

## Research traceability identification talent in sports psychology: a bibliometric analysis with vosviewer

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Authors' Contributions: A - Study Design; B - Data Collection; C - Statistical Analysis; D - Manuscript Preparation; E - Funds Collection


### Article Information:

Submitted: March 17, 2026; Accepted: April 29, 2026; Published: April 30, 2026

### ABSTRACT

**Problems:** Talent identification in sports is a multidimensional field of research that continues to evolve in line with advances in science, technology, and the needs of modern sports. Talent identification encompasses not only physical aspects and tactical skills but also psychological, social, cognitive, and environmental factors. Despite the increasing research, mapping global research trends, particularly on psychological skill-based talent identification in sports, remains a lack of a comprehensive structure. **Purpose:** This study aims to analyze the mapping of global research trends regarding psychological skills-based talent identification in sports, evaluate scientific collaboration networks, identify existing research gaps, and compile recommendations for future research. **Methods:** This study employed bibliometric analysis with the help of VOSviewer software. Data sources were obtained from Google Scholar for the 2015–2025 period through the Publish or Perish Reference Manager application. Mapping was conducted based on frequently appearing and interrelated keywords in the scientific literature, namely "Talent Identification by Psychological Skills in Sport," which resulted in 500 documents with a topical scope that reflects the diversity of themes in the field being studied. **Results:** The research results show that the peak number of publications occurred in 2016, indicating increased interest in this topic during that period. The most frequently published journal was Psychology of Sport and Exercise, published by Elsevier. **Conclusion:** This study provides a comprehensive overview of the development of talent identification research in sports from a psychological perspective and can be a starting point for further researchers in finding relevant sources and theoretical foundations, as well as identifying research opportunities that are still open in the future.

**Keywords:** bibliometric analysis, sport psychology, talent identification, VOSviewer.

 <https://doi.org/10.24036/patriot.v%vi%i.1220>



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### Introduction

Talent identification in sports has attracted the attention of various parties, from academics to coaches and policymakers. In practice, many methods still focus on physical and technical aspects. However, several studies have revealed that psychological aspects also play a significant role in determining athlete performance, particularly at the professional level (MacNamara et al., 2010; Rees et al., 2016). Beyond physical and technical skills, an athlete's mindset often plays a crucial role in their development and long-term success. Qualities like motivation, resilience, and the ability to manage emotions can shape how athletes handle pressure, recover from setbacks, and stay consistent in their performance. For this reason, including psychological evaluation in talent identification can help provide a more complete picture of an

athlete's true potential.

Psychological characteristics such as motivation, self-confidence, discipline, and the ability to manage stress are factors that differentiate talented athletes from average athletes (MacNamara et al., 2010). They introduced the concept of Psychological Characteristics of Developing Excellence (PCDEs) as a crucial indicator for continuously improving performance. Similarly, (Abbott & Collins, 2004) criticized conventional talent identification methods that often neglect psychological aspects and emphasized the importance of incorporating psychological elements into athlete selection and development systems. In real-world settings, these psychological qualities often determine whether an athlete can fully translate their physical potential into consistent performance. Athletes with strong mental skills are typically better at staying focused during competition, adapting to challenges, and sustaining long-term commitment to training. Therefore, integrating psychological components into talent identification and development is not just complementary, but essential for building well-rounded and high-performing athletes.

Despite its growing recognition, the integration of psychological skills into talent identification has not been fully reflected in practice and research. Research suggests that most talent identification methods in team sports remain monodisciplinary, with a dominant focus on physical and technical aspects (Barraclough et al., 2022). Other research also reveals that the majority of attention is still focused on physical and motor skills, with less attention being paid to psychological aspects (Xiang et al., 2022). Therefore, there is a clear research gap between theoretical recognition of the importance of psychological aspects and their implementation in scientific practice. Studies attempting to link psychological aspects to talent development are still rare. For example, research that holistically examines the career development of female athletes and emphasizes the importance of psychological support in maintaining performance (Gledhill & Harwood, 2015). However, to date, there has been no comprehensive study that quantitatively and visually illustrates the dynamics of talent identification research with a specific emphasis on psychological aspects. Further studies conducted by (Gledhill et al., 2017; Gledhill & Harwood, 2019) has actually approached this direction, but has yet to address the in-depth and broad quantitative dimensions of visual analysis.

