Review Paper

Health and wellbeing among retired elite athletes: Empirical evidence

ANXO PENA-PÉREZ[1], IAGO PORTELA-PINO[2]

[1]Department of Special Didactics. Faculty of Education and Sports Sciences. University of Vigo. Vigo, Spain.
[2]Faculty of Health Sciences. Isabel I University. Burgos, Spain.

ABSTRACT

Objectives: The implications that sport retirement generates among high-level athletes has led to an increase in scientific investigations which describe the quality of life associated to the athletes´ health. The main objective of the study was to determinate the primary problems faced by retired athletes. Study design: The search was carried out in 2 databases: Scopus and WOS. 47 articles were found, 34 and 13 respectively. Method: The design of this study is a descriptive, non-experimental path cast post ex facto retrospection. Results: The research shows three dominant content trends about the quality of life of retired athletes: First mental health, where depression, stress and identity problems were the most notable variables. Second, physical health related to injuries and pain threshold. Last, the quality of life associated to physical activity and healthy habits. Conclusions: Mental health is a key factor to consider before, during and after the sporting career but also physical health is also another determining concept to consider. Physical activity is also a key concept in the lives of retired athletes.

Keywords: Athlete health, Career transition, Retirement.

Cite this article as:
Pena-Pérez, A., & Portela-Pino, I. (2023). Health and wellbeing among retired elite athletes: Empirical evidence. *Journal of Human Sport and Exercise, 18*(4), 903-914. https://doi.org/10.14198/jhse.2023.184.14

Corresponding author. *Faculty of Health Sciences, Universidad Isabel I. Fernán González, 76, Burgos, Spain.*
E-mail: iagoportt92@gmail.com
Submitted for publication June 13, 2023.
Accepted for publication June 16, 2023.
Published October 01, 2023 *(in press* September 12, 2023).
JOURNAL OF HUMAN SPORT & EXERCISE ISSN 1988-5202.

doi:10.14198/jhse.2023.184.14

INTRODUCTION

It is essential to know the health and wellness of retired athletes, being necessary to carry out smooth transitions for retiring athletes (Burns et al., 2022), existing problems as important as even a significantly higher of adverse mental health and sleep disruption in ER and in former prevalence of elite rugby players with a higher number of concussions (Hind et al., 2021), or a study that reported that the athletes of different modalities who retired after exercising at the elite level had higher levels of problems with food addiction compared to other members of the society (Kalkan, 2021).

Studies regarding the sporting retirement of high-level athletes have had a notable increase in the last 10 years due to the importance that this career transition represents for athletes 'health. The current discourse within this field suggests that transition to a non-competitive stage is led by a general change from a social, psychological and health perspective in athletes´ life (Kadlcik & Flemr, 2008). However, there are elements that can facilitate this transition, such as long-term strategies, based on professional support, designed to assist and prepare athletes so that they might better adapt to their new life's (Drawer & Fuller, 2001). The importance of facilitating the access to support and care services is crucial to minimize and control the risk that retired athletes experience in relation to their welfare and well-being (Brown et al., 2018). Different analysis show the different problems existing among athletes once their sporting career is over, these include: adaptation to new physical exercise routines (Plateau et al., 2017; Yao et al., 2020), common mental disorders (Gouttebarge & Kerkhoffs, 2017; Sanders & Stevinson, 2017), nutritional habits and lifestyle´s changes (Yao et al., 2020), labour insertion problems (Ling & Hong, 2014), health affliction due to injuries after retirement (Hind et al., 2020; King et al., 2013) and metabolic problems (Churchill et al., 2018). Furthermore, the interplay of factors such as retirement voluntariness, sport satisfaction and planning undertaken prior to retirement, hinder how athletes manage the transition to a new lifestyle stage (Barriopedro et al., 2019).

Given this situation, our review aims to investigate the productivity indicators of the current topic and explore the different thematic trends and measurement instruments associated with the health and wellbeing of retired elite athletes in order to contribute to the growing knowledge base surrounding the sporting retirement of high-level athletes.

METHOD

Bibliometric analysis is a universal method that, through quantitative techniques, aims to explore the scientific production of a certain discipline over a given time frame (Camps, 2008).

The design of this study is a descriptive, non-experimental path cast post ex facto retrospection (Montero & León, 2002) which aim to analyse the scientific production considering different productivity indicators to describe our discipline.

