symptoms

of MHDs within the jockey population, samples are predominantly male. As such, further research exploring female jockeys may shed light on gender differences between male and female jockeys. Studies exploring lesser reported clinical MHDs within jockey academic literature (e.g., schizophrenia) are also recommended.

Programmes designed to support jockeys for MHDs are needed, although organisations should be considerate of the horseracing environment, particularly important as jockeys perceive stigma as a key barrier to help-seeking (McConn-Palfreyman *et al.*, 2019). The development of a mental health and well-being framework (Purcell *et al.*, 2019) within horseracing organisations may begin to standardise the care of jockeys who are experiencing a MHD, but also to promote early intervention and prevention strategies. Naturally, each iteration of the framework may look and serve differently dependent on the organisation. This is an important consideration given the cultural differences in attitudes towards MHDs (Kotera *et al.*, 2020) and the popularity of horseracing worldwide. Four key components are reported by Purcell *et al.* (2019), discussed in Table 3, with specific recommendations made for the jockey population.

Table 3: Jockey mental health and wellbeing framework. Adapted from Purcell, Gwyther, and Rice (2019)

Stage	Recommendation
Preventative	<ul style="list-style-type: none"> - Mental health screening on licensing courses for jockeys, and at regular periods throughout the season that may increase the risk for MHDs such as injury or a loss of competitive rides. - Athlete development. Develop awareness for jockeys outside of the sport of horseracing, important given jockeys unidimensional identity (McGuane <i>et al.</i>, 2019). This could involve programmes related to dual career and planning for life after a career as a jockey. - Development of bespoke, mental health literacy programmes. Given jockeys workload and time constraints, programmes may be delivered online and shorter in length (e.g. one hour)
At risk - prevention	<ul style="list-style-type: none"> - Increase visibility of services that may increase the likelihood of a referral to mental health professionals. This may occur from members of a multidisciplinary team (e.g. strength and conditioning coach, nutritionist, sport psychologist, physios, medical officers). Organisations can also play a role by promoting services at racetracks and through jockey support networks (e.g. jockey associations).
Early intervention	<ul style="list-style-type: none"> - Within organisation supports are preferred, such as sport or clinical psychologists, or medical officers. If other professionals are required, in-house supports should refer on to external services. Careful consideration should be made to the type of professional contacted given the unique, nuanced nature of a career as a jockey. Given the current climate in the Covid-19 pandemic, online or telephone support services may be most appropriate.
Specialist mental health care	<ul style="list-style-type: none"> - A standardised mental health emergency plan should be in place, with agreement between support staff as to what does and does not constitute as a mental health emergency. Moreover, it is paramount that procedures are in place for the jockey if a mental health emergency occurs. A return to riding plan should also be created to promote a safe and healthy return to the sport.

Strengths and limitations

The strengths of this paper are:

1. It is the first review article to explore professional jockey mental health beyond the negative impact of weight-making

2. The review is designed to help inform practitioners and researchers working with jockeys on the prevalence of symptoms associated with MHDs which may improve professional practice. Organisations may also consider the recommendations proposed throughout the review article to maximise jockey welfare.

3. Literature searches and the application of the inclusion and exclusion criteria were conducted independently by two authors in order to minimise selection bias.

The limitations of the present paper are:

1. Although a search protocol was implemented, the best practice approach of a pre-registered, systematic review was not adopted in the present review. As such, studies may not have been identified for inclusion due to the non-systematic search process employed. The benefits of pre-registration include the development of study aims and objectives to answer a specific research question, but also to avoid bias and increase transparency by detailing data analysis intentions in advance (Quintana, 2015). Moreover, the validity and quality of studies included in the review were not assessed.

2. Whilst the search strategy was broad, encompassing a wide variety of MHDs, it is possible that less common MHDs may not have been identified.

Conclusion

The review suggests that jockeys report a prevalence of symptoms associated with MHDs. It appears that jockeys experience depressive and anxiety symptoms with much greater frequency than other athletes, despite male jockeys continuing to account for the majority of the professional ranks. Depressive symptoms are strongly associated with injury and stress, suggesting that support initiatives should focus on assisting jockeys to cope better with each of these factors. Distress symptoms reported by jockeys appear largely comparable with other athletes. Risk factors for anxiety and

distress symptoms include athlete burnout, career dissatisfaction, and the contemplation of retirement. Substance misuse, particularly adverse alcohol use, appears substantially greater for jockeys than that observed in many studies examining team and individual athletes. Further longitudinal epidemiological studies are necessary, ideally with data gathered from jockeys in differing racing jurisdictions. Much of the data throughout the review is taken from European jockeys, therefore jockeys from other popular racing areas (e.g., Australia; United States; Hong Kong) are underrepresented.

Disordered eating behaviours are common, but with no clear findings from the eating attitudes data, they appear largely to be long-established methods of attempting to make weight, rather than indicative of a high prevalence of clinical eating disorders. Such behaviours (e.g., wasting) are accepted and embedded within the culture of horse racing performance (Martin *et al.*, 2017; McGuane *et al.*, 2019). Lastly, help-seeking among the jockey population appears low, with research highlighting that stigma and the need to appear stoic reported as key barriers to accessing professional psychological support services. Jockey-specific programmes that consider the profession's unique stressors and sports culture are required. These programmes should be designed to increase mental health literacy, reduce stigma, and provide jockeys with access to confidential services.

What is already known?

- Jockeys experience a multitude of stressors throughout their careers that may impact their mental health
- Studies have explored the physical and psychological interplay of weight-making on jockeys' mental health, although an updated review has yet to be conducted exploring the wider mental health literature

- Early studies indicate that depressive symptoms may be greater among jockeys than other elite athletes

What are the new findings?

- The present review provides an overview of updated and contemporary research exploring the mental health of professional jockeys
- Prevalence of depression and anxiety symptoms, and adverse alcohol use, appear greater among professional jockeys than athletes from other sports
- Risk factors for anxiety and distress symptoms among jockeys include athlete burnout, career dissatisfaction, and the contemplation of retirement. Further research is needed to identify other general and sport-specific risk factors
- Help-seeking among the jockey population appears low

Appendix B

Published Version of Stressors Experienced by Jockeys Article

Introduction

For athletes, competing in elite sport can be a stressful experience. A host of studies over the past 30 years have explored stressors amongst elite athletes across multiple sports and a range of competition levels to better understand the demands athletes experience throughout their careers (e.g., Noblet & Gifford, 2002; Hanton *et al.*, 2005). Whilst these studies have captured important information for practitioners, sport psychologists and researchers, there are a number of sports underrepresented within the literature. As highlighted by Thelwell *et al.* (2007), exploring alternative sports is important. Such efforts may not only improve the knowledge and understanding of the practitioner and the group of athletes they are working with, but also the subsequent intervention delivered by the practitioner to the athletes. One underrepresented sport in stressors literature is the sport of horseracing, in particular, the athletes aboard the thoroughbred racehorse, jockeys. Despite the fact the sport has been labelled as high risk and demanding (Warrington *et al.*, 2009), there is a dearth of literature examining the stressors experienced by jockeys. Moreover, few sports involve an animal-human dyad, which may contribute unique findings that are not reported within other team and individual sport studies. As such, the present study sought to explore the stressors experienced by a sample of professional jockeys.

The predominant theory employed by sport psychology researchers when exploring stress is the transactional model (Lazarus & Folkman, 1984). This theory proposes that stress occurs as an interaction between a person and the environment. Specifically, stress in this context has been defined as “an ongoing process that involves

individuals transacting with their environments, making appraisals of the situations they find themselves in, and endeavouring to cope with any issues that may arise” (Fletcher, Hanton, & Mellalieu, 2006, p. 329). Research among figure skaters’ laid the foundations for future examinations surrounding stress in athletes. Indeed, the seminal work of Scanlan *et al.* (1991) and Gould *et al.* (1993) identified that figure skaters stress sources included expectations and pressure to perform, physical and psychological demands of skating, environmental demands, and relationship issues. Developing on this work, a holistic approach to stress research was adopted by Noblet and Gifford (2002), designed to capture a wide range of stressors faced by Australian Rules Footballers. Stressors faced by these athletes included common performance related issues (e.g. poor form), intra- and interpersonal issues (e.g. career development concerns), as well as stressors within the environment in which they operate (e.g. negative aspects of organisational systems). As a result, this work highlighted that athletes face stressors from both the competition and non-competition environment. More recently, researchers have categorised stressors in a sporting context, with it commonly accepted that athletes face competitive (e.g., pressure, risk of injury), organisational (e.g., cultural and team issues), and personal stressors (e.g., family issues; Arnold & Fletcher, 2012; Sarkar & Fletcher, 2014). Although these studies cover a wide range of sports, to the author’s knowledge, no studies have used interviews using the transactional model of stress as a theoretical framework to identify the sources of stress experienced by jockeys.

Despite a range of studies highlighting the unique nature of a career as a jockey (Warrington *et al.*, 2009; Wilson *et al.*, 2014a) only one study has examined stressors in the jockey population. Landolt *et al.* (2017), using the effort-reward imbalance model (Siegrist, 1996) as a guiding theory, reported five categories of key demands

experienced by apprentice jockeys ($n = 35$), which included: time demands (e.g., travelling for long hours); role suppression (e.g., lack of autonomy); workload (e.g., long hours spent working which impacts sleep); weight (e.g., managing weight); cognitive demands (e.g., concentrating for short periods, repeatedly); and ancillary demands such as track work and cleaning out the stables. The authors concluded that despite the multiple demands placed on apprentice jockeys, the stress effects may be buffered via the horse-human dyad, fame and money, and the experience of racing itself. For example, jockeys elicited descriptions highlighting the intrinsic positive emotions associated with being a jockey, largely arising from working with horses. Though the findings highlight the broad nature of stressors experienced by jockeys, the sample was narrow in nature and limited to apprentice jockeys. Apprentice jockeys are younger jockeys, often inexperienced, therefore exploring a broader sample of jockeys may yield further findings to add to the current literature base. Indeed, it is plausible to suggest that jockeys experiences are likely to vary in different racing jurisdictions due to factors such as the geographical landscape of the country (e.g., size), racing legislation and minimum riding weights, amongst others. More recently, perhaps indicative of the demanding nature of the sport of horseracing, research has demonstrated that mental health issues may be prevalent in the sport. Among a sample of 42 professional jockeys, 57% met the criteria for depression, 36% for psychological distress, and 21% for generalised anxiety (Losty *et al.*, 2019). In a larger scale study ($n = 84$), King *et al.* (2020) demonstrated that 79% of jockeys met the criteria for at least one common mental disorder (CMD). Specifically, a prevalence of adverse alcohol use (61%), depression (35%), generalised anxiety (27%), and psychological distress (19%) was reported. The findings also revealed that almost a quarter of the professional jockeys taking part in the study were contemplating retirement from the sport within

the next 12 months. Understanding the stressors jockeys experience may provide practitioners and researchers with a deeper understanding of the contributing factors towards such numbers.

Considering the above, there is a need to develop the research on the jockey population and the sources of stress they experience. Firstly, jockeys take part in a unique sport that is renowned for its tough nature (e.g., high prevalence of injury; body mass requirements; weight manipulation methods), yet there is limited data pertaining to the psychology of jockeys. Secondly, sports involving a horse-human dyad are underrepresented in the athlete stressors literature. A jockey must attempt to maximise not only their own performance, but also that of the horse they are competing aboard. Moreover, jockeys compete on multiple horses daily, each horse with its own unique behavioural patterns and level of ability. This relationship may provide the athlete with a distinctive source of stress and demands that are not faced by those competing in individual or team sports. Thirdly, from an applied perspective, the importance of practitioners having an awareness of the stressor's jockeys face is key if specific support programmes are to be developed. Thus, this study focussed on exploring sources of stress faced by professional jockeys in Ireland.

Methods

The philosophical assumptions underpinning the study were informed by ontological relativism and epistemological constructionism. As such, our assumption is that multiple subjective realities exist, and are dependent on an individual's experiences, values and beliefs (Erlingsson & Brysiewicz, 2013). Moreover, due to this approach, knowledge was co-constructed between the interviewer (lead researcher) and participants (Willig, 2019).

Horseracing and the Jockey – A Brief Background

The following section attempts to provide the reader with a brief background on horseracing and the jockey in an endeavour to increase contextual understanding of the findings presented in the results section. Horseracing is divided into two categories, Flat and National Hunt (often referred to as Jump racing). Flat jockeys are generally smaller in stature, due to the necessity to ride at lower weights. These weights vary between racing jurisdictions, although in Ireland, minimum and maximum riding weights for Flat jockeys are set at 8st 4lbs (52.6kg/116lbs) and 9st 12lbs (62.6kg/138lbs). For National Hunt jockeys, minimum and maximum riding weights are 9st 10lbs (61.7kg/136lbs) and 11st 12lbs (75.3kg/166lbs; HRI, 2020). The riding weights allocated to jockeys includes the jockey's body weight and racing accessories (e.g. silks, breeches, boots, body protector, saddle; Wilson *et al.*, 2014a). Unlike several weight-making athletes such as boxers and lightweight rowers, where a 24-hour window between weigh-in and competition occurs, jockeys are required to step on the scales around 30 minutes prior to competition. Moreover, post-race, if a jockey has either won or placed (finished second, third, or fourth), they must be weighed again (known as weighing in), to ensure they are within around 1kg of their pre-race weight. In some cases, jockeys may do this up to 14 times a day if competing at two race meetings. As such, replenishment of food sources and hydration is often unachievable due to the constant need to manipulate weight dependent on the horse the jockey is riding. These challenges are often exacerbated for younger jockeys, known as Apprentice and Conditional jockeys. Apprentice jockeys compete in Flat racing, whilst Conditional jockeys compete in National Hunt racing. These jockeys compete with a claim, or a reduction in weight allowance (3lbs, 5lbs, 7lbs, or 10lbs), dependent on their experience, based on the number of winners they have ridden. Whilst this is used to

incentivise trainers to select younger jockeys, because a lighter horse is likely to be more competitive in a race, it can result in Apprentice or Conditional jockeys attempting to reach unrealistic weights. For instance, a recent study in the United Kingdom has found that only one out of 32 Apprentice jockeys could reach the minimal riding weight whilst maintaining a fat mass of more than 2.5kg (lowest fat mass reported among weight-restricted males) with the authors posing the question: is it time to change the weights or change the jockeys? (Wilson, Hill, Martin, Morton, & Close, 2020).

In Ireland, Flat jockeys are paid €175 per race, with National Hunt jockeys paid €200 per race. Estimating the yearly earnings of jockeys is difficult due to multiple factors impacting the total figure such as prize money, travel costs, and sponsorship. However, a recent article in the *Racing Post* (the horseracing industry's primary newspaper) suggested that the most successful jockeys in the sport can earn hundreds of thousands of euros each year (Riley, 2020). For most jockeys however, a figure of around €30,000 after tax and expenses is more likely. Apprentice and Conditional jockeys earn substantially less, with a figure of around €15,000 reported. Jockeys drive hundreds of thousands of miles each year, not only to racetracks for competition, but also to racing yards in the hope of procuring future riding opportunities. This often involves jockeys working long hours, riding for trainers in the morning (6-7am), and competing late at night if an evening race meeting is scheduled (7-10pm). For a full representation of the daily life of a jockey, please see the article of Wilson et al. (2014a).

Participants

Fifteen jockeys took part in the present study including Flat Professional ($n = 4$), Apprentice ($n = 3$), National Hunt Professional ($n = 5$), and Conditional ($n = 3$)

jockeys. As male and female jockeys compete against one another under the same competition rules, it was not deemed necessary to separate genders in the data analysis. Further, due to the low number of female jockeys participating in Ireland in comparison to male jockeys, the exact number of female jockeys participating in the study has been withheld to protect anonymity. On average, the jockeys in the present study were 27 years old ($SD = 2.65$; range 22 – 34), had been licenced jockeys for 7.9 years ($SD = 4.1$; range 2 – 16) and had ridden 165 winners ($SD = 152$; range 4 – 500). Adverts on social media, text messages via the regulatory bodies messaging service, and the promotion of the study at the racetrack via the Senior Medical Officer were used as methods to encourage participation from the jockeys. Jockeys were required to contact the lead researcher expressing their interest in participating in the study.

Procedure

Ethical approval was received from the Waterford Institute of Technology Research Ethics Committee. Jockeys were invited to take part in a semi-structured interview either face-to-face ($n = 8$) or via telephone ($n = 7$). The interviews lasted nearly 30 minutes ($M = 29.13$ minutes; range = 10 - 64 minutes) and were all performed by the lead researcher. The lead researcher is a neophyte qualitative researcher but has conducted undergraduate and postgraduate qualitative research methods training. They have also completed both qualitative undergraduate and postgraduate dissertations/research studies. Interviews were semi-structured in nature, giving participants freedom to expand and elaborate on ideas they perceived as important to aid in the collection of deeper, more meaningful data (Smith & Sparkes, 2014).