Therefore, this study aims to take a closer and more systematic look at how talent identification research has developed, particularly in relation to psychological aspects, by using a quantitative and visual (bibliometric) approach. Rather than focusing on isolated findings, this research attempts to capture the broader landscape of existing studies and how they are interconnected over time. It explores key trends, recurring themes, and influential contributions that have shaped the discussion around psychological factors in talent identification. In doing so, the study seeks to better understand the extent to which psychological elements have been acknowledged and integrated within the scientific literature. This approach is expected to reveal not only what has been studied, but also highlight gaps that still need further attention. By presenting these insights in a clear and structured way, the study aims to make the field more accessible for researchers, coaches, and practitioners. Ultimately, it is hoped that the findings will support the development of more holistic and evidence-based talent identification systems that genuinely reflect the complex nature of athlete performance.

## Method

In this study, researchers used bibliometric analysis as a structured quantitative method to assess and examine bibliographic data. This method not only provides a comprehensive overview of research progress on a specific topic but has also been widely used in various scientific fields to identify trends in scientific collaboration and to map the thinking within a research context. Bibliometrics is a quantitative study of literature based on bibliographic data, with the aim of providing an overview of the evolution of science (the process of development and change in science over time, in terms of theories, methods, and their applications), technology, and specific scientific fields through an objective evaluation of the performance and impact of research activities (Chen & Wu, 2017).

The literature search in this study was carried out in a systematic and structured manner by combining a set of carefully selected keywords related to talent identification and psychological aspects in sport. Keywords such as "*talent identification*," "*talent detection*," and "*athlete development*" were paired with terms like "*psychological characteristics*," "*mental skills*," "*motivation*," and "*resilience*" to capture studies that bridge both domains. Boolean operators (AND, OR) were applied to refine the search and ensure that the results remained focused while still broad enough to capture relevant variations in terminology. To maintain consistency and relevance, the search was limited to publications written in English and covered the period from 2015 to 2025, allowing the study to reflect more contemporary developments in the field. The inclusion criteria prioritized peer-reviewed journal articles, conference proceedings, and review papers that explicitly addressed talent identification with at least some attention

to psychological components. On the other hand, studies that focused purely on physical or technical performance without linking to psychological aspects were excluded to maintain alignment with the study's objective. The screening process began with titles and abstracts to quickly assess relevance, followed by a more detailed review when necessary, while duplicate entries were identified and removed during data cleaning using the Publish or Perish application. This step-by-step approach was intended to ensure that the dataset remained both relevant and manageable for further bibliometric analysis.

Google Scholar served as the primary source for collecting bibliographic data to be analyzed using a bibliometric approach. Google Scholar is an open source search engine for academic literature, providing access to a wide variety of scholarly documents from various publishers, institutions, and disciplines. The platform allows users to conduct advanced searches using specific phrases, author names, publisher names, and time periods, making it a versatile tool for accessing scholarly articles (Ghosh, 2025). The selection of Google Scholar as the sole data source for this study was based on several reasons. First, Google Scholar excels in ease of access. Unlike paid databases like Scopus or Web of Science, which require institutional or individual subscriptions, Google Scholar is free to anyone. This is particularly advantageous for researchers who face challenges accessing commercial databases (Harzing & van der Wal, 2008; Thulesius, 2011).

Google Scholar tends to be more open in collecting scientific literature, including publications in local journals, journals not yet listed in major databases, and scientific works in various languages and countries (Delgado López-Cózar et al., 2019). However, despite differences in indexing systems and the number of sources involved, Google Scholar remains considered a good and relevant source of bibliometric data. This is because Google Scholar citation data has been shown to correlate well with Web of Science and Scopus, despite differences in coverage and indexing systems (Thulesius, 2011). Although Scopus has advantages in metadata quality and standardization, utilizing Google Scholar better suits this study's exploratory approach, which aims to map general trends in the literature that may not be fully captured by more selective databases. Therefore, using Google Scholar in this study was a strategic choice to meet the need for comprehensive and easily accessible data.

