West Science Interdisciplinary Studies
Vol. 01, No. 11, November and 2023: pp. 1271-1280

Analysis of the Literature on the Role of Physical Activity in Improving Wellbeing and Quality of Life

Rezeki Nur[1], Yossy Dwi Erliana[2], Indra Tjahyadi[3], Budi Mardikawati[4]
[1] Akper Mappa Oudang Makassar and rhenu@ymail.con
[2] Fakultas Psikologi dan Humaniora Universitas Teknologi Sumbawa and yossy.dwi.erliana@uts.ac.id
[3] Universitas Panca Marga and indratjahyadi@upm.ac.id
[4] Politeknik Transportasi Darat Bali and mardikawati@poltradabali.ac.id

ABSTRACT

This study undertakes a thorough bibliometric analysis to investigate how the body of research on the benefits of physical activity for improving wellbeing and quality of life is changing. The study examines authorship patterns, citation networks, theme clusters, and keyword co-occurrences using data from well-known databases in order to offer a comprehensive picture of the area. Important writers including DER Warburton, CE Garber, and WL Haskell have produced seminal works that serve as a basis for international principles and recommendations. The impact of physical activity on overall health to the impact of adolescent and mental health are just a few of the varied dimensions covered by thematic clusters in the research. Recurring themes are found by keyword co-occurrence analysis, one of which being the general impact of physical activity on life and quality. Unexplored topics, such how exercise affects diseases like multiple sclerosis and the COVID-19 pandemic's effects, indicate areas that warrant more study. The amalgamation of results provides significant perspectives for scholars, professionals, and decision-makers seeking to propel understanding and guide evidence-based solutions concerning physical activity and wellness.

Keywords: *Physical Activity, Wellbeing, Quality of Life, Bibliometric Analysis*

1. INTRODUCTION

Physical activity is universally recognized as a fundamental component of a healthy lifestyle, contributing significantly to overall health and quality of life. It has been extensively researched across various disciplines, including public health, sports science, psychology, and medicine. Regular physical activity has numerous benefits, such as improving cardiovascular health, cognition, bone health, and mental well-being [1], [2]. However, sedentary lifestyles have become increasingly prevalent, leading to various health complications [3]. It is necessary to encourage people to engage in physical exercise, despite the fact that there is a high level of information and good attitudes toward physical activity [4]. A significant number of people, including medical students, do not meet the levels of physical exercise that are suggested because [5]. The promotion of physical activity and the elimination of access inequities are both areas that might benefit from interventions that are implemented at both the individual and environmental levels [6]–[9]. In order to have a better understanding of the physiological and psychological mechanisms that underlie the improvement of mental health that exercise brings about, particularly in specific circumstances such as India, further study is required.

Physical activity has a significant impact on both mental and physical health, as well as on the overall economy of a nation [10], [11]. Regular exercise reduces the risk of non-communicable diseases (NCDs) such as cardiovascular diseases, type 2 diabetes, and cancer, and is associated with many health benefits and delayed mortality [2], [12]. Additionally, engaging in physical exercise has the potential to mitigate the negative consequences of depression, improve one's mood, promote life satisfaction, and give one a feeling of purpose and meaning in life [2]. Additionally, it has a

significant impact on the mental health and well-being of university students by lessening the symptoms of worry and stress that they experience within their daily lives. In order to accomplish the goal of fostering a healthy society, it is essential to have an understanding of the function that physical exercise plays in society and to raise awareness among the general public. Therefore, it is of the highest significance to encourage people to engage in physical exercise and to highlight the favorable effects that it has on the health of individuals.

The increasing awareness of the complex effects of physical activity on an individual's overall health is what spurred this research. Even though separate studies have looked at various aspects of this relationship, a thorough review of the literature is necessary to spot trends, fill in any gaps, and guide future investigations. Systematic analysis is necessary to integrate many approaches and theoretical frameworks from other disciplines, reveal the larger body of knowledge, and direct evidence-based initiatives.

