

Occurrence of common mental disorders among former elite athletes

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Abstract

Participating in elite sports can be beneficial for many reasons - but the question arises: what is the payoff to be an elite athlete or what are the consequences of being an elite athlete in sports? The phenomenon which became popular and opens many conversations in sport and psychology circles is the occurrence of common mental disorders (CMD) in former elite athletes.

In this literature review, three electronic databases were searched: PubMed, Web of Science, ScienceDirect.

This paper summarizes eight studies which were selected following the PRISMA guidelines. The studies covered mental health disorders among former elite athletes and their symptoms: distress, sleep disturbance, anxiety/depression, and alcohol misuse, the occurrence of life events and career dissatisfaction. This literature review showed the prevalence of CMD in former elite athletes.

There were no results about the contribution to developing CMD in former elite athletes. Factors associated with the occurrence of CMD in former athletes included involuntary retirement from the sport, concussions, collision/high contact sport, increased body mass index, osteoarthritis

Keywords mental health • retired athlete • prevalence.

Introduction

Mental health issues are a widespread phenomenon. World Health Organization (WHO) defines mental health as a state of well-being in which the individual is aware of his or her own abilities, is able to cope with daily stresses in life, can work productively, and is able to contribute to his or her community (Organization, 2004). However, there is a need to better define mental health in a sports context (Henriksen et al., 2019). Also, the criterion for mental health in sport is not clearly defined. International Olympic Committee (IOC) brought a consensus statement about mental health in elite athletes (Reardon et al., 2019).

According to WHO, health is a state of complete physical, mental and social well-being and not just the absence of disease or weakness (Organization, 2004). So from the psychological perspective what is mentally illness does not exclude mental health and vice versa. In the last few years, symptoms of anxiety, depression, distress or adverse substance use – are defined as symptoms of common mental disorders (CMD).

Compared to the general population, elite athletes are at greater risk of high-prevalence of some mental disorders such as anxiety or depression (Purcell et al., 2019). There are many stressors that have an impact on elite athletes. A professional sports career is characterized by more than 640 distinct stressors that could induce mental health symptoms and disorders (Arnold & Fletcher, 2012). When it comes to former athlete, there is a prevalence of poor mental health (Vincent Goutteborge, 2017; Kilic et al., 2017). Literature about the state of health in former athletes is mostly focused on CMD and its symptoms. Further, there are some studies that

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show the prevalence of CMD in former athletes (Vincent Gouttebauge et al., 2019; Mannes et al., 2019). Some studies show that prevalence is not so different compared to the general population (Mannes et al., 2019). The purpose of this review was to assess the state of current research literature regarding the occurrence of common mental disorders among former elite athletes.

Method

Study design

This paper has been developed and reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Liberati et al., 2009).

Search strategy

The search strategy was designed to be as broad as possible to identify all potentially relevant literature. Search strategy of terms: (mental health OR mental wellbeing OR mental disorders) AND (retired OR retirement OR former) AND athlete. The screening process included an electronic search of the Web of Science, ScienceDirect and PubMed databases (specific to Title, Abstract, and Keywords only).

The PICOS criterion for defining the research question and synthesis is: Population (former elite athlete), Intervention or issue (common mental disorders), Comparators (NA), Outcome or themes (occurrence).

Eligibility criteria and information sources

Inclusion and exclusion criteria were used to ensure clearly defined boundaries to identify all relevant literature. This study included: (i) former elite athletes; (ii) study design including conceptual, theoretical, and perspective articles, and any years of publication; (iii) mental health viewed as an overall mental state; (iv) the studies were written in English language. Studies were excluded: (i) college athlete; (ii) cause of mental health (transition, drug abuse, concussion); (iii) mental illness in particular (depression, anxiety, panic attack, posttraumatic stress disorder (PTSD)). Studies that were not excluded based on participant characteristics (e.g. age, gender, ethnicity, mental health condition). The decision for inclusion or exclusion of the retrieved studies was based initially on the title, then on the abstract and finally on the full text.

Study records, screening, and selection of citations

Identified studies were uploaded into Zotero software version 5. The citation information included the author, year of publication, title of the paper, journal name, volume, and issue number, page numbers, DOI number, keywords, and the abstract. All duplicates were eliminated from the Zotero database. The full-text articles that would be potential citations were obtained and saved as Adobe PDF files. The whole process of citation is described in Fig.1 in the flow diagram. This review examined self-reported (MI).