Despite its advantages, the use of Google Scholar as the sole database presents several limitations that should be acknowledged. One major concern is the variability in metadata quality, as Google Scholar does not apply strict indexing standards compared to databases such as Scopus or Web of Science. This can lead to inconsistencies in author names, publication sources, and citation counts, which may affect the accuracy of bibliometric mapping. In addition, Google Scholar includes a wide range of document types, including non-peer-reviewed materials, which increases the risk of incorporating lower-quality sources despite careful screening. The platform's search algorithm is also less transparent, making it difficult to fully replicate search results and ensure complete reproducibility of the study. Furthermore, citation counts in Google Scholar are often inflated due to broader coverage, which may influence the interpretation of research impact. Therefore, although Google Scholar is valuable for providing comprehensive and inclusive data, the findings of this study should be interpreted with these limitations in mind, and future research is encouraged to triangulate the results using multiple databases to obtain more robust results.

The bibliographic data obtained from Google Scholar in this study was then analyzed using the Publish or Perish (PoP) application. In practice, the data collection process is carried out by entering keywords relevant to the research topic into the Google Scholar search field using the Publish or Perish application. After the search results appear, the researcher reviews the list of relevant publications and then saves the information in CSV or RIS format for further analysis. The collected data is then used for visualization, topic trend analysis, and collaborative mapping using another software, VOSviewer.

VOSviewer is a tool used to create and present bibliometric networks using existing data. After selecting the analysis type, VOSviewer automatically finds frequently occurring terms and calculates the strength of the relationships between them. The results are displayed in a visual map, with each term displayed as a dot, with connecting lines indicating the relationships or associations between the terms. The size of the dot reflects how frequently the term appears, while the color of the dot indicates the cluster or group of related topics (Nurul Hidayati et al., 2023). The distance between the dots reflects the closeness of the relationship. The closer the distance, the stronger the relationship (Tărăban et al., 2024).

## Results

The first step the researcher took was to determine relevant keywords and then filter the search results based on predetermined criteria. A search of the Google Scholar database in July 2025 revealed 500 documents discussing the topic "Talent Identification by Psychological Skills in Sport" with publication years ranging from 2015 to 2025. The collected documents were then mapped and further analyzed to

identify current research directions and trends based on the Google Scholar search results. The analyzed data was then visualized based on three main categories: (1) the top 20 documents with the highest number of citations; (2) the number of documents per year; and (3) the highest number of publishers publishing documents.

Based on data searches using the Publish or Perish application from Google Scholar, the author generated 500 documents related to the previously determined keywords. The results obtained from the analysis of the application are explained in detail in several components, namely Number of Citations, Authors, Title, Year, Source, Article URL, Cites URL, GSRank, Query Date, Type, DOI, Cites Per Year, Cites Per Author, Abstract, and Full Text URL. The analysis shows that there are several documents that are most widely used by researchers. Table 1 lists the 20 most influential documents based on the highest number of citations in the period 2015-2025.