2. LITERATURE REVIEW

2.1 Theoretical Framework

Exploration of the relationship between physical activity and well-being has a long history, with early studies in the late 19th century and more systematic investigations in the mid-20th century [13]. Various theoretical frameworks have been used to understand this relationship, including biopsychosocial models, socioecological models, and psychological theories [14]. These frameworks provide different perspectives on how physical activity affects well-being. By examining the theoretical underpinnings of these studies, researchers aim to gain a comprehensive understanding of this complex relationship [15].

2.2 Current State of the Literature

Recent studies have investigated a variety of aspects when it comes to the relationship between physical exercise and well-being. These aspects include the impact on mental health, the prevention of chronic illness, and the socio-cultural impacts on involvement. Several studies have demonstrated that there is a beneficial correlation between engaging in physical exercise and maintaining adherence to treatment for addiction [16]. When it comes to adults, there is substantial evidence that physical exercise helps prevent weight gain, particularly when the intensity of the activity ranges from moderate to strenuous [17]. [18] Research has shown that those who engage in physical activity have greater levels of cardiorespiratory fitness, better health, and a decreased chance of acquiring chronic medical conditions, including cardiovascular disease. There is still a lack of clarity on the connection between physical activity, physical fitness, and intellectual success in children who are enrolled in school, as there are data that contradict each other [19]. According to research [20], community-based physical activity programs that include a peer support component have been proven to have good benefits on social support, mental well-being, and levels of physical activity among those who have been diagnosed with mental health conditions. It is important to note that the association between physical exercise and well-being differs not just across various groups, such as children, adolescents, adults, and older individuals, but also between gender and cultural factors.

Gaps and Controversies

Despite the wealth of research, there are still some gaps and controversies in the literature. This section will critically examine these knowledge gaps, discussing areas where there is conflicting evidence or where limited research has been conducted. Identifying these gaps is critical to guide future research efforts and inform the development of evidence-based interventions.

3. METHODS

The research method in the article text describes the type of research, the subject and object of the study, the time and location of the research, the research instrument, the sampling method, data collection, and data analysis (10 pt).

We will search a wide range of reputable databases, such as PubMed, Scopus, and Web of Science, in order to do an exhaustive bibliometric analysis. A combination of keywords like "physical activity," "well-being," "quality of life," and associated terms will be used in the search approach. Studies published in books, conference proceedings, and peer-reviewed journals will all meet the inclusion criteria. The emphasis will be on literature from the previous 20 years in order to capture current trends that were accessed on October 30 with the aid of Publish or Perish (PoP).

Table 1. Metrics Data Research

Publication years	: 1989-2023
Citation years	: 34 (1989-2023)
Paper	: 980
Citations	: 292131
Cites/year	: 8592.09
Cites/paper	: 298.09
Cites/author	: 95455.11
Papers/author	: 320.77
Author/paper	: 3.64
h-index	: 201
g-index	: 522
hI,norm	: 123
hI,annual	: 3.62
hA-index	: 74
Papers with ACC	: 1,2,5,10,20:945,912,758,538,282

Data Analysis

VosViewer, a widely used bibliometric software, will be used for data extraction and analysis [21]. VosViewer facilitates the visualization and analysis of bibliometric networks, including co-authorship networks, citation networks, and keyword co-occurrence networks. This tool allows us to map the intellectual structure of the field, identify clusters of related research, and visualize the evolution of key themes over time.