Results

Study selection

In total, we found 140 articles that entered the selection process (Fig. 1). There were 43 duplicates and these were removed. Furthermore, 97 articles were excluded through the screening of titles and abstracts. After screening the titles and abstracts, 54 records were excluded because they did not meet inclusion criteria, and 43 articles were read in depth to determine eligibility. Of these, 35 articles were excluded for reasons shown in Figure 1. A total of 8 articles underwent full data extraction and were included in this review.

All 8 articles were sorted by the author's name. There were 5 cross-sectional studies and all of them showed prevalent anxiety and depression and some of them alcohol use and distress in former athletes. Also, a prospective cohort study showed the prevalence of anxiety and depression, distress and alcohol use. In two observational studies, results showed prevalence of anxiety and depression, and in a smaller percentage of distress and alcohol abuse. Complete results with percentages are presented in Table 1.

Table 1. Descriptive characteristics of article reviewed.

Authors	Year	Sample	Design	Instrument	Main Findings
Gouttebarga et al.	2015	Current professional football players (n = 149) Former professional football players (n = 104)	an observational study	The Distress Screener Burn-Out Scale General Health Questionnaire Rosenberg's Self-Esteem Scale AUDIT-C Questionnaire on the Experience and Evaluation of Work Social Athletic Readjustment Rating Scale	<ul style="list-style-type: none"> • In former and current professional football players the prevalence of mental health problems was up to 26% and 39%; the most commonly reported condition was anxiety and depression. •The prevalence of psychosocial difficulties such as low self-esteem ranged from 5% to adverse nutrition behavior to 42% in former players. •Former players with low supervisor support and recent life events were more likely to have mental health complaints.
Gouttebarga et al.	2017	Current professional national ice hockey players (n = 81) Former professional national ice hockey players (n = 77)	a prospective cohort study	Distress Screener General Health Questionnaire (GHQ-12) Patient-Reported Outcomes Measurement Information System (PROMIS) AUDIT-C Social Athletic Readjustment Rating Scale	<ul style="list-style-type: none"> •A substantial prevalence and 6-month incidence of symptoms of CMD were found among retired professional ice hockey players. •The (4-week) prevalence of symptoms of CMD among former elite players ranged from 12% for distress to 29% for adverse alcohol use. Around 13% of the former players reported two simultaneous symptoms of CMD, 10% three simultaneous symptoms of CMD and 1% four simultaneous symptoms of CMD. The incidence of symptoms of CMD among elite players over the follow-up period of 6 months ranged from 8% for distress, anxiety/depression, and eating disorders to 25% for sleep disturbance. •The occurrence of symptoms of CMD was related to the presence of distress, severe musculoskeletal injuries, alcohol use, recent life events, surgeries, and career dissatisfaction. •Former professional players exposed to a higher level of career dissatisfaction and/or higher level of surgeries is 7 to 8 times more likely to report symptoms of CMD to compare to those who were less or unexposed.
Gouttebarga et al.	2017	Current elite athlete (n = 203) Former elite athlete (n = 282)	cross-sectional analysis	Distress Screener General Health Questionnaire (GHQ-12) Patient-Reported Outcomes Measurement Information System (PROMIS)	<ul style="list-style-type: none"> •Prevalence (4-week) of symptoms of CMD (not clinically diagnosed) ranged from 18% for distress to 29% for anxiety/depression among former elite athletes. This result is similar to athletes from other sports disciplines and comparable with the lifetime prevalence estimates in the general population of the Netherlands. • A higher level of career dissatisfaction, a higher number of severe injuries, surgeries, recent adverse life events, and lower level of social