**Table 1.** Publication Data for Talent Identification by Psychological Skills on Sport

Author	Title	Year	Citation
RS Weinberg, D Gould	Foundations of sport and exercise psychology	2023	7211
TO Bompa, C Buzzichelli	Periodization-: theory and methodology of training	2019	4918
EP Torrance	Guiding creative talent	2018	4416
I Jones	Research methods for sports studies	2022	3213
JD Mayer, DR Caruso, P Salovey	The ability model of emotional intelligence: Principles and updates	2016	2481
L Hardy, G Jones, D Gould	Understanding psychological preparation for sport: Theory and practice of elite performers	2018	2054
AKA McKay, T Stellingwerff	Defining training and performance caliber: a participant classification framework	2021	1982
LE Robinson, DF Stodden, LM Barnett, VP Lopes	Motor competence and its effect on positive developmental trajectories of health	2015	1746
R Martens, RS Vealey	Successful coaching	2024	1440
C Swann, A Moran, D Piggott	Defining elite athletes: Issues in the study of expert performance in sport psychology	2015	1405
A Currie, JL Derevensky, ID Glick	Mental health in elite athletes: International Olympic Committee consensus statement (2019)	2019	1322
E Gallardo-Gallardo	The meaning of talent in the world of work	2018	1277
T Cassidy, P Potrac, S Rynne	Understanding sports coaching: The pedagogical, social and cultural foundations of coaching practice	2023	1269
SA Mitchell, JL Oslin, LL Griffin	Teaching sport concepts and skills: A tactical games approach	2020	1206
CL Ardern, P Glasgow, A Schneiders	2016 Consensus statement on return to sport from the First World Congress in Sports Physical Therapy, Bern	2016	1044
LM Barnett, SK Lai, SLC Veldman, LL Hardy, DP Cliff	Correlates of gross motor competence in children and adolescents: a systematic review and meta-analysis	2016	1043
NL Holt, KC Neely, LG Slater, M Camiré	A grounded theory of positive youth development through sport based on results from a qualitative meta-study	2017	1032
SE Jenny, RD Manning, MC Keiper, TW Olich	Virtual (ly) athletes: where eSports fit within the definition of "Sport"	2017	1026
DL Gill, L Williams, EJ Reifsteck	Psychological dynamics of sport and exercise	2017	1024
R Blank, AL Barnett, J Cairney, D Green	International clinical practice recommendations on the definition, diagnosis, assessment, intervention, and psychosocial aspects of developmental coordination	2019	925

Table 1 shows the 20 most frequently cited scientific documents in the period 2015-2025, related to the main themes such as sports psychology, sports training, and sports talent development, arranged by the number of citations. The most cited literature is Weinberg & Gould (2023) with the title Foundations of Sport and Exercise Psychology with the number of citations, being a very influential source for

research on this theme. From Table 1, it can also be seen that the main focus of the research, some of which are Sports Psychology and Mental Performance (Hardy et al., 2018; Reardon et al., 2019; Weinberg & Gould, 2023), Talent Identification and Development (Dlugonski et al., 2022; Gallardo-Gallardo et al., 2013; Torrance, E, 2018), and Sports Training and Coaching (Cassidy et al., 2023). Judging from the publication year and time trends, there is a mix of classic and contemporary literature. Although some publications date from 2015-2016, they still have high citation counts. Other publications, such as Cassidy et al., 2023, have received significant attention, indicating the relevance of the authors' topics. This figure shows a list of the most frequently cited scientific papers in the field of sport psychology and sports training over the past ten years. This analysis makes it easier to understand research development trends and identify reliable and high-quality sources to support scientific writing.

Research trends from 2015-2025 show a high level of interest among researchers in the topic "Talent Identification by Psychological Skills in Sport," indicating increasing attention to the role of psychological aspects in identifying and developing athlete potential. Although research patterns from 2015-2025 demonstrate significant interest in this topic, the highest number of publications was recorded in 2016. Since then, attention to this topic has tended to decline. This can be seen in Figure 1.

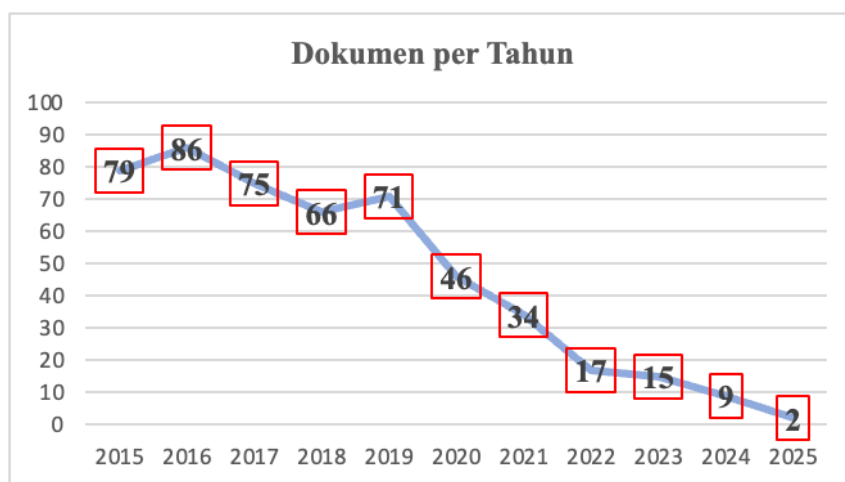
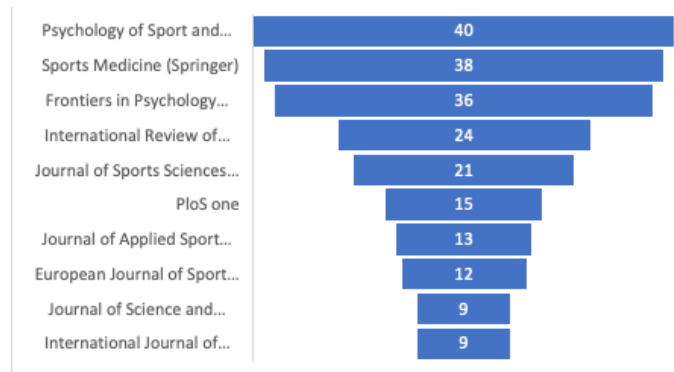