4. RESULTS AND DISCUSSION

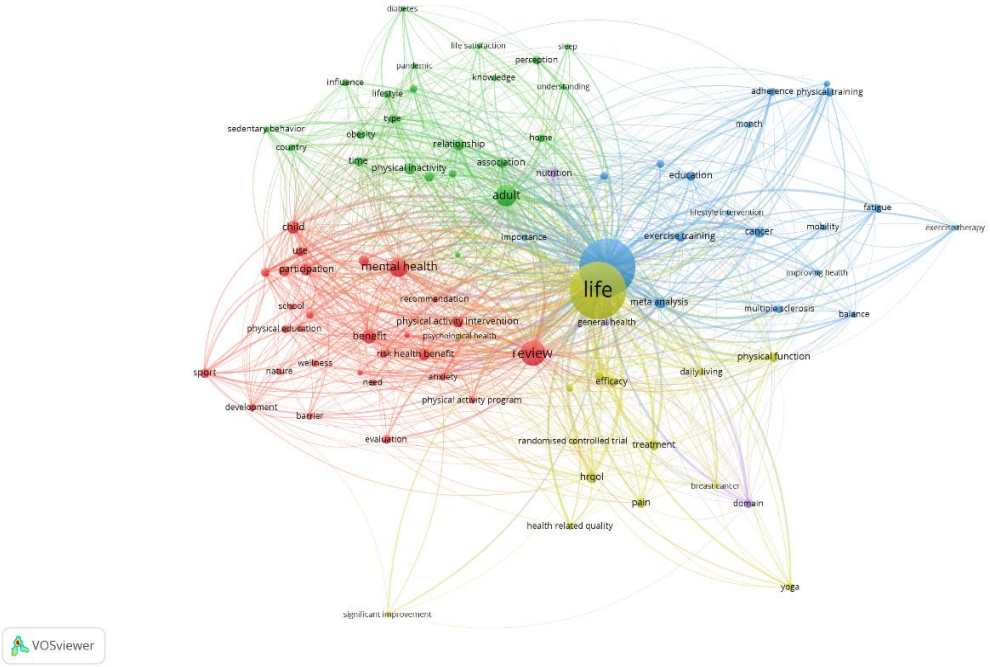

Figure 1. Mapping Results

The bibliometric analysis has provided a comprehensive overview of the literature from Figure 1 on the role of physical activity in improving well-being and quality of life.

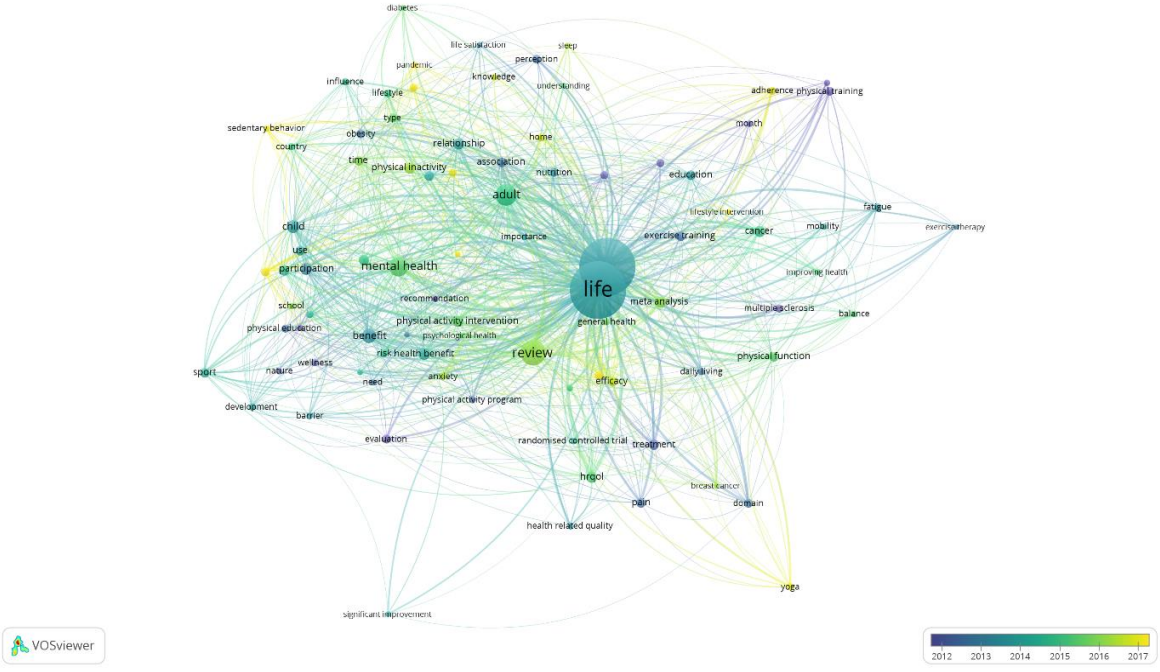

Figure 2. Trend Research

Bibliometric analysis revealed a dynamic landscape in the literature on the role of physical activity in improving well-being and quality of life. A total of 980 publications were identified from the selected database, covering the last two decades. The distribution across journals, publication years and disciplines provides an initial overview of the diversity and scope of research in this area.