Interview Guide

The order of the interview questions was determined by the interview guide, although a flexible approach was implemented to ensure a natural flow of conversation occurred. The interview guide was created based on the research team's experience working with professional jockeys, as well as previous athlete stressors literature (Noblet & Gifford, 2002). Four main questions were asked to participants. Firstly, to facilitate rapport between the interviewer and participant, participants were asked to discuss their career as a jockey to date, including any highlights or rewarding aspects. Secondly, participants were asked to recall stressors they have experienced or were currently experiencing within their careers. Thirdly, each individual stressors were identified in further detail with the participants. Finally, jockeys were asked if there had been any significant points in their career that were particularly difficult that had not been previously discussed within the interview.

Interviewer and Data Analysis Team Background

The lead researcher (LK) has delivered sport psychology sessions to younger trainee jockeys, and is therefore familiar with the nuanced language used in the sport of horseracing. Authors JP and AM work closely with jockeys in their roles as medical officers. The final author CL is a sport psychology consultant working with jockeys on a weekly basis. The lead author had not worked with any of the jockeys participating in the present study.

Data Analysis

Reflexive thematic analysis was used to analyse qualitative data and explore the experiences, meanings and reality of participants (Braun & Clarke, 2019). Reflexive thematic analysis was selected for the present study due to its flexibility and the desire to identify general patterns across a set of data (Braun & Clarke, 2019). The six-stages

of reflexive thematic analysis popularised by Braun and Clarke (2006) was used to analyse data. However, whilst these stages are presented in a linear fashion, the process occurred organically and creatively, in a recursive nature, whereby the lead author often integrated multiple stages, reviewing and refining codes and themes to better develop and understand the data. Firstly, the analysis began with the lead author familiarising themselves with the data by repeatedly reading and re-reading the transcripts. Line by line coding of the transcripts was then completed with codes relating to what was explicitly stated in the interviews (semantic approach), rather than underlying ideas and interpretations (latent approach). Once coding had been completed across each interview, the analysis occurred more broadly, attempting to identify any common patterns between the codes. Once this had been established, the lead researcher reviewed codes, developed themes and subsequently refined themes into higher order and lower order themes. Theme identification was attributed to “something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set” (Braun & Clarke, 2006, p. 82). In the present study, themes were reported with explicit or surface meanings to ensure they effectively highlighted the essence of the theme. Several theme ideas were collapsed into more appropriate themes and other initial codes were removed from the data analysis as they were deemed irrelevant (e.g., no clear pattern in the data). Themes were then named in a clear manner, so the reader could clearly identify the overarching construct of the theme. Once completed, a written report based on the conclusion of thematic analysis was finalised (this article).

A combination of inductive and deductive methods of analysis were adopted. First, data were analysed inductively whereby codes were generated from the data itself, with pre-existing concepts and ideas withheld from the interpretation process

(Chapman, Hadfield, & Chapman, 2015). However, the researchers acknowledge that truly “inductive” analysis is not possible to conduct due to the “unconscious application of prior knowledge to the thematic analysis process” (Chapman *et al.*, 2015, p.204). Deductive analysis was used to aid categorising the raw data themes into higher-order categories that may have previously been identified in the stress in sport literature.

Quality Standards

To facilitate good quality standards in qualitative research, the authors employed multiple, flexible methods that were used throughout the research process at times that were determined as the most important, rather than following pre-defined criterion checklists. Critical friends were used to provide a theoretical sounding board that promote reflexivity and encourage alternative interpretations of the data dependant on the individual’s interests and experiences (Smith & Sparkes, 2014). In the present study, critical friends (e.g., supervisors) provided feedback on the inductive analysis, promoting discussion surrounding the inclusion and subsequent naming of certain higher-order themes. Moreover, throughout the research process, the lead author adopted a reflexive approach, frequently documenting their own biases, beliefs and motivations towards the research project (Johnson, Adkins, & Chauvin, 2020). The reflexive musings were shared with co-authors in meetings, but also through the process of member reflections. Member reflections were also used as an alternative to the popular member-checking given the recent discussions around its limitations (see Smith & McGannon, 2018). Member reflections in the present study involved engaging with several of the participants ($n = 3$) after interviews had been transcribed and analysed, with further insights gathered around the results and the participants responses to the lead author’s interpretations of the data. For example, in one member reflection, the lead author asked further questions on the career and financial uncertainty that

coincides with life as a jockey. Although no extra data were collected during the member reflection, the comments from the jockey aided the lead researcher's understanding on this subject (e.g., a large number of jockeys competing for rides on a relatively small number of horses). Lastly, a substantive report (this article) was produced containing thick descriptions of the data that provides not only the participants with a voice to share their experiences, but also for the reader to summarise and conclude their own individual interpretations of the data (Geertz, 1973). No changes were made to the transcripts from the first interview.

Results

Analysis of the interviews resulted in the identification of 81 unique sources of stress experienced by jockeys. These were subsequently grouped into 22 categories of stressors. The average number of stressors reported by each jockey was 15, ranging between 9 and 28. Following this, categories of stressors were grouped into four main themes, including: competition-based stressors; racing industry stressors; interpersonal stressors; and career stressors. The findings are predominantly discussed via substantive thick description in the form of direct quotes.

Competition-based Stressors

Competition-based stressors ($n = 22$) refers to stressors directly related to the jockey prior to or during competition (Figure 3.1 in Chapter 3). The higher-order themes within this dimension were: current form, pressure, horse, injury, opponents, tactical and race-day.

The most frequently cited theme within current form was "lack of form", which primarily related to being in a slump (e.g., long periods without winning). Jockeys' negative perceptions of their form in the lead up to a race was a source of stress and

impacted their view on the chances of them winning a race. The following quote discusses this notion: “I had plenty of rides, no winners. I hit a very, very low spot...It took me another year to ride another winner which was incredibly hard”.

The participants within the present sample reported the dangers and potential “serious injury” that occurs as a jockey within the theme of injury. The following passage highlights an injury a jockey received whilst competing:

...I got a number of bad falls in a row...There was a fall that I got in [names racecourse] a couple of years back and I got a bad concussion. I got the fall and that was all well and good but an oncoming horse kicked me in the head and I got a bad concussion (Participant 11).

The most frequently cited themes within pressure referred to “riding in a big race” ($n = 4$) and “riding a favourite” ($n = 3$). Pressure is synonymous with elite sport, though perceptions of pressure altered when riding a horse expected to win a race as illustrated in the following quote: “If you’re riding a favourite you will feel more pressure. If you miss the break on a favourite you are more likely to panic” (Participant 3).

The most frequently cited theme within horses was “riding poor horses” which refers to the jockeys’ perception that a horse has a lack of ability and little chance of winning a race. Jockeys belief in the animal’s ability appeared to influence motivation towards competition, highlighted in the following quote:

It’s not worth your while riding bad horses because you end up looking bad. It’s a bad loop you are stuck in. Trainers only want you if you are riding winners but you only ride winners if you are put on good horses. It’s an infinite loop (Participant 4).

Within the theme of opponents, some jockeys reported feeling “intimidated by senior jockeys”. This view was expressed predominantly by younger jockeys with one jockey stating: “they (senior jockeys) might try push the boundaries in a race, they might think they can take your position in a race because they do think you’re not mentally tough and will try bully you” (Participant 3). Jockeys highlighted the importance of the tactical elements of race, with the most prevalent stressors occurring from “split-decision during races” and “disagreeing with tactical instructions from a trainer”. Jockeys were cognisant that decisions during a race can be the difference between winning and losing and it appears that jockeys are often required to change tactics during a race:

You’ve got to understand how difficult it is to stick to a game plan. It’s all well and good going out there with a plan but they are more guidelines than anything because things change and maybe some horse fell in front of you and hampered you, or maybe you got boxed in (Participant 7).

Racing Industry Stressors

This theme reflects the stressors that arise from the racing industry ($n = 26$), including legislation and rules enforced on the jockeys by the sport’s governing body (Figure 3.2 in Chapter Three). The higher-order themes within this dimension were: weight, workload, travel demands, injury concerns, suspension, facilities, and issues with governing body. The most frequently cited theme within weight was “weight loss strategies” which in the present sample of jockeys related to wasting. Wasting refers to rapid weight loss techniques whereby jockeys at least 5% of their body mass, or more, in less than seven days (Cullen *et al.*, 2015b; Warrington *et al.*, 2009). Methods of wasting employed by jockeys include food restriction, excessive exercise, acute

dehydration via sweating (e.g. sauna use, wearing a sweat suit), or the use of prohibited substances (e.g. laxatives/diuretics) (Leydon & Wall, 2002; Wilson *et al.*, 2014a) Jockeys are required to align their weight with that of the horse up to a maximum of fourteen times a day in exceptional circumstances. As such, jockeys may engage in acute weight loss strategies to ensure they are able to compete. The following quote illustrates the demanding nature of regular acute weight loss:

Eight stone seven (119 lbs) is as low as I've got this year. Probably get to eight stone six (118 lbs) at a push but I'd have to sweat a lot. That's tough and you wouldn't feel right for days after...During a race the adrenaline kicks in and you're grand. After that it (process of weight loss) gets you and next day you'd be f**k*d. I wouldn't be able to eat that night even after because your stomach will be tightened up and that's probably the hardest bit (Participant 4).

“Weight loss and mood” was also highlighted as a stressor, with several jockeys acknowledging the deleterious impact making and managing weight can have on them as an individual. One jockey expressed “...it's just the weight thing that gets you down more than anything else” (Participant 5). The workload experienced by jockeys was reported as vast, which often resulted in “lengthy seasons” although stressors such as “long hours” and “work before competition” was also discussed. The following quote illustrates the workload demands placed upon one jockey:

Well I'm employed in [names trainer] for 39 hours a week which would be 6.30am-11.30am in the morning and then the other two (days) on a Wednesday and a Friday. (I) drive to the races, drive home. This week alone I've spent eight hours a day in the car going to the races to Killarney (and)

that's before I even rode a horse. So, you're talking 10 hours away from home racing before you do three hours in work, so you're talking maybe 13 hours a day. (I) definitely wouldn't be far off 100 hours a week which is mental, colossal (Participant 8).

Contributing to the workload of jockeys was the travel demands, including "travelling long distances" and "late travel after competition". Jockeys travel the length and breadth of the country, often in isolation, competing at different racetracks daily:

I'm usually driving a bit. That's another thing, the driving. We take turns but you'd usually end up driving yourself. Riding, get back home at 10, 11 or 12 and then go back and do the same the next day. It's hard going that way. Being on the road is definitely one of the hardest parts (Participant 4).

Among the injury concerns higher-order theme, "injury rehabilitation" and the deleterious impact of the inability to compete was prevalent. The following quote highlights the isolation associated upon recovering from an injury: "I just think lads are left alone and you are just in that bubble on your own and it feels like nobody else is around" (Participant 6). Moreover, jockeys felt that further support structures should be available to them whilst injured to negate the impact of the solitude expressed in the quote above. These support structures included an injury rehabilitation hub for all injured jockeys and easier access to sport psychology services.

Suspension resulted in one jockey missing a riding opportunity (due to excessive whip use), which resulted in them missing a valuable, prestigious race:

I missed a big winner in [names country]. I should have won the biggest race in [names country] but I was suspended...I'll never forget that feeling. It was the hardest thing in my racing career...To be so close, yet there's somebody

else sitting on him (the horse) receiving all the praise, all the publicity, the limelight, it was the hardest thing to take. That hit me very very hard (Participant 3).

Facilities at the race-track were largely regarded as poor by jockeys, with particular reference to “inadequate food provision”. One jockey stated “the major problem we have here in Ireland is the quality of food that we get at the track”. Providing jockeys with adequate nutrition was not a priority for racecourses according to a number of jockeys. The most frequently cited theme within issues with governing body was “evening race-meets”. Evening race-meets occur throughout the season for both flat and jump jockeys. As discussed previously, jockeys often complete work before competition. Thus, racing in the evening results in jockeys arriving home late, with work early the following day:

I often find as well that coming back from an evening meeting, even though you’ll be going all day, if you are riding in the last you’ll be jacked up on adrenaline and you might not have eaten all day. Eating at nine pm at night and maybe struggling to sleep and staying awake until one and then the next second the alarm is going off at six am and you are off again after five hours sleep (Participant 5).

Interpersonal Stressors

Interpersonal stressors ($n = 20$) relate to stressors that arise from relationships with other people (Figure 3.3 in Chapter Three). The higher-order dimensions identified in this theme were: trainer, other jockeys, expectations of others, support networks and communication. The most frequently cited theme within trainer was “negative tactical debrief after performance” and “difficulty keeping trainers happy”. Building and

managing relationships with trainers and owners is imperative for jockeys, although this can be demanding as detailed in the following quote: “Keeping trainers happy is a big challenge. When you are riding for loads of different trainers and one day you can’t ride for them, so you have to let them down and ride for someone else” (Participant 7).

The theme of other jockeys was perceived as a source of stress though it’s important to note in the current sample this was unique to apprentice and conditional jockeys when “first entering the weighing room”. Jockeys are required to prepare for competition in a small environment among other jockeys which may be intimidating to the younger athletes, with one jockey stating: “it would be senior jockeys to the younger jockeys. There’s a bit of manipulating” (Participant 15). The expectation of others was difficult to manage for a number of jockeys, with “pressure from trainers and owners” cited as a source of stress. Managing external pressure is an important aspect of an athlete’s career, especially when holding the expectations of those financially and emotionally invested in a horse’s performance as illustrated in the following quote: “If you get beat, it can cost you to lose a ride on a horse, to lose the owners that you’ve been riding for, they might not want you anymore” (Participant 12). Jockeys also discussed receiving social media abuse if a horse they were competing aboard did not win. In one case, this resulted in a death threat to the jockey: ‘It’s not funny anymore, you get death threats and everything...I had a bloke messaging me saying he was going to kill me’ (Jockey 13).

The “insular world of horseracing” was reported as a prevalent theme within support network where jockeys reported that support networks were often small and connected to the racing industry (e.g. jockeys reported that often a small number of fellow jockeys were friends or partners). As such, it appeared that the identity of the

jockey was limited to that of their athletic career due to relationships between significant others commonly working within the horseracing industry:

Racing dictates so much of your time that you tend to find it very hard to stay in contact with people outside of racing. You do tend to find that your only friends are one that are in racing... It's very hard to switch off and find another outlet (Participant 3)

Communication, including “communicating effectively to owners and trainers” was viewed as a challenging aspect involved in the role of a jockey. Jockeys are often required to provide tactical analysis and debrief after a race to a trainer and owner to enhance their understanding of a horse's performance. The following quote highlights the difficulty in achieving this aspect coherently and confidently for some jockeys: “I find dealing with people hard...Even just communicating with my trainer or other colleagues, I find it hard as I'm reserved. I struggle to open up and get myself out there to talk with them” (Participant 15).

Career Stressors

Career stressors ($n = 13$) relate to general stressors faced by jockeys, largely concerning career progression (Figure 3.4 in Chapter Three). The following themes were identified, including: career uncertainty, career opportunities, and transitions. The most frequently cited theme within career uncertainty was “losing rides”, commonly known as being ‘jockeyed-off’:

You can be getting jockeyed off a horse for no reason and people have different opinions...I used to beat myself up about it and it would upset me...If I knew I did something wrong that's fine but if I get jockeyed off and you know you didn't give it a bad ride it would be a kick in the stones (Participant 9).

A prominent stressor discussed by jockeys was career opportunities; more specifically “limited opportunities”. This theme refers to the competitive nature of the sport of horseracing whereby jockeys are competing against one another to ride a relatively small pool of horses, as discussed in the following passage: “There are too many jockeys and there’s not enough trainers, there’s not enough horses to go around”. Linked to the “career uncertainty” was “financial uncertainty” with several jockeys considering retirement from the sport for these reasons. One jockey stated:

I'm probably going to be getting out of racing sooner or later because it's not paying me at all. I'll probably be out of it next year...I've gotten to the age now that I can't be fooling myself and I need to make a proper living. Unless you have a big stable behind you, you're not going to make an awful lot of money (Participant 4).

Transitions occur throughout a jockey’s career, however the most frequently cited theme in the current sample was “from apprentice/conditional to professional”. Transitioning from an apprentice/conditional license to a full professional license appeared a precarious period in a jockey’s career:

I think the major factor is that when you are losing your claim, coming to that stage in your career, lads are starting to say it is make or break whether you are going to make it as a professional...You lose your claim and then you are more or less on level par with all (of) the senior jockeys (Participant 6).

Discussion

The purpose of the present study was to identify the sources of stress experienced by a sample of professional jockeys using the transactional model of stress

as a guiding framework. Overall, the findings indicate that jockeys encounter a wide range of stressors relating to competition and non-competition environments. Four general dimensions of stressors were reported, which included competition (e.g. form, pressure), the racing industry (e.g. workload), interpersonal (e.g. maintaining relationships with owners and trainers) and career-related stressors (e.g. career uncertainty). The findings contribute to the limited sport psychology research conducted among professional jockeys, whilst also adding to the ever growing body of literature exploring sources of stress among elite athletes.