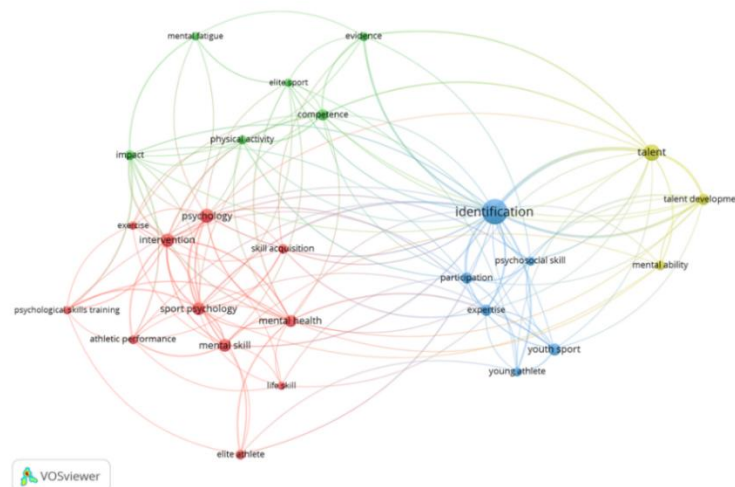
Figure 1. Annual Publication Trend

Figure 1 shows that 2016 was the year with the highest number of publications, reaching 86. This indicates that this theme attracted significant attention from researchers that year. The increased attention to non-physical aspects of talent scouting and athlete development can be explained by advances in psychological approaches. These approaches highlight the value of psychological factors such as mental resilience, motivation, and cognitive abilities, which are increasingly recognized as crucial elements for success in sports (Doncaster et al., 2020; Kaygusuz, 2024). After peaking in 2016, the number of publications showed a consistent downward trend. In 2017 (75 documents), 2018 (66 documents), and in 2019, there was a slight increase to 71 documents. However, a sharp decline occurred between 2020 and 2025, from 46 documents to just two in 2025, although 2025 is still ongoing and available data does not fully reflect the final number. This decline is due to several factors, including a decline in global research activity following the COVID-19 pandemic (Park & Jeon, 2023). Furthermore, the decline is also due to the current research trend focusing more on the use of technology, algorithm-based approaches such as artificial intelligence and big data, and diversity issues, rather than classical methods of talent identification based on psychology or education (Parra-Martinez & Wai, 2023). The number of publications in the last three years has also been very low, with 15 documents in 2023, 9 documents in 2024, and 2025 (2 documents), although there is a possibility of an increase in the number of publications compared to the current data. While this indicates a lack of priority in current research, it also opens up opportunities for researchers to review and offer new approaches to this field to regain its relevance (Baker et al., 2020).