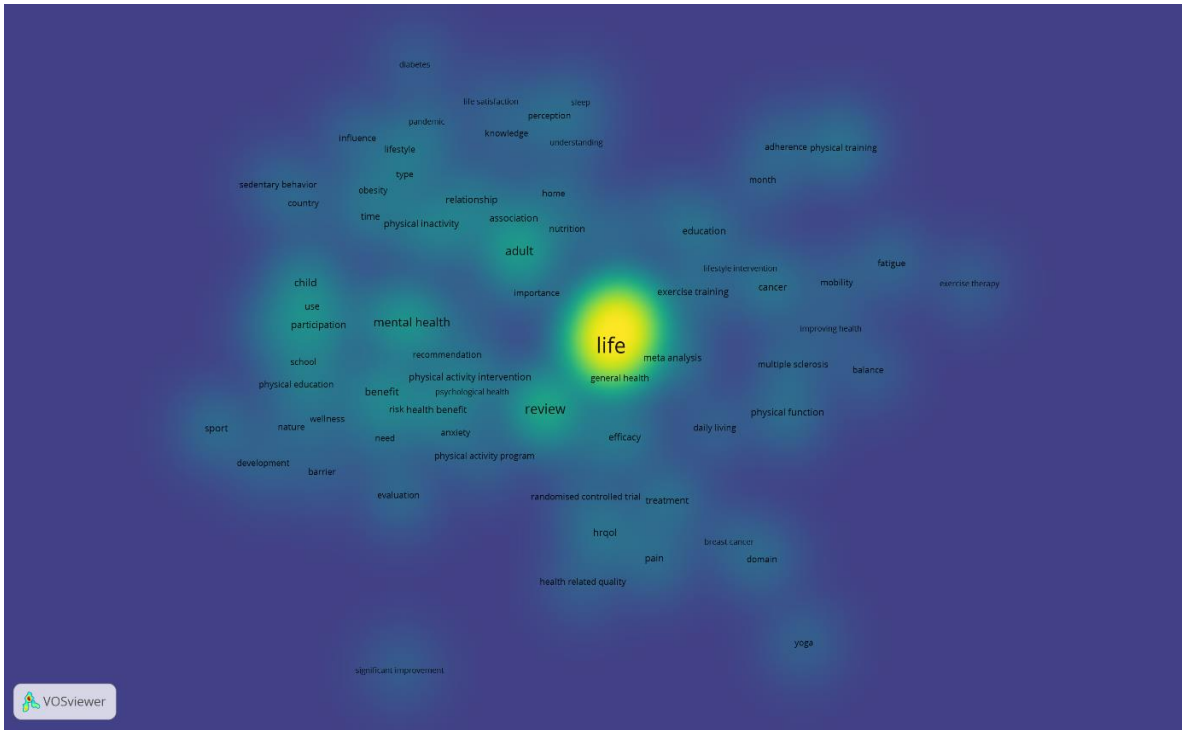

Figure 3. Cluster Mapping

The multifaceted nature of the literature on physical activity and wellbeing is revealed by the discovery of these clusters. The influence of physical activity on mental health and the function of lifestyle and educational treatments are examples of cross-cutting issues that span clusters and highlight the intricacy of the relationship being studied. Future research projects should use a holistic approach, taking into account the interaction between psychological, physical, and social aspects, according to integrative insights from these clusters. To enhance their effectiveness, physical activity-promoting initiatives and policies should be customized for certain demographic groups and medical problems.

Table 2. Cluster Identifications

Cluster	Total Items	Most frequent keywords (occurrences)	Keyword
1	28	Adolescent (20), anxiety (25), environment (30), mental health (15).	Addition, adolescent, anxiety, area, barrier, benefit, child, chronic disease, development, environment, evolution, health benefit, health outcome, mental health, nature, need, participation, physical activity interview, physical activity program, physical education, public health, recommendation, review, risk, school, sport, use, wellness
2	23	Knowledge (20), life satisfaction (20), mental wellbeing (30), physical inactivity (25)	Adult, association, country, covid, diabetes, home, increase, influence, knowledge, life satisfaction, lifestyle, mental wellbeing, obesity, pandemic, perception, physical inactivity, relationship,

