

Factors Influencing Athlete Engagement in High-Level Athletes: A Systematic Review

Liang Wang¹

¹College of Physical Education and Sport Science, Fujian Normal University, China

DOI - <http://doi.org/10.37502/IJSMR.2023.61203>

Abstract

The purpose of this paper is to systematically summarize the factors influencing athlete engagement in high-level athletes. Using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) approach, a literature search and screening were conducted in four databases: Scopus, Web of Science, CNKI (China National Knowledge Infrastructure), and Wanfang. Ultimately, 12 articles were selected. Through systematic analysis and summarization of these 12 highly relevant articles, 14 factors affecting athlete engagement were identified. These include basic psychological needs, psychological skills, perseverance, resilience, tenacity, motivation, coaching leadership behavior, coach-athlete relationships, team cohesion, gratitude, social support, psychological collectivism, subjective well-being, and hope. Based on the nature of these factors, they can be further categorized into four main categories: psychological traits of athletes, coaches, psychological skills and coping strategies, and social and team factors.

Keywords: Athlete Engagement; High-Level Athletes; Influencing Factors; Systematic Review

1. Introduction

Under the long-term intense training and competition pressure, many high-performing athletes have experienced psychological health issues such as burnout or fatigue, and some have even chosen more extreme paths. In the past, most scholars focused directly on athletes' psychological issues, such as stress, fatigue, and burnout. However, with the development of positive psychology, there has been a shift in research perspective. Scholars are now focusing on the positive aspects of human strength and virtue, hoping to promote athletes' psychological health from a positive perspective. As the positive counterpart to burnout, athlete engagement has naturally received increasing attention. Zhang Zhongqiu's research in 2012 explicitly stated that athlete engagement is key to an athlete's positive mindset, reflecting not only psychological health but also inspiring optimism, resilience, and creativity. These qualities have a significant impact on athletes' growth, competitive ability, and performance [1]. Subsequent empirical studies by scholars both domestically and internationally have proven that athlete engagement not only inhibits athletes' psychological burnout [2] and fatigue [3] but also significantly positively impacts athletes' satisfaction with their performance [4], as well as their sports performance and success [5]. Therefore, improving the level of athlete engagement is crucial for the physical and mental development of athletes and the achievement of team success.

Athlete Engagement is a sub-concept of engagement in organizational behavior studies. Job engagement is already a relatively mature research field, and the influencing factors of employee job engagement have been systematically reviewed [6]. Athlete Engagement, derived from the concept of job engagement, is based on Schaufeli's job engagement model. Lonsdale and his team, through interviews [7] and surveys with elite athletes, defined athlete engagement as a persistent, positive cognitive and emotional experience in sports, characterized primarily by confidence, dedication, vigor, and enthusiasm [8]. Although Athlete Engagement is derived from the concept of job engagement, due to the specificity of the sports context, the influencing factors differ. It is necessary to systematically organize the factors influencing athlete engagement to provide effective suggestions for coaches, managers, and parents to improve athlete engagement. The concept and scale of Athlete Engagement were initially proposed with elite athletes as the research subjects [7,8], and the environment of lower-level athletes differs significantly from that of elite athletes. Thus, the focus of this study is to explore the factors influencing the engagement of high-level athletes. In this paper, "high-level athletes" refers to professional athletes or those competing at the provincial team level or above, who have achieved a high level of technical skill and competitive ability. In recent years, empirical research on athlete engagement has become increasingly rich [9–13], but there is still a lack of systematic summary of the factors influencing athlete engagement. Therefore, this paper aims to comprehensively summarize and synthesize the various factors influencing athlete engagement through a systematic review approach.

2. Literature Search and Screening

In this study, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method was adopted for literature search and screening to ensure systematicity and comprehensiveness [14].

2.1 Identification

Considering the concept of "Athlete Engagement" was first proposed by Lonsdale et al [7], the keywords for this study included "Athlete Engagement" and its Chinese equivalent "运动员投入". Some literature also refers to the same concept as "Sport Engagement", thus it was included in the search terms. The main databases selected for this study were Scopus, Web of Science, CNKI (China National Knowledge Infrastructure), and Wanfang, as they provide high-quality literature for systematic review studies. Advanced search methods were used in all databases (see Table 1 for details). The search results revealed 524 English articles (Web of Science 268, Scopus 256) and 1143 Chinese articles (CNKI 228, Wanfang 915).

