

Inside edge – prevalence and factors associated with symptoms of anxiety/depression in professional cricketers

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Abstract

The purpose of this study was to i) determine the prevalence of anxiety/depression symptoms in professional cricketers and ii) identify factors associated with symptoms of anxiety/depression. One-hundred and seventy-seven (n=177, response rate of 76%) professional cricketers completed the General Health Questionnaire 12 (GHQ-12). Odd ratios (OR) for anxiety/depression symptoms were related to players' career, family and education. Prevalence of symptoms of anxiety/depression was 59% (n=104/177). Anxiety/depression symptoms increased when players were contracted for more than 2 years (OR: 5.0; 95% CI: 1.2-21.3; p=0.028) and if they played their last offseason overseas (OR: 3.5; 95% CI: 1.3-9.6; p=0.013). Anxiety/depression symptoms decreased by 70% when players made 'productive use' of their time in the offseason (OR: 0.3; 95% CI: 0.1-0.9; p=0.036) and contracted for 2 years (OR: 0.3; 95% CI: 0.1-1.0; p=0.049). These findings can be incorporated into cricket mental health literacy programmes to improve awareness and understanding, and to encourage early help-seeking.

Keywords: Mental Health; Cricket; General Health Questionnaire.

Introduction

Athlete mental health, like physical health, can be considered a resource that allows athletes to function, cope with stress, perform and achieve their goals (Gorczyński et al., 2019; Ogden et al., 2022). If an athlete's mental health is not protected, the athlete may be at risk of developing mental health symptoms and subsequent disorders, which may lead to injury, poor performance, early retirement, and potential risk of harm to self and others (Purcell et al., 2019; Reardon et al., 2019; Rice et al., 2016). Given this importance, and the extant peer-reviewed literature, consensus-based guidelines and recommendations to promote and manage the mental health of an athlete have recently been published, along with frameworks and tools to help prevent and care for athletes with mental ill-health concerns (Gouttebauge et al., 2021; Henriksen et al., 2020; Purcell et al., 2019; Reardon et al., 2019). These consensus statements and frameworks discuss athlete mental health in general, but emphasise the need for more symptom- and sport-specific research.

Cricket is one of the world's most popular team sports, with 106 member countries, over 300 million male and female participants, and in excess of 1 billion fans (International Cricket Council, 2018). From a mental health perspective, cricket has been argued to have a unique set of challenges compared to other team sports (McCabe et al., 2021; Ogden et al., 2022). These include: how performance is appraised primarily using individual game statistics (for example, runs scored), the different formats of the game (5-day tests, 50 overs (1-days) and 20 overs (Twenty20), and extensive travel and time away from home. For example, an international cricket tour may last up to two months and require playing all formats of the game. To date, six peer-reviewed studies have been published focusing on the mental health of cricketers (McCabe et al., 2021; Ogden et al., 2022). Only one of these studies included current professional cricketers and reported symptom-specific disorders (Schuring et al., 2017).

Globally, it is estimated that 264 million people (3.6% of the global population) and 322 million people (4.4% of the global population) suffer from some form of anxiety or depression (World Health Organisation, 2017). Anxiety is defined as the anticipation of a future threat and is characterised by feelings of apprehension and fear, while depression is characterised by sadness, apathy, guilt, low self-esteem, disturbed sleep, decreased appetite, tiredness and poor concentration (American Psychiatric Association, 2013). Depression can be chronic or recurrent and can significantly affect an individual's ability to cope with daily life. Despite being different, anxiety and depression are closely linked. Approximately 85% of patients suffering from depressive disorders also experience symptoms of anxiety (Gorman, 1996), while depression occurs in up to 90% of patients with anxiety disorders (Gorman, 1996). Considering this close link, anxiety and depression have been assessed as one construct in research and screening (for example, the General Health Questionnaire, GHQ-12)(Goldberg et al., 1997; Goldberg & Hillier, 1979; Goldberg & Williams, 1988). The GHQ-12 specifically is a popular tool to assess symptoms of anxiety/depression and has been used in community, clinical and sport settings(Armino et al., 2021; Gnambs & Staufenbiel, 2018). The popularity of the GHQ-12 can be attributed to its robust psychometric properties and being quick and

unobtrusive to administer (Goldberg et al., 1997; Goldberg & Hillier, 1979; Goldberg & Williams, 1988).