The findings revealed unique sources of stress specific to jockeys that have yet to be cited among other individual or team athletes. A novel finding was that jockeys cited stress sources which included their perceptions of the horse's ability they were competing aboard. Specifically, within the present sample, if the jockey felt the horse they were riding did not have a realistic chance of winning a race, this appeared to impact a jockey's preparation towards the race. For example, jockeys illustrated negative perceptions towards travelling to competition and making weight. The importance of the relationship between horse and human has been documented (e.g., Jackman *et al.*, 2017) therefore such findings may be relevant to those working or competing in other equestrian sports such as eventing, polo, dressage, endurance riding, and show jumping. Moreover, other unique stressors reported included the workload and travel demands associated with being a jockey. Whilst jockeys are professional athletes, the life they lead is akin to an amateur athlete, insofar that jockeys often work incredibly long hours, riding work for trainers early in the morning, before driving to the racetrack to compete in the afternoons/evenings. The data highlighted that jockeys often found balancing such demands a difficult process, with several descriptions corroborating with the dimensions associated with athlete burnout. Previous research

found that jockeys reported moderate levels of athlete burnout, with statistically significant positive associations identified between an increase in athlete burnout dimensions and the prevalence of psychological distress and anxiety symptoms (King *et al.*, 2020). Further qualitative research is needed to better understand athlete burnout among jockeys, including symptoms, antecedents and consequences of the condition. Identifying novel stressors, such as those reported in the present study, is important to continue to develop knowledge and understanding of the athlete stressors literature. This is perhaps emphasised to a greater extent among unique populations of athletes (e.g., jockeys), where limited empirical research exists. In developing the research base, and the subsequent practical application of the findings, it is hoped that refined, bespoke support programmes are designed and implemented for jockeys.

On the other hand, sources of stress reported by jockeys appeared similar to other athlete stressors studies, which included performance concerns, managing professional and personal relationships, spending time away from family, and career progression uncertainty (Giacobbi *et al.*, 2004; Gould *et al.*, 1993; Hanton *et al.*, 2005; Landolt *et al.*, 2017; Noblet & Gifford, 2002; Scanlan *et al.*, 1991; Thelwell *et al.*, 2007). The findings highlighted competition sources of stress that have been reported elsewhere in the literature such as pressure and injury (Sarkar & Fletcher, 2014). However, the most prominent stressors within the competition domain were linked to a lack of form and not winning. Unlike many other individual sports such as the 100 metre sprint in athletics, whereby the individual with the quickest time wins the race, the best performance from the jockey aboard the racehorse may not result in success (when success is based on winning a race). For context, the champion flat jockey in Ireland throughout the 2018/2019 season rode 111 winners across 416 rides (HRI, 2018). Thus, the rider, despite statistically being the most successful flat jockey in the

country, was riding at a 27% strike rate. Therefore, even the most successful flat jockey in Ireland was not winning 73% of the races they competed in. As such, practitioners working with jockeys may benefit from exploring goal-setting interventions, with an emphasis on developing process or performance goals, rather than outcome goals (Hardy & Jones, 1994). Moreover, the opponent was also considered a competition source of stress particularly if the jockey felt intimidated by other jockeys which aligns with other athlete stressors literature (Campbell & Jones, 2002; Hanton *et al.*, 2005; Noblet & Gifford, 2002; Thelwell *et al.*, 2007). This is an important consideration as horseracing is a rare sport in that the competitors prepare for each race in close proximity to one another (e.g., the weighing room). Although the weighing room is often reported as a place for camaraderie (Vamplew & Kay, 2005) several jockeys within the present sample reported otherwise, especially upon first entering the weighing room as a younger, inexperienced jockey.

The general dimension of racing industry considers the occupation more globally, acknowledging factors that are not directly related to race-day, yet present a significant part of a jockey's athletic career. The most prevalent theme discussed by jockeys was weight. The current findings are consistent with previous qualitative research (McGuane *et al.* 2019), which illustrates the negative physiological and psychological consequences of wasting, and adds further evidence to the multitude of quantitative studies documenting the impact of weight-making on mood. (Caulfield & Karageorghis, 2008; Leydon & Wall, 2002; Mezey, King, & Mezey, 1987). Thus, wasting on a frequent basis, almost daily in some circumstances, may have a notable impact on jockey health. The repercussions for younger jockeys may be greater as they are required to compete with a claim. Recent research has suggested that many young jockeys are unable to reach their lowest allocated riding weight (Wilson

et al., 2020), therefore further research is required to develop understanding of minimal riding weights for jockeys. The anthropological measurements of humans has gradually increased, yet the minimal riding weights have not followed in the same manner. For instance, over the past 40 years, the average body mass of jockeys entering the trainee jockey programme at the Racing Academy and Centre of Education (RACE) has risen by 47%, from 37kg to 54.5kg. Yet, in the same period, the minimum riding weights for jockeys has increased by just 10%, from 47.7kg to 52.7kg (Cullen *et al.*, 2015a).

This is one of the first studies to identify sources of stress reported by jockeys that related to the organisation under which they compete. In particular, the planning of evening race-meets, which are increasingly popular in the summer months. Although these present an opportunity for organisations and racecourses to increase revenue, they place jockeys and other racing personnel under an intense workload. According to our sample, the congested racing calendar ensures jockeys experience lengthy seasons. For flat jockeys, the domestic programme runs from March to November, with the busiest periods occurring between June and August. During these periods, jockeys may compete every day. Once the domestic season is completed, jockeys will often compete abroad during the winter months in places such as Dubai and Australia. On the other hand, jump jockeys compete throughout the winter months, with the busiest periods occurring in December and between March and May. Similar to flat jockeys, jump jockeys may also compete every day during the busiest periods. However, in Ireland particularly, jump racing is also popular throughout the summer, resulting in very few opportunities for jockeys to take time away from the sport. Similar findings are reported by athletes competing in cricket (Thelwell *et al.*, 2007) and Australian footballers (Noblet & Gifford, 2002). Moreover, the most frequently cited theme within facilities was inadequate food provision which is a novel finding and yet to be reported among

jockey literature. Jockeys felt they were unable to obtain healthy foods at racetracks and instead settled for less than optimal nutrition (e.g., takeaway fast food) once competition had finished. The racecourse is an optimal place to target jockey attitudes and behaviours towards nutrition given the time spent at racetracks throughout the season and the impact that role models may have on other jockey's nutritional habits. For instance, if a senior, successful jockey was seen eating healthy, substantial meals, rather than snacks and drinks commonly used by jockeys (e.g. sweets, fizzy drinks), attitudes and behaviours may begin to change. The sport's governing body may also consider policy changes to the weight structuring system in place for jockeys given the considerable research highlighting the multitude of unhealthy weight management practices employed. Other sports such as collegiate and high-school wrestling employ the 1.5% rule which ensures wrestlers can only lose up to 1.5% of their body weight per week to discourage rapid weight loss.

Interpersonal stressors were identified in the present sample, with the most prevalent higher-order theme related to trainers. Jockeys reported that some trainers were unapproachable and had received negative tactical debriefs on competitive performances. This dynamic is similar to the coach-athlete relationship, with conflict with a coach reported as a stressor elsewhere (Cosh & Tully, 2015; Hanton *et al.*, 2005; Noblet & Gifford, 2002). However, the relationship between jockey and trainer may be slightly different in comparison to the conventional coach-athlete relationship, particularly for younger jockeys. In this context, the trainer-jockey dynamic often follows the master-servant approach (Vamplew, 2000). Jockeys also felt pressure from the public and reported the level of scrutiny experienced due to social media sites such as Twitter and Facebook as a source of stress. Social media abuse, which in some cases led to death threats, is a relatively new phenomenon in the sport science literature.

Minimal research exists exploring social media use among athletes, however one study found that student-athletes spend almost 32 hours per week on average using mobile phones, with smartphone usage and time spent on social media said to be associated with one another (DesClouds *et al.*, 2018). Further research is needed to identify the impact of smartphone usage among athletes, particularly important due to the links between mental health outcomes and the use of smartphones (Rosen *et al.*, 2013). Although social media can be positive for the athlete's career, such as raising funds for sponsorship or marketing purposes, if these benefits come at the cost of social media abuse then appropriate training and procedures must be employed to ensure the safety and welfare of athletes. A recent article in the Trainer Magazine highlighted the social media abuse that racehorse trainers receive, commonly known as trolling, suggesting that individuals who work or compete within the racing industry may be particularly susceptible (Oliver, 2019).

Career-related stressors were reported by jockeys which related to career uncertainty, career opportunities, and transitions. The most prevalent raw-data themes under career uncertainty was job insecurity and financial insecurity. This corroborates previous research in sport that highlights athletes often feel periods of uncertainty during their careers from both a career and financial perspective (Cosh & Tully, 2015). Financial difficulties were reported in the present study, with one participant citing the stressors as a reason for contemplating retirement from the sport. In a recent study, King *et al.* (2020) reported that over a quarter of jockeys in Ireland were contemplating retirement from the sport within the next 12 months. Previous research exploring the demands of jockeys cited money as a rewarding aspect of the role, with the prospect of future earnings appearing to motivate the individuals (Landolt *et al.*, 2017). In contrast, among the present sample it appeared that opportunities to earn vast amounts of monies

was limited. The differing standpoints in the present study may relate to the type of racing code for which jockeys compete in. In the Australian study (Landolt *et al.*, 2017), all of the participants competed in flat racing, where prize pools are significantly greater than jump racing. Given half of the sample in our study were competing in jump racing, and thus less prize money on offer, this may account for the contrasting financial views.

The findings presented highlight key considerations for applied practitioners. Specifically, practitioners must have an understanding and appreciation of the unique requirements of a career as a jockey, which is unlike many other athletes from popular team and individual sports. For instance, one jockey reported the fatal injury of a horse as a source of stress. This is a less common occurrence than an athlete reporting a lack of form or financial concerns, therefore education and contextual understanding of the situation is important for practitioners intervening with athletes in such instances. The findings also highlight the need for a multidisciplinary athlete support team working in an interdisciplinary manner. Many of the stressors reported by jockeys (e.g., weight management, injury rehabilitation) crossover to multiple sports science domains such as sport psychology, nutrition, strength and conditioning, nutrition and career development. Similar suggestions to best support the athlete have been reported elsewhere (e.g., Gouttebargé *et al.*, 2016a). A final consideration for practitioners is the awareness of the language used by jockeys in describing specific situations that may not be common parlance for a practitioner with little experience working with jockeys. Such phrases synonymous with the sport of horseracing were elicited throughout the interviews. For example, being ‘jocked off’, which refers to losing a ride on a horse and being replaced by another jockey. Appreciating, understanding and implementing the language used by jockeys may help develop rapport and facilitate a healthier, more effective relationship between practitioner and jockey.

Future research should seek to explore the stressors faced by jockeys longitudinally. Examining the various stressors experienced by jockeys across a season at specific time points would provide valuable information to practitioners working with jockeys on a regular basis. Identifying the coping strategies adopted by jockeys and how they acquired such strategies would also assist in informing future support services. Currently, limited literature exists surrounding the psychological skills employed by jockeys and the mechanisms used to maintain or enhance performance. Moreover, although this study captured a range of stressors, categorising stressors (e.g. competitive, organisational, personal) as other researchers have proposed (e.g., Hanton *et al.*, 2005) may enhance the understanding of how to best support jockeys in the future. Such research may also explore if stressors are experienced differently between successful/less successful jockeys and how they are interpreted by the individual (e.g. facilitative versus debilitating). Nevertheless, the holistic approach in the present study allowed for a multitude of stressors to be identified, despite the lack of categorisation into pre-determined categories. Lastly, given the plethora of demands and stressors identified within this study, and the prevalence of symptoms associated with CMDs among jockeys (Losty *et al.*, 2019; King *et al.*, 2020), exploring how these stressors impact mental health warrants further investigation. A number of studies have suggested that whilst prevalence of CMDs between the general population and athletes is comparable (Gorczynski *et al.*, 2017a), the stressors experienced by athletes may increase their susceptibility to CMDs.

The present study is not without limitations. The main limitation relates to the application of the transactional model of stress within the study. For example, the present study identified sources of stress, but failed to explore other areas of the stress process. In line with the theory proposed by Lazarus and Folkman (1984), and moving

beyond identifying sources of stress, future studies should consider how jockeys appraise specific stressors, identifying whether they are perceived as harmful, threatening, or challenging. For example, the present study identified that pressure from trainers/owners was one of the most frequently reported stressors, however how jockeys responded to such a stressor was not captured. Some jockeys may feel threatened by the perceived pressure from trainers/owners, which may result in certain stress related emotions arising (e.g., anxiety); others may view the perceived pressure in a more positive light (e.g., challenging). Moreover, no single source of stress was reported by all 15 participants, highlighting the individuality of participant's perceptions of the stress process (Lazarus & Folkman, 1984; McKay *et al.*, 2008). As such, the stress process among jockeys in the present study is partially presented, whereas a continuous journey exploring the aforementioned segments of the transactional model of stress would have yielded more detailed findings (Neil *et al.*, 2016). Further, despite building on previous research and including senior jockeys, 40% of the sample were apprentice or conditional jockeys. Finally, data collection occurred midway through the flat jockey's competitive season, which is a period when national hunt jockeys are not competing as regularly. As with the study of Noblet and Gifford (2002), it is possible that participants discussed their most recent experiences of stressors, opposed to stressors that may occur at different times of the year. For instance, travel demands are likely to have been at the forefront of jockeys' minds as an important racing festival had recently taken place.

In summary, the aim of the study was to explore the sources of stress experienced by jockeys throughout their careers. A wide variety of jockeys were interviewed, extending beyond previous research, which has been limited to younger, inexperienced jockeys. Jockeys appear to experience a wide range of stressors that

relate not only to competition but also the unique aspect of the racing industry, interpersonal stressors and career-related concerns. Of these stressors, some appear similar to those reported in other sports, whereas unique jockey specific stressors are also presented. Implications for practitioners working with jockeys are highlighted, whilst future research directions to enhance the research area have been documented.

Appendix C

Participant Information Sheet - Study One



Stressors Experienced by Professional Jockeys in Ireland

Primary Investigator: Lewis King

The aim of this study is to explore the stressors (e.g., demands, challenges) associated with a career as a professional jockey. Currently, much of the research is anecdotal, and no study to date has explored this area with professional jockeys in Ireland.

Participant Requirements

To participate in this study you must hold a professional Irish jockey licence and be over the age of 16. Participants will be required to complete an interview that will last between 30-60 minutes.

Potential risks to participants from involvement in the Research Study

While extremely low, there is a risk of psychological harm due to reflecting upon personal experiences within the last year. If at any point the participant feels discomfort they are advised to stop the interview and advised to contact Chief Medical Officer Dr Adrian McGoldrick or Jockey Pathway Sport Psychology Service Provider Dr Ciara Losty. If the primary investigator feels the participant is a danger to themselves or others the primary investigator will report this to the aforementioned names. The participant will be made aware that this information will be shared. Appropriate helpline numbers will be provided at the end of the interview via a printed handout and given to the participant.

As a participant in the study you have;

- 1) The right to non-participation and the right to leave the study at any time,
- 2) The right to anonymity meaning your name will not be used for any part of the study including publication or further study.
- 3) The right to confidentiality with only the primary researcher having access to study information and raw data.
- 4) The right to expect that the primary researcher is responsible and well-meaning in all of his actions.

If you require further information please contact: Lewis King, Primary Investigator, +44 7584574266

(lewis.king@postgrad.wit.ie). **If participants have any concerns please contact:** *Suzanne Kiely,*

Secretary of the Ethics committee at Waterford Institute of Technology (skiely@wit.ie)

Appendix D

Informed Consent Form - Study One



Stressors Experienced by Professional Jockeys in Ireland

- I have read and understood the subject information sheet.
- I understand what the project is about, and what the results will be used for.
- I am fully aware of all of the procedures involving myself, and of any risks and benefits associated with the study.
- I know that my participation is voluntary and that I can withdraw from the project up until the point at which the primary investigator has transcribed the interview.
- I understand by participating or not participating in the study it will not affect my career opportunities.
- I am aware that the results of testing will be kept confidential and will be stored in a secured location and filing cabinet within the Institute. Destruction of all personal data will occur after five years.

Participant's name (Printed):

Participant's signature:

Parental consent (required those under the age of 18):

Date:

Investigator's signature:

Appendix E

Interview Guide from Study One

Questions

Introduction

- Can you discuss your career to date, including any high points or rewarding aspects?

Main Questions

- Are you able to recall any stressors you have experienced during your career, or are currently experiencing?
- Explore each stressor in further detail with the participants. Build on new stressors that may be identified during this section
- Are there any significant points during your career that were particularly difficult that has not been discussed within the interview?

Probes

- Can you expand on that please?
- Tell me more
- How do you mean?
- Can you give me an example?