**Figure 2.** Journal Publication Trends 2015-2025

Based on bibliometric analysis conducted using VOSviewer software, a list of the major journals with the most published scientific papers related to talent identification in sport was obtained. The funnel-shaped graph in Figure 2 shows the top 10 journals that have made the greatest contribution to the development of literature in this field. The dominance of Sport Psychology in Talent Identification is evident in the Journal of Psychology of Sport and Exercise, which is at the top with the most publications (40 papers). Next is the journal Frontiers in Psychology, which is in third place with 36 papers, strengthening evidence that the psychological approach is quite dominant in scientific publications on this topic. This indicates that psychological factors are a crucial aspect in the process of talent identification (Hamidi & Wazir, 2022). Based on these findings, the sport psychology approach is very dominant in the scientific debate on talent identification (Gledhill et al., 2017; Hamidi & Wazir, 2022). Sport Medicine (Springer) is in second place with a total of 38 papers. The number of documents indicates that this topic has also received significant attention in the field of sports medicine, particularly in terms of physiology or athlete performance. Furthermore, the International Review of Sport and Exercise Psychology (24 documents) and the Journal of Sport Sciences (21 documents) demonstrate that these studies are frequently published in journals across the fields of sport and exercise science. Journals such as Plos One (15 documents), the Journal of Applied Sport Psychology (13 documents), and the European Journal of Sport Science (12 documents) demonstrate that the research topic spans a wide range of disciplines and is accepted by both general and specialized journals. The bottom two journals in Figure 2 are the Journal of Science and Medicine in Sport and the International Journal of Sport Psychology, each with nine documents. While these are relatively small in number, their presence remains significant, reflecting the global reach and variety of methods used in scientific publications. Furthermore, to gain a better understanding of the relationships between keywords that frequently appear together in this study, a visualization of the co-occurrence network is presented in Figure 3 as an illustration of the thematic relationships formed in the literature that has been analyzed.



**Figure 3.** Co-occurrence Network

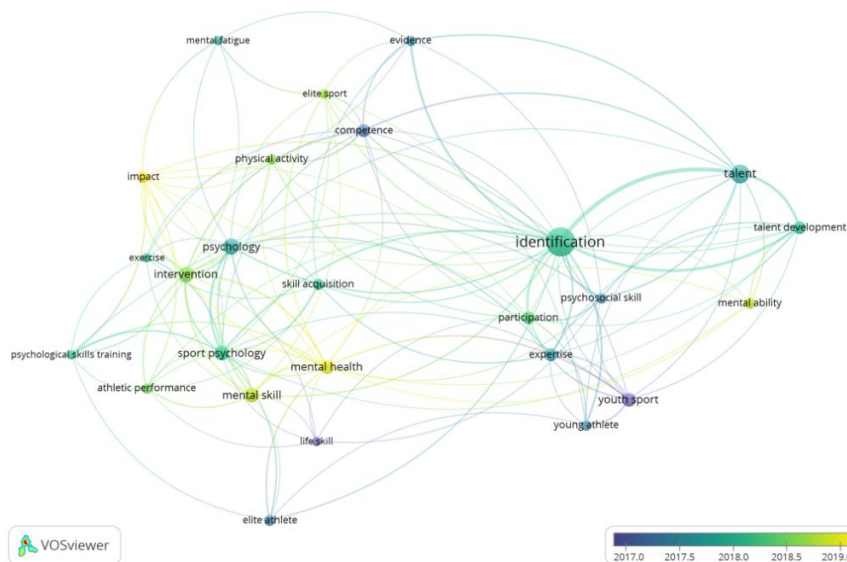
Figure 3 illustrates the keyword co-occurrence analysis from VOSviewer, revealing the relationships between frequently occurring terms in research on sports talent identification. Dots represent keywords, lines depict co-occurrence relationships, and colors indicate automatically generated thematic clusters. Cluster 1 (red) consists of 11 thematic items: "athletic performance," "elite athlete," "exercise," "intervention," "life skills," "mental health," "psychological skills training," "psychology," "skill acquisition," and "sport psychology." Cluster 2 (green) centers on six keywords: "competence," "elite sport," "evidence," "impact," "mental fatigue," and "physical activity." Cluster 3 (blue) includes six keywords: "expertise," "identification," "participation," "psychosocial skills," "young athlete," and "youth sport." Finally, cluster 4 (yellow) contains three highlighted keywords: "mental ability," "talent," and "talent development." This visualization reflects that research on talent identification in sports is not confined to a single aspect but is divided into various thematic dimensions. The word "identification" is centrally positioned and serves as the primary link between the clusters, indicating that all approaches are interconnected and mutually supportive in the scientific discussion on talent identification.