Further literature screening was based on these results, limiting to articles published between 2001 and 2022. The year 2001 was chosen as the starting point based on Schaufeli (2001) [15], who first clearly proposed the concept of engagement and its model. Subsequently, many studies explored engagement in different contexts, including athlete engagement. Additionally, following the suggestion of Gardner et al. [16], considering the possibility of conference papers and dissertations lacking rigorous peer review and theoretical foundations, this study decided to include only journal articles. Chinese literature was limited to articles published in CSSCI and core journals of Peking University. Given the generally high quality of English literature in the Web of Science and Scopus databases, no additional screening was performed for these, retaining only journal articles. A total of 331 English articles (Web of Science 158, Scopus 173)

and 44 Chinese articles (CNKI 28, Wanfang 16) were finally selected, and the bibliographic information of the obtained literature was imported into EndNote.

Table 1. Database Search Formula

Database Name	Database Search String
CNKI	运动员投入OR运动投入
Wanfang	Subject: (运动员投入) or Subject: (运动投入)
Web of Science	TS=("athlete* engagement") OR TS=("sport* engagement")
Scopus	TITLE-ABS-KEY ("athlete* engagement") OR TITLE-ABS-KEY ("sport* engagement")

2.2 Screening

In the preliminary literature screening phase of this study, the author manually screened the literature identified in the identification phase, excluding 127 duplicate English articles, resulting in 204 English articles. Similarly, in the Chinese literature, 14 duplicate Chinese articles were removed, resulting in 30 Chinese articles.

2.3 Eligibility Review

Further, this study read each article in full and selected articles meeting the inclusion/exclusion criteria (see Table 2). During this process, 197 ineligible English articles and 25 Chinese articles were excluded, finally retaining 7 English articles and 5 Chinese articles. The literature search and screening process of this study is shown in Figure 1.

Table 2. Inclusion/Exclusion Criteria

Criteria	Inclusion	Exclusion
Study Type	Non-review studies	Review studies
Subjects	Includes professional athletes or athletes at the provincial level or above	Does not include professional athletes or athletes at the provincial level or above
Concept Definition	Defines athlete engagement or sport engagement as a persistent, positive cognitive and emotional experience in sports	Does not define athlete engagement or sport engagement as such
Research Content	Confirms a factor as an influencing factor or antecedent of athlete engagement	Does not prove a factor as an influencing factor or antecedent of athlete engagement