Appendix F

Published Version of Common Mental Disorders and Risk Factors among Irish

Jockeys Study

Introduction

Horseracing is widely regarded as a tough and demanding sport, physically and mentally, for its human competitors, jockeys. The sport places jockeys under intense weight demands, necessary to ride at low stipulated riding weights throughout competitive season which typically lasts over a protracted season, with competition taking place on most days of the year (Wilson *et al.*, 2014a). This is unique in the world of elite competition, whereas athletes competing in other weight-making sports such as boxing or rowing attempt to peak towards several targets per season. The antithesis occurs in horseracing with jockeys aligning their weight for competition up to seven times a day, around 30 minutes before each race, dependent on the particular horse they are riding (Wilson *et al.*, 2014a). Rules dictate that jockeys must “weigh in” (post-race) within ~1kg of their pre-race weight, therefore sufficient rehydration and energy replenishment is often unachievable. Other weight-making sports such as professional boxing allow the athletes 24 hours, post weigh-in to replenish energy stores and rehydrate. Moreover, jockeys compete in a dangerous sport, with frequent injury reported (O’Connor *et al.*, 2017a; 2017b; 2018a; 2018b). A recent qualitative study by Landolt *et al.* (2017) was one of the first to shed light on the demands experienced by jockeys during their careers. These demands include: time demands (e.g., long working hours, travel), role suppression (e.g., restricted roles as an apprentice), physical demands (e.g., maintaining weight), cognitive demands (e.g., intense periods of concentration numerous times per day), and ancillary demands (e.g., washing horses, cleaning stables). Lastly, a career as a jockey is often an uncertain one. Most jockeys

are self-employed athletes, with few jockeys under contract by specific owners or trainers to ride their horses.

In light of these stressors and career experiences of jockeys, research conducted by Losty *et al.* (2019) explored the prevalence of common mental disorders (CMDs), typically consisting of distress, anxiety, and depression, amongst a sample of professional jockeys. CMDs have been defined as "...a syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behaviour that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning. Mental disorders are usually associated with significant distress in social, occupational, or other important activities" (American Psychiatric Association, 2013, p.20). The authors found via self-report questionnaires examining symptom prevalence that 57% of jockeys met the criteria for depression, 36% for psychological distress, and 21% for generalised anxiety. Findings also identified that professional jockeys mean scores for each of the CMDs assessed were greater than a sample of amateur jockeys. Additionally, injured jockeys were 46 times more likely to meet the criteria for depression than non-injured jockeys. In comparison to other elite athletes (Beable *et al.*, 2017; Gulliver *et al.*, 2015), Rugby players (Du Preez *et al.*, 2017) and soccer players (Gouttebauge *et al.*, 2015b), the prevalence of CMDs may be greater among the jockey population.

Multiple factors have been acknowledged to increase the susceptibility of elite athletes to CMDs (Gouttebauge *et al.*, 2015) with athletes placed under intense physiological and psychological pressure, competing at an age when incidence of CMDs are most likely to occur (Rice *et al.*, 2016). Indeed, Arnold and Fletcher (2012) highlighted that athletes may experience up to 640 unique stressors throughout their careers that may increase the likelihood of an athlete developing CMDs. Such factors

include athlete burnout, career satisfaction, low levels of social support, and difficulties associated with retirement (Beable *et al.*, 2017; Frank *et al.*, 2017; Rice *et al.*, 2016). The only empirical article examining CMDs among jockeys (Losty *et al.*, 2019) focussed predominantly on symptom prevalence, therefore understanding the factors which may contribute to the development of such symptoms was not possible (excluding injury status).

Accordingly, the aim of this study was to explore the prevalence of CMDs (distress, depression, generalised anxiety, and adverse alcohol use) and their associations with specific risk factors (athlete burnout, career satisfaction, low levels of social support, contemplating retirement) among a sample of professional Irish jockeys. The primary hypothesis for the study was that there will be significant associations between those meeting the criteria for CMDs and the presence of risk factors assessed.

Methods

Design and Participants

A cross-sectional study design was used. Professional jockeys completed an anonymous and confidential online survey using Survey Monkey which took between 15-20 minutes to complete. All professional jockeys, registered in Ireland, over the age of 16 from both flat and national hunt codes were invited to participate (n=162). Participants were recruited via emails and text messages sent by the Irish Horseracing Regulatory Board (IHRB) and racing media outlets. Reminders were sent after two and four weeks. After reading an online participant information sheet, jockeys provided informed consent. At the end of the questionnaire, links to various mental health charities and helplines were given should participants have experienced any distress

while completing the questionnaire. Ethical approval was granted by a local Third Level Institution's Research Ethics Committee.

Measures

Demographic data were collected including gender, age, educational level, years holding a licence, number of winners ridden, difficulty making weight and current injury status. Internal consistency of the scales used in the present study were measured using Cronbach's alpha coefficient. Mental disorder screening tools, measured via validated self-report questionnaires, included:

Psychological distress – Psychological distress was measured using the Kessler Psychological Distress Scale (K10) (Kessler *et al.*, 2003). The questionnaire included 10 items relating to symptoms experienced in the past four weeks (e.g. in the past 4 weeks, how often did you feel tired for no good reason?) on a 5-point scale (1 - none of the time to 5 - all of the time). A total score ranging from 10 to 50 was obtained by summing up all of the answers on the 10 items. Higher scores indicated higher symptoms levels and a score of 22 or more indicated symptoms of distress. Cronbach alpha was measured at 0.90.

Depression – Depression was measured using the Center for Epidemiological Studies Depression (CES-D) (Radloff, 1977) scale. The questionnaire consisted of 20 items investigating how an individual felt or behaved in the previous seven days (e.g. I felt everything I did was an effort). Responses were made on a four-point scale (0 - rarely or none of the time to 3 - most or all of the time). The score received was the sum of the 20 questions with a possible range from 0-60, higher scores indicative of higher symptoms levels. In line with previous cut-offs, a score of 16 was considered an expression of symptoms of depression. Cronbach alpha was measured at 0.82.

Anxiety – Anxiety was measured over the previous two weeks using the Generalised Anxiety Disorder (GAD) (Spitzer *et al.*, 2006) scale. The questionnaire consisted of seven items (e.g. over the last two weeks, how often have you not been able to stop or control worrying?) on a four-point scale (0 - not at all to 3 - nearly every day). The GAD-7 score was calculated by adding together the scores for the seven questions (range 0-21). Higher scores indicated higher symptoms levels and in line with previous research a score of 10 or greater was indicative of generalised anxiety disorder. Cronbach alpha was measured at 0.91.

Adverse alcohol use – Alcohol consumption was measured using the three item AUDIT-C (e.g. how many standard drinks do you have on a typical day?) (Dawson *et al.*, 2005). Scores measured between 0 and 12 and were computed by calculating the sum of the three questions, with a score of 5 or more indicative of adverse alcohol use. Cronbach alpha was measured at 0.74.

Potential risk factor questionnaires were included:

Burnout – Burnout was measured using the Athlete Burnout Questionnaire (ABQ) (Raedeke & Smith, 2001). The ABQ contains 3 subscales with a total of 15 items measuring: (i) physical and emotional exhaustion; (ii) devaluation; and (iii) reduced sense of accomplishment. Scores were measured on a 5-point Likert scale (1 = almost never to 5 = almost always). Cronbach alpha was measured at 0.91, 0.90, and 0.84 for the physical and emotional exhaustion, devaluation and reduced sense of accomplishment sub-scales, respectively.

Career satisfaction – Career satisfaction was measured through the Greenhaus scale (e.g. I am satisfied with the success I have achieved in my career) (Greenhaus *et al.*, 1990). Scores were measured on a 5-point scale ranging from extremely dissatisfied to

extremely satisfied. A total score of 5 to 25 was reported by summing up the answers to the five questions, with a lower score indicating higher levels of career dissatisfaction. Cronbach alpha was measured at 0.89.

Social support – Social support was measured using the Perceived Available Support in Sport Questionnaire (PASS-Q) (Freeman *et al.*, 2011). Scoring was completed on a 5-point Likert scale ranging from not at all (0) to extremely (4), with higher scores indicating a higher perception of social support. Scales on the PASS-Q relate to four types of support including emotional, esteem, informational and tangible. Cronbach alpha was measured at 0.92, 0.92, 0.89, and 0.83 for the sub-scales measuring emotional, esteem, informational, and tangible support respectively.

Contemplating retirement – Contemplating retirement was measured using a single question (are you contemplating retirement from competing in the next 12 months? Yes/no). This variable was subsequently computed into a dichotomous figure (yes/no).

Data analyses

All data were analysed using the statistical software programme IBM SPSS Statistics 23.0. In line with other mental health epidemiological studies in sport (Gouttebarge, Frings-Dresen, *et al.*, 2015), only questionnaires with adequate information completed were eligible for analysis: set at 50% of descriptive variables and 50% of prevalence and risk factors measures. Descriptive statistics (mean, \pm standard deviation (\pm SD), frequency, range) were produced for all assessed measures (demographic, prevalence, risk factors). Prevalence of CMDs (psychological distress, depression, generalised anxiety, adverse alcohol use) and risk factors (burnout, career satisfaction, social support, contemplating retirement) were calculated. Tests of normality highlighted that the data was not normally distributed. Differences in demographic, prevalence and risk

factor variables between flat and national hunt jockeys were calculated using Mann-Whitney and chi-square tests with a priori alpha level of 0.05 selected. Effect sizes calculated as Phi, Cramers V or Cohen's d. Binary univariate logistic regression, results expressed as odds ratios (OR) and their 95% confidence intervals (CI), was conducted to determine the associations between the presence or absence of CMDs and risk factors.

Results

Participants

Eighty-four jockeys participated in the study, representing a total response rate of 52% for the professional jockey population. The jockeys (93% male; 7% female) had a mean age of 25.5 years old (SD = 6.6) and had been competing professionally in the sport of horseracing for 7.6 years (SD = 6.6; range = 0 to 31 years). A small proportion (9.5%) were injured at the time of survey completion. Statistically significant differences in age and injury status were observed between flat and national hunt jockeys. Table 1 presents all demographic characteristics of the participants

Table 1: Participant characteristics (N and means \pm SD)

	Total	Flat	National Hunt	p Value	Effect size
N	84	37 (44)	47 (56)	0.17	0.30
Jockey response rate, %	52	N/A	N/A		
Age in years, M (SD) ^a	25.5 (6.6)	23.5 (7.5)	27 (5.3)	0.02	0.53
Gender, n (%)				0.58	0.06
Male	78 (93)	35 (95)	43 (91)		
Female	6 (7)	2 (5)	4 (9)		
Highest level of education reached, n (%)				0.12	0.29
Primary school,					
Junior Certificate,	2 (2)		2 (4)		
Leaving Certificate,	45 (56)	21 (57)	24 (51)		
Third Level Education,	25 (30)	14 (39)	11 (23)		
Other,	9 (11)	2 (4)	7 (15)		
	3 (4)		3 (8)		
Years as a jockey, M (SD)	7.6 (6.6)	6.7 (7.6)	8.3 (5.7)	0.27	0.24
Range (years)	0-31	0-31	1-21		
Number of winners, M (SD)	182.3 (385.5)	169.3 (271.2)	192.0 (458.9)	0.79	0.06
Range (winners)	0-3000	0-1050	0-3000		
Working hours per week, M (SD)	59.7 (17.2)	59.2 (18.0)	60 (17.1)	0.84	0.04
Currently injured, n (%)[†]	8 (9.5)	1 (3)	7 (15)	0.06	0.21
Weight-making difficulties (1-10), M (SD)	4.7 (2.9)	4.94 (2.9)	4.54 (2.9)	0.53	0.13

^a and [†] indicate statistically significant differences between flat and national hunt jockeys

^a Mann Whitney test, $p \leq 0.05$

[†] Chi-square, $p \leq 0.05$

Prevalence of CMD symptoms

In total, 79% of participants met the criteria for at least one CMD, 38% met the criteria for two or more CMDs, and 18% reached the threshold for three or more CMDs. Prevalence of symptoms of CMDs varied: adverse alcohol use (61%); depression (35%); generalised anxiety (27%); psychological distress (19%). Flat jockeys reported greater mean scores on distress and generalised anxiety scales ($p \leq .05$), with national hunt jockeys scoring significantly higher ($p \leq .05$) on the depression scale. One-third of jockeys (33%) had sought help for personal or emotional problems. The most popular help-seeking source was via a counsellor or sport psychologist (20%). Prevalence and previous mental health help-seeking data, including mean scores and those meeting the criteria for distress, depression, generalised anxiety and adverse alcohol use are included in Table 2.

Table 2: Prevalence of symptoms of CMD and reported help-seeking behaviour among jockeys in Ireland.

	Total	Flat	National Hunt
Symptom (potential range), mean (SD)			
K10 (10-50),	16.7 (6.0)	17.8 (6.49)	15.9 (5.4)
CES-D (0-60)*,	12.93 (8.2)	10.2 (5.1)	15.0 (9.6)
GAD-7 (0-21),	6.5 (4.5)	6.6 (4.3)	6.4 (4.7)
AUDIT-C (0-12),	5.3 (3.0)	5.2 (2.7)	5.4 (3.2)
Diagnostic cut-off, proportion n (%)			
K10 score \geq 22,	16 (19)	7 (19)	9 (19)
CES-D \geq 16,	29 (35)	7 (19)	22 (46)
GAD-7 \geq 10,	23 (27)	10 (27)	13 (28)
AUDIT-C \geq 5	51 (61)	23 (62)	28 (60)
Met caseness for any CMD, n (%)	66 (79)	27 (73)	39 (83)
Met caseness for 2 \geq CMD, n (%)	32 (38)	14 (38)	18 (38)
Met caseness for 3 \geq CMD, n (%)	15 (18)	5 (14)	10 (21)
Previous mental health help-seeking history for personal or emotional problems (GHSQ) n (%)			
Any source	28 (33)	14 (38)	14 (30)
Psychologist	8 (1)	4 (11)	4 (9)
Doctor/GP	16 (19)	6 (16)	10 (21)
Psychiatrist	2 (<1)	0	2 (4)
IHRB Senior Medical Officer	8 (1)	2 (5)	6 (13)
Counsellor/sport psychologist	17 (20)	4 (11)	13 (28)
<i>Abbreviations: Common Mental Disorder (CMD); Kessler Psychological Distress Scale (K10); Center for Epidemiologic Studies Depression (CES-D); General Anxiety Disorder Questionnaire (GAD-7); Alcohol Use Disorders Identification Test (AUDIT-C); General Help Seeking Questionnaire (GHSQ). *indicates significant difference ($p \leq .05$) between flat and national hunt jockeys.</i>			

Risk Factors for Common Mental Disorders

As shown in Table 3, mean scores for all subscales associated with athlete burnout were within the rare to sometimes range. A total of 24 jockeys (29%) met the threshold for career dissatisfaction. Social support subscales indicated jockeys received slight to moderate levels of social support, with greater mean scores reported on the emotional and esteem-support scales in comparison to informational and tangible support. In total, 26% were contemplating retirement from a career as a jockey within the next 12 months. No significant differences were observed between flat and national hunt jockeys.

<i>Symptom Measure (potential range)</i>	Total	Flat	National Hunt
ABQ (0-5), <i>M (SD)*</i>			
EE	2.8 (1.01)	2.70 (1.06)	2.87 (0.97)
D	2.20 (0.97)	2.06 (1.02)	2.31 (0.92)
PA	2.79 (0.86)	2.82 (0.77)	2.77 (0.93)
Career satisfaction (5-25), <i>M (SD)</i>	16.24 (5.08)	16.22 (5.21)	16.26 (5.03)
<i>n (%)</i>	24 (29)	10 (27)	14 (30)
Social support, <i>M (SD)*</i>			
Emotional support,	2.30 (1.23)	2.09 (1.28)	2.46 (1.17)
Esteem support,	2.05 (1.17)	1.97 (1.27)	2.10 (1.08)
Informational support,	1.98 (1.17)	2.08 (1.11)	1.89 (1.21)
Tangible support,	1.76 (1.17)	1.86 (1.13)	1.68 (1.11)
Contemplating retirement, <i>n (%)</i>	22 (26.2)	8 (27)	14 (30)

**cut-offs not provided for Athlete Burnout Questionnaire (ABQ) or social support questionnaires. Abbreviations: ABQ – Athlete Burnout Questionnaire; EE – Emotional exhaustion; D – Devaluation; PA – Reduced Sense of Personal Accomplishment.*

Associations between Prevalence (presence versus absence) of Symptoms of CMDs and Risk Factors

Individual Predictors

Table 4 highlights results from binary univariate logistic regression analysis assessing associations between presence versus absence of symptoms of CMDs and risk factors. Amongst professional jockeys, for each unit increase in EE, D or PA on the athlete burnout questionnaire (ABQ), there was an increased odds of meeting the CMD criteria for: Psychological distress (EE OR = 5.3; D = 7.9; PA OR = 8.0), Generalised anxiety (EE OR = 4.7; D OR = 3.0; PA OR = 2.9), Depression (EE OR = 1.17; D OR = 1.3; PA OR = 1.03), and Adverse alcohol use (EE OR = 1.3; D OR = 1.33; PA OR = 1.18). Associations between burnout dimensions were significant for psychological distress and generalised anxiety ($p \leq .05$).

Table 4: Binary univariate logistic regression analysis, results expressed as OR and their 95 CI's, between CMDs and assessed risk factors amongst a sample of licenced jockeys. (Numbers in brackets indicate number of individuals which did not meet the threshold for the specific CMD versus the number which did).