The search was carried out across two different databases, Scopus and Web of Science. 3 keywords were defined to obtain the documents related to the discipline of study: athletes health, career transition and retirement. The construction of the search string was the following: [Athletes health) AND (Career transition OR Retirement)]. In order to make this analysis more precise, different criterion were applied to select the articles. Search was conducted over the period 2000-2020. In addition, it was established that only scientific articles published in scientific journals would be accepted. Finally, articles within the following research areas were excluded: biochemistry molecular biology, paediatrics, engineering, government law and environmental

sciences ecology. This adjustment caused us to miss significant documents, however, after a preliminary analysis it could be observed that the search equation represented, from and content perspective, the target of this study. A total of 127 articles were found, 56 in Scopus and 71 in WOS; of which 47 were finally selected. A large number of articles did not meet the criteria with regards to the population sample, others were far from the object of study and a minority were not accepted due to the language.

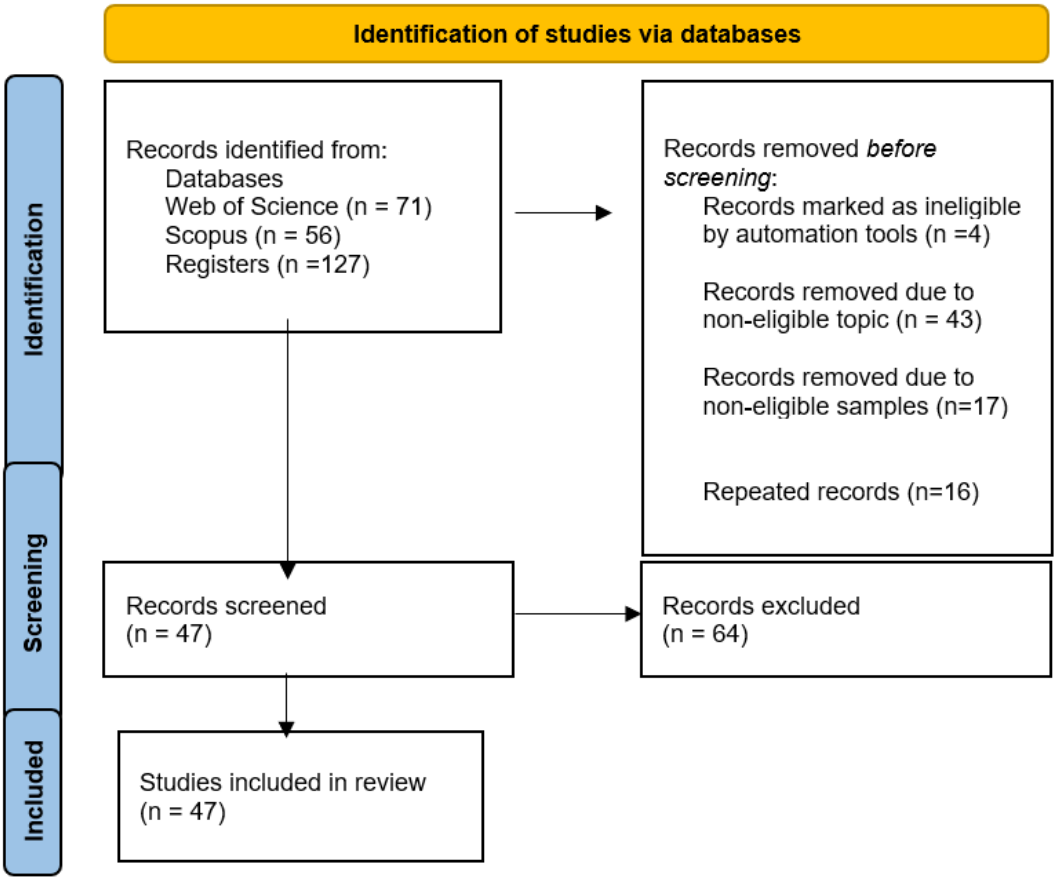

Figure 1. Identification of studies via database.

The bibliometric analysis was carried out in two sections: Firstly, the productivity indicators that provide quantitative data such as type of study, years of production, number of authors, level of collaboration, gender bias, impact indicator, and institution collaboration were reviewed. Secondly, an analysis of content and the measurement instruments implemented in the different investigations. Microsoft Excel program 16.33 was the software used to collect all the data, which was presented graphically and tabulated for a better understanding.

RESULTS

The data analysed from the 47 articles is outlined below. Results were organised into two different categories: The first category explains the Productivity Indicators where it is shown a serial of quantitative data with the purpose of describing how the current situation of our topic is in terms of productivity. The second category concerns the content indicator which describes the thematic trends related to our subject and the most used instruments to analyse the variables belonging to each thematic trend.