Anxiety/depression symptoms among athletes is a major concern, with a prevalence and incidence ranging from 21% to 48%, and 17% to 57%, respectively (Armino et al., 2021). Most of these studies have been conducted in professional football (Armino et al., 2021). For example, using the GHQ-12, Gouttebarga et al. (2015) reported an anxiety/depression symptom prevalence range of 25%-43% for 540 professional footballers across five European countries (Gouttebarga et al., 2016). As mentioned, only one study to date has investigated anxiety/depression symptoms among current professional cricketers. Specifically, an anxiety/depression symptom prevalence of 37% and 27%, respectively, was reported in a moderate sized cohort of both current (n=78) and former (n=38) professional South African cricketers (Schuring et al., 2017). Career dissatisfaction, major injury, surgery, and adverse life events were also associated with increased symptoms of anxiety/depression (Schuring et al., 2017). Based on these findings, it appears that contributing factors related to symptoms of anxiety/depression in cricketers could be divided into three categories - career, family and education.

Recently, in recognition of the unique challenges cricketers face, a call to improve the mental health support of professional cricketers was made in an editorial (Mahmood & Friedman, 2021). Based on the elite athlete mental health and well-being framework (Purcell et al.), Mahmood and Friedman proposed the symptom-specific screening and identification of contributing factors for professional cricketers (Mahmood & Friedman, 2021). The primary goal of symptom-specific screening is to identify players 'at risk' of mental-ill health issues in the early stages to prevent it from leading to a more serious medical condition. Many mental ill-health contributing factors are potentially modifiable, therefore identifying them is important to not only to prevent mental ill-health but also promote and optimise mental health (Purcell et al., 2019). The purpose of this study was therefore to i) determine the prevalence of anxiety/depression symptoms in current professional cricketers and ii) identify contributing and protective factors associated with symptoms of anxiety/depression in professional cricketers.

Methods

A cross-sectional survey design was used to identify players with symptoms of anxiety/depression. The study was conducted in accordance with the Declaration of Helsinki Ethical Principles for Medical Research involving Human Subjects (2013) and was approved by the University of Cape Town Human Research Ethics Committee (HREC REF: 540/2018).

Participants were current professional cricketers who are members of the South African Cricketers' Association (SACA). SACA contacted and sent an online survey to all 233 current professional South African cricketers to participate in the study. The study formed part of a larger SACA health and well-being project, of which the measurement of anxiety/depression symptoms was one component. One-hundred and seventy-seven (n=177) players across 13 domestic teams (response rate of 76%) completed the online survey. Participants completed the survey on their personal electronic devices in one sitting during a standard, scheduled SACA-player team meeting session. Completion of the survey was supervised by the Personal Development Manager (PDM) to ensure the participants completed all the questions as accurately as possible and to standardise data collection across the 13 teams. The full survey took 30-60 minutes to complete.

The survey consisted of two parts. Part one captured information about the players' career (e.g. main role in the team, level of cricket i.e. Division 1 or Division 2), family (e.g. marital status, whether they had children) and education (e.g. highest level of education, whether they were currently studying.). Part 1 also asked players how 'productive' they were during different phases of the season. For this study, 'productive use' was not explicitly defined or measured, as the meaning may differ between players. In other words, the meaning was left up to the player and how they perceived productivity. Part two included the 12-item General Health Questionnaire (GHQ-12) (Goldberg et al., 1997; Goldberg & Hillier, 1979; Goldberg & Williams, 1988).

The GHQ-12 was used to assess players with symptoms of anxiety/depression (Goldberg et al., 1997; Goldberg & Hillier, 1979; Goldberg & Williams, 1988). The GHQ-12 includes six positively phrased

items (e.g., 'Have you been able to concentrate on what you were doing') and six negatively worded items (e.g., 'Have you lost much sleep over worry'). The GHQ-12 has been validated for a recall period of up to several weeks (internal consistency: 0.7–0.9; criterion-related validity: sensitivity \geq 0.70, specificity \geq 0.75, Area Under ROC Curve \geq 0.83) (Goldberg et al., 1997). The traditional scoring method was used where the scores are summed to give a total score ranging from 0-12 with a score of \geq 3 indicating symptoms of anxiety/depression (Goldberg et al., 1997).