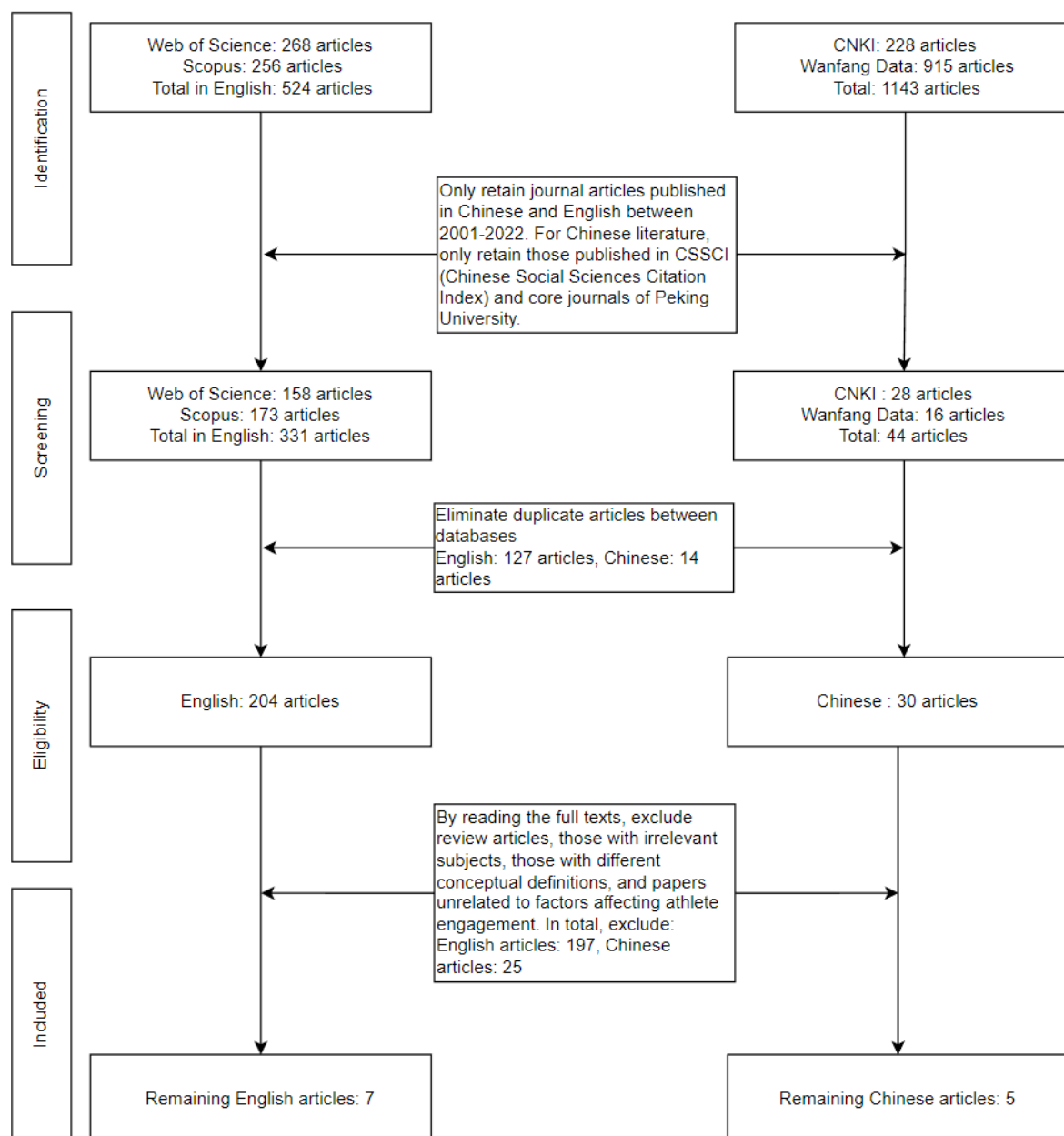


Figure 1. PRISMA flow diagram

2. Results

Following the PRISMA guidelines for systematic reviews and meta-analyses, this study conducted exhaustive literature searches and strict screening processes in Scopus, Web of Science, CNKI, and Wanfang databases, ultimately selecting 12 relevant articles. These studies were all quantitative cross-sectional studies, and the main content of the included literature is shown in Table 3. In terms of geographical distribution, 7 studies originated from China, 2 from the USA, and one each from Canada, Sweden, and Spain. Among the included studies, three by the team of Wang Bin and two by Jeffrey J. Martin's team were included. In terms of time dimension, 11 out of these 12 articles were published between 2013 and 2022, particularly during 2014 to 2016 and 2020 to 2022.

Regarding the theoretical application, six of the studies were based on Self-Determination Theory to propose hypotheses and as a framework for analyzing factors influencing athlete engagement. In addition, theories like Trait Coping Theory, Broaden-and-Build Theory of Positive Emotions, and the Demand-Resource Model were also used to explain factors influencing athlete engagement. Some studies did not explicitly adopt a specific theory but rather proposed hypotheses and explanations based on journal literature reviews and practical experience. Through the analysis of these 12 articles, this study summarized 14 key factors affecting the engagement of high-level athletes, covering basic psychological needs, psychological skills, perseverance, resilience, tenacity, motivation, coaching leadership behavior, coach-athlete relationships, team cohesion, gratitude, social support, psychological collectivism, subjective well-being, and hope. These factors were further categorized into four main categories: psychological traits of athletes, coaches, psychological skills and coping strategies, and social and team factors.