Productivity indicators

The results show that the production of this study topic is considerably small. About 90% of the publications have been developed in the last 10 years, with 2017 and 2019 being a clear turning point with 11 publications each. English is the most used language, covering 100% of the results. One of the rationales this review targets outputs from 2000 to 2020 was because after a preliminary review, no articles were found before the year 2000. In addition, our analysis focused on the productivity of journals and also the productivity of published articles by country. With this, we aim to identify if there is a certain tendency of some countries and journals to publish about this topic.

Regarding the productivity of journals, a total of 47 articles were published by 33 journals which 75.75% published a single article, 12.12% two articles, 9.09% three articles and 3.03% four articles. Only 8 journals published more than one article; the British Medical Journal stands out with 4 articles.

Finally, in terms of productivity, England with 12, USA with 11, and The Netherlands with 6, were the countries with the most numerous publications, following by South Africa, Spain, Canada, New Zeeland, Portugal, Switzerland and Sweden with 2 or more publications on this topic.

Collaboration Index

The collaboration index allows us to find out the level of collaboration between authors about the bibliography production with regards to a certain topic. Within this study, 202 authors have been identified. Considering this, and the number of articles used for this investigation, it indicates that in this topic there is a high level of collaboration between authors. 76.59% of the articles have more than two authors participating, 19.14% of the articles were written by two authors and only 4.25% were written by a single author.

Institutional Index

The institutional index allows us to find the number of institutions collaborating in the publications of our study. 109 different institutions were found across the 47 articles. This indicates a high level of collaboration between institutions. Almost all the publications were carried out by two or more institutions, specifically 41 publications which represents 87.23% of the total. Only six articles, 12.76% of the total, were carried out by a single institution.

In addition, we also looked to identify which institutions produced the largest number of publications. Only four institutions published more than two articles: University of Amsterdam (6), University of Cape Town (5), Vrije Universiteit (4), Loughborough University (3). Twelve institutions published at least two articles and 99 different institutions published a single article.

Gender representation in surveys

The results may indicate that there is a female under-representation in the articles analysed. From all the publications, 44.68% show only male representation in the population samples compare to 6.38% on publications with only female representation. The remaining articles either include both genders in the population samples (29.78%) or due to data protection the gender of population participating in the sample is unknown (12.76%). The remaining studies (6.38%) are non-experimental and no population was needed.

Sport type

A high number of publications focus on athletes who belong to team sports, specifically 57.47% of the total. Studies where research has been carried out on individual sports athletes have been the 10.63%. In

remaining publications, due to data protection policies, the sport practiced is unknown or the sample is formed by athletes from both individual and collective sports.

Types of study

The analysis of the types of study was organized in two sections: Experimental studies and non-experimental studies. Among the experimental studies, 63.82% are cross-sectional studies, 6.38% are observational cohort studies, 4.25% are pilot studies, and longitudinal studies are in a minority with 2.12%. Within the non-experimental studies, 6.38% are qualitative studies, 10.63% are case studies and 6.38% are review studies.

Content indicator

Thematic trends and measurement instruments

Five thematic trends were identified within our investigation: Mental health, Physical Health related to pain and injuries, Physical activity, Quality of life and Retirement transition.

The reviewed studies also demonstrate significant variety in the measurement instruments implemented. Many authors with similar methodological objectives choose different measurement instruments, with a clear preference over short versions. On the other hand, the sample acceptance ratio in this type of study is around 30% of the total population contacted (Torregrossa et al., 2019), with certain exceptions in some studies with an acceptance ratio greater than 60% (Bush et al., 2020).

Mental health and instruments implemented

This is the largest thematic trend of our study. When compared to the remaining categories and the number of mentions per publication, mental health occupies 30.15% of the total categories. In addition, although it is not one of the direct objectives of many investigations, a high number of authors mention mental health as a determining concept in the transition stage of sports retirement (Torregrossa et al., 2019). Mental health is a concept that elite athletes must take into account before and after retiring as professional athletes due to the impact it has on the well-being of athletes (Barriopedro et al., 2019).

As shown in Table 1. mental health is a very broad category that has been approached by different authors through different variables and measurement instruments. Sport retirement supposes a stage of change in the habits and customs of athletes that affects the mental health causing problems such as depression (Gardner, 2013; Giannone et al., 2017; Irandoust et al., 2019; Mannes et al., 2020; Sanders & Stevinson, 2017; Schuring et al., 2017), anxiety-related problems as a consequence of stress caused by the beginning of a new lifestyle (Lundqvist, 2020), problems of athletic identity causing difficulties in assimilating changes of life stage (Giannone et al., 2017; Marin-Urquiza et al., 2018), problems related to distress and the loss of control over a new lifestyle (brain damage due to multiple concussions during the sports career causing cognitive impairment (Gallo et al., 2017) or other mental pathologies caused by concussions that affect daily activities of life such as walking (Manor et al., 2020). In addition, problems related to personal satisfaction (Schuring et al., 2017) and emotional development (Wood et al., 2017) are characteristic of retired professional athletes.