The prevalence of players with symptoms of anxiety/depression (reported as a percentage, %) was determined from the players' GHQ-12 scores. The GHQ-12 score for each player along with the mean GHQ-12 with 95% confidence intervals are also reported. GHQ-12 scores of \geq 3 indicated symptoms of anxiety/depression (Goldberg et al., 1997). Based on the \geq 3 cut-off, players were grouped into symptoms or no symptoms for logistic regression analyses. For the logistic regression, the specific questions relating to playing career, family and education were treated as explanatory variables. All explanatory variables were tested in one model. For the logistic regression model, likelihood ratio tests were conducted to test the overall effect ($p < 0.05$) of each independent explanatory variable on the main model. An adjusted second model was then computed with the explanatory variables that had a significant effect expanded upon (Hamilton, 2012). Odd ratios (ORs), 95% confidence intervals (95% CI's) and p-values are reported for the logistic regression analyses. Variables are computed relative to a referent or base variable. For example, for relationship status, the base variable was single. No specific selection process was used to decide the reference variable. All statistical analyses were computed using STATA 11.1 (StataCorp, College Station, TX USA).

Results

Participants had a mean age of 25 ± 4 years and 5 ± 4 years experience as a professional cricketer (Table 1). The prevalence of symptoms of anxiety/depression in South African cricketers was 59% ($n=104/177$). The mean GHQ score for the sample was 3.6 (95% CI: 3.2-4.0) (Figure 1).

Table 1. Descriptive information reported as percentages (%). Factors are grouped by category (Family, Education or Career).

Family	Percentage (%)
Relationship status	
Married	14
Single	33
With a partner	53
Children	
No	80
Yes	20
Education	
Highest level education completed	
Secondary Education	58
Tertiary	28
Tertiary (Postgraduate)	10
Vocational Secondary Education	3
Currently studying	
No	63
Yes	37
Career	
Level of Play	
Division 1	46
Division 2	54
Contract duration	
1 year	69
2 year	21
2 + year	10
Highest level of cricket competed	
Division 1	46
Proteas	13
SA Emerging Team	7
SA "A"	10
Division 2	25
Main role	
Batsman	34
Batting all-rounder	20
Bowler	27
Bowling all-rounder	15
Wicket-keeper	5
Played overseas in the last offseason	
No	71
Yes	29
Productive use of spare time in season	
No	26
Yes	74
Productive use of spare time in the offseason	
No	27
Yes	73
Union satisfaction	
Satisfied	50
Somewhat satisfied	31
Unsatisfied	19
Union professionalism	
Agree	54
Disagree	9
Neutral	37
Relocation	
No	45
Yes	55
Currently playing away from home	
No	60
Yes	40
Game time during the 2016/2017 season	
I believe I did not play enough	26
I believe that I was overplayed	2
I believe the amount I played was fair	72