**Table 2.** Co-occurrence Network

Cluster	Keywords
Cluster 1 (Red) 11 items	Athletic performance, elite athlete, exercise, intervention, life skill, mental health, psychological skills training, psychology, skill acquisition dan sport psychology
Cluster 2 (Green) 6 items	Competence, elite sport, evidence, impact, mental fatigue dan physical activity
Cluster 3 (Blue) 6 items	Expertise, identification, participation, psychosocial skill, young athlete dan youth sport
Cluster 4 (Yellow) 3 items	Mental ability, talent dan talent development

\*Keyword in Google Scholar Database: Talent Identification by Psychological Skills on Sport

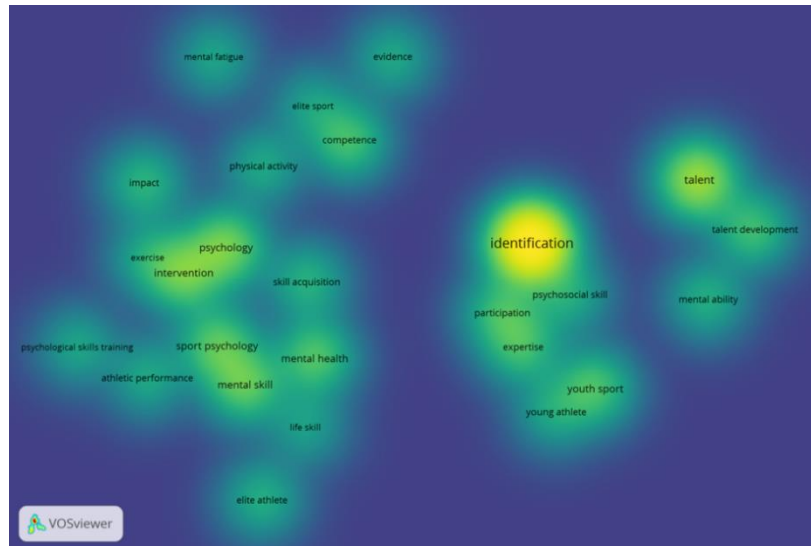
To understand how research topics have developed over time, the overlay visualization shown in Figure 4 is used. This visualization allows for analysis of keywords based on the average year of their appearance in the literature, thus identifying prominent early themes as well as new topics that are starting to attract attention in research on talent identification in sports.



**Figure 4.** Overlay Visualization

Figure 4 illustrates the temporal evolution of studies on sports talent identification. Blue represents key keywords from early publications (2017-2018), such as youth sport, expertise, and elite athlete. Green, on the other hand, represents more recent themes, such as intervention, mental health, and life skills, indicating increased attention to the psychological aspects of athletes. The central position of the word "identification" indicates its relationship to various topics across various clusters, including

physical, psychological, and talent development. These results indicate that studies on talent identification are increasingly focusing on a holistic and comprehensive approach (Parra-Martinez & Wai, 2023). Next, a density visualization was performed to identify the most common and interrelated keywords or topics in the literature. This density visualization can be seen in Figure 5.



**Figure 5.** Density Visualization

Figure 5 shows that the bright yellow area, as seen for the term "identification," indicates a high occurrence rate and strong relationships with other keywords. Conversely, the green to blue areas indicate topics with lower frequency and relatedness. This visual presentation makes it easier to determine the focus of the study, map the depth of the existing scientific discussion, and provide guidance for future research on under-researched topics (van Eck & Waltman, 2013).

## Discussion

This research demonstrates that the study of talent identification based on psychological skills in sport has a strong theoretical foundation in the field of sports psychology. The predominance of literature, such as Weinberg & Gould (2023), confirms that psychological skills such as motivation, emotional regulation, self-confidence, and concentration are important determinants of successful athlete performance. The high number of citations in this literature indicates that modern talent identification processes no longer solely assess physical capacity but also consider mental readiness as a predictive indicator of long-term success. In addition, the influence of emotional intelligence theory as explained in *The Ability Model of Emotional Intelligence: Principles and Updates* shows that the ability to understand and manage emotions plays an important role in competitive performance (Mayer et al., 2016; Stoyanova-Bozhkova et al., 2022). Athletes with strong emotional intelligence tend to be better able to cope with pressure, maintain focus, and adapt to the dynamics of competition (Mathur & Singh, 2024; Yue et al., 2025). These findings strengthen the argument that psychologically based talent identification should incorporate aspects of emotional control and decision-making as part of the evaluation instrument.