			research, sedentary behavior, sleep, time, type, understanding
3	19	Education (20), lifestyle intervention (25), mobility (30)	Adherence, balance, cancer, education, exercise therapy, exercise training, fatigue, heart failure, importance, improving health, lifestyle intervention, meta analysis, mobility, month, multiple sclerosis, physical training, quality, regular physical activity, year
4	15	Efficacy (20), psychological health (20)	Breast cancer, daily living, dementia, efficacy, health related quality, healthrelated quality, hrqol, life, pain, physical function, psychological health, randomised controlled, significant improvemen, treatment, yoga
5	3	General health (20)	Domain, general health, nutrition

The literature on the role of physical activity in improving wellbeing and quality of life can be categorized into five distinct thematic clusters. Cluster 1 focuses on the intersection of physical activity, adolescence, and mental health, exploring the benefits of physical activity in adolescence and the environmental factors influencing participation. Cluster 2 centers on the knowledge base surrounding physical activity, its impact on life satisfaction, and its influence on mental wellbeing, with a contemporary lens on the relationship between physical activity and mental wellbeing in the context of global events. Cluster 3 emphasizes the educational aspects of physical activity, lifestyle interventions, and improvements in mobility, particularly in managing and improving health outcomes for specific conditions. Cluster 4 examines the efficacy of physical activity interventions and their impact on psychological health, with a focus on mitigating psychological health challenges associated with specific health conditions. Cluster 5 explores the general health implications of physical activity, with potential areas of exploration related to broader lifestyle factors influencing general health.

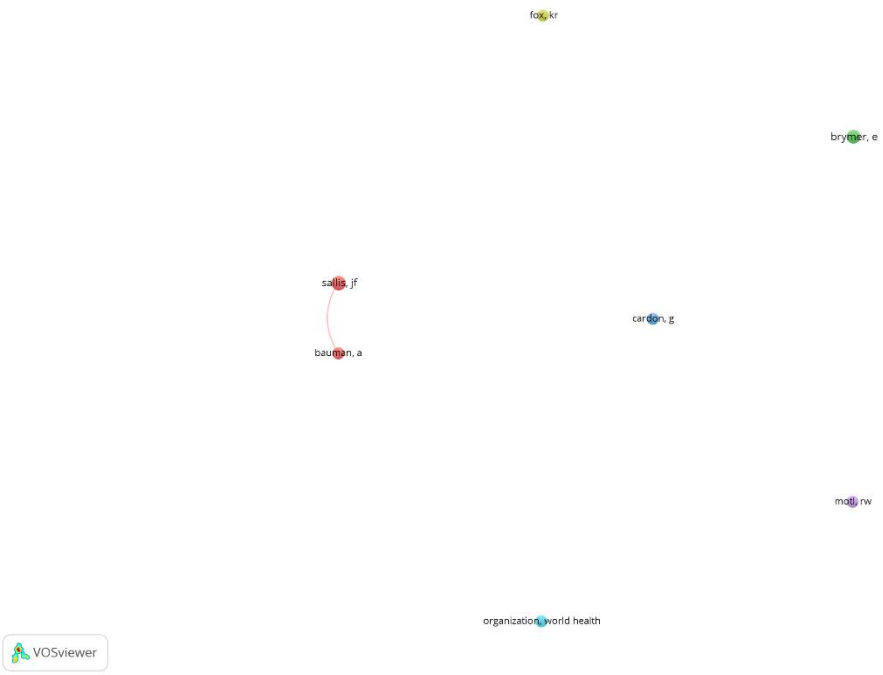

Figure 4. Author's Collaboration

Co-authorship networks illuminate the collaborative structures within the literature. Prolific authors and research groups emerge, showcasing the interconnectedness of scholars in exploring the relationship between physical activity and wellbeing. Collaborative patterns also highlight interdisciplinary collaborations, suggesting a convergence of insights from diverse fields such as public health, sports science, and psychology. This interdisciplinary approach underscores the complexity of the subject and the need for:

Table 3. Citations Analysis

Citations	Authors and year	Title
13439	WL Haskell, IM Lee, RR Pate, KE Power (2007)	Physical activity and public health: updated recommendation for adults from the American College of Sports Medicine and the American Heart Association
11179	DER Warburton, CW Nicol, SSD bredin (2006)	Health benefits of physical activity: the evidence
7158	CE Garber, B Blissmer, MR Deschenes (2011)	… of exercise for developing and maintaining cardiorespiratory, musculoskeletal, and neuromotor fitness in apparently health adults: guidance for prescribing exercies
6146	ME Nelson, WJ Rejeski, SN Blair, PW Duncan (2007)	Physical activity and public health in order adults: recommendation from the American College of Sports Medicine and the American Heart Associaton
5612	GH Guyatt, DH Feeny, DL Patrick (1993)	Measuring health-related quality of life
5189	IB Wilson, PD Cleary (1995)	Linking clinical variables with health-related quality of life: a conceptual model of patient outcomes
5015	FC Bull, SS Al-Ansari, S Biddle, K Borodulin (2020)	World Health Organization 2020 guidelines on physical activity and sedentary behaviour
4507	KL Piercy, RP Troiano, RM Ballard, SA Carlson (2018)	The physical activity guidelines for Americans
4377	GR Norman, JA Sloan, KW Wyrwich (2003)	Interpretation of changes in health-related quality of life: the remarkable universality of half a standard deviation
4090	R Guthold, GA Stevens, LM Riley, FC Bull (2018)	Worldwide trends in insufficient physical activity from 2001 to 2016: a pooled analysis of 358 population-based surveys with 1-9 million participants

The citation analysis of the identified publications provides valuable insights into the seminal works and key contributors that have significantly influenced the field of physical activity and wellbeing. The work by Haskell et al. (2007) stands out as a cornerstone in the literature, shaping guidelines and recommendations for physical activity in adults. Warburton et al. (2006) provide a comprehensive review, synthesizing evidence on the health benefits of physical activity. Garber et al. (2011) offer crucial guidance for exercise prescription, emphasizing the importance of various exercise modalities. Nelson et al. (2007) focus on the unique considerations for older adults, contributing to the understanding of how physical activity promotes health across the lifespan. Guyatt et al. (1993) have influenced the development and application of instruments for assessing health-related quality of life. Wilson et al. (1995) provide a conceptual framework for understanding the link between clinical variables and health-related quality of life. Bull et al. (2020) reflect ongoing efforts to update and refine global guidelines. Piercy et al. (2018) play a crucial role in shaping public health recommendations and guidelines in the United States. Guthold et al. (2018) provide a global perspective on physical inactivity trends.

Table 4. Keywords Analysis

Most occurrences		Fewer occurrences	
Occurrences	**Term**	**Occurrences**	**Term**
991	Life	20	Multiple sclerosis
978	Quality	19	Covid
198	Review	19	Fatigue
139	Adult	18	Wellness
111	Mental health	18	Country
63	Benefit	17	Yoga
53	Child	17	Physical activity program
48	Health benefit	16	Development
44	Participation	16	Daily living
40	Relationship	15	Heart failure
40	Meta analysis	13	School
39	Physical activity intervention	12	Breast cancer
39	Hrqol	11	Addition
37	Physical inactivity	10	Chronic disease

The keyword co-occurrence analysis identifies the most and fewer occurrences of terms within the literature on physical activity and wellbeing. This analysis provides insights into the recurring themes and focal points of research, shedding light on the predominant topics and less-explored areas within the field.

Most Occurrences

Physical exercise has a substantial influence on a variety of areas of people's lives, including their general well-being, their quality of life, and the many components of their health. Due to the fact that research indicates that physical exercise can have good impacts on mental, bodily, and social aspects of adult wellbeing, it is of utmost importance to have an understanding of the link between physical activity and wellbeing in the adult population. In addition, it has been discovered that physical exercise has a substantial impact on mental health, and there are therapies that are focused at preventing and managing mental health disorders. Participating in physical exercise confers a multitude of advantages, ranging from increases in mental and emotional well-being to improvements in physiological health if one is physically active. It is also very important to investigate the effects that physical exercise has on the well-being of children, including the positive effects on their development, the results for their health, and the formation of healthy behaviors that will last a lifetime.