	Psychological distress (68:16)			Depression (55:29)			Generalised anxiety (61:23)			Adverse alcohol use (33:51)		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Burnout												
EE*	5.3	2.3-12.4	<.0001	1.17	0.75-1.84	.492	4.7	2.2-10.1	<.0001	1.30	0.83-2.04	.248
D*	7.9	2.9-21.7	<.0001	1.3	0.82-2.07	.270	3.0	1.7-5.6	<.0001	1.33	0.83-2.13	.235
PA*	8.0	2.8-23.1	<.0001	1.03	0.60-1.74	.913	2.9	1.5-5.8	.002	1.18	0.70-1.97	.538
Career satisfaction*	0.8	0.7-0.9	.003	1.01	0.93-1.10	.782	0.9	0.8-1.0	.025	0.94	0.86-1.03	.201
Social support												
ES	1.0	0.6-1.5	.854	1.15	0.80-1.68	.451	0.9	0.6-1.4	.702	1.12	0.78-1.60	.533
ESTS	0.9	0.6-1.5	.718	1.26	0.85-1.88	.248	1.0	0.7-1.5	.942	1.28	0.87-1.88	.209
IS	0.8	0.5-1.3	.409	1.01	0.69-1.49	.958	0.9	0.6-1.5	.860	0.95	0.65-1.39	.797
TS	0.7	0.4-1.2	.240	1.14	0.76-1.71	.526	0.9	0.6-1.5	.853	1.14	0.77-1.70	.515
Contemplating retirement*	0.13	0.04-0.4	.001	0.69	0.25-1.88	.465	0.24	0.1-0.7	.008	0.65	0.23-1.81	.406

Abbreviations: Emotional Exhaustion (EE); Devaluation (D); Reduced Sense of Personal Accomplishment (PA); Emotional Support (ES); Esteem Support (ESTS); Informational Support (IS); Tangible Support (TS).

Lower levels of career satisfaction (as a predictor) were associated with meeting the criteria for psychological distress (OR = 0.8) and generalised anxiety (OR = 0.9). Contemplating retirement (as a predictor) was also associated with psychological distress (OR = 0.13) and generalised anxiety (OR = 0.24).

Discussion

This study builds on previous research exploring the mental health of jockeys in Ireland (Losty *et al.*, 2019). The research extends our knowledge via the use of a larger sample of professional jockeys and the inclusion of potential risk factors. Findings indicated that nearly four out of five jockeys met the criteria for at least one CMD, including adverse alcohol use (61%), depression (35%), generalised anxiety (27%), and psychological distress (19%). Thirty-eight percent met the criteria for two or more CMDs, with 18% meeting the threshold for the presence of three or more CMDs. Moreover, burnout dimensions (emotional and physical exhaustion, sport devaluation, reduced sense of accomplishment), career satisfaction and the contemplation of retirement all independently predicted meeting the criteria for distress and generalised anxiety.

In comparison to the study of Losty *et al.* (2019), the presence of at least one CMD is similar (79% vs 76%), with distress (19% vs 36%) and depression (35% vs 57%) reported less in the present sample of professional jockeys, and generalised anxiety prevalence reported at a greater rate (27% vs 21%). Mean scores for CMDs varied between the two studies for depression (M = 12.93 vs 20.29) and distress (M = 16.7 vs 21.12), although scores for generalised anxiety were comparable (M= 6.48 vs 6.29). Differences in prevalence rates between the studies may be attributable to the

sample size, with Losty *et al.* (2019) summarising their prevalence data from 42 professional jockeys, in comparison to 84 jockeys recruited in the present study.

The prevalence rates of CMDs reported by jockeys were similar to Dutch elite athletes (anxiety/depression = 44.7%, distress = 26.6%) (Gouttebarga *et al.*, 2017), UK professional athletes (anxiety/depression = 48%, distress = 29%) (Foskett & Longstaff, 2018) and athletes from New Zealand (depression = 21%) (Beable *et al.*, 2017) and Australia (depression = 27%, distress = 17%, anxiety = 7%) (Gulliver *et al.*, 2015). However, while prevalence of adverse alcohol use among jockeys is comparable to a sample of National Rugby League (NRL) players in season (61% vs 63%) (Du Preez *et al.*, 2017), these figures are greater than those previously observed Gaelic sports (23%) (Gouttebarga *et al.*, 2016c) and Dutch elite athletes (6%) (Gouttebarga *et al.*, 2017). However, accurate comparison is not without limitation due to a variety of methodological issues such as possible selection bias, differing assessments methods, the nature of self-reported data, and the diverse array of CMDs not assessed. Although it is acknowledged that the concept of mental health is often nuanced and individualised, future research projects exploring athlete mental health may attempt to use similar methodologies to facilitate comparisons between sports. Such attempts have been developed in recent years, including the athlete psychological strain questionnaire (Rice *et al.*, 2020).

Burnout dimensions were identified as independent predictors of psychological distress and generalised anxiety. Emotional exhaustion is underpinned by the psychological and physical fatigue experienced as a result of training and competition, with reduced sense of accomplishment associated with feelings of inadequacy and competence in relation to sporting performance and achievements (Raedeke & Smith, 2001). A multitude of factors may contribute to the development of burnout

symptomology in jockeys although these relationships have yet to be established empirically. However, possible explanations for these associations may relate to the labour intensive nature of the occupation. Jockeys often work extremely long hours (60 per week in the present sample), travelling vast distances to racetracks across the country on a daily basis and competing across lengthy seasons. Moreover, unlike other sports, there is no structured off-season for jockeys, facilitating periods of rest, recovery and downtime, ensuring jockeys compete almost 365 days a year. Previous research has reported that having very few days off from either training and/or competition contributes to the development of burnout symptoms in athletes (Gustafsson *et al.*, 2008). Notwithstanding this, physical and emotional exhaustion is only one part of the burnout syndrome. Research using novel burnout theory, such as the integrated model of athlete burnout (Gustafsson *et al.*, 2011), may help better explain the multidimensional nature of athlete burnout. The model states that antecedents (excessive training, negative performance demands, lack of recovery), feelings of entrapment (unidimensional athletic identity, performance based self-esteem), personality, coping and the environment (perfectionism, low social support, low autonomy), all contribute to the development of the early signs of athlete burnout. Broadening the scope of enquiry via the use of the integrated model of burnout, beyond a quantitative symptom measure, may help researchers and practitioners develop a deeper understanding of the burnout construct among jockeys.

Over a quarter of jockeys who participated in the study were contemplating retirement from the sport within the next 12 months. The findings, alongside the study of Beable and colleagues (2017) investigating elite athletes, is one of the first to report the potential link between those contemplating retirement and the presence of CMDs. However, from the current study it was not possible to detect the direction of this

association, whether the development of CMDs symptoms occurs via the uncertainty surrounding contemplating retirement, or CMD symptoms facilitate the thoughts of contemplating retirement. Nevertheless, from an applied perspective it is critical to acknowledge and understand jockeys' transitions throughout their careers, not only in relation to retirement, but also non-normative transitions (Wylleman *et al.*, 2004), such as an apprentice (newly licenced) jockey transitioning into a full professional jockey license. Similar parallels can be drawn to the academy soccer player who unexpectedly begins playing with the first team at a young age. Understanding these transitions, as well as ensuring support is there for athletes during these periods, is of paramount importance to not only aid performance but also psychological health and wellbeing (Schinke *et al.*, 2018). Organisations must also be aware of the impact they can have on individuals during transitional periods and designated programmes to support these athletes are recommended.

Nearly 30% of the jockeys reported dissatisfaction with their careers, with higher levels of dissatisfaction associated with meeting the criteria for distress and generalised anxiety. Similar findings occurred amongst professional athletes in the United Kingdom (Foskett & Longstaff, 2018), and professional soccer players (Gouttebauge *et al.*, 2015a). Such findings indicate that career satisfaction scales may be a useful screening measure in the early identification of CMDs (Foskett & Longstaff, 2018). Adverse alcohol use was found in 61% of jockeys in the present study, considerably greater than a sample of soccer players (19%) (Gouttebauge *et al.*, 2015b). This figure is similar to NRL players in-season (63%) (Du Preez *et al.*, 2017), with the findings from the present study also collected in-season, therefore comparison may be appropriate. Nevertheless, the context is different, given that jockeys have loosely defined seasons, with no specific beginning or end points. Previous research among

jockeys reported that alcohol accounted for a large proportion (5%) of daily energy intake (Dolan *et al.*, 2011). According to the World Health Organisation (WHO), Ireland is one of the largest consumers of alcohol in Europe, suggesting that the culture and attitudes of the country towards alcohol may play a role in this statistic (WHO, 2004). Indeed, Alcohol Action Ireland contend that 54% of the Irish population are classified as harmful drinkers (*Alcohol Facts*, 2020). The prevalence of adverse alcohol use in the present sample is of concern, given the deleterious effects of alcohol on not only physical, psychological health, and athletic performance (O'Brien & Lyons, 2000), but also the safety of jockeys whilst competing aboard horses running up to 65 km/h. Jockeys also reported slight to moderate levels of perceived social support, with the greatest mean score occurring on the emotional support scale, and lowest mean scores on the tangible support scale. Our findings corroborate previous research indicating that lower levels of social support may be associated with the development of symptoms of CMDs (Gouttebauge *et al.*, 2017).

As with any cross-sectional study, the analysis does not allow for causal relationships to be identified between prevalence of CMDs and potential risk factors. Moreover, the recruitment procedures were blinded to the lead researcher and were coordinated by IHRB, therefore non-response analysis could not be conducted. The project was designed as such to ensure privacy and confidentiality of the participants. Another point to consider is the role of selection bias whereby those who completed the online questionnaire perhaps have experience of psychological morbidity, therefore increasing the prevalence rates found amongst the population of jockeys. On the other hand, mental health among jockeys remains a subject with a significant stigma attached to it, so it is plausible that prevalence rates may be under-reported. However, as the questionnaires were confidential and anonymous, the authors believe that these

potential effects were limited. It is also acknowledged that the use of validated questionnaires do not provide an individual with a diagnosis of depression, anxiety or distress. An instrument such as the Patient Health Questionnaire (PHQ-9; Kroenke *et al.*, 2001) may have been more useful in detecting depressive symptoms amongst jockeys as the questionnaire screens for symptoms over the preceding fortnight, in line with the International Statistical Classification of Diseases and Related Health Problems (ICD-10), which provides diagnostic criteria for diagnosing depression clinically. However, the CES-D was chosen (which assesses symptoms over the preceding one-week period) as this questionnaire has been used in a plethora of athlete mental studies (Rice *et al.*, 2016), and the only jockey mental health study to date (Losty *et al.*, 2019), allowing comparison between studies. While a diagnostic interview or clinical assessment set the gold standard for diagnosis of psychological morbidity, they were ruled out due to concerns around confidentiality, their effect on engagement with the study, and the time demands they would have placed upon participants.

The present study highlights the importance for the design of specific psychological inventories and screening methods to assess symptoms of CMDs among jockeys. The profession is a unique one and the validated screening assessments may not reflect the nuances associated with the career. Longitudinal research examining jockey mental health may also help identify areas whereby jockeys require specific support such as upon entering the sport, managing periods of losing runs, or retiring from the sport. Moreover, as per a recent mental health in sport consensus statement (Henriksen *et al.*, 2019), it would be beneficial for researchers to broaden the scope of assessment. Multiple factors impact mental health (e.g. unidimensional identity, relationship breakdowns), which current measurement tools do not consider. Psychological wellbeing is more than the absence of conditions such as depression and

anxiety and awareness of such is critical for the development of theory driven research and application. The present study is one of very few to research mental health among jockeys, and the first to address a gap in the literature by exploring risk factors for jockey mental health.. It is hoped that the findings can be used by organisations associated within the sport to raise awareness of mental health issues, inform policy, and assist in developing bespoke support programmes.

Conclusion

This study is the first to investigate the prevalence rates of and associated risk factors for CMDs among jockeys. Nearly four out of five participants met the criteria for at least one CMD, with adverse alcohol use (61%) and depression the most commonly reported (35%). Burnout dimensions, career satisfaction, and the contemplation of retirement were associated with meeting the criteria for CMDs. In total, 26% of jockeys were contemplating retirement within 12 months. Future research is required to further explore the mental health of jockeys, in particular the use of questionnaires such as the Patient Health Questionnaire (PHQ-9) or clinical interviews to more accurately determine the prevalence of diagnosable mental illnesses. Moreover, longitudinal screening for symptoms of CMDs may help better support jockeys and develop understanding of specific factors that impact the mental health of this population.

Appendix G

Full Questionnaire used in Study Two, including Participant Information Sheet and Informed Consent

We are inviting all professionally licensed jockeys (e.g. flat, national hunt, apprentices, conditionals) to complete this confidential and anonymous survey. In response to interviews conducted with several professional jockeys, this survey aims to investigate the prevalence of common health issues in horse racing. We will gather information relating to typical lifestyle practices, psychological distress, depression, anxiety and alcohol use. Risk factors will also be assessed including burnout, career satisfaction, social support and retirement. This will allow the health and sporting needs of the industry to be better understood so that specific support structures may be put in place to help you during your career and in retirement.

Estimated Time: 20 minutes. Please answer each of the following questions as honestly as possible. There are no right or wrong answers, move through the questions quickly. The survey must be completed in one go so make sure you have some time when you start it.

The research is being carried out by Mr Lewis King, Dr Ciara Losty, Dr SarahJane Cullen (Waterford Institute of Technology), Dr Giles Warrington (University of Limerick), Dr Adrian McGoldrick and Dr Jennifer Pugh (Irish Horseracing Regulatory Board).

While involvement in this survey is not mandatory, participation is encouraged by the Irish Horseracing Regulatory Board so that we can help you in the future. Participants will be coded (e.g. J1) to protect confidentiality and only the lead researcher (Mr Lewis King) will have access to the data. No identifiable information will be released and data will be analysed at the group level. The data will be analysed using a computer programme.

If you have any questions or concerns regarding the study please contact the project administrator Lewis King (lewis.king@postgrad.wit.ie). If you have any concerns about the way you have been approached/treated during this study, please contact Suzanne Kiely, Waterford Institute of Technology, Postgraduate Support Unit - skiely@wit.ie.

By completing this questionnaire, you confirm that you have read and understood the above information. You understand that your participation is voluntary and that you are free to withdraw at any time.

Note that all responses will remain CONFIDENTIAL and ANONYMOUS.

Demographic Information

* 1. Age in years?

* 2. Gender you identify as?

- Male
- Female
- Prefer not to state
- Other (please specify):

* 3. What is your nationality?

- Irish
- Other (please specify)

* 4. What is the highest level of education you have achieved?

- Primary School
- Junior Certificate
- Leaving Certificate
- Third Level Education (college)
- Other (please specify)

* 5. Which code of racing do you most commonly compete in?

- Flat
- National Hunt

* 6. What weight allowance do you claim off? (in lbs)

0 (Professional)

7

3

10

5

* 7. For how many years have you held a professional racing license?

* 8. Approximately how many winners have you ridden in your career?

* 9. How would you rate your performance in competition over the previous 2 weeks?

Very poor

Poor

Average

Good

Very good

10. Are you contemplating retirement from a career as a jockey within the next 12 months?

Yes

No

Injury

* 11. Are you currently injured and unable to race?

Skip to Question 15 if you answer No this question

Yes

No

12. Please select your current type of injury:

Concussion

Bone (e.g. fractures)

Lacerations (cuts)

Bruises

Soft tissue injuries (e.g. muscle sprain/tear, ligament sprain/tear)

Other (please specify)

* 13. For how long has this current injury prevented you from racing?

- Has not prevented me
- 1 week
- 1-3 weeks
- Between 3 weeks and 3 months
- More than 3 months

14. Approximately how many days work did you miss due to your most recent injury? (includes racing, riding out, schooling, yard work)

* 15. Approximately how many injuries have you had throughout your career that have kept you from racing at a meeting?

* 16. What are your most recent injuries (past 12 months)? Multiple boxes can be ticked.

- No injuries
- Lacerations (cuts)
- Soft tissue injuries (e.g. muscle sprain/tear, ligament sprain/tear)
- Bone (e.g. fractures)
- Bruises
- Concussion
- Other (please specify):

* 17. Have you previously had a suspected/medically diagnosed concussion?

Skip to Question 21 if you answer No this question

- Yes
- No

* 18. Approximately how many suspected/medically diagnosed concussions have you had?

- None
- 1
- 2
- 3
- 4
- 5+

* 19. How many concussions have you suffered (in your career so far) that prevented you from racing?

- None
- 1
- 2
- 3
- 4
- 5+

* 20. How many concussions have you had where the symptoms lasted 3 weeks or longer? Symptoms include: headache, dizziness, nausea (feeling sick/vomiting), pressure in head, blurred vision, "Doesn't feel right", confused or can't remember, feeling like you are "in a fog", drowsiness, tiredness or low energy, amnesia (forgetting things), trouble sleeping, trouble concentrating, feeling slowed down, slow reaction times.

- 0
- 1
- 2
- 3
- 4
- 5+

Weight

* 21. On a scale of 1-10, what degree of difficulty do you have in managing your weight for racing? (1 - Not very difficult to manage, 10 - very difficult to manage)

1 10

* 22. How often do you find yourself wasting/doing light for racing?

- Daily
- 2-3 times a week
- Once a week
- Once a month
- Never

Workload

* 23. Over the last 12 months, on how many occasions did you take three or more days consecutive holidays away from work? (includes racing, riding out, stable work, etc)

- Never
- Once
- Twice
- Three times
- Four times or above

* 24. What are your average working hours per week? (Work includes racing, riding out, travelling to and from the racetrack, yard work, etc).