In terms of methodology and training systems, literature such as "Periodization: Theory and Methodology of Training" by Tudor O. Bompa and Carlo Buzzichelli (Bompa & Buzzichelli, 2019) demonstrates that talent development still requires an integration of physical and psychological aspects. The concept of training periodization emphasizes the importance of systematic, long-term planning, which in this context can be enhanced by a psychological skills training approach. Therefore, talent identification should ideally be conducted multidimensionally through an integrated evaluation of physical capacity, mental readiness, and athlete development potential (Sarmiento et al., 2018; Till et al., 2019). Analysis of publication trends shows that the peak of research occurred in 2016, then experienced a gradual decline until 2025. This phenomenon can be attributed to the changing direction of sports research which is increasingly moving towards technology and data-based approaches. However, this shift does not reduce the urgency of the psychological approach, but rather opens up opportunities for integration between mental assessment and artificial intelligence-based analysis. The shift in theme from a focus on youth sport and expertise to mental health and intervention also demonstrates a growing awareness of the importance of psychological well-being in the

long-term development of athletes (Gwyther et al., 2024; Thrower et al., 2024). The results of the co-occurrence analysis show that the keyword “identification” is in a central position and is connected to clusters such as psychological skills training, mental health, youth sport, and talent development. This indicates that talent identification research is becoming increasingly holistic and interdisciplinary. Overall, these findings confirm that psychological skills are an essential component of modern sports talent identification systems, and serve as a strategic foundation for coaches and sports institutions in designing evidence-based athlete selection and development programs.

Although the theoretical foundation for psychologically based talent identification is robust, much of the existing literature remains correlational, limiting the strength of causal inferences regarding long-term athlete success. The heavy reliance on canonical sources such as Weinberg and Gould may unintentionally narrow conceptual diversity, potentially overlooking alternative psychological frameworks that could enrich predictive models. Moreover, the operationalization of constructs like motivation, emotional regulation, and self-confidence often lacks standardization across studies, raising concerns about measurement validity and cross-study comparability. While emotional intelligence is frequently highlighted as a key determinant of performance, empirical evidence demonstrating its incremental predictive value beyond established psychological skills remains insufficiently conclusive. The integration of psychological assessment within periodization models is conceptually appealing, yet practical implementation guidelines for coaches are still underdeveloped and rarely empirically tested in applied settings. The observed decline in publication trends after 2016 may also reflect theoretical saturation or methodological redundancy rather than merely a shift toward technology-driven research. Therefore, future investigations must prioritize longitudinal, multi-method designs and advanced analytics to critically examine whether psychologically grounded talent identification systems truly enhance developmental efficiency and performance sustainability.

### Conclusion

Bibliometric analysis of talent identification studies in sports shows that psychological approaches to sport have dominated the literature over the past ten years (2015-2025). The terms identification, youth sport, psychological skills, and life skills appear consistently and strongly in various clusters. The peak number of publications occurred in 2016, but the trend shows a decline in the number of documents in recent years. Overlay and density visualizations emphasize the shift in attention from physical topics to psychosocial issues and athlete well-being. These findings suggest that in sports, talent identification is viewed not only from a physical perspective but also encompasses broader mental, emotional, and social aspects.

### Acknowledgements

We would like to thank the Universitas Pendidikan Indonesia for its full support in publishing this article. We also thank all those who have assisted, directly or indirectly, in making this research possible.

### Conflicts of Interest

The authors declare that there are no financial, professional, institutional, or personal relationships that could be construed as a potential conflict of interest in relation to this study. The research was conducted independently without any external funding or influence that could affect the interpretation of the results or the objectivity of the manuscript.

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