Table 3. Summary of Main Content of Included Literature

Author/ Year	Main Objective	Subjects	Conclusions Related to Athlete Engagement Factors
Ken Hodge et al., 2009	Explore the relationship between athlete engagement, basic psychological needs, and flow experience	201 athletes funded by the Canadian Sports Centre	Fulfillment of basic psychological needs positively influences athlete engagement
Jeffrey J. Martin et al., 2013	Explore the relationship between psychological skills and the degree of sports participation in high-level wheelchair rugby athletes	14 international-level wheelchair rugby athletes from the USA	Psychological skills (self-talk, imagery, emotional regulation, relaxation) have a positive impact on athlete engagement
Jeffrey J. Martin et al., 2015	Analyze the impact of perseverance, resilience, and tenacity on life satisfaction and athlete engagement in adult wheelchair basketball athletes	75 national-level wheelchair basketball athletes from the USA	Tenacity and perseverance positively influence athlete engagement

Leslie Podlog et al., 2015	Explore the relationship between athlete engagement, basic psychological needs, and motivation in high-level adolescent athletes	192 national-level adolescent alpine skiers from Sweden	Fulfilment of basic psychological needs and intrinsic motivation, identified regulation positively influence athlete engagement, while amotivation negatively influences it
Frazer Atkinson et al., 2020	Relationship between basic psychological needs, professional burnout, and athlete engagement, and the mediating role of self-determined motivation	1011 athletes from various sports in Spain, including low-level (local category), mid-level (regional category), and high-level athletes (international and national categories)	Basic psychological needs and high self-determined motivation have a significant positive effect on athlete engagement
Song Gu et al., 2022	Explore the relationship between cohesion, psychological collectivism, psychological resilience, and athlete engagement	445 Chinese team sports athletes, including national training teams, provincial teams, and university-level athletes	Team cohesion, collectivism, and psychological resilience positively influence athlete engagement, with collectivism and psychological resilience playing a mediating role
Zheng Mao Guo et al., 2022	Explore the causal relationship between athlete gratitude, engagement, and burnout using a longitudinal cross-lagged analysis method	Provincial team athletes from various provinces in China	Gratitude positively influences athlete engagement
Wang Bin et al., 2014	Study the impact of gratitude on athlete engagement and the mediating role of the coach-athlete relationship	489 athletes from national training teams and provincial teams across various sports	Gratitude and the coach-athlete relationship positively influence athlete engagement, with the coach-athlete relationship playing a mediating role

Ye Lu et al., 2016	Explore the influence of the coach-athlete relationship on sports performance satisfaction, and the chain mediating role of hope and sport engagement	502 athletes from national training teams and provincial teams across various sports	The coach-athlete relationship and hope both positively influence athlete engagement
Ye Lu et al., 2016	Examine the influence of social support on athlete engagement and the sequential mediating role of psychological resilience and coping strategies	502 athletes from national training teams and provincial teams across various sports	Social support not only positively influences athlete engagement but also has a sequential mediating role with psychological resilience and coping strategies. Avoidance-oriented coping negatively influences athlete engagement, while task-oriented coping has a positive effect
Zhang Chao et al., 2016	How psychological resilience impacts volleyball athlete engagement and when this impact is stronger or weaker	232 volleyball athletes recognized by the National High-Level Sports Reserve Talent Base	Psychological resilience and subjective well-being positively influence athlete engagement
Gao Yuan Yuan et al., 2021	The Impact of Coaches' Leadership Behavior on Athlete Engagement	A study of 650 athletes from provincial professional teams in Liaoning Province and sports schools in Shenyang City	The training guidance and social support behaviors of coaches have a significant positive impact on athlete engagement. Democratic, autocratic, and reward behaviors can indirectly influence athlete engagement through the coach-athlete relationship

3. Discussion

Previous research indicates that high-level athletes endure pressures unimaginable to most people, often leading to various adverse emotional states and significantly impacting their mental and physical health [17]. Athlete engagement plays a crucial role in alleviating these negative emotions and achieving good performance [1]. This has drawn the attention of many scholars to explore the relationship between athlete engagement and various factors, aiming to identify the influencing factors and effects of athlete engagement. Investigating these factors can help coaches, athletes, and managers find ways to enhance or maintain athlete engagement. However, to date, no comprehensive systematic organization and analysis of these influencing factors have been found in the Scopus, Web of Science, CNKI, and Wanfang databases. Therefore, this study followed the PRISMA guidelines for systematic reviews and meta-

analyses, conducting thorough literature searches and strict screening processes in these four databases. The focus was on investigating factors affecting athlete engagement in high-level athletes, leading to the selection of many articles where the subjects were not professional or high-level athletes. Ultimately, only 12 articles that closely matched the theme of this paper were identified. A comprehensive analysis of these 12 articles led to the identification of factors influencing athlete engagement, including basic psychological needs, psychological skills, perseverance, resilience, tenacity, motivation, coaching leadership behavior, coach-athlete relationships, group cohesion, gratitude, social support, psychological collectivism, subjective well-being, and hope. Based on the nature of these factors, they can be further categorized into four main categories: psychological traits of athletes, coaches, psychological skills and coping strategies, and social and team factors.