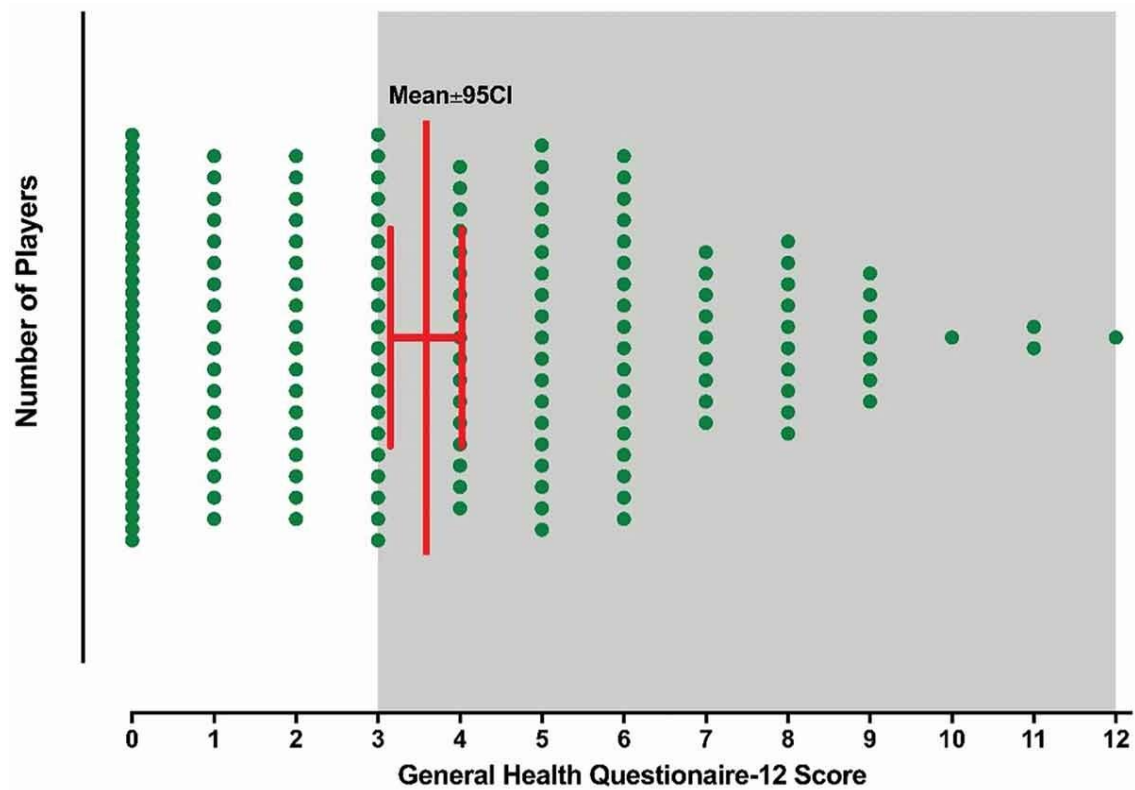


Figure 1. GHQ-12 score for each player. The grey-shaded area indicates players who scored ≥ 3 , which was used as the threshold score for symptoms of anxiety/depression. Mean \pm 95% CI are also indicated (red).

The likelihood of developing symptoms of anxiety/depression increased when players were contracted by a Division 1 team (OR: 7.3; 95% CI: 2.0-26.3; $p=0.002$) compared to a Division 2 team, were contracted for more than 2 years (OR: 5.0; 95% CI: 1.2-21.3; $p=0.028$) relative to 1 year or if they played their last offseason overseas (OR: 3.5; 95% CI: 1.3-9.6; $p=0.013$) (Table 2). The likelihood of reporting symptoms of anxiety/depression decreased by 70% when players made productive use of their spare time in the offseason (OR: 0.3; 95% CI: 0.1-0.9; $p=0.036$) and were contracted for 2 years (OR: 0.3; 95% CI: 0.1-1.0; $p=0.049$) compared to a 1 year contract.

Table 2. Logistic regression for symptoms of anxiety/depression. Data are reported as odd ratios (OR) and 95% confidence intervals (95% CI). p values are also reported.