Fewer Occurence

Research related to multiple sclerosis likely investigates the impact of physical activity on symptom management, functional abilities, and overall wellbeing in individuals with this condition. Studies exploring the potential of physical activity interventions in managing and alleviating fatigue, particularly in clinical populations, are also prevalent. The relationship between physical activity and heart failure is another area of focus, with research examining the safety, efficacy, and benefits of exercise interventions for individuals with heart failure. Additionally, the role of physical activity in breast cancer outcomes is a specific area of interest, with studies investigating the preventive and therapeutic effects of physical activity in individuals with or at risk of breast cancer. The integration of physical activity into daily living routines and the promotion of physical activity within the school setting are also topics of research.

The keyword co-occurrence analysis provides a comprehensive view of the recurring themes and less-explored areas within the literature on physical activity and wellbeing. The prevalence of terms such as "Life," "Quality," and "Review" underscores the multidimensional nature of research,

emphasizing the overarching impact of physical activity on various aspects of individuals' lives. In addition, the identification of terms that occur less frequently draws attention to particular areas that may qualify for additional investigation. These areas include the impact of physical activity on conditions such as multiple sclerosis, the influence of the COVID-19 pandemic (Covid), and the connection between physical activity and fatigue. These findings may be used by researchers and practitioners to drive future investigations, which will ensure that a comprehensive knowledge of the complex link between physical exercise and wellbeing is achieved.

Implications and Applications

The findings of this analysis have implications for both research and practice. Researchers can leverage insights into influential works, thematic clusters, and recurring keywords to guide future investigations, ensuring a holistic exploration of the relationship between physical activity and wellbeing. Practitioners and policymakers can use this information to inform evidence-based interventions tailored to specific populations and contexts.

Limitations and Future Directions

While the bibliometric analysis provides valuable insights, it is not without limitations. The exclusion of certain databases, reliance on predefined keywords, and potential publication bias may influence the comprehensiveness of the findings. Future research could expand the scope by incorporating additional databases and employing advanced text mining techniques to capture a broader spectrum of literature.

CONCLUSION

In conclusion, the bibliometric analysis presented herein provides a comprehensive overview of the intellectual landscape within the literature on physical activity and wellbeing. The identification of seminal works, key contributors, thematic clusters, and recurring keywords contributes to a nuanced understanding of the field's evolution. Notable authors have significantly influenced global guidelines, while thematic clusters highlight diverse research dimensions. Emerging areas, such as the influence of physical activity on conditions like multiple sclerosis and the impact of the COVID-19 pandemic, underscore the dynamic nature of the discipline. The synthesis of these findings has implications for both research and practice, guiding future investigations and informing evidence-based interventions. As the field continues to evolve, this analysis serves as a valuable resource for advancing knowledge and promoting health through the lens of physical activity and wellbeing.

REFERENCES

[1] Q.-E. Chung, S. A. Abdulrahman, M. K. J. Khan, H. B. J. Sathik, and A. Rashid, "The relationship between levels of physical activity and academic achievement among medical and health sciences students at Cyberjaya University College of Medical Sciences," *Malaysian J. Med. Sci. MJMS*, vol. 25, no. 5, p. 88, 2018.

[2] R. Laumbach, Q. Meng, and H. Kipen, "What can individuals do to reduce personal health risks from air pollution?," *J. Thorac. Dis.*, vol. 7, no. 1, pp. 96–107, Jan. 2015, doi: 10.3978/j.issn.2072-1439.2014.12.21.

[3] C. R. Nigg, "Technology's influence on physical activity and exercise science: the present and the future," *Psychol. Sport Exerc.*, vol. 4, no. 1, pp. 57–65, 2003.

[4] D. Ding *et al.*, "The economic burden of physical inactivity: a global analysis of major non-communicable diseases," *Lancet*, vol. 388, no. 10051, pp. 1311–1324, 2016.

[5] A. Mahindru, P. Patil, and V. Agrawal, "Role of physical activity on mental health and well-being: a review," *Cureus*, vol. 15, no. 1, 2023.