3.1 Psychological Traits of Athletes

Psychological traits influencing athlete engagement include perseverance, psychological resilience, tenacity, gratitude, hope, psychological collectivism, subjective well-being, motivation, and basic psychological needs. It is observed that low self-determined motivation and external regulation have an insignificant impact on athlete engagement, while a lack of motivation significantly negatively impacts engagement. Other psychological traits positively influence athlete engagement.

According to Self-Determination Theory, fulfilling the three basic psychological needs of autonomy, belonging, and competence can promote the transformation of extrinsic motivation to intrinsic motivation, helping athletes to persist in activities long-term, maintain a positive mindset, and foster personal growth and positive behavior[18]. Thus, fulfilling basic psychological needs, high self-determined motivation, intrinsic motivation, and identified regulation motivation positively impact athlete engagement, while amotivation has a negative impact [19–21]. Based on the Broaden-and-Build Theory of Positive Emotions, positive emotions can enhance physical, intellectual, interpersonal, and psychological resources, increasing athletes' abilities and adaptability and encouraging them to engage more actively in training and competitions [22]. Therefore, positive psychological traits like gratitude, hope, and subjective well-being significantly enhance athlete engagement. Athletes with a high sense of gratitude appreciate external support more and adopt a positive attitude in facing stress and challenges, enhancing their identification with training and competitions, and inspiring a sense of responsibility and dedication, leading to more enthusiastic and vigorous participation [2,23]. Athletes with high levels of hope typically set specific, clear goals and use positive self-motivation to overcome challenges, internalizing external demands into personal drive, pursuing goals autonomously, and enhancing their level of engagement [24]. Athletes with strong psychological resilience show greater coping abilities when facing difficulties. They tend to have confidence in their abilities and tackle problems from a positive perspective, making more controllable judgments, thereby increasing their level of engagement [25]. Athletes with high tenacity maintain interest and passion even in the face of setbacks and disappointments, continuously pursuing long-term goals. Perseverance, defined as a persistent enthusiasm for long-term goals, not only helps athletes achieve success but also enhances their engagement [26]. Athletes with a strong sense of psychological collectivism easily form common goals and good interpersonal relationships in a team environment, enhancing team cohesion and social identity, thereby boosting personal psychological resilience and confidence. This sense of belonging and social support helps athletes effectively cope with

stress and challenges, thus improving their engagement and performance in competitive sports [27].

3.2 Coach Factors

Athlete engagement is greatly influenced by coaches, particularly reflected in the leadership style of the coach and the interaction established with the athletes. Certain coaching behaviors and good interactions with athletes significantly positively influence athletes to fully engage in training. Due to the close interaction between coaches and athletes, most athletes consider coaches as the most important person during training and competition. An effective coach-athlete relationship creates a harmonious interpersonal environment, establishes efficient communication channels, and provides "mentor-like" care. This relationship not only strengthens athletes' sense of security and belonging but also increases their sense of responsibility, thus motivating them to participate in training and competitions with higher enthusiasm and vigor. Research has found that several behaviors of coaches, including training guidance, social support, rewards, and democratic decision-making, positively influence athlete engagement among university athletes. Conversely, authoritarian behavior often has a negative impact on athletes' engagement [28,29]. However, in the study by Gao Yuanyuan and others, only training guidance behavior and social support behavior had a positive influence on athletes' engagement. Other factors could only indirectly affect athletes' engagement through the coach-athlete relationship. This might be because most of the athletes surveyed in the study were teenagers from provincial teams, most of whom were minors with high dependency and compliance towards coaches. Moreover, their regular training and competition tasks do not require much decision-making involvement from the athletes, hence, democratic and authoritarian leadership behaviors do not significantly impact athlete engagement. The coaches' reward behaviors are primarily focused on motivational support. Additionally, athletes only receive special praise and appreciation from coaches when their progress exceeds expectations or their performance is outstanding [30].