<i>Overall model</i>				
<i>Symptoms (vs. No symptoms)</i>	<i>OR</i>	<i>95% CI</i>	<i>p value</i>	
Age	1.0	0.8-1.1	0.642	
<i>Relationship status (Single)</i>				
Married	1.5	0.3-7.1	0.635	
With a partner	1.0	0.4-2.3	0.981	
<i>Children (No)</i>				
Yes	1.2	0.4-3.7	0.788	
<i>Level of education (Secondary education)</i>				
Tertiary	1.6	0.7-3.8	0.282	
Tertiary (postgrad)	1.7	0.4-6.5	0.474	
Vocational Secondary Education	2.3	0.2-19.0	0.447	
<i>Study status (No)</i>				
Yes	1.8	0.8-4.2	0.154	
<i>Years as a professional</i>	1.0	0.8-1.1	0.540	
<i>Level of Play (Division 2)</i>				
Division 1	7.3	2.0-26.3	0.002	
<i>Contract duration (1 year)</i>				
2 years	0.3	0.1-1.0	0.049	
+2 years	5.0	1.2-21.3	0.028	
<i>Highest level of cricket (Semi-professional)</i>				
Franchise	0.8	0.3-2.1	0.606	
Proteas	0.5	0.1-3.8	0.475	
SA Emerging Team	0.4	0.1-2.2	0.274	
SA "A"	0.2	0.0-1.5	0.119	
<i>Main role (Batsman)</i>				
Batting all-rounder	0.8	0.3-2.3	0.706	
Bowler	1.0	0.4-3.0	0.893	
Bowling all-rounder	1.5	0.5-4.8	0.498	
Wicket-keeper	1.1	0.2-6.5	0.922	
<i>Played last offseason overseas (No)</i>				
Yes	3.5	1.3-9.6	0.013	
<i>Productive use of spare time in-season (No)</i>				
Yes	1.8	0.6-5.6	0.310	
<i>Productive use of spare time offseason (No)</i>				
Yes	0.3	0.1-0.9	0.036	
<i>Union satisfaction (Satisfied)</i>				
Somewhat satisfied	0.5	0.1-1.7	0.270	
Unsatisfied	1.4	0.3-5.5	0.645	
<i>Union professionalism (Neutral)</i>				
Agree	1.0	0.3-3.1	0.993	
Disagree	3.8	0.5-28.1	0.190	
<i>Relocation (No)</i>				
Yes	0.9	0.3-2.7	0.857	
<i>Playing away from home (No)</i>				
Yes	0.6	0.2-1.6	0.317	
<i>Game time in 2016/2017 season (Played a fair amount)</i>				
Did not play enough	0.8	0.3-1.9	0.547	
Overplayed	0.2	0.0-3.7	0.258	

Discussion

The purpose of this study was to determine the prevalence of anxiety/depression symptoms in current professional cricketers and identify potential contributing factors associated with these symptoms.

The prevalence of symptoms of anxiety/depression for this study cohort was 59%, which is higher than previously reported for current cricketers (37%, n=78) and former cricketers (27%, n=38)(Schuring et al., 2017), and other elite level athletes (ranging from 21% to 48%)(Armino et al., 2021). The prevalence is also higher than South African emergency services personal (44%, based on GHQ-28)(Ward et al., 2006) and medical doctors (51%, GHQ-12)(Govender et al., 2012), but not dissimilar to South African nurses (60%, based on GHQ-28)(Khamisa et al., 2017). Compared to Schuring et al, we can speculate as to why the prevalence of anxiety/depression symptoms in the present study was higher in the current sample of cricketers (Schuring et al., 2017). The surveys were conducted at different times - Schuring et al. (2017) conducted their survey in 2015/2016, while the current study was conducted in 2018. Thus, the obvious conclusion is that the prevalence of symptoms of anxiety/depression increased in professional cricketers over the 2–3-year period. After the Schuring et al. (2017) survey, cricketers and teams may have also become more aware of their mental health and the need to destigmatise it, which resulted in more perceptive responses. The sample size between the two studies (177 (76% response rate) in the current study vs 78 (response rate 52%) in previous study), stage of the season and setting when completing the GHQ-12 may also explain the difference in prevalence between the two studies. In the present study, players completed the GHQ-12 during the pre-season in a controlled scheduled SACA-player team meeting session, while Schuring et al. (2017) sent a link via email (it is unclear during which stage of the season Schuring et al. (2017) conducted their survey). Irrespective, the high prevalence of symptoms of anxiety/depression in the present study reinforces the mental health concerns in professional cricket.

The current study also identified both contributing and protective factors for anxiety/depression symptoms. Both the contributing and protective factors were career-related, suggesting that they are highly modifiable. Cricketers competing at a higher divisional level, contracted for more than two years, or having played overseas in their last offseason were more likely to report symptoms of anxiety/depression, while cricketers making ‘productive use’ of their spare time in the offseason and contracted for 2 years had a 70% lower probability of developing symptoms of anxiety/depression. Recently, using a qualitative exploratory research design, Ogden and colleagues identified contracts

and stability as a major theme that could both negatively and positively impact a cricketer's mental health (Ogden et al., 2022). Specifically, players in the final year of their contract had financial worries and felt unstable due to the prospect of not having a job, which increased their self-report of anxiety and negatively impacted their mental health (Ogden et al., 2022). In support and extending Ogden et al. (Ogden et al., 2022) conclusions, our findings suggest that short-term (1 year) contracts may not offer players stability, placing them at risk of experiencing symptoms of anxiety/depression. Longer-term contracts (more than two years) on the other hand, may also manifest into symptoms of anxiety/depression because players may feel they have fully committed to one team for an extended period, thereby potentially missing out on other opportunities. In the other words, longer-term contracts (more than two-years) do not offer players flexibility. In contrast to one-year and two-year plus contracts, two-year contracts afford players stability and flexibility, which positively affects their mental health.

