

The Potential and Contribution of Sports Psychology to Sports Science: Literature Review

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Abstract

Sports science is a complex research domain. Describe research metadata using systematic reviews and meta-analysis in sports science, then find out the potential and contribution of sports psychology studies. Today's progress of sports achievement cannot be separated from supporting factors, namely research and science in sports, which is commonly called sports science. This study aims to describe metadata using a systematic review in sports science and then find out the potential and contribution of sports psychology studies. This study refers to the PRISMA model (Preferred Reporting Items for Systematic reviews and Meta-Analyses). The conclusion of this study is known that sports psychology research dominates one-third of the overall research found.

Keywords: sports science, PRISMA model, sports psychology

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INTRODUCTION

Studies using Systematic reviews and Meta-Analysis methods were found and widely published during the Covid-19 Pandemic. Regardless of whether this assumption is valid or not, studies with Literature Review and Meta-Analysis have been known for a long time. In 2009 a guide was published regarding literature review and meta-analysis known as the acronym PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) (Liberati et al., 2009a). Systematic reviews and meta-analyses are essential tools to summarize evidence accurately and reliably, and the information obtained helps practitioners and researchers to stay up-to-date. Studies of this kind provide empirical evidence for regulatory authorities to make policies, assess the risks, benefits, and harms of medical interventions (Liberati et al., 2009b).

The PRISMA Statement for Reporting Systematic Reviews and Meta-Analyses of Studies Evaluating Health Care Interventions is a guideline for reporting systematic reviews and meta-analyses. However, there is still a rebuttal that Meta-analyses have methodological limitations and can be biased due to a lack of information on the primary studies' validity (Bhandari et al., 2001). All data collected regarding research summaries and actions in research strongly supports new research that can be carried out in the future and helps editors assess the benefits of publishing new study reports (Lancet, 2004; Liberati et al., 2009a; Young & Horton, 2005). This kind of study pIn sports science, many studies have been carried out using systematic reviews and meta-analysis.

Sport and society are inseparable and are phenomena that significantly impact society. Through sports, it can create character building so that sports can be used as a bridge to build self-confidence, national or regional identity, and make national pride (Rohendi & Rustiawan, 2020). Sports achievements significantly impact an area (city, district, or country). They are a matter of pride or prestige to appreciate them by other regions, political recognition, and the economic field (Houlihan & Green, 2010).

However, the progress of current sports achievements will not run by itself if there are no supporting factors. One of the supporting factors discussed here is science in sports, which is commonly called sports science. (Martindale & Nash, 2013). Sports science includes research on exercise, sports activity, sports humanities, and social sciences. Furthermore, sports science includes natural science, which also belongs to science (Kim, 2019). Sports science is a combination of several interrelated and very comprehensive scientific disciplines to improve athlete performance and assist in the training process for coaches (Abidin, 2012; Rohendi & Rustiawan, 2020).

This article will describe research metadata that uses systematic reviews and meta-analysis in sports science, then find out the potential and contribution of sports psychology studies. Maybe this is a making a literature review of many literature review studies. This study is limited to the range of publications in the last ten years, from 2012 to 2021, with the topic of sports science using the literature review method.

METHOD

Design

In collecting data, this study refers to the PRISMA model (Preferred Reporting Items for Systematic reviews and Meta-Analyses) (Liberati et al., 2009a). The reason for choosing Prisma is the ease of accessing references related to this model. Besides that, it is easy to be replicated by anyone with various substances.

Databases

The study begins by collecting articles from the open-access article database on the LENS.ORG website. The Lens database was chosen for the ease of access provided by this platform. In addition, Lens is an open-access database that provides exciting and easy-to-use features for conducting literature reviews. However, Lens does not provide data visualization features in citation interconnections between authors, and Lens only provides data visualization in tables, graphs, maps, and word clouds.

Keyword Search

The keywords used in this study are "sports science literature review," keywords are searched for in the title, abstract, keyword, and field of study fields. So that the articles containing the word "sports science literature review" were collected in the title, abstract, keyword, and field of study fields. The structure of the search keyword string is as follows: (Title: (sport AND (science AND (literature AND review)))) OR (Abstract: (sport AND (science AND (literature AND review)))) OR (Keyword: (sport AND (science AND (literature AND review))) OR Field of Study: (sport AND (science AND (literature AND review)))). The search is limited to the year of publication of the last ten years, namely from 2012-2021.

Inclusion Criteria

Based on the results of the inclusion criteria used are; (1) research using the word literature review in the title, (2) found the word literature review in the abstract, (3) scope sports science, and (4) there is a field research sports psychology.

Identification	Electronic database on the website LENS.ORG with Identifier Type/Sources: Microsoft Academic, Crossref, PubMed, Core, PubMed Central (n=791)
Screening	Titles/abstract (n=459)
Eligibility	Full-text articles (n=357)
Included	Perform a data description

RESULTS AND DISCUSSION

Document Distribution by Source and Publication Year

Search results on Lens.org found 459 scholarly works. All articles found are in English. The article has an Identifier Type that comes from five source databases, namely Microsoft Academic (436), Crossref (308), PubMed (167), Core (97), PubMed Central (93). From this data, there is an indication that one article has the same metadata in several database sources.

Papers with Open Access flag (231), have full Abstract (458), Indexed Fulltext (35), Funding papers (39), Has Affiliation (340), Has ORCID iD (201), Cited By Patents (2), Cited By Scholarly Works (235), Analytics Set (308). Meanwhile, the number of documents based on the year of publication can be seen in Table 1.