Sleep

* 25. How many hours sleep do you get each night on average?

26. Do you have difficulty getting to sleep each night?

- Never
- Sometimes
- Always

* 27. Please tick any specific mental health concerns you are currently experiencing or have experienced over the last 12 months. These can relate to self or professional diagnosis. *Self-diagnosis is the process of identifying, or diagnosing, medical symptoms/conditions in oneself.* Multiple boxes can be ticked.

- Stress
- Anxiety
- Depression
- Concentration or memory problems
- Schizophrenia or psychosis
- Problems due to alcohol use
- Problems due to illegal drug use
- Problems due to the use of prescription medication (e.g. painkillers)
- Problems due to gambling
- Prefer not to say
- I have suffered no such health concerns.
- Other poor mental health concern:

* 28. Did you take any time off from race-riding as a result of such selected poor mental health?

- Yes
 No

* 29. Do you think your mental health was made worse by race-riding, was it made better, or did it make no difference?

- Worse
 Better
 No difference
 Unsure

* 30. Do you feel jockeys in Ireland receive adequate support for their mental health from the industry? (This can include a variety of factors from support when injured to planning for a career after retirement from competing)

- Yes
 No
 Unsure

* 31. Have any of your blood relatives (e.g. father, mother, brother, sister) been diagnosed with a mental illness?

- Yes
 No
 Unsure

* 32. Have you ever seen a mental health professional (e.g. doctor, psychologist, psychiatrist, etc) to get help for your personal or emotional problems?

- Yes
 No

33. Do you know which type of mental health professional(s) you have seen? (Multiple boxes can be ticked).

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> GP/Doctor | <input type="checkbox"/> Psychiatrist |
| <input type="checkbox"/> IHRB Senior Medical Officer | <input type="checkbox"/> Counsellor |
| <input type="checkbox"/> Psychologist | |
| <input type="checkbox"/> Other (please specify) | |

34. How many times did you visit the mental health professional(s)?

* 35. How helpful was the visit to the mental health professional?

- | | |
|--|--|
| <input type="checkbox"/> Extremely unhelpful | <input type="checkbox"/> Helpful |
| <input type="checkbox"/> Unhelpful | <input type="checkbox"/> Extremely helpful |
| <input type="checkbox"/> Somewhat helpful | |

Alcohol

* 36. How often do you have a drink containing alcohol?

Skip to Question 39 if you answer Never this question

- Never
- Monthly or less
- 2-4 times per month
- 2-3 times per week
- 4+ times per week

* 37. How many units of alcohol do you drink on a typical day when you are drinking? For example, 1 pint of lager is 2 units, 1 bottle of beer is 1.7 units, 1 small glass of wine is 1 unit, 1 shot of vodka is 1.4 units.

- 1-2
- 3-4
- 5-6
- 7-9
- 10+

* 38. How often have you had 6 or more units if female, or 8 or more if male, on a single occasion in the last year?

- Never
- Less than monthly
- Monthly
- Weekly
- Daily or almost daily

39. Kessler Psychological Distress Scale

1 = none of the time	2 = a little of the time	3 = some of the time	4 = Most of the time	5 = all of the time
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During the last 30 days, about how often did you feel tired out for no good reason?

During the last 30 days, about how often did you feel nervous?

During the last 30 days, about how often did you feel so nervous that nothing could calm you down?

During the last 30 days, about how often did you feel hopeless?

During the last 30 days, about how often did you feel restless or fidgety?

During the last 30 days, about how often did you feel so restless you could not still?

During the last 30 days, about how often did you feel depressed?

During the last 30 days, about how often did you feel that everything was an effort?

During the last 30 days, about how often did you feel so sad that nothing could cheer you up?

During the last 30 days, about how often did you feel worthless?

40. *Center for Epidemiologic Studies Depression Scale*

Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week?

Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
--	---	--	------------------------------------

- I was bothered by things that usually don't bother me
 - I did not feel like eating; my appetite was poor.
 - I felt that I could not shake off the blues even with help from my family or friends.
 - I felt I was just as good as other people.
 - I had trouble keeping my mind on what I was doing.
 - I felt depressed.
 - I felt that everything I did was an effort.
 - I felt hopeful about the future.
 - I thought my life had been a failure
 - I felt fearful
 - My sleep was restless.
 - I was happy.
 - I talked less than usual.
 - I felt lonely.
 - People were unfriendly.
 - I enjoyed life.
 - I had crying spells.
 - I felt sad.
 - I felt that people dislike me.
 - I could not get "going."
-

SCORING: zero for answers in the first column, 1 for answers in the second column, 2 for answers in the third column, 3 for answers in the fourth column. The scoring of positive items is reversed. Possible range of scores is zero to 60, with the higher scores indicating the presence of more symptomatology

41. *Generalised Anxiety Disorder 7 Scale*

Over the last two weeks, how often have you been bothered by the following problems?	Not at all	Several days	Over half of the days	Nearly every day
Feeling nervous, anxious, or on edge	0	1	2	3
Not being able to stop or control worrying	0	1	2	3
Worrying too much about different things	0	1	2	3
Trouble relaxing	0	1	2	3
Being so restless that it's hard to sit still	0	1	2	3
Becoming easily annoyed or irritable	0	1	2	3
Feeling afraid as if something awful might happen	0	1	2	3

42. *AUDIT-C*

	0	1	2	3	4
How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times per month	2-3 times per week	4+ times per week
How many units of alcohol do you drink on a typical day when you are drinking?	1-2	3-4	5-6	7-9	10+
How often have you had 6 or more units if female, or 8 or more if male, on a single occasion in the last year?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily

43. *Athlete Burnout Questionnaire*

Almost never	Rarely	Sometimes	Frequently	Almost always
I'm accomplishing many worthwhile things in horseracing				
I feel so tired from my training that I have trouble finding energy to do other things				
The effort I spend in horseracing would be better spent doing other things				
I feel overly tired from my horseracing participation				
I am not achieving much in horseracing				
I don't care as much about my horseracing performance as much as I used to.				
I am not performing up to my ability in horseracing				
I feel "wiped out" from horseracing				
I'm not into horseracing like I used to be				
I feel physically worn out from horseracing				
I feel less concerned about being successful in horseracing than I used to				
I am exhausted by the mental and physical demands of horseracing				
It seems no matter what I do, I don't perform as well as I should.				
I feel successful at horseracing				
I have negative feelings towards horseracing				

Note: Response set is a 5-point Likert scale of (1) almost never to (5) almost always.

44. *Career Satisfaction Scale*

Strongly disagree	Disagree to some extent	Uncertain	Agree to some extent	Strongly agree
I am satisfied with the success I have achieved in my career				
I am satisfied with the progress I have made towards meeting my overall career goals				
I am satisfied with the progress I have made towards meeting my goals for income				
I am satisfied with the progress I have made towards meeting my goals for advancement				
I am satisfied with the progress I have made toward meeting my goals for the development of new skills				

45. *Perceived Available Support in Sport Questionnaire (PASS-Q)*

If needed, to what extent would someone...

	Not at all	Slightly	Moderately	Considerably	Extremely
Provide you with comfort and security	0	1	2	3	4
Reinforce the positives	0	1	2	3	4
Help with travel to riding out or race day	0	1	2	3	4
Enhance your self-esteem	0	1	2	3	4
Give you constructive criticism	0	1	2	3	4
Help with tasks to leave you free to concentrate	0	1	2	3	4
Give you tactical advice	0	1	2	3	4
Always be there for you	0	1	2	3	4
Instil you with confidence to deal with pressure	0	1	2	3	4
Do things for you at competition (e.g., race day)	0	1	2	3	4
Care for you	0	1	2	3	4
Boost your sense of competence	0	1	2	3	4
Give you advice about performing in competitive situations	0	1	2	3	4
Show concern for you	0	1	2	3	4
Give you advice when you're performing poorly	0	1	2	3	4
Help you organise and plan your competition/matches	0	1	2	3	4

Thank you for participating in our survey

-If you have any questions, please contact Project Administrator: Lewis King
(lewis.king@postgrad.wit.ie).

-If you have any concerns about your current health and wellbeing, please contact your
Doctor/General Practitioner.

-The jockey pathway also provides free professional services to all licensed jockeys (including
apprentices and conditionals). To access these services visit [https://www.workinracing.ie/jockey-
pathway/](https://www.workinracing.ie/jockey-pathway/) for more information.

-For information about mental health helplines you can visit the following websites:

<http://www.workinracing.ie/industry-welfare/industry-assistance-programme/>

<https://www.hse.ie/eng/services/list/4/mental-health-services/helpisathand/helpisathand-toolkit/>

Notice of information -

Irish Horseracing Regulatory Board is the sponsor of this study. We will be using information from
you in order to undertake this study and will act as the data controller for this study. This means that
we are responsible for looking after your information and using it properly. Information relating to the
study will be securely stored for 5 years in accordance with Waterford Institute of Technology's
ethics guidelines. You have the right to withdraw from the study before or during data collection. To
safeguard your rights, we will use the minimum personally-identifiable information possible. You can
find out more about how we use your information by contacting lewis.king@postgrad.wit.ie

Appendix H

Interview Guide for Study Three

Introduction

Could you give me a bit of background on your time as a jockey?

Could you describe some positive/negative aspects of being a jockey, and what impact (if any) it has had on your personal life?

Have you had any experience with a mental health professional? If so, how did you find the experience?

Define help-seeking for participant

The action of seeking help from professional services such as psychologist, psychiatrist, counsellor, mental health professional.

Questions

What do you think the mainstream attitudes/beliefs are towards seeking professional psychological help? For instance, going to visit a psychologist?

Are you aware of any stereotypes that may exist towards those who seek help for their mental health?

Are you aware of any stereotypes that may exist specifically towards jockeys who seek help for their mental health?

How do you think it make you or another jockey feel to be seen asking for help?

Do you think it would be worrying for a jockey if their trainer/other jockeys/friends/family heard that they were seeking help?

What do jockeys like yourselves think of other jockeys who get help for mental health problems?

How do you think you would feel if you visited a mental health professional?

Barriers

Interviewer defines barriers (things that stop jockeys seeking help) and seeking help (looking for help from a professional source such as doctor, psychologist, counsellor, etc).

Can you think of 3 things that might stop a jockey from seeking help for a mental health issue?

Facilitators

Interviewer defines facilitators (things that make it easier for jockeys seeking help)

Can you think of 3 things that could make it easier for a jockey to seek help for a mental health issue?

How well do you think the horseracing industry does at supporting the mental health of jockeys?

Help-seeking behaviour

Can you think of any reasons as to why a jockey might not try to access support for their mental health?

Accessing Services

How best can the racing industry connect with jockeys to support them?

What is the best method of delivery for jockeys? Zoom/ telephone / face-2-face?

Have you ever used the 24-7 CARE helpline? (include in questionnaire)

Closing questions

What can be done to improve jockeys accessing support for their mental health?

Appendix I

Study Three Participant Information Sheet

Study introduction

Research in Ireland has established that mental health issues may be prevalent amongst Irish jockeys. Therefore, access to professional psychological support services is required. The goal of the study is to explore aspects of help-seeking that serve as barriers or facilitators to help-seeking amongst jockeys.

Participant requirements

The participant will be required to complete an interview which is estimated to last between 20-45 minutes. The interview is likely to take place over the phone or via Zoom due to the current Covid-19 outbreak. The participant is required to complete one interview, although they may be contacted after the interview has been transcribed to clarify specific quotes, thoughts or ideas. The interview will be recorded via a dictaphone, with a copy of the recording sent to jockeys if requested. Participants will be required to read the participant information sheet and sign (electronically) an informed consent form prior to the interview taking place.

Benefits to participants

The benefits of participating in the study are that you are helping shape and guide future research and support programmes designed specifically for the needs of the jockey. The life of a jockey is unique in relation to other athletes, therefore our support programmes need to match those unique challenges.

Estimated Time: 20-45 minutes

Potential risks to participants from involvement in the Research Study

While extremely low, there is a risk of psychological harm due to reflecting upon personal experiences within the last year. If at any point the participant feels discomfort they are advised to stop the interview and advised to contact Senior Medical Officer Dr Jennifer Pugh or Jockey Pathway Sport Psychology Service Provider Dr Ciara Losty. If the primary investigator feels the participant is a danger to themselves or others the primary investigator will report this to the aforementioned names. The participant will be made aware that this information will be shared. Appropriate helpline numbers will be provided at the end of the interview via a printed handout and given to the participant.

As a participant in the study you have;

- 5) The right to non-participation and the right to leave the study at any time,
- 6) The right to anonymity meaning your name will not be used for any part of the study including publication or further study.
- 7) The right to confidentiality with only the primary researcher having access to study information and raw data.
- 8) The right to expect that the primary researcher is responsible and well-meaning in all of his actions.

If you require further information please contact:

Lewis King, Primary Investigator, +44 7584574266 (lewis.king@postgrad.wit.ie)

If participants have any concerns please contact: *Suzanne Kiehy, Secretary of the Ethics committee at Waterford Institute of Technology (skiehy@wit.ie)*

Appendix J

Study Three Informed Consent Form



Exploring barriers and facilitators to help-seeking amongst jockeys

- I have read and understood the subject information sheet.
- I understand what the project is about, and what the results will be used for.
- I am fully aware of all of the procedures involving myself, and of any risks and benefits associated with the study.
- I know that my participation is voluntary and that I can withdraw from the project up until the point at which the primary investigator has transcribed the interview.
- I understand by participating or not participating in the study it will not affect my career opportunities.
- I am aware that the results of testing will be kept confidential and will be stored in a secured location and filing cabinet within the Institute. Destruction of all personal data will occur after five years.

Participant's name (Printed): _____

Participant's signature: _____

Date: _____

Investigator's signature: _____

Appendix K

Study Four Participant Information Sheet, Informed Consent Form, and Full Questionnaire

Participant Information

We are inviting all professionally licensed jockeys (e.g. flat, national hunt, apprentices, conditionals) to complete this confidential survey. In response to interviews conducted with several professional jockeys, this survey aims to investigate attitudes towards help-seeking for mental health difficulties. This will allow the health and sporting needs of the industry to be better understood so that specific support structures may be put in place to help you during your career and in retirement.

Estimated Time: 15 minutes.

Please answer each of the following questions as honestly as possible. There are no right or wrong answers, move through the questions quickly. The survey must be completed in one go so make sure you have some time when you start it.

The research is being carried out by Mr Lewis King, Dr Ciara Losty, Dr SarahJane Cullen (Waterford Institute of Technology), Dr Giles Warrington (University of Limerick), Dr Adrian McGoldrick and Dr Jennifer Pugh (Irish Horseracing Regulatory Board).

While involvement in this survey is not mandatory, participation is encouraged by the Irish Horseracing Regulatory Board so that we can help you in the future. Participants will be coded (e.g. J1) to protect confidentiality. The data will be analysed using a computer programme. Only the lead researcher (Mr Lewis King) will have access to the data.

If you have any questions or concerns regarding the study please contact the lead researcher Lewis King (lewis.king@postgrad.wit.ie). If you have any concerns about the way you have been approached/treated during this study, please contact Acting Secretary of the WIT Research Ethics Committee at the following email address: ethics@wit.ie.

Notice of information -

Irish Horseracing Regulatory Board is the sponsor of this study. We will be using information from you in order to undertake this study and will act as the data controller for this study. This means that we are responsible for looking after your information and using it properly. Information relating to the study will be securely stored for 5 years in accordance with Waterford Institute of Technology's ethics guidelines. You have the right to withdraw from the study before or during data collection. To safeguard your rights, we will use the minimum personally-identifiable information possible. You can find out more about how we use your information by contacting lewis.king@postgrad.wit.ie

By completing this questionnaire you consent to participate in this study. You confirm that you have read and understood the above information. You understand that your participation is voluntary and that you are free to withdraw at any time.

Note that all responses will remain CONFIDENTIAL.

Section 1 - Demographic Information

1. Age in years?

2. Gender you identify as

- Male
- Female
- Prefer not to state
- Other (please specify)

3. Nationality

- Irish
- Other (please specify)

4. Predominant License type:

- Flat Professional
- Flat Apprentice
- National Hunt Professional
- National Hunt Conditional

* 5. Claiming allowance (if you ride with no claim please skip this question):

- 3
- 5
- 7
- 10

6. Number of years as a licensed jockey:

7. What is the highest level of education you achieved?

- Primary School
- Junior Certificate
- Leaving Certificate
- Third Level Education (College)
- Other (please specify)

8. Have you previously experienced or are currently experiencing a mental health difficulty? These can relate to self or professional diagnosis. *Self-diagnosis is the process of identifying, or diagnosing, medical symptoms/conditions in oneself.*

- Yes
- No

9. If yes, please specify condition(s) in the box below:

10. Have you met with a mental health professional at any time due to mental health difficulties? *A mental health professional includes a psychologist, psychiatrist, counsellor., GP/Doctor. A sport psychologist is NOT classed as a mental health professional.*

Yes

No

11. Have you met with a mental health professional in the past 12 months due to mental health difficulties? *A mental health professional includes a psychologist, psychiatrist, counsellor, GP/Doctor. A sport psychologist is NOT classed as a mental health professional.*

Yes

No

12. Do you know anyone who has previously sought help from a mental health professional?

Yes

No

13. Attitudes towards Seeking Professional Psychological Help

	0 (disagree)	1	2	3 (agree)
1.	If I believed I was having a mental breakdown, my first inclination would be to get professional attention			
2r.	The idea of talking about problems with a psychologist strikes me as a poor way to get rid of emotional conflicts			
3.	If I were experiencing a serious emotional crisis at this point in my life, I would be confident that I could find relief in psychotherapy			
4r.	There is something admirable in the attitude of a person who is willing to cope with his or her conflicts and fears without resorting to professional help			
5.	I would want to get psychological help if I were worried or upset for a long period of time			
6.	I might want to have psychological counselling in the future			
7.	A person with an emotional problem is not likely to solve it alone; he or she is likely to solve it with professional help.			
8r.	Considering the time and expense involved in psychotherapy, it would have doubtful value for a person like me.			
9r.	A person should work out his or her own problems; getting psychological counselling would be a last resort.			
10r.	Personal and emotional troubles, like many things, tend to work out by themselves.			