How players used their off-season seems to be a key contributing factor for symptoms of anxiety/depression. Playing overseas in the last offseason increased the potential for anxiety/depression symptoms, while players that made productive use of their spare time in the offseason had a lower chance of experiencing anxiety/depression symptoms. From a general periodization perspective, the off-season should be viewed as a window of opportunity for players to recover and 'rebuild' for the start of the following season (Mujika et al., 2018). During the off-season a significant decrease or complete cessation of team training is observed, to allow players to physically rebuild and recondition for the upcoming season. Psychologically, the off-season provides players with the opportunity to reflect and reset. It is a period to spend meaningful time away from the sport, and engage in other activities of interest (Mujika et al., 2018). Recently, based on surveys and interviews of professional men's 15s rugby union players perceptions of psychological recovery and physical regeneration during the off-season, Mellalieu et al. (2022) modelled three distinct phases of the off-season that are important for athlete well-being – 1) decompression from the previous season 2) cognitive detachment from the sport and 3) preparation for the upcoming season (Mellalieu, 2022). Decompression from the previous season describes a period where players attempt to unwind or

'come down' from the pace and intensity of the day to day demands of professional sport before being able to fully take 'a break' from the sport itself(Mellalieu, 2022). Cognitive detachment refers to the period of the off-season where players feel they are genuinely able to mentally switch off and detach themselves fully from thinking about sport-related demands (for instances, a vacation trip)(Mellalieu, 2022). Preparation for the upcoming pre-season describes the activities that players engage in ready for a return to their sporting environment (for example, physical conditioning)(Mellalieu, 2022). Our findings support such a model - players that use their spare time productively in the offseason may be in healthier mental state going into the new competitive season than players that did not. Cricketers that choose to play overseas during the off-season forfeit the benefits of decompressing, detaching and preparing for the upcoming season, which may have a compound effect on player's anxiety/depressive symptoms if not properly managed. That is, in addition to losing the benefits of an off-season, also carry the physical and mental burden of playing another competitive season before their next competitive season. In effect, it is three competitive seasons without any significant rest and recovery away from the sport. Furthermore, while playing overseas, cricketers may not have access to their normal social support mechanisms, negatively impacting their mental health further (Ogden et al., 2022; Purcell et al., 2019). Collectively, these findings highlight the importance of time-off from cricket to do other meaningful activities and establishing a work-life balance to protect against developing symptoms of anxiety/depression during the season. With that said, should players wish to play overseas during their off-season, mechanisms to monitor and manage player psychological load (in addition to the typically monitored and managed physical training load) should be in place throughout the year. This requires an ecological systems approach, which we will discuss next.

In 2019, Purcell et al (2019) described a comprehensive ecological systems framework to promote positive mental health and prevent mental-ill health(Purcell et al., 2019). The framework highlights the important role the athlete's ecological dynamics (i.e. the interactions within the athlete's broader social and cultural context) plays in promoting positive mental health. For example, 'the microsystem' includes the team and management, while governing bodies form 'the exosystem'. In addition to the ecological dynamics in which the athlete functions, the framework emphasises the