Table 1. Distribution of Documents by Publication Year

Publication Year	Document Count
2012	24
2013	26
2014	40
2015	59
2016	32
2017	40
2018	47
2019	56
2020	75
2021	60

Distribution of Documents by document Type

Table 2 presents the number of documents based on Document Type, which is known that the document is dominated by journal articles with several 357 documents, Unknown 68 documents, Dissertation 15 documents.

Table 2. Distribution of Documents by Document Type

Document Type	year	Total by Type
Book	2012-2021	2
Book Chapter	2012-2021	7
Conference Proceedings Article	2012-2021	2
Dissertation	2012-2021	15
Journal Article	2012-2021	357
Libguide	2012-2021	1
Other	2012-2021	6
Report	2012-2021	1
Unknown	2012-2021	68
Total Documents		459

Distribution of Documents by Document Type: Journal Article

Table 3 displays the data after filtering the number of documents based on Document Type: Journal Article. Total found 357 journal article documents, with varying amounts each year. An average of 35.6 articles were published per year, a minimum of 17 articles published in 2013, furthermore, a maximum of 61 articles published in 2020. In general, it is known that there is an increase in the number of articles from 2012 to 2021.

Table 3. Distribution of Documents by Document Type: Journal Article

Publication Year	Document Type	Document Count
2012	Journal Article	18
2013	Journal Article	17
2014	Journal Article	27
2015	Journal Article	44
2016	Journal Article	30
2017	Journal Article	32
2018	Journal Article	34
2019	Journal Article	44
2020	Journal Article	61
2021	Journal Article	50
	Total	357
	Average	35.6
	Min	17
	Max	61

Document Distribution by Top Field of Study

Table 4 shows the data distribution after filtering the number of documents based on Top Fields of Study. It is known that there are 9 top fields of study. The dominating field of study is Medicine with 139 documents and Psychology with 129 documents, then Physical Therapy with 83 documents, and Sport Science with 38 documents. There are many other fields of study with a varied number of documents. These four nominations are broadly dominating fields of study; on the other hand, they may still coincide with these four fields of study. In the Top Field of Study, it is known that psychology is the second-largest scope of the study compared to other study areas. It shows that the psychological aspect has become a power dimension that sports need to be studied.

Table 4. Distribution of Documents by Top Field of Study

Field of Study	Document Count
Medicine	139
Psychology	129
Physical therapy	83
Sports science	38
Applied psychology	37
Physical Medicine and rehabilitation	34
Sports medicine	32
Physical education	27
Psychological intervention	20

Top Source Country

Four countries dominate out of the 15 selected rankings based on the source country. The top country in the United States has 43 documents, the United Kingdom, 40 documents, Australia 36 documents, and Spain, 29 documents. There are many more contributions from other countries that are not mentioned here.

Sports Psychology

Mental skills are essential in athletes' success (Cece, 2020). Sports psychologists should report on participant and context information to adequately describe the diverse sports experiences of youth (Robertson et al., 2019). Adolescent sport participation may be a protective environment against anxiety and depressive symptoms (Panza et al., 2020). Psychological theories relating to self-regulation could shed more light on how endurance performance is determined (McCormick et al., 2019). Sports psychologists should focus on the interpersonal behaviors of coaches on teams' emergent states (Robertson et al., 2019). There is an increased percentage of qualitative articles in 2015-2017 compared to 2010-2012 (McGannon & Smith, 2020). Narrative inquiry can expand sport psychology's socio-cultural identity research agenda (McGannon et al., 2021).

Sports Psychology in Sports science

Exercise and psychology interventions may prevent injury in pre-elite athletes (Smyth et al., 2019). A brief screening instrument designed to identify early indicators of athlete-specific distress and potential mental health symptoms is needed (Rice et al., 2020). Elite athletes may be as likely as members of the general population to experience mental disorders (Poucher et al., 2021). Sports physiotherapists implement psychological strategies during athletes' rehabilitation but are elements within their scope (Annear et al., 2019). The Athlete Psychological Strain Questionnaire may facilitate earlier identification for male and female elite athletes vulnerable to mental health symptoms (Rice et al., 2020). Sports medicine and mental health professionals should screen for psychological distress in athletes that may otherwise appear to be well-functioning (Rice et al., 2020).

The study of motivation, personality type, anxiety, stress, anger, hate, likes, and others is invisible. Because sports actors are human, the study of psychology cannot be separated. The best athletes use five prominent psychological factors to protect themselves from potential adverse effects (Sarkar & Fletcher, 2014). Sports physiotherapists implement psychological strategies during athletes' rehabilitation but are elements within their scope (Annear et al., 2019). An athlete who can excel in a particular sport can not be separated from the physical and psychological factors that support athletes. The chaos of a football match is often caused by players who cannot control themselves from disturbing emotions. Social support and negative social interactions have implications for athlete psychological health, potentially influencing the links of stress-related experiences with burnout and well-being (DeFreese & Smith, 2014). Athletes experience additional mental health risk factors compared to non-athletic populations (Schinke et al., 2018). Youth sports psychologists can develop skills training programs informed by athlete data to enhance focus and emotional control (Dohme et al., 2020).

CONCLUSION

The summary of this study acknowledges that sports science is a very complex study domain. Many perspectives and other fields of study have colored the research in it. Research in the scope of Medicine and psychology are the two domains that dominate research. It can be concluded that the study of sports that makes humans objects in it cannot be separated from the contribution of sports psychology research. Physical and psychological aspects are the object of study that continues today.

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