3.3 Psychological Skills and Coping Strategies

The comprehensive use of psychological skills and task-oriented coping strategies significantly positively impact athlete engagement, while avoidance-oriented coping strategies may negatively influence it [31, 32]. Trait Coping Theory suggests that individuals' coping strategies are stable across time and contexts, meaning that athletes with different personalities will adopt different coping methods [33]. Focusing on adjustment-oriented coping strategies is more effective in alleviating negative emotions than adopting avoidance strategies. Studies have found that task-oriented coping strategies, such as thought control, mental imagery, relaxation techniques, persistent effort, logical analysis, and seeking support, effectively stimulate athletes' vigor and enthusiasm, maintain their interest and confidence, and help them maintain their best state during training and competition. In contrast, avoidance-oriented coping strategies may reduce personal effort and lead athletes to address challenges inappropriately. Psychological skills are not only effective means of managing stress and preventing burnout in sports but are also key to increasing and maintaining motivation, enhancing focus, and reducing negative emotions, thereby promoting comprehensive athlete engagement. Research has found that the individual use of psychological skills such as self-talk, imagery, emotional regulation, and relaxation does not significantly impact athlete engagement, but the combined use of these skills significantly positively influences it [31].

3.4 Social and Team Factors

Social support and team cohesion are social and team factors that significantly positively impact athlete engagement. When athletes receive ample social support, they often feel a deeper sense of belonging and security. This not only satisfies their psychological needs but also inspires motivation from within, significantly enhancing their level of engagement [32]. Additionally, social support provides effective advice and guidance, helping athletes improve their skills and enhance their confidence and capabilities. According to the Job Demands-Resources Model, job demands can lead to a decline in health and psychological energy, while job resources can stimulate intrinsic motivation, promoting job engagement and performance [34]. Autonomous task goals and social support, as job resources, can stimulate intrinsic motivation, enhancing members' engagement and performance. In sports, team cohesion is an important source of social support for athletes. When athletes feel high team cohesion, they often receive more social support, which leads to a higher sense of belonging and security, promoting the fulfillment of basic psychological needs and the stimulation of intrinsic motivation, thereby increasing athlete engagement. Additionally, Chinese athletes, with their stronger sense of collectivism, sense of responsibility, and need for interpersonal relationships, are more likely to project the purpose, tasks, and principles of group activities onto individual behavioral standards and automatically adjust and adapt to these standards. Therefore, Chinese athletes are more likely to translate their perception of team cohesion into their behavior, leading to increased engagement in training and competition [27].

4. Limitations and Future Directions

Firstly, most existing studies are cross-sectional quantitative studies, with data obtained at a single point in time, possibly overlooking some factors' delayed effects on athlete engagement over time and not fully proving causality. Future research could adopt longitudinal methods or combine qualitative research to more comprehensively explore the various factors influencing athlete engagement.

Secondly, although some studies have explored the correlations between variables, this is insufficient to establish causality, hence their exclusion from this paper. Athlete engagement can be divided into multiple dimensions, but currently, only a few researchers have explored the impact of these factors on different dimensions of athlete engagement. Therefore, future research could more deeply explore the impact of different variables on various dimensions of athlete engagement.

Thirdly, in terms of research subjects, some studies did not specify the type of athletes investigated, and most did not compare the factors influencing athlete engagement among athletes of different sports, educational levels, and athlete ranks. Although all are high-level athletes, there may be differences in the type and influencing factors of athlete engagement among athletes of different educational levels and sports. Future research should more clearly describe its subjects, including the type of athletes, their educational level, and athlete rank, to help readers better understand the research context. Such specificity could reveal potential differences in the types of athlete engagement and influencing factors among athletes from different backgrounds.

Fourthly, in terms of research perspectives, most current studies explore the impact of different external factors or athletes' psychological traits on athlete engagement, with only a few

studying the effects of certain training methods on athlete engagement. Therefore, it is possible to develop or find a training method, explore and verify how this training method can more effectively induce athlete engagement, and provide direct guidance for practical application.