				The Eating disorder Screen for Primary care AUDIT-C Social Athletic Readjustment Rating Scale Greenhaus scale Social Support Questionnaire	support were related to the occurrence of symptoms of CMD among former elite athletes.
Gouttebargé et al.	2016	Former elite rugby players (n = 295)	cross-sectional analysis	Distress Screener General Health Questionnaire (GHQ-12) Patient-Reported Outcomes Measurement Information System (PROMIS) Social Athletic Readjustment Rating Scale Greenhaus scale	<ul style="list-style-type: none"> •Prevalence of symptoms of CMD among retired professional players ranged from 15% for smoking and 25% for distress to 62% for adverse nutrition behavior. •There were associations between a higher number of life events and distress, sleeping disturbance, anxiety/depression, and adverse nutrition behavior, and also for a higher level of career dissatisfaction and distress, and adverse nutrition behavior.
Jones et al.	2018	Former cricket players 50+ (n=113) Population (n=4496)	cross-sectional analysis	NA	<ul style="list-style-type: none"> •Anxiety and depression were more prevalent in former elite cricketers than a normal population.
Kilic et al.	2017	Current football players (n= 348) Retired football players (n= 345) Current handball players (n= 232) Retired handball players (n= 230)	cross-sectional analysis	Distress Screener General Health Questionnaire (GHQ-12) Measurement Information System (PROMIS) AUDIT-C Social Athletic Readjustment Rating Scale	<ul style="list-style-type: none"> •Prevalence (4 weeks) of symptoms of CMD ranged from 8% for adverse alcohol use to 19% for anxiety/depression among retired professional football players. •Prevalence (4 weeks) of symptoms of CMD ranged from 7% for adverse alcohol use to 16% for anxiety/depression among retired professional handball players. •Among retired both, handball and football professional players, a higher number of severe injuries and a higher number of recent adverse LE were especially related to the presence of symptoms of CMD •Professional football and handball players exposed to a higher number of severe injuries and/ or a higher number of recent adverse LE are 20– 50% times more likely to report symptoms of CMD during or after their career by comparison with those less or unexposed.

Mackinnon et al.	2019	Former professional male jockeys (n=135) Participants from the reference population (n=675)	cross-sectional analysis	NA	<ul style="list-style-type: none"> •The study found a higher prevalence of self-reported anxiety and depression compared to the reference population.
Schuring et al.	2017	Current cricket players (n=78) Former cricket players n=38)	an observational prospective cohort study	Distress Screener General Health Questionnaire (GHQ-12) Measurement Information System (PROMIS) AUDIT-C Social Athletic Readjustment Rating Scale Greenhaus scale	<ul style="list-style-type: none"> •Prevalence was 26% for distress, 21% for sleep disturbance, 24% for anxiety/depression, and 22% for adverse alcohol use. •All stressors (surgery, injury, career dissatisfaction, life events) were associated with an increased risk of symptoms of CMD.