Analysing the variables separately, we have found out that in this study, a large number of measurement instruments were used to measure one single variable, which shows a lack of homogeneity, but adequate validity values. To measure depression we have found different measurement instruments such as the self-rating version of the Montgomery-Åsberg Depression Rating Scale (MADRS-S), The Profile of mood States (PROMS), the Short Depression-Happiness Scale (SD-HS) which shows an acceptable level of internal consistency, the Canter of Epidemiological Studies-Depression scale (CES-D), the Four Dimension Symptom

Questionnaire (4DSQ), the Depression Anxiety Stress Scale (DASS) and finally the Beck Depression Inventory (BDI).

Table 1. Mental health.

Theme	Instruments	Reference
Depression	MADRS-S	Lundqvist, 2020
	PROMS	Irandoust et al., 2019
	SD-HS	Sanders and Stevinson, 2017
	CES-D	Giannone et al., 2017 & Mannes et al., 2020
	4DSQ	Gouttebarge and Kerkhoffs, 2017 &Brown et al., 2017
	DASS	Gardner, 2017
	BDI	Marin-Urquiza et al., 2018
Anxiety	GAD-7	Lundqvist, 2020
	STAI	Giannone et al., 2017
	DASS	Gardner, 2017
Identity Problem	AIMS	Giannone et al., 2017
	AIQ	Yao et al., 2018
Distress	Distress Screener	Gouttebarge et al., 2015
	DASS	Gardner, 2017
Brain Damage	MMSE, WMS, FNAME	Gallo et al., 2018
Other Pathologies		
Self-Esteem	RSES	Gouttebarge et al., 2015
Self-Satisfaction	Greenhouse Scale	Gouttebarge and Kerkhoffs, 2017
Anger	IAE	Bush et al., 2020

For the studies that include anxiety within the mental health category, we found measurement instruments such as the Generalize Anxiety Disorder scale (GAD-7), the State-Trait Anxiety Inventory (STAI) and the already mentioned DASS.

With regards the athletic identity the most used measurement instrument was the Athletic Identity Measurement Scale (AIMS), present in various studies (Giannone et al., 2017; Marin-Urquiza et al., 2018). Also, the French version of the Athletic Identity Questionnaire (AIQ), which is a 21-item Likert scale questionnaire also appeared in the study made by Yao et al. (2020).

The Distress Screener was used to identify early stage of distress (Gouttebarge et al., 2015) and the already mentioned DASS which contains a subscale focused on stress.

Concussions have always taken a key role in the development of mental pathologies and its consequences in daily basis activities, such as walking. For this, a different battery of tests was carried out, such as the Mini-Mental State Examination (MMSE), the Wechsler Memory Scale (WMS) and the Face-Name Associative Memory Exam (FNAME). All of the noted tests look to measure cognitive ability.

Other mental pathologies have been included in many publications such as self-satisfaction where the Green House Scale was used as a measurement instrument. Also, the Intermittent Explosive Disorder (IEA) was used to measure the anger. Finally, the Rosenberg Self-Esteem Scale was used to measure the self-esteem.

Physical health and instruments implemented

This represented the third largest category in our study. Physical health is one of the determining factors for athletes when it comes to continuing their professional careers. During the active sports career stage, poor physical health care and attention leads to risk factors associated with mental health and quality of life problems after retirement (Sanders & Stevinson, 2017). Studies show a high number of athletes who continue with their sports careers despite competing with pain or high number of accumulated injuries, a factor that has long-term consequences on physical, emotional and behavioural health (Bush et al., 2020). In the Table 2 it is shown that different variables could expand upon and define the concept of physical health, and therefore the measurement instruments that the authors have taken into account when trying to define it. On the one hand, we find authors who have highlighted pain as a physical health stressor.

Table 2. Physical health.

Theme	Instruments	Reference
Pain	Nagi´s Disability Model	Bush et al., 2020
	VAS	Arliani et al., 2014
	PCS-C	Mannes et al., 2020
Injuries	Self-Wellbeing Survey	King et al., 2013
	DARs	Drawer & Fuller, 2001
	SF-8	Bullock et al., 2020

Different instruments have been implemented for this category such as the Nagi's Disability Model (Bush et al., 2020); the Numerical Rating Scale (NRS) (Sanders & Stevinson, 2017); the Visual Analogue Scale (VAS) (Arliani et al., 2014) and the Pain Catastrophizing Scale (PCS-C) (Mannes et al., 2020). In addition, different measurement instruments were used to analyse the impact of injuries throughout the sporting career such as the Self-Wellbeing Survey (King et al., 2013); the Diagnosis Arthritis Rates Scale (DARs) (Drawer & Fuller, 2001) and the SF-8 which is a health related quality of life assessment (Arliani et al., 2014).