Note: r = reversed scored.

14. Mental Health Literacy Scale

	1 – Very unlikely	2 - Unlikely	3 - Likely	4 – Very likely
1.	If someone became extremely nervous or anxious in one or more situations with other people (e.g., a party) or performance situations (e.g., presenting at a meeting) in which they were afraid of being evaluated by others and that they would act in a way that was humiliating or feel embarrassed, then to what extent do you think it is likely they have Social Phobia			
2.	If someone experienced excessive worry about a number of events or activities where this level of concern was not warranted, had difficulty controlling this worry and had physical symptoms such as having tense muscles and feeling fatigued then to what extent do you think it is likely they have Generalised Anxiety Disorder			
3.	If someone experienced a low mood for two or more weeks, had a loss of pleasure or interest in their normal activities and experienced changes in their appetite and sleep then to what extent do you think it is likely they have Major Depressive Disorder			
4.	To what extent do you think it is likely that Personality Disorders are a category of mental illness			
5.	To what extent do you think it is likely that Dysthymia is a disorder			
6.	To what extent do you think it is likely that the diagnosis of Agoraphobia includes anxiety about situations where escape may be difficult or embarrassing			
7.	To what extent do you think it is likely that the diagnosis of Bipolar Disorder includes experiencing periods of elevated (i.e., high) and periods of depressed (i.e., low) mood			
8.	To what extent do you think it is likely that the diagnosis of Drug Dependence includes physical and psychological tolerance of the drug (i.e., require more of the drug to get the same effect)			
9.	To what extent do you think it is likely that in general in Australia, women are MORE likely to experience a mental illness of any kind compared to men			
10.	To what extent do you think it is likely that in general, in Australia, men are MORE likely to experience an anxiety disorder compared to women			
	1 – Very unhelpful	2 - Unhelpful	3 - Helpful	4 - Very helpful
11.	To what extent do you think it would be helpful for someone to improve their quality of sleep if they were having difficulties managing their emotions (e.g., becoming very anxious or depressed)			
12.	To what extent do you think it would be helpful for someone to avoid all activities or situations that made them feel anxious if they were having difficulties managing their emotions			
	1 – Very unlikely	2 - Unlikely	3 - Likely	4 – Very likely
13.	To what extent do you think it is likely that Cognitive Behaviour Therapy (CBT) is a therapy based on challenging negative thoughts and increasing helpful behaviours			
	Mental health professionals are bound by confidentiality; however there are certain conditions under which this does not apply.			
	To what extent do you think it is likely that the following is a condition that would allow a mental health professional to break confidentiality:			
14.	If you are at immediate risk of harm to yourself or others			
15.	if your problem is not life-threatening and they want to assist others to better support you			

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
16.	I am confident that I know where to seek information about mental illness				
17.	I am confident using the computer or telephone to seek information about mental illness				
18.	I am confident attending face to face appointments to seek information about mental illness (e.g., seeing the GP)				
19.	I am confident I have access to resources (e.g., GP, internet, friends) that I can use to seek information about mental illness				
20.	People with a mental illness could snap out if it if they wanted				
21.	A mental illness is a sign of personal weakness				
22.	A mental illness is not a real medical illness				
23.	People with a mental illness are dangerous				
24.	It is best to avoid people with a mental illness so that you don't develop this problem				
25.	If I had a mental illness I would not tell anyone				
26.	Seeing a mental health professional means you are not strong enough to manage your own difficulties				
27.	If I had a mental illness, I would not seek help from a mental health professional				
28.	I believe treatment for a mental illness, provided by a mental health professional, would not be effective				
Please indicate to what extent you agree with the following statements:					
	Definitely unwilling	Probably unwilling	Neither unwilling or willing	Probably willing	Definitely willing
29.	How willing would you be to move next door to someone with a mental illness?				
30.	How willing would you be to spend an evening socialising with someone with a mental illness?				
31.	How willing would you be to make friends with someone with a mental illness?				
32.	How willing would you be to have someone with a mental illness start working closely with you on a job?				
33.	How willing would you be to have someone with a mental illness marry into your family?				
34.	How willing would you be to vote for a politician if you knew they had suffered a mental illness?				
35.	How willing would you be to employ someone if you knew they had a mental illness?				

15. *Self-Stigma of Seeking Psychological Help*

	1 – Strongly disagree	2	3 – Agree and disagree equally	4	5 – Strong agree
1.	I would feel inadequate if I went to a therapist for psychological help				
2r.	My self-confidence would NOT be threatened if I sought professional help				
3.	Seeking psychological help would make me feel less intelligent				
4r.	My self-esteem would increase if I talked to a therapist				
5r.	My view of myself would not change just because I made the choice to see a therapist				
6.	It would make me feel inferior to ask a therapist for help				
7r.	I would feel okay about myself if I made the choice to seek professional help				
8.	If I went to a therapist, I would be less satisfied with myself				
9r.	My self-confidence would remain the same if I sought professional help for a problem I could not solve				
10.	I would feel worse about myself if I could not solve my own problems				

Note: r = reverse scored.

16. *Perception of Stigmatisation by Others for Seeking Help*

Imagine you had an issue that you could not solve on your own. If you sought professional support for this issue, to what degree do you believe that the people you interact with would:

	1 – not at all	2 – a little	3 - some	4 – a lot	5 – a great deal
1.					
2.					
3.					
4.					
5.					

17. *Barriers to Help-Seeking among Jockeys Questionnaire*

In previous research with jockeys we identified several barriers for jockeys accessing support from mental health professionals. To what extent do the following impact you accessing such services:

	1 – not at all	2 – slightly	3 - somewhat	4 – very	5 – extremely
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

Appendix L

The Multidimensional Scale of Perceived Support

	Very strongly disagree	Strongly disagree	Mildly disagree	Neutral	Mildly agree	Strongly agree	Very strongly agree
There is a special person who is around when I am in need	1	2	3	4	5	6	7
There is a special person with whom I can share my joys and sorrows	1	2	3	4	5	6	7
My family really tries to help me	1	2	3	4	5	6	7
I get the emotional help and support I need from my family	1	2	3	4	5	6	7
I have a special person who is a real source of comfort to me	1	2	3	4	5	6	7
My friends really try to help me	1	2	3	4	5	6	7
I can count on my friends when things go wrong	1	2	3	4	5	6	7

I can talk about my problems with my family	1	2	3	4	5	6	7
I have friends with whom I can share my joys and sorrows	1	2	3	4	5	6	7
There is a special person in my life who cares about my feelings	1	2	3	4	5	6	7
My family is willing to help me make decisions	1	2	3	4	5	6	7
I can talk about my problems with my friends	1	2	3	4	5	6	7

Appendix M

Racehorse Trainer Mental Health: Prevalence and Risk Factors

*The following study has been published in the *Journal of Equine Veterinary Science*.

The citation for the article is:

King, L., Cullen, S. J., O'Connor, S., McGoldrick, A., Pugh, J., Warrington, G., & Losty, C. (2021). Racehorse trainer mental health: Prevalence and risk factors. *Journal of Equine Veterinary Science*, *101*, 103423.

Introduction

Racehorse trainers play an important role within the horseracing industry. Their role primarily involves training racehorses to earn the maximum prize money in a competitive season as well as managing members of staff, facilitating or maintaining relationships with owners, and ensuring the health and safety of the racehorse. However, the occupation is not without its difficulties. Speed and Andersen (2008) highlighted the unpredictable nature of a career as a racehorse trainer. Trainers work exhaustive schedules, on average nearly 65 hours per week. Associations between lengthy working hours and adverse health outcomes have been identified (Wong *et al.*, 2019), and racehorse trainer lengthy working hours appear comparable to other animal related occupations such as farmers (Kunde *et al.*, 2017) and veterinary services (Adam *et al.*, 2019). Two-thirds of trainers never or rarely had one day off per week. Trainers also face increased pressure from owners (e.g., pressure to win competitive races), shoulder the burden of responsibility for keeping horses healthy and sound, as well as financial difficulties. Racehorse trainers costs primarily relate to staff, feed for the horses, fixed overheads (rent, mortgage payments) and maintenance costs for the yard such as machinery or gallop repairs (Riley, 2021). Financial aspects associated with this highly demanding role were reported as the most prevalent work-place challenge to the point that trainers often explored other avenues of employment, with the main reason cited as a lack of income earned from training racehorses. Indeed, with prize money reduced due to the COVID-19 pandemic, these challenges may be greater than previously reported.

Despite these stressors and difficulties, research exploring the mental health of racehorse trainers is sparse. In one of the few reports to examine the mental health of this population, it was found that 29% of trainers ($n = 303$) in Australia reported feeling

anxious often or very often, whilst 32% stated they felt down/depressed often or very often (Speed & Andersen, 2008). More recently, another study in Australia explored the psychological wellbeing of racehorse trainers in comparison to other racing personnel (not specified) and the general population (Bullock *et al.*, 2019). The authors suggested that racehorse trainers reported significantly greater scores on depressive and anxiety measures in comparison to other racing staff and the general population. Lastly, Racing Welfare, a UK based charity designed to support the horseracing industry, found that 75% of trainers ($n = 75$) reported experiencing stress, anxiety, or depression over the previous 12 months (McConn-Palfreyman *et al.*, 2019). Moreover, 51% of trainers reported take home earnings after taxes at less than £19,000 per year, and 69% earning less than £29,000 per year. Therefore, it appears that racehorse trainers predominantly earn substantially less than other similar industries such as farming where in 2017 an average salary was reported at €31,000 (Teagasc, 2017). In total, 39% of all trainers found financial uncertainty a very stressful component of their occupation. As such, financial difficulties may have contributed to the steady decline in the number of racehorse trainers, with the climate for racehorse trainers to run and maintain a sustainable business a challenge (HRI, 2018). As with most sports, the concentration of the most successful athletes usually arises in a small number of teams. In horseracing, similar concepts apply wherein the most successful horses reside with a small number of trainers, which means for a vast amount of trainers, success is difficult. The abovementioned stressors may influence the mental health of trainers, but there is also a possibility that common stressors play a role in the development of mental health issues as has been highlighted amongst other populations in sport (e.g., athletes, coaches) and other rural occupations (e.g., farmers). Specifically, determinants such as career dissatisfaction, a lack of social support, and financial difficulties, have been

reported to be associated with an increase in the occurrence of symptoms for common mental disorders (CMDs) (Bullock *et al.*, 2019; Gregoire, 2002; King *et al.*, 2020; Rice *et al.*, 2016)

To date, no study has examined the mental health of racehorse trainers in Ireland using validated screening questionnaires. Thus, the purpose of this study was to investigate the prevalence of symptoms associated with CMDs, defined as depression, generalised anxiety, psychological distress and adverse alcohol use, and their associations with specific risk factors (career dissatisfaction, lower levels of social support, financial difficulties) among racehorse trainers. It was hypothesised that racehorse trainers reporting greater levels of career dissatisfaction and financial difficulties, and lower levels of social support, would increase the presence of symptoms associated with CMDs.

Methods

Procedures

Licensed trainers over the age of 18 ($n = 450$) were invited to participate by the Irish Horseracing Regulatory Board (IHRB). Participants were recruited through July-August 2019 with survey reminders sent at two- and four-week intervals. Information about the study was sent via email and text messages by IHRB to licensed trainers, with this procedure blinded to the researchers for privacy and confidential reasons. Participants completed an anonymous and confidential online survey on survey website Survey Monkey. After reading a participation information sheet, participants provided informed consent. The electronic questionnaire took around 20 minutes to be completed, with data saved automatically on a secure electronic server only accessible by the lead researcher. Upon completion of the questionnaire, numbers for mental health helplines and support services were provided for the participant to contact if the

participants felt distressed or concerned. Ethical consent for the study was provided by a local Third Level Institutions Research Ethics Committee (REF: 18/HSES/06).

Measures

Demographic and general lifestyle data was collected including age, gender, predominant code of racing training horses in, educational level reached, years' experience as a trainer, number of winners, working hours per week, number of horses in training, and number of staff employed. Validated mental health prevalence questionnaires were used to capture prevalence data and included:

Psychological distress

Assessed using Kessler Psychological Distress Scale (K10) (Kessler *et al.*, 2003). The questionnaire scores questions on a 5-point Likert scale ranging from 1 (none of the time) to 5 (all of the time) with scores ranging from 10-50 by summing up the responses to all 10 questions. A score of 22 or more indicates symptoms of distress with higher scores representing higher symptom levels. Cronbach's alphas for the 10 items indicated high reliability ($\alpha = .93$). See Appendix D.

Depression

Depression was measured using the Center for Epidemiological Studies Depression (CES-D) (Radloff, 1977) scale. The 20-item questionnaire asks participants to respond to questions relating to the previous seven days on a four-point scale ranging from 0 (rarely or none of the time) to three (most or all of the time). Scores ranged from 0-60 with higher scores indicative of higher symptoms levels. A score of 16 or more was used as the threshold as has been used previously in research (e.g., Losty *et al.*, 2019). The depression scale was found to be highly reliable (20 items; $\alpha = .81$). See Appendix E.

Anxiety

Anxiety was measured over the previous two weeks using the Generalised Anxiety Disorder (GAD) (Spitzer et al., 2006) scale. The seven-item questionnaire is scored on a four-point scale, ranging from 0 (not at all) to three (nearly every day) and includes questions such as “over the last two weeks, how often have you not been able to stop or control worrying?”. Higher scores indicate higher symptoms levels, with a score of 10 or more indicative of generalised anxiety disorder. Cronbach’s alpha for the seven-item questionnaire was .93. See Appendix F.

Adverse alcohol use

Alcohol consumption was measured using the three item AUDIT-C (e.g., how many standard drinks do you have on a typical day?) (Dawson *et al.*, 2005). A score between zero and three were calculated using the sum of the three completed questions, with a potential score ranging from zero to 12. A score of five or more was indicative of adverse alcohol use. The three-item questionnaire was highly reliable ($\alpha = .82$). See Appendix G.

Associated risk-factor questionnaires were also completed by participants and included various self-made and validated questionnaires, included below:

Career dissatisfaction

Career dissatisfaction was measured via the Greenhaus scale (e.g., I am satisfied with the success I have achieved in my career) (Greenhaus *et al.*, 1990). Using a five-point scale, scores were measured from extremely dissatisfied (1) to extremely satisfied (5). A total score of 5 to 25 was reported by summing up the answers to the five questions, with a lower score indicating greater levels of career dissatisfaction, and a

score between five and 12 reported as career dissatisfaction. The Greenhaus scale was found to be highly reliable (5 items; $\alpha = .90$). See Appendix H.

Social support

The Multidimensional Scale of Perceived Social Support (Zimet *et al.*, 2010) was employed to measure perceived social support. The 12-item questionnaire contains three subscales consisting of four questions each, measuring specific types of social support which included support from; (i) significant others; (ii) family; and, (iii) friends. Each scale was computed by summing the four specific questions on each subscale and obtaining a mean value by dividing each subscale by four. Total social support was also computed by calculating the average score from all 12 questions. Cronbach's alphas for each subscale demonstrated high reliability and ranged from .93 to .96. See Appendix P.

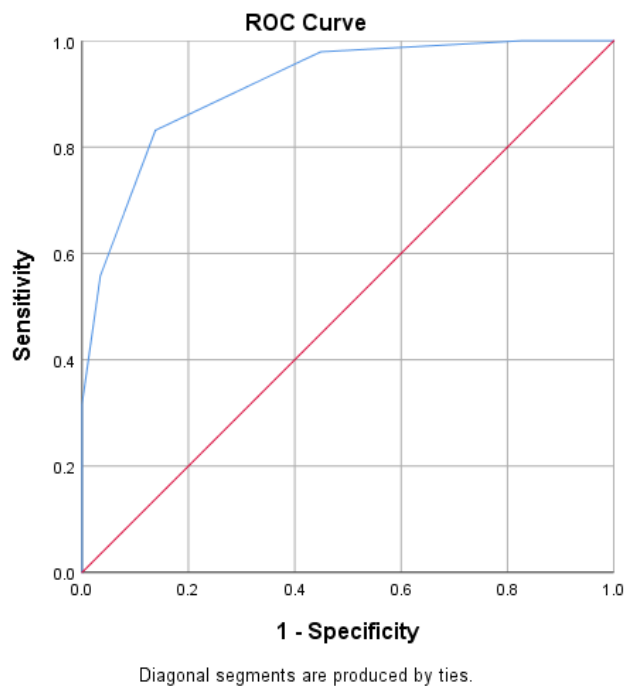
Financial difficulties

Financial difficulties were measured by the use of two questions which included questions relating to trainers perception of paying bills (e.g., think back over the past year and rate the difficulty you had in paying your bills) and money left over at the end of each month (e.g., at the end of each month, do you end up with: more than enough money left over, some money left over, just enough money to make ends meet, not enough money to make ends meet). A maximum score of seven was possible, with a score of ≥ 4.5 indicative of financial difficulties. Receiver Operator Characteristics

(ROC) curve identified ≥ 4.5 as the appropriate cut-off point with a sensitivity of 0.832 and specificity of 0.138 (Figure 9.1). The variable was subsequently transformed into a dichotomous variable of low financial difficulties and high financial difficulties.