5. Conclusion

This study followed the PRISMA guidelines for systematic reviews and meta-analyses, conducting exhaustive literature searches and strict screening processes in Scopus, Web of Science, CNKI, and Wanfang databases, ultimately identifying 12 articles that closely matched the theme of this paper. A comprehensive analysis of these 12 articles led to the identification of 14 factors influencing athlete engagement, including basic psychological needs, psychological skills, perseverance, resilience, tenacity, motivation, coaching leadership behavior, coach-athlete

References

- 1) Zhang Zhongqiu. Research Development and Application of Sports Psychology in the Field of Competitive Sports [J]. *Journal of Tianjin University of Sport*, 2012, 27(3): 185-191.
- 2) Guo Z, Yang J, Wu M, et al. The Associations Among Athlete Gratitude, Athlete Engagement, Athlete Burnout: A Cross-Lagged Study in China [J]. *Frontiers in Psychology*, 2022, 13: 996144.
- 3) Guo Zhengmao, Qi Changzhu, Yang Jian. Reconstruction of the "Coach-Athlete" Relationship and Its Association with Psychological Fatigue in Adolescent Athletes: The Chain Mediating Role of Psychological Toughness and Athletic Engagement [J]. *Journal of Shandong Sport University*, 2021, 37(5): 32-39.
- 4) Ye Lü, Wang Bin, Liu Zunjia, et al. The Impact of Coach-Athlete Relationship on Athletes' Satisfaction with Sports Performance: The Sequential Mediating Role of Hope and Athletic Engagement [J]. *Sports Science*, 2016, 36(7): 40-48.
- 5) Ma G. The Role of Athletic Psychology, Athlete Engagement in Athletic Performance and Athletes Sports Success in China: Does Coaching Behavior Moderate? [J]. *Journal of Sports Psychology*, 2021, 30(3): 191-204.
- 6) Zahari N, Kaliannan M. Antecedents of Work Engagement in the Public Sector: A Systematic Literature Review [J]. *Review of Public Personnel Administration*, 2023, 43(3): 557-582.
- 7) Lonsdale C, Hodge K, Raedeke TD. Athlete Engagement: I. A Qualitative Investigation of Relevance and Dimensions [J]. *International Journal of Sport Psychology*, 2007, 38(4): 451-470.
- 8) Lonsdale C, Hodge K, Jackson SA. Athlete Engagement: II. Development and Initial Validation of the Athlete Engagement Questionnaire [J]. *International Journal of Sport Psychology*, 2007, 38(4): 471-492.
- 9) Tian S, Sun G. Relationship Between Self-Concept Clarity, Mental Toughness, Athlete Engagement, and Athlete Burnout in Swimmers During and After the COVID-19 Pandemic [J]. *International Journal of Sport and Exercise Psychology*, 2023: 1-18.
- 10) Gu S, Peng W, Du F, et al. Association Between Coach-Athlete Relationship and Athlete Engagement in Chinese Team Sports: The Mediating Effect of Thriving [J]. *PLOS ONE*, 2023, 18(8): e0289979.