Quality of life and instruments implemented

Quality of life is a very generic topic that can be approached from different perspectives. In our study, we have found authors who use different variables to provide information on the quality of life of athletes after sports retirement. The analysed publications tend to describe the quality of life through variables related to health habits such as alcohol consumption, sleep disturbance or nutritional habits (Gouttebarge & Kerkhoffs, 2017; Schuring et al., 2017). Also, some authors analyse quality of life through indicators on metabolic variables and those related to the body composition (Silva et al., 2020). Table 3. Shows the different measurement instruments that have been used to analyse the quality of life.

Table 3. Quality of life.

Theme	Instruments	Reference
Alcohol Consumption	Audit-t	Shuring et al., 2017
Sleep Disturbance	PROMIS (SD)	Gouttebarge & Kerkhoffs, 2017
Nutritional Habits	Leeds Food Preference Questionnaire	Silva et al., 2020
Metabolic Variables	Blood pressure, resting energy expenditure, blood samples	Silva et al., 2020
Body Composition	Body mass index, Bioimpedance Analysis, Dual-Energy X-ray Absorptiometry, Multispectral Frequency Bioelectrical Impedance	Silva et al., 2020

Due to the breadth of the quality of life concept, many investigations have been developed through interviews and non-validated questionnaires (Filbay et al., 2017). However, other authors have used validated instruments to describe the quality of life among retired athletes such as the Audit-t to measure the alcohol consumption (Schuring et al., 2017), the PROMS-SD to measure the sleep disturbance (Gouttebarge & Kerkhoffs, 2017), the Leeds Food Preference Questionnaire (LFPQ) to identify nutritional habits and a wide range of metabolic test well known in sport medicine such as blood test, Dual-Energy X-ray Absorptiometry, Multispectral Frequency Bioelectrical Impedance, etc (Silva et al., 2020).

Retirement transition and instruments implemented

This is the smallest category of our study. The study of this section is characterized by its appearance in the non-experimental publications of our work. Due to its nature and the way of obtaining information from retired athletes through their own reports, this category lacks of validated measurement instruments and is carried out by open surveys (Plateau et al., 2017) or in-depth interviews where athletes are given the opportunity to extend their responses and explain their own experience through their career transition (Brown. et al., 2017).

Although authors do not tend to use validated questionnaires when studying about retirement transition itself, we found the use of the Social Readjustment Rating Scale that considers the number of life events detrimental on the transition to sport retirement (Gouttebarge et al., 2016).

Physical activity and instruments implemented

Most retired athletes experience changes in self-definition that affects their daily behaviours and habits as they come to accept a non-athletic lifestyle (Yao et al., 2020). During the active sports stage, athletes are supported by a multidisciplinary team, however, once retired there is no such help in the transition into their new lifestyle. The lack of intervention programs to sustain a good lifestyle has caused many athletes to develop different problems due to lack of physical activity (Silva et al., 2020). Studies show the consequences that a sedentary lifestyle has on body composition (body fat and weight) compared to retired athletes who adopt more physically active lifestyles and obtain better values on respiratory function, body composition or mental health. Testimonials from active retired athletes detail the benefits of physical activity such as enjoyment, revitalization and positive health. Other retired, athletes also highlight different barriers to the practice of physical activity such as access to sport facilities or a low level of fitness (Torregrossa et al., 2019).

Table 4. Physical activity.

Theme	Instruments	Reference
Physical Activity Profile	GPAC	Yao et al., 2018
Exercise Engaging	BREQ-3	Gouttebarge and Kerkhoffs, 2017
Physical activity barriers	BEDE	Silva et al., 2020
Motivations to practise physical activity	EMGI	Torregosa et al., 2019

In our study, we have found publications that have implemented different measurement instruments that are shown in Table 4. such as the Global Physical Activity Questionnaire (GPAC), comparable to the International Physical Activity Questionnaire (IPAC), which measures the frequency, intensity and context of the physical activity (Melekoğlu et al., 2019; Yao et al., 2020); the Behavioural Regulation Exercise Questionnaire (BREQ-3) which is used to assess motivation to engage in exercise (Silva et al., 2020); the Barriers to Physical Exercise and Sports (BEDE), which is a Spanish ad hoc questionnaire that measures the perceived barriers to carry out physical activity; finally, the Exercise Motives and Gain Inventory (EMGI) which measures the reasons for participation in physical activity, both instruments present in (Torregrossa et al., 2019).