need to prevent mental-ill health symptoms, along with early detection and focused-intervention(Purcell et al., 2019). Mental-ill health preventative measures include providing mental health literacy to improve awareness and understanding, reduce stigma and encourage early help-seeking. Other foundational preventative measures include focusing on the athlete's career and personal development goals and facilitating the achievement of these goals, and providing athletes with mental health screening and feedback. In an editorial, Mahmood and Friedman showed how this comprehensive ecological systems framework can be applied to cricket, and further emphasised the point of symptom-specific screening and risk factor identification(Mahmood & Friedman, 2021). The methods and findings of this study provides data to amplify Purcell's mental health prevention framework for cricket. For example, the anxiety/depression symptom contributing and protective factors identified can be discussed in cricket mental literacy programmes. Also, as mentioned earlier, cricketers wishing to play overseas during their off-season should be provided with symptom-specific mental health support, but not only at the level of the athlete. The cricketer's microsystem and exosystem should also be optimised to promote positive mental health and preventing mental-ill health. To do this effectively, anxiety/depression symptoms should be screened and monitored (Currie et al., 2021). Recently, the International Olympic Committee (IOC) recognised this need to appropriately screen for mental health symptoms and disorders in elite athletes throughout their career and developed the Sport Mental Health Assessment Tool 1 (used by sports medicine physicians and other licensed/registered health professionals) and the Sport Mental Health Recognition Tool 1 (used by athletes' coaches, family members and other members of the athlete's entourage)(Goutteborge et al., 2021). Also, in a recent review on the GHQ-12 in sport, Armino et al suggested that the GHQ-12 can potentially be used as monitoring tool for anxiety/depression symptoms(Armino et al., 2021).

A key strength of the present study is the sample size - the largest sample of professional cricketers in cricket anxiety/depression research. A notable weakness on the other hand, is the cross-sectional study design. While most studies in sport that have adopted the GHQ-12 use a cross-sectional study design(Armino et al., 2021), the GHQ-12 can be used to assess symptoms of anxiety/depression prospectively. As mentioned earlier, the GHQ-12 can potentially be used as a monitoring tool to

screen for symptoms of anxiety/depression. Routine GHQ-12 assessment will offer insight into whether players GHQ-12 scores change based on time (e.g. time of the year) and/or event (e.g. major injury or winning a series) dependent factors. It also worth noting that the study was specific to male South African professional cricketers. This may be seen a positive in that the sample was homogenous and from a highly regarded cricket nation. These positives however may limit the generalizability of the findings to other cricket playing populations – for example, developing cricket nations and female cricketers. With that said, we recommend cricket playing countries (developed and developing) embark on similar mental health studies for comparison in both male and female cohorts to optimise positive mental health and prevent mental-ill health. Finally, it is important to note that mental health is a complex construct, especially within the sporting setting (Lundqvist et al., 2022).

Anxiety/depression symptoms may be a natural, and even healthy, response to elite sport career-related stresses (Lundqvist et al., 2022). Recently, Lundqvist et al. (2022) highlighted the need for researchers and practitioners to be cognisant of this ‘natural’ variation in mental health symptoms, which are non-clinical and therefore require mental health support - compared to an actual psychiatric disorder, which will require psychiatric care.

Conclusion

The prevalence of symptoms of anxiety/depression for this study cohort was 59%, which is higher than previously reported for current cricketers (37%, n=78) and former cricketers (n=38) (27%), and other elite level athletes (range from 21% to 48%). Both the contributing factors and protective factors were career-related, which could be modifiable. Cricketers competing at a higher divisional level, contracted for more than two years, or played overseas in their last offseason had a higher chance of developing symptoms of anxiety/depression, while cricketers making productive use of their spare time in the offseason and contracted for 2 years had a 70% lower probability of developing symptoms of anxiety/depression. Using an ecological systems approach, these findings can be incorporated into mental health literacy programmes for cricket to improve awareness and understanding and encourage early help-seeking. The findings also allow cricket stakeholders to provide targeted (for example,

cricketers wishing to play overseas) symptom-specific mental health support to optimise positive mental health and prevent mental-ill health.

Practical Applications:

- Cricketers competing at a higher divisional level, contracted for more than two years, or played overseas in their last offseason were more likely to develop symptoms of anxiety/depression.
- Cricketers making productive use of their spare time in the offseason and contracted for 2 years had a 70% lower probability of developing symptoms of anxiety/depression.
- The contributing factors and protective factors identified in this study should be included into mental health literacy programmes for cricket to improve awareness and understanding, and encourage early help-seeking.
- Cricket stakeholders can also use the identified contributing factors and protective factors to provide targeted symptom-specific mental health support to optimise positive mental health and prevent mental-ill health.

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