Figure 9.1

ROC Curve Highlighting Sensitivity and Specificity of the Financial Difficulty Variable.



Data Analysis

Data was analysed using statistical software programme IBM SPSS 24.0 for Windows. Descriptive data (mean, standard deviation, range) were performed for all variables. Univariate logistic regression, expressed as odds ratios (OR) and 95% confidence intervals (CI), was conducted to analyse the potential relationships between CMDs (psychological distress, depression, generalised anxiety, adverse alcohol use) and risk-factors (career dissatisfaction, social support, financial difficulties).

Results

Participants

Licensed trainers ($n = 450$) were contacted to take part in the study, of which 124 (81% male; 18% female; 1% preferring not to say) completed the questionnaire, representing a response rate of 28%. Participants ranged in age from 24 to 85 years old. Participants trained horses across both codes of racing, with 14% training flat horses, 44% training national hunt horses, and 43% training both flat and national hunt (dual) horses. On average, trainers had trained racehorses for 14 years ($SD = 10.9$) and worked 64 hours per week ($SD = 21.5$). Nearly one in two (48%) trainers reported not having a period of three days or more holiday from work in the past 12 months, and 73% reported not having a day off work in the previous two weeks. All characteristics of the participants are presented in Table 9.1.

Prevalence of Symptoms of CMD

Prevalence of symptoms of CMDs among racehorse trainers in Ireland varied for depression (41%), adverse alcohol use (38%), psychological distress (26%), and generalised anxiety (18%). In total, 45% of participants met the criteria for at least one CMD, 32% for at least two CMDs, and 21% for at least three CMDs. One fifth (21%) had accessed a mental health professional for support with their personal or emotional problems, with a doctor/GP the most commonly selected (15%). All prevalence rates are presented in Table 9.2.

Table 9.1*Participants Characteristics*

n	124
Trainer response rate	28%
Age in years, M (SD)	47.3 (12.03)
Gender	
Male, n (%)	100 (81)
Female, n (%)	22 (18)
Prefer not to say, n (%)	2 (1)
Code of racing,	
Flat, n (%)	17 (14)
National Hunt, n (%)	54 (43)
Dual (both Flat and National Hunt), n (%)	53 (43)
Highest level of education reached	
Primary school, n (%)	9 (7)
Junior Certificate, n (%)	30 (24)
Leaving Certificate, n (%)	35 (28)
Third Level Education, n (%)	41 (34)
Other, n (%)	9 (7)
Years as a trainer, M (SD)	13.9 (10.88)
Number of winners, M (SD)	78.1 (159.62)
Range	0-1100
Working hours per week, M (SD)	63.56 (21.49)
Numbers of horses in training, M (SD)	15.66 (19.23)
Range	1-150
Members of staff employed (part or full-time), M (SD)	3.38 (5.4)
Range	0-40
Number of times when trainer had a period of three or more days off work in the past 12 months	
Never	59 (48)
Once	46 (37)
Twice	11 (9)
Three times	6 (5)
Four times or more	2 (1)
Number of days off work in the last two weeks	
No days	90 (73)
One day	20 (16)
Two days	8 (7)
Three days or above	6 (4)

Table 9.2*Prevalence of Symptoms of CMDs and Risk Factors for Racehorse Trainers*

Symptom Measure (potential range)	
K10 (10-50), M (SD)	17.9 (7.5)
Range,	10-42
CES-D (0-60), M (SD)	16.7 (8.7)
Range,	0-58
GAD-7 (0-21), M (SD)	5.1 (5.3)
Range,	0-21
AUDIT-C (0-12), M (SD)	3.9 (3.3)
Range,	0-12
Caseness cut-off (percentage meeting cut-off score)	
K10 score \geq 22, n (%)	33 (26)
CES-D \geq 16, n (%)	51 (41)
GAD-7 \geq 10, n (%)	22 (18)
AUDIT-C \geq 5, n (%)	47 (38)
Met caseness for at least one CMD, n (%)	56 (45)
Met caseness for at least two CMDs, n (%)	40 (32)
Met caseness for at least three CMDs, n (%)	26 (21)
Number that have ever seen a mental health professional to get help for personal or emotional problems (GHSQ) n (%)	
Male	19 (19)
Female	7 (32)
Other	0 (0)
Any source	26 (21)
Psychologist	4 (3.2)
Doctor/GP	19 (15.3)
Psychiatrist	4 (3.2)
IHRB Senior Medical Officer	4 (3.2)
Counsellor/Other (not specified)	15 (12.1)

Prevalence of Risk-Factors

Mean score for career dissatisfaction was 15.5, and although as a group the participants were above the threshold for career dissatisfaction (>12), only 28% met the criteria for career dissatisfaction. Sixty-four percent reported experiencing financial difficulties within the past year. Mean scores on all social support scales indicated that

trainers perceived they had moderate to high levels of social support. See Table 9.3 for all risk factor information.

Table 9.3

Risk Factors for CMDs to Racehorse Trainers in Ireland

<i>Symptom Measure (potential range)</i>	
Career dissatisfaction (5-25), <i>M (SD)</i>	15.45 (5.03)
<i>n (SD)</i>	35 (28)
Adverse alcohol use (0-12), <i>M (SD)</i>	3.86 (3.28)
<i>n (SD)</i>	47 (38)
Social support (0-7), <i>M (SD)*</i>	
Total social support	5.35 (1.3)
Significant other	5.62 (1.53)
Family	5.38 (1.47)
Friends	5.04 (1.48)
Financial difficulties (1-7), <i>M (SD)</i>	5.12 (1.45)
<i>n (SD)</i>	79 (64)

*cut-offs not provided for social support measures

Relationship between Prevalence of Symptoms of CMD and Risk-Factors

Table 9.4 presents associations (expressed as odds ratios OR related and 95% confidence intervals) from binary univariate logistic regressions between prevalence of CMDs and risk factors in Irish racehorse trainers. Career dissatisfaction, lower levels of social support, and financial difficulties significantly increased the likelihood of meeting the criteria for psychological distress, depression, and generalised anxiety.

Table 9.4

Binary Univariate Logistic Regression Analysis, Expressed as OR and Their 95% CI's, between CMDs and Assessed Risk Factors among Racehorse Trainers in Ireland

	Psychological distress			Depression			Generalised anxiety			Adverse alcohol use		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
CS SS ^a	0.22	0.09-0.51	.001	0.19	0.08-0.46	<.001	0.29	0.11-0.76	.011	1.13	0.5-2.53	.771
TSS	0.50	0.35-0.71	<.001	0.52	0.80-1.68	<.001	0.54	0.38-0.78	.001	0.94	0.72-1.24	.680
SO	0.69	0.53-0.89	.005	0.73	0.85-1.88	.015	0.71	0.54-0.93	.014	0.88	0.70-1.13	.288
Family	0.69	0.53-0.89	<.001	0.56	0.69-1.49	<.001	0.61	0.45-0.82	.001	0.87	0.68-1.13	.273
Friends	0.55	0.4-0.75	<.001	0.58	0.76-1.71	<.001	0.58	0.42-0.81	.001	1.15	0.9-1.48)	.267
FD	0.07	0.02-0.32	<.0001	0.18	0.53-3.96	<.0001	0.06	0.01-0.49	<.0001	1.37	0.64-2.92	.775

Note:.^a Lower scores = lower levels of social support. *Abbreviations: TSS – Total social support; SO – Significant other.**

Discussion

The findings from the present study are the first to explore racehorse trainer mental health in Ireland using validated screening questionnaires. In total, 45% of trainers met the criteria for at least one CMD, including depression (41%), adverse alcohol use (38%), psychological distress (26%), and generalised anxiety (18%). Moreover, 32% of trainers met the threshold for at least two CMDs, and 21% for at least three CMDs. Career dissatisfaction, financial difficulties, and lower levels of social support increased the likelihood of meeting the criteria for psychological distress, depression and generalised anxiety. The findings also highlight that only a fifth of trainers had sought support for their personal or emotional problems.

Of the limited data available, findings from our study suggest that depressive symptoms may be greater among racehorse trainers in Ireland than other racing jurisdictions previously reported. A greater proportion of racehorse trainers met the threshold indicative of a depressive disorder in the present study (41%) compared to trainers studied in Australia (32%) (Speed & Andersen, 2008). Whilst this finding may represent differing levels of CMD symptoms between racehorse trainers dependent on their location and unique occupational characteristics, findings should be interpreted with caution. Methodological assessments between the two studies differed, with the use of a validated questionnaire in the present study (CES-D), and a self-made questionnaire in the Speed and Andersen (2008) study. In this study, trainers were asked to rank how often they felt depressed or anxious on a 6-point Likert scale measuring from never to always. Using a validated questionnaire exploring symptoms over a specific time period may have provided more accurate and effective results for analysis. Consequently, future research may seek to determine differences between the stressors, lifestyles, and mental health of racehorse trainers in differing racing jurisdictions,

particularly important given the mean score for depressive symptoms was above the cut-off score of 16 in the present sample.

Due to the dearth of information relating to racehorse trainer mental health, a useful occupational comparison may be made to farmers given the similarities between the two roles which includes working with animals, long working hours, financial difficulties, working rurally, and potential social isolation (Gregoire, 2002). Epidemiological studies exploring farmer mental health rates have reported figures between 29% and 24% for mild anxiety and depression (Gregoire, 2002). In the United States, using the same questionnaire as the present study (CES-D), prevalence rates were reported at 9.3%, with a mean score of 6.1 (Stallones *et al.*, 1995), which was considerably lower than the mean score of 16.7 reported in the present study. Research in the United Kingdom reported much lower rates of depression (4.2%), likely due to the methodological approach undertaken (Revised Interview Clinical Schedule) (Thomas *et al.*, 2003). Thus, in studies that used self-reported questionnaires, it appears that prevalence of symptoms associated with CMDs among Irish racehorse trainers may be greater in comparison to other similar working domains, with particular emphasis on depression prevalence (41%).

The number of trainers seeking help for personal or emotional problems was relatively low in this study, with 21% reporting seeking help from a mental health professional. Similar rates of help-seeking (21%) were also reported among racehorse trainers in Australia (Speed & Andersen, 2008), although the authors reported on intention to seek help, rather than actual engagement with professional mental health services, so clarity around precise help-seeking estimates is difficult to ascertain. Furthermore, most of the participants in the present study were male. A lack of help-seeking among males has been documented within the literature, which often relates to

masculinity (Addis & Mahalik, 2003) and conforming to certain ‘masculinity scripts’(Mahalik *et al.*, 2003), but also the stigma linked to seeking and accessing professional support (Clement *et al.*, 2015). Indeed, in the present study, a greater percentage of female trainers (32%) had previously sought help in comparison to male trainers (19%). Currently in Ireland, a 24/7 helpline is available to anyone who works in the racing industry if they wish to discuss any issues they are experiencing. However, given only one fifth of trainers reported talking to a mental health professional about their personal or emotional problems, it suggests that trainers may not be utilising the service. Exploring factors which may inhibit racehorse trainers accessing support services represents an important future direction of research.

Two-thirds of trainers reported financial difficulties. Trainers were between five and 16 times more likely to meet the criteria for distress, depression, or generalised anxiety if experiencing financial difficulties. Past research has identified that racehorse trainers report significantly lower financial wellbeing scores in comparison to non-trainers (e.g., other individuals working within the racing industry) (Bullock *et al.*, 2019). Thus, financial difficulties appear to be a key stressor for racehorse trainers, with issues around staffing levels and wages, cash flow, levels of debt, not obtaining enough work (e.g., number of horses in training) to cover financial outgoings, increasing costs, and poor prize money (Speed & Andersen, 2008). In the current climate, throughout the COVID-19 pandemic, this stressor may be exacerbated due to reductions in prize money. Horseracing is extremely competitive; therefore, trainers cannot solely rely on training fees and prize money to support their business and are usually required to partake in other forms of business activity such as buying and selling horses, further emphasising the unpredictability of life as a racehorse trainer. Consequently, organisations and key stakeholders might consider the impact that financial difficulties

can have on an individual's mental health. Workshops, support programmes, and training modules that include business advice and information relating to managing periods of financial adversity would be useful given the prevalence of trainers experiencing financial difficulties. Racehorse trainers are required to attend a racehorse trainer licensing course prior to receiving their trainer license, therefore they represent an opportunity to facilitate the abovementioned training recommendations. Moreover, educational courses throughout a racehorse trainers beyond the licensing course career should also be facilitated.

Greater levels of career dissatisfaction were associated with meeting the threshold for distress, depression and generalised anxiety, with 28% reporting dissatisfaction with their careers. This figure is greater than the 16% previously reported among racehorse trainers in another study (Speed & Andersen, 2008). In total, trainers in the present study that were dissatisfied with their careers were between 3.4 to 8.3 times more likely to meet the criteria for one of distress, depression or generalised anxiety. This finding corroborates previous research that has identified the associations between prevalence of CMDs and career dissatisfaction (Rice *et al.*, 2016). Thus, career dissatisfaction measures may be useful as an early screening measure to identify mental health issues or challenges. Nevertheless, career satisfaction among racehorse trainers appears high, with 72% classified as satisfied with their careers. One potential reason for this is that working with horses may act as a stress-buffer for the trainers, with research highlighting the positive impact working with horses can have on an individual's mental health (Hallberg, 2008). Further research is needed to identify other areas that may contribute to the career satisfaction of trainers.

Trainers reported moderate to high levels of perceived social support, with social support dimensions appearing to serve as a protective factor for meeting the

criteria for distress, depression and generalised anxiety. This may be due to the close-knit nature of the horseracing industry, wherein significant others and family members often work alongside one another. Indeed, anecdotally, a host of trainers currently working in Ireland have continued the family business when a relative has retired from the sport. Research suggests that positive or protective effects of social support are due to both direct and indirect concepts, whereby mental health is benefited directly through close social relationships, and indirectly via buffering in stressful situations (Gariépy *et al.*, 2016). Future research of interest would include the potential disparity between *perceived* and *received* social support measures. Currently, the effects of trainers *receiving* social support are not known, however previous studies have identified that factors relating to specific stressors, providers and the recipient all play a key role in the effectiveness of received support (Maisel & Gable, 2009). As such, careful consideration should also be made to the type of intervention delivered to the individual (e.g., online vs face-to-face).

As with any research project, the present study is not without limitations. Firstly, whilst the sample size was large ($n = 124$), the survey response rate was 28% and it may be possible that the data is not fully representative of the larger racehorse trainer population in Ireland. For instance, the mean number of staff employed was 3.4 staff numbers, but the range varied from 0 – 40. Similar concepts apply to the total number of horses in training reported by the present sample, with the average number reported at 15.7, with the range between one and 150. Thus, it may be the case that our sample consists of smaller racehorse trainers, indicated by the relatively low averages of horses in training and staff employed. However, findings in the United Kingdom reported that majority of trainers employ one to five workers, and on average train one to 19 horses (McConn-Palfreyman *et al.*, 2019), suggesting that the majority of racehorse trainer

businesses are smaller in stature. Furthermore, due to the anonymous nature of the study, with recruitment procedures blinded to the lead researcher, non-response analysis could not be conducted. Consequently, it is possible that those with mental health issues were more inclined to respond to the questionnaire. Lastly, we acknowledge the limitations associated with self-reported data in relation to mental health research. It is possible that trainers were under or over-motivated to answer questions in a certain manner dependent on factors such as lived experience or stigma. Nonetheless, the questionnaires were conducted anonymously so it is hoped these issues were avoided.

Conclusion

The present study is the first study in Ireland to examine racehorse trainer mental health using validated screening measures. Key findings include the prevalence of symptoms of CMDs, with nearly one in two trainers (45%) meeting the criteria for any CMD, the most prevalent being those meeting the criteria for depression (41%). Risk factors for trainer mental health may include career dissatisfaction, financial difficulties and lower levels of social support. Identifying and implementing specific bespoke interventions for racehorse trainers is a challenge until the research and understanding around the varying areas of mental health and mental illness within this population are better understood. As such, future research may consider a broader approach given the nuances and unique nature of a career as a racehorse trainer, moving beyond presence of symptoms, examining other areas reported to impact mental health (e.g., identity, stigma), as well as the possible development of bespoke interventions and support structures.