DISCUSSION AND CONCLUSIONS

This study has shown five different thematic categories that provide relevant information about the transition stage of elite athletes. Although there is a high level of collaboration between authors, athlete transition is still a growing research stream that has generally been addressed by institutions belonging to the United Kingdom, the United States and the Netherlands, where Gouttebarge has been the most highlighted author. Moreover, cross-sectional studies have been the most common study type where a clearly small acceptance ratio is obtained over the study sample, which means that the use of new data collection strategies may be considered when dealing with populations of retired elite athletes.

The content analysis has led us to know 5 categories related to quality of life and health among retired athletes. Recognizing that each of the categories plays an important part in the lives of retired athletes, mental health is one of the most frequent topics within this research domain. Using different measurement instruments, authors have been able to explain the mental health of retired athletes through different variables such as depression, anxiety and identity problems (Gouttebarge & Kerkhoffs, 2017). Mental health is a key factor to take into account before, during and after the sporting career due to the implications it has on the quality of life and well-being (Barriopedro et al., 2019).

Athletes 'physical health is also another determining concept to take into account before, during and after the conclusion of the sports career, as the review suggests that athletes who have been forced to retire due to injuries tend to develop more mental and quality of life problems than those athletes who ended their sports career intentionally (Sanders & Stevinson, 2017). Furthermore, we can affirm that after reviewing these publications, the frequency of injuries alongside poor care and treatment can have long-term repercussions on the athlete's well-being (Bush et al., 2020).

Physical activity is also a key concept in the lives of retired athletes since this new stage implies a restructuring of life goals beyond those that were merely sports focused. There is evidence that physical activity in retired athletes has positive effects on quality of life, body composition and mental health, however there is still a lack of intervention programmes that promote physical activity among retired athletes (Silva et al., 2020). Greater help might be considered for retired athletes who wish to practice physical activity by facilitating access to sport facilities (Torregrossa et al., 2019).

Retirement transition is a broad research topic that can be approached from perspectives focused on the athlete´s experience itself. In depth interviews have been the most used measurement instrument due to the versatility that offer to athletes to expand their responses (Brown et al., 2017). However, it may be considered in future investigations lines, the study on a validated questionnaire that narrows the retirement transition in a more precise way.

It is clear that retirement is a transition stage that induces athletes to experience changes from a social, psychological and health perspective, with direct repercussion on the quality of life (Kadlcik & Flemr, 2008). Sleep disturbance, alcohol consumption and nutritional habits may be important factors that affect the quality of life among retired athletes (Schuring et al., 2017; Silva et al., 2020).

We are aware that due to the search string and a rigorous selection of articles based on the population and study content, there has been a considerable loss of information. We are conscious that the sample specificity of our study, precisely on only retired elite athletes, means that we have not been able to consider other

variables or content categories belonging to other population types such as amateur or semi-professional athletes.

Our conclusion is that there is higher interest in this subject and a progress in awareness of the difficulties that athletes experience once they finish their sports career. However, from the official sports institutions there are still no aid programs for athletes focused on the post-retirement stage. Institutions where multidisciplinary teams offer advice on mental health, healthy habits and physical activity to achieve better values of quality of life and well-being among retired elite athletes could be considered.

AUTHOR CONTRIBUTIONS

All the authors have contributed equally to each of the sections of the study conducted.

SUPPORTING AGENCIES

No funding agencies were reported by the authors.

DISCLOSURE STATEMENT

No potential conflict of interest were reported by the authors.

REFERENCES

Arliani, G. G., Lara, P. S., Astur, D. C., Cohen, M., Gonc¸alves, J. P. P., & Ferretti, M. (2014). Impact of sports on health of former professional soccer players in Brazil. Acta Ortopédica Brasileira, 22(4), 188-190. https://doi.org/10.1590/1413-78522014220400954

Barriopedro, M., de Subijana, C. L., Muniesa, C., Ramos, J., Guidotti, F., & Lupo, C. (2019). Retirement Difficulties in Spanish Athletes: The Importance of the Career Path. Sport, Exercise, and Performance Psychology, 8(4), 387-400. https://doi.org/10.1037/spy0000136

Brown, C. J., Webb, T. L., Robinson, M. A., & Cotgreave, R. (2018). Athletes' experiences of social support during their transition out of elite sport: An interpretive phenomenological analysis. Psychology of Sport and Exercise, 36, 71-80. https://doi.org/10.1016/j.psychsport.2018.01.003

Brown, J. C., Kerkhoffs, G., Lambert, M. I., & Gouttebarge, V. (2017). Forced Retirement from Professional Rugby Union is Associated with Symptoms of Distress. International Journal of Sports Medicine, 38(8), 582-587. https://doi.org/10.1055/s-0043-103959