[6] H. Ashari and T. P. Nugrahanti, "FRAUD, ETIKA DAN KEGAGALAN BANK DARI SUDUT PANDANG PEGAWAI," *J. Ris. Akunt. dan Keuang.*, vol. 9, no. 2, pp. 305–324, 2021.

[7] H. Ashari and T. P. Nugrahanti, "Household economy challenges in fulfilling life needs during the Covid-19 pandemic," *Glob. Bus. Econ. Rev.*, vol. 25, no. 1, pp. 21–39, 2021.

[8] Z. Abidin, D. Destari, S. Syafruddin, S. Arifin, and M. Agustiani, "Implementation of Islamic Religious Education Learning and Character in the New Normal Era," *Al-Hayat J. Islam. Educ.*, vol. 6, no. 1, pp. 158–169, 2022.

[9] D. Destari, H. Tannady, A. G. Zainal, S. Nurjanah, and J. M. J. Renwarin, "The Improvement of Employee's Performance in Plastic Ore Industry: Mediating Role of Work Motivation.," *Turkish Online J. Qual. Inq.*, vol. 12, no. 7, 2021.

[10] L. Allin, C. Haighton, S. Dalkin, J. Das, and G. Allen, "Understanding the challenges and impact of training on referral of postnatal women to a community physical activity programme by health professionals: A qualitative study using the COM-B model," *Midwifery*, vol. 116, p. 103516, 2023.

[11] C. Li, G. Ning, Y. Xia, and Q. Liu, "Health benefits of physical activity for people with mental disorders: From the perspective of multidimensional subjective wellbeing," *Front. Psychiatry*, vol. 13, p. 1050208, 2022.

[12] S. Setia, D. Furtner, M. Bendahmane, and M. Tichy, "Success4life Youth Empowerment for Promoting Well-being and Boosting Mental Health: Protocol for an Experimental Study," *JMIR Res. Protoc.*, vol. 11, no. 9, 2022, doi: 10.2196/38463.

[13] H. S. Heera, S. S. H. Najar, A. Shevchenko, and O. Lytvynenko, "Valeological relationship of physical workability with health indicators," 2023.

[14] K. Borodulin and S. Anderssen, "Physical activity: associations with health and summary of guidelines," *Food Nutr. Res.*, vol. 67, 2023.

[15] H. Xu, "Mobilities and health: a relational perspective," *Tourism Geographies*, vol. 25, no. 2–3. Taylor & Francis, pp. 936–939, 2023.

[16] E. Castillo-Viera, F.-J. Gago-Valiente, F.-J. Giménez-Fuentes-Guerra, M.-T. Abad-Robles, and E. Moreno-Sánchez, "Physical Activity Programmes in the Treatment of Addictions: A Systematic Review," *Appl. Sci.*, vol. 12, no. 18, p. 9117, 2022.

[17] J. M. Jakicic *et al.*, "Physical activity and the prevention of weight gain in adults: a systematic review," *Med. Sci. Sports Exerc.*, vol. 51, no. 6, p. 1262, 2019.

[18] G. F. Fletcher, C. Landolfo, J. Niebauer, C. Ozemek, R. Arena, and C. J. Lavie, "Promoting physical activity and exercise: JACC health promotion series," *J. Am. Coll. Cardiol.*, vol. 72, no. 14, pp. 1622–1639, 2018.

[19] S. Shah and S. Diwan, "PHYSICAL FITNESS, PHYSICAL ACTIVITY AND ACADEMIC ACHIEVEMENT IN SCHOOL GOING CHILDREN: A NARRATIVE," *Int J Physiother Res*, vol. 7, no. 4, pp. 3106–3197, 2019.

[20] L. M. Tweed, E. N. Rogers, and F.-E. Kinnafick, "Literature on peer-based community physical activity programmes for mental health service users: a scoping review," *Health Psychol. Rev.*, vol. 15, no. 2, pp. 287–313, 2021.

[21] Y. Iskandar, J. Joeliaty, U. Kaltum, and H. Hilmiana, "Bibliometric Analysis on Social Entrepreneurship Specialized Journals," *J. WSEAS Trans. Environ. Dev.*, pp. 941–951, 2021, doi: 10.37394/232015.2021.17.87.