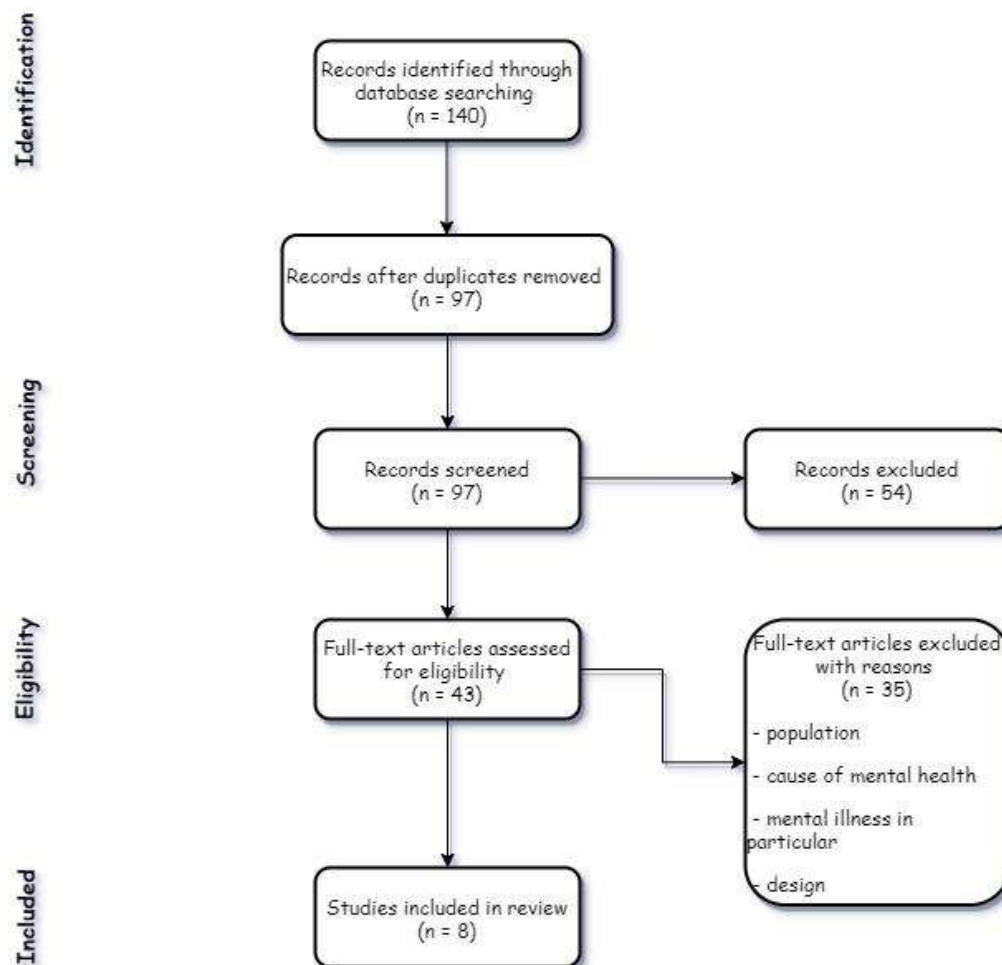


Figure 1. The PRISMA flow diagram

Discussion

According to the studies, the cause of poor mental health in former athletes usually lies in something physical like injury or surgery. Also distress or retirement could be one of the causes (Gouttebarga et al., 2015; Gouttebarga et al., 2017; Schuring et al., 2017). The important thing that can be a limitation is that there were no observations and measurements by medical professionals, but former athletes self-reported their symptoms (Kilic et al., 2017; Mackinnon et al., 2019). There are several causes of poor mental health in former athletes: higher number of severe injuries, recent life events, low social support and career dissatisfaction could be associated with mental health problems (Gouttebarga et al., 2015; Gouttebarga et al., 2016; Kilic et al., 2017; Schuring et al., 2017). The cross-sectional analysis assessment did not allow attribution of causation. To summarize, from all eight studies the assumptions about the possible cause were: involuntary retirement,

osteoarthritis, collision/high contact sport, injuries, concussion, low social support, substance use (illicit drug, tobacco, alcohol consumption, anabolic androgenic steroids), misuse and psychological distress during the career. Using anabolic-androgenic steroids (AAS) during career can also be a risk factor for mental health in late life (Lindqvist et al., 2013). Only in one study the authors said that mental health is a rather taboo subject among professional athletes, so they hypothesize that the prevalence of CMD symptoms might be underestimated (Kilic et al., 2017). Some authors brought a consensus statement about mental health in sport. Mental health is an important component of overall health; In a sport context, mental health should be better defined; Research should look at the bigger picture on mental health in sport and therefore expand the scope of assessment; Athlete's mental health is an important thing for the whole athletic career and the post-athletic career; The environment can have a positive impact on athletes' mental health; Mental health is a

phenomenon that all athlete experience but should be followed by professionals (Henriksen et al., 2019). From all these results the need for bringing more attention to mental health in sport during athletes' career but post-career too, is clearly evident. There are still many mental disorders that have not been investigated in sport but compared to non-athletic peers and standards that exist in the general population, athletes and former athletes seem to have higher prevalence rates for the most CMD (Moesch et al., 2018). The European Federation of Sport Psychology (FEPSAC) suggest a model of service and it provides help for elite athletes suffering from CMD, so that model could be potentially useful for former athletes as well (Moesch et al., 2018). Also, an International Olympic Committee made a consensus statement for future directions for mental health in elite sport (Reardon et al., 2019).

Conclusion

In all 8 studies, there was a prevalence of CMD in former athletes. This review showed prevalence in common mental disorders in former athletes. Studies show that factors associated with involuntary retirement, osteoarthritis, injuries, low social support, substance use, collision/high contact sport, concussion could explain the prevalence of the mental health in former athletes.

Perspectives

The overall study quality in the field of mental health in former elite athletes is poor. In addition, a sample of subjects may not be representative of the findings. In all these studies, former athletes from collective sports were selected for the sample, so the results may be different in an individual sport. Also, the results may vary depending on when the athlete ended his career. Furthermore, most studies were self-reported rather than diagnosed by professionals. Following this, it is questionable whether and how much athletes are aware of their mental health, whether they know how to recognize some symptoms or whether they know how to express themselves at all when it comes to their mental health. The lack of mental health literacy can affect the accuracy of the results but also the creation of a realistic picture of the mental health of former athletes. Since the spectre of mental disorders in elite athletes is largely unknown, psychiatric disorders which are established on the

general population may not give the most accurate results when it comes to elite athletes. More intervention about mental health literacy could be beneficial for a better understanding of this phenomenon at this population. Also, mental health literacy could contribute to developing strategies to improve mental health in former elite athletes.

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