Burns, L., Weissensteiner, J. R., Cohen, M., & Bird, S. R. (2022). A survey of elite and pre-elite athletes' perceptions of key support, lifestyle and performance factors. BMC Sports Science, Medicine and Rehabilitation, 14(1), 1-12. https://doi.org/10.1186/s13102-021-00393-y

Bush, E., Cupery, T., Turner, R. W., Sonnega, A., Weir, D., Whitfield, K. E., & Jackson, J. S. (2020). The Price of Playing Through Pain: The Link Between Physical and Behavioral Health in Former NFL Athletes. American Journal of Men's Health, 14(6). https://doi.org/10.1177/1557988320975541

Camps, D. (2008). Limitaciones de los indicadores bibliométricos en la evaluación de la actividad científica biomédica. Colombia Médica, 39(1), 74-79.

Churchill, T. W., Krishnan, S., Weisskopf, M., A. Yates, B., Speizer, F. E., Kim, J. H., Nadler, L. E., Pascual-Leone, A., Zafonte, R., & Baggish, A. L. (2018). Weight Gain and Health Affliction Among Former National Football League Players. The American Journal of Medicine, 131(12), 1491-1498. https://doi.org/10.1016/j.amjmed.2018.07.042

Drawer, S., & Fuller, C. W. (2001). Propensity for osteoarthritis and lower limb joint pain in retired professional soccer players. British Journal of Sports Medicine, 35(6), 402-408. https://doi.org/10.1136/bjsm.35.6.402

Filbay, S. R., Bishop, F., Peirce, N., Jones, M. E., & Arden, N. K. (2017). Common attributes in retired professional cricketers that may enhance or hinder quality of life after retirement: a qualitative study. BMJ Open, 7(7), e016541. https://doi.org/10.1136/bmjopen-2017-016541

Gallo, V., McElvenny, D., Hobbs, C., Davoren, D., Morris, H., Crutch, S., Zetterberg, H., Fox, N. C., Kemp, S., Cross, M., Arden, N. K., Davies, M. A. M., Malaspina, A., & Pearce, N. (2017). BRain health and healthy AgeINg in retired rugby union players, the BRAIN Study: study protocol for an observational study in the UK. BMJ Open, 7(12), e017990. https://doi.org/10.1136/bmjopen-2017-017990

Gardner, A. (2013). The complex clinical issues involved in an athlete's decision to retire from collision sport due to multiple concussions: A case study of a professional athlete. Frontiers in Neurology, 4, 141. https://doi.org/10.3389/fneur.2013.00141

Giannone, Z. A., Haney, C. J., Kealy, D., & Ogrodniczuk, J. S. (2017). Athletic identity and psychiatric symptoms following retirement from varsity sports. International Journal of Social Psychiatry, 63(7), 598-601. https://doi.org/10.1177/0020764017724184

Gouttebarge, V., Frings-Dresen, M. H. W., & Sluiter, J. K. (2015). Mental and psychosocial health among current and former professional footballers. Occupational Medicine, 65(3), 190-196. https://doi.org/10.1093/occmed/kqu202

Gouttebarge, V., Kerkhoffs, G., & Lambert, M. (2016). 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

Gouttebarge, V., & Kerkhoffs, G. M. M. J. (2017). A prospective cohort study on symptoms of common mental disorders among current and retired professional ice hockey players. The Physician and Sportsmedicine, 45(3), 252-258. https://doi.org/10.1080/00913847.2017.1338497

Hind, K., Konerth, N., Entwistle, I., Hume, P., Theadom, A., Lewis, G., King, D., Goodbourn, T., Bottiglieri, M., Ferraces-Riegas, P., Ellison, A., & Chazot, P. (2021). Mental Health and Wellbeing of Retired Elite and Amateur Rugby Players and Non-contact Athletes and Associations with Sports-Related Concussion: The UK Rugby Health Project. Sports Medicine, 1-13. https://doi.org/10.1007/s40279-021-01594-8

Hind, K., Konerth, N., Entwistle, I., Theadom, A., Lewis, G., King, D., Chazot, P., & Hume, P. (2020). Cumulative Sport-Related Injuries and Longer Term Impact in Retired Male Elite- and Amateur-Level Rugby Code Athletes and Non-contact Athletes: A Retrospective Study. Sports Medicine, 50(11), 2051-2061. https://doi.org/10.1007/s40279-020-01310-y

Irandoust, K., Taheri, M., Chtourou, H., Nikolaidis, P. T., Rosemann, T., & Knechtle, B. (2019). Effect of Time-of-Day-Exercise in Group Settings on Level of Mood and Depression of Former Elite Male Athletes. International Journal of Environmental Research and Public Health, 16(19), 3541. https://doi.org/10.3390/ijerph16193541