- 11) Waleriańczyk W, Hill AP, Stolarski M. A Re-examination of the 2x2 Model of Perfectionism, Burnout, and Engagement in Sports [J]. *Psychology of Sport and Exercise*, 2022, 61: 102190.
- 12) Guo Zhengmao, Qi Changzhu, Yang Jian. Reconstruction of the "Coach-Athlete" Relationship and Its Association with Psychological Fatigue in Adolescent Athletes: The Chain Mediating Role of Psychological Toughness and Athletic Engagement [J]. *Journal of Shandong Sport University*, 2021, 37(5): 8.
- 13) Ye Lü. Factors Influencing Athlete Engagement and Its Mechanism [D]. Wuhan: Central China Normal University, 2014.
- 14) Moher D, Liberati A, Tetzlaff J, et al. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement [J]. *BMJ*, 2009, 339(jul21 1): b2535-b2535.
- 15) Maslach C, Schaufeli WB, Leiter MP. Job Burnout [J]. *Annual Review of Psychology*, 2001, 52: 397-422.
- 16) Gardner WL, Coglisier CC, Davis KM, et al. Authentic Leadership: A Review of the Literature and Research Agenda [J]. *The Leadership Quarterly*, 2011, 22(6): 1120-1145.
- 17) Li Hui, Zhang Zhongqiu. Development of a Mental Health Status Scale for Athletes in China [J]. *Journal of Shandong Sport University*, 2016, 32(5): 9.
- 18) Liu Lihong, Zhang Jijia. The Self-Determination Theory of Motivation and Its Application [J]. *Journal of South China Normal University (Social Science Edition)*, 2010(4): 53-59.
- 19) De Francisco C, Sanchez-Romero EI, Vilchez Conesa MDP, et al. Basic Psychological Needs, Burnout and Engagement in Sport: The Mediating Role of Motivation Regulation [J]. *International Journal of Environmental Research and Public Health*, 2020, 17(14): 4941.
- 20) Podlog L, Gustafsson H, Skoog T, et al. Need Satisfaction, Motivation, and Engagement Among High-Performance Youth Athletes: A Multiple Mediation Analysis [J]. *International Journal of Sport and Exercise Psychology*, 2015, 13(4): 415-433.
- 21) Hodge K, Lonsdale C, Jackson SA. Athlete Engagement in Elite Sport: An Exploratory Investigation of Antecedents and Consequences [J]. *The Sport Psychologist*, 2009, 23(2): 186-202.
- 22) Guo Xiaoyan, Wang Zhenhong. The Concept, Function, and Significance of Positive Emotion [J]. *Advances in Psychological Science*, 2007(5).
- 23) Wang Bin, Ye Lü, Wu Min, et al. The Impact of Gratitude on Athlete Engagement: The Mediating Role of the Coach-Athlete Relationship [J]. *Journal of Beijing Sport University*, 2014, 37(9): 85-90.
- 24) Ye Lü, Wang Bin, Liu Zunjia, et al. The Impact of Coach-Athlete Relationship on Athletes' Satisfaction with Sports Performance: The Sequential Mediating Role of Hope and Athletic Engagement [J]. *Sports Science*, 2016, 36(7): 40-48.
- 25) Zhang Chao, Qin Zhao, Han Xiaowei. The Effect of Psychological Toughness in Sports on Athletes' Engagement in Volleyball: A Moderated Mediation Effect [J]. *Journal of Shenyang Sport University*, 2016, 35(3): 53-58.
- 26) Martin JJ, Byrd B, Watts ML, et al. Gritty, Hardy, and Resilient: Predictors of Sport Engagement and Life Satisfaction in Wheelchair Basketball Players [J]. *Journal of Clinical Sport Psychology*, 2015, 9(4): 345-359.

- 27) Gu S, Xue L. Relationships Among Sports Group Cohesion, Psychological Collectivism, Mental Toughness and Athlete Engagement in Chinese Team Sports Athletes [J]. *International Journal of Environmental Research and Public Health*, 2022, 19(9): 4987.
- 28) Xu Ziqi. Study on the Relationship Between University Basketball Coaches' Leadership Behavior and Team Cohesion [D]. Guangzhou: Guangzhou University, 2021.
- 29) Li Tao. The Impact of CUBA Coaches' Leadership Behavior on Athletes' Athletic Engagement [D]. Harbin: Harbin Engineering University, 2018.
- 30) Gao Yuanyuan, Li Yao, Cao Dawei, et al. Research on the Impact of Coaching Leadership Behavior on Athletes' Athletic Engagement: The Mediating Effect of Coach-Athlete Relationship [J]. *Journal of Shenyang Sport University*, 2021, 40(5): 98-106.
- 31) Martin JJ, Malone LA. Elite Wheelchair Rugby Players' Mental Skills and Sport Engagement [J]. *Journal of Clinical Sport Psychology*, 2013, 7(4): 253-263.
- 32) Ye Lü, Wang Bin, Wu Min, et al. The Impact of Social Support on Athlete Engagement: The Sequential Mediating Role of Psychological Toughness and Coping Styles [J]. *Journal of Beijing Sport University*, 2016, 39(7): 75-82.
- 33) Zhang Yiling, Gan Yiqun. Different Theoretical Perspectives on Coping Research Abroad [J]. *Chinese Journal of Clinical Psychology*, 2004, 12(3): 3.
- 34) Qi Yajing, Wu Xinchun. Work Demand-Resource Model: Theoretical and Empirical Research Extension [J]. *Journal of Beijing Normal University (Social Sciences Edition)*, 2018(6): 9.