Kadlcik, J., & Flemr, L. (2008). Athletic Career Termination Model in the Czech Republic: A Qualitative Exploration. https://doi.org/10.1177/1012690208098544

Kalkan, N. (2021). Investigation of Retired Elite Athletes' Food Addiction. Progress in Nutrition, 23(4). https://doi.org/10.23751/pn.v23i4.11156

King, T., Rosenberg, M., Braham, R., Ferguson, R., & Dawson, B. (2013). Life after the game - Injury profile of past elite Australian Football players. Journal of Science and Medicine in Sport, 16(4), 302-306. https://doi.org/10.1016/j.jsams.2012.09.003

Ling, Z., & Hong, F. (2014). After the Glory: Elite Athletes' Re-Employment in China. The International Journal of the History of Sport, 31(6), 635-651. https://doi.org/10.1080/09523367.2013.878498

Lundqvist, C. (2020). Ending an Elite Sports Career: Case Report of Behavioral Activation Applied as an Evidence-Based Intervention With a Former Olympic Athlete Developing Depression. The Sport Psychologist, 34(4), 329-336. https://doi.org/10.1123/tsp.2019-0152

Mannes, Z. L., Ferguson, E. G., Perlstein, W. M., Waxenberg, L. B., Cottler, L. B., & Ennis, N. (2020). Negative Health Consequences of Pain Catastrophizing Among Retired National Football League Athletes. Health Psychology, 39(5), 452-462. https://doi.org/10.1037/hea0000847

Manor, B., Zhou, J., Lo, O. Y., Zhu, H., Gouskova, N. A., Yu, W., Zafonte, R., Lipsitz, L. A., Travison, T. G., & Pascual-Leone, A. (2020). Self-Reported Head Trauma Predicts Poor Dual Task Gait in Retired National Football League Players. Annals of Neurology, 87(1), 75-83. https://doi.org/10.1002/ana.25638

Marin-Urquiza, A., Ferreira, J. P., & Van Biesen, D. (2018). Athletic identity and self-esteem among active and retired Paralympic athletes. Https://Doi.Org/10.1080/17461391.2018.1462854, 18(6), 861-871. https://doi.org/10.1080/17461391.2018.1462854

Melekoğlu, T., Sezgin, E., Işın, A., & Türk, A. (2019). The Effects of a Physically Active Lifestyle on the Health of Former Professional Football Players. Sports, 7(4), 75. https://doi.org/10.3390/sports7040075

Montero, I., & León, O. G. (2002). Clasificación y descripción de las metodologías de investigación en Psicología. No 3 International Journal of Clinical and Health Psychology, 2, 503-508.

Plateau, C. R., Petrie, T. A., & Papathomas, A. (2017). Exercise attitudes and behaviours among retired female collegiate athletes. Psychology of Sport and Exercise, 29, 111-115. https://doi.org/10.1016/j.psychsport.2017.01.001

Sanders, G., & Stevinson, C. (2017). Associations between retirement reasons, chronic pain, athletic identity, and depressive symptoms among former professional footballers. European Journal of Sport Science, 17(10), 1311-1318. https://doi.org/10.1080/17461391.2017.1371795

Schuring, N., Kerkhoffs, G., … J. G.-T. P. and, & 2017, U. (2017). The mental wellbeing of current and retired professional cricketers: an observational prospective cohort study. Taylor & Francis, 45(4), 463-469. https://doi.org/10.1080/00913847.2017.1386069

Silva, A. M., Nunes, C. L., Matias, C. N., Jesus, F., Francisco, R., Cardoso, M., Santos, I., Carraça, E. V., Silva, M. N., Sardinha, L. B., Martins, P., & Minderico, C. S. (2020). Champ4life Study Protocol: A One-Year Randomized Controlled Trial of a Lifestyle Intervention for Inactive Former Elite Athletes with Overweight/Obesity. Nutrients 2020, 12(2), 286. https://doi.org/10.3390/nu12020286

Torregrossa, M., Conde, E., Perez-Rivases, A., Soriano, G., & Ramis, Y. (2019). La actividad física y el deporte saludable en exdeportistas de élite. Cuadernos de Psicología Del Deporte, 19(2), 12-27. https://doi.org/10.6018/cpd.350791

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

Yao, P. L., Laurencelle, L., & Trudeau, F. (2020). Former athletes' lifestyle and self-definition changes after retirement from sports. Journal of Sport and Health Science, 9(4), 376-383. https://doi.org/10.1016/j.jshs.2018.08.006

