

PROMOTIONAL STRATEGIES IN POST-COVID 19 PANDEMIC SPORTS DEVELOPMENT: A SYSTEMATIC LITERATURE REVIEW

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Abstract

This literature review study aims to determine promotion strategies in sports development after the Covid-19 pandemic: A systematic literature review. The technique used in this research is library research. Systematic literature search on promotional strategies in post-Covid 19 sports development: A systematic literature search was conducted in Sage, Scopus, Google Scholar, and Researchgate databases. Literature analysis used a systematic literature review method. A total of three articles were selected for review. The results of the review of the articles related to processes of participation and empowerment, with sports promotion strategies taking control over what determines the health and well-being of individuals; The holistic approach has proven successful. As a result, the sports development strategy can be realized as a step towards improving the sports lifestyle of individuals. Literature analysis used a systematic literature review method. A total of three articles were selected for review. The results of the review of the articles related to processes of participation and empowerment, with sports promotion strategies taking control over what determines the health and well-being of individuals; The holistic approach has proven successful. As a result, the sports development strategy can be realized as a step towards improving the sports lifestyle of individuals. Literature analysis used a systematic literature review method. A total of three articles were selected for review. The results of the review of the articles related to processes of participation and empowerment, with sports promotion strategies taking control over what determines the health and well-being of individuals; The holistic approach has proven successful. As a result, the sports development strategy can be realized as a step towards improving the sports lifestyle of individuals.

Keywords: promotion, sports development, Covid-19 pandemic

STRATEGI PROMOSI DALAM PENGEMBANGAN OLAHRAGA PASCA PANDEMI COVID 19: A SYSTEMATIC LITERATURE REVIEW

Abstrak

Studi tinjauan pustaka ini bertujuan untuk mengetahui strategi promosi dalam pengembangan olahraga pasca pandemi Covid-19: Sebuah tinjauan pustaka yang sistematis. Teknik yang digunakan dalam penelitian ini adalah penelitian kepustakaan. Penelusuran literatur sistematis tentang strategi promosi dalam pengembangan olahraga pasca Covid-19: Pencarian literatur sistematis dilakukan di database Sage, Scopus, Google Scholar, dan Researchgate. Analisis literatur menggunakan metode tinjauan literatur sistematis. Sebanyak tiga artikel dipilih untuk ditinjau. Hasil tinjauan dari artikel-artikel tersebut terkait dengan proses partisipasi dan pemberdayaan, dengan strategi promosi olahraga yang mengambil kendali atas apa yang menentukan kesehatan dan kesejahteraan individu; Pendekatan holistik telah terbukti berhasil. Hasilnya, strategi pengembangan olahraga dapat direalisasikan sebagai langkah untuk meningkatkan gaya hidup olahraga individu. Analisis literatur menggunakan metode

tinjauan literatur yang sistematis. Sebanyak tiga artikel dipilih untuk ditinjau. Hasil dari tinjauan artikel terkait dengan proses partisipasi dan pemberdayaan, dengan strategi promosi olahraga mengambil kendali atas apa yang menentukan kesehatan dan kesejahteraan individu; Pendekatan holistik telah terbukti berhasil. Hasilnya, strategi pengembangan olahraga dapat direalisasikan sebagai langkah untuk meningkatkan gaya hidup olahraga individu. Analisis literatur menggunakan metode tinjauan literatur yang sistematis. Sebanyak tiga artikel dipilih untuk direview. Hasil dari tinjauan artikel terkait dengan proses partisipasi dan pemberdayaan, dengan strategi promosi olahraga mengambil kendali atas apa yang menentukan kesehatan dan kesejahteraan individu; Pendekatan holistik telah terbukti berhasil. Hasilnya, strategi pengembangan olahraga dapat direalisasikan sebagai langkah untuk meningkatkan gaya hidup olahraga individu.

Kata kunci: promosi, pengembangan olahraga, pandemi Covid-19

INTRODUCTION

The Covid-19 outbreak that originated in Wuhan, China, has rapidly spread across different countries and regions worldwide, making it one of the most severe pandemics in over a century, comparable to the 1918 influenza pandemic. In addition to the strain on the healthcare sector, the pandemic has also had a significant impact on the global economy (Dwipayanti et al., 2021). To address the economic and social challenges posed by the pandemic, many governments are quickly implementing measures aimed at curbing the spread of the disease (Hui, 2021). The sports industry, which plays a crucial role in promoting economic growth, knowledge development, and innovation, has been significantly impacted by the global health crisis caused by Covid-19. The effects of the pandemic are expected to be long-lasting and may exacerbate educational disparities, particularly in physical education, which typically occurs outdoors. Maintaining social distancing measures can be challenging since students need to move around and be in close proximity to one another during physical education classes. Therefore, it is important to examine how physical education will need to be adapted to prepare for future pandemics (Sukdee & Chankuna, 2021).

In addition, pandemics like Covid-19 can result in quarantine or isolation periods, which can have various organizational repercussions for athletes, including the suspension of organized training and competitions, limited communication with coaches, restricted mobility, lack of exposure to sunlight, and inadequate training facilities. The consequences of isolation can be damaging to an athlete's physical and personal well-being, including unhealthy eating habits, disrupted sleep patterns, addiction, loneliness, increased body fat, decreased muscle mass, weakened immune system, impaired cognitive function, insomnia, and depression. These outcomes can significantly impact an athlete's short-term and long-term physical fitness and competitive performance. Although it is challenging to predict how long the current Covid-19 pandemic will last, it is essential to anticipate its negative effects on athlete's training adaptation (Jukic et al., 2020). The SARS-CoV-2 virus, which caused Covid-19, emerged in China in December 2019, and rapidly spread worldwide, leading to an unparalleled pandemic and necessitating global quarantine measures that have created an unprecedented and uncertain situation. As a result, organized sports have been affected, causing numerous challenges for athletes and the industry as a whole.

In light of current scientific knowledge, we highly recommend that athletes view quarantine as a chance for self-improvement and progress. Additionally, it is crucial to provide proper guidance to educate athletes about the significance of practicing preventive measures and hygiene practices to boost immunity and maintain good living conditions while isolated. To promote aerobic adaptation, athletes' living spaces should be furnished with portable cardio and resistance training equipment, such as bicycles or rowing machines, and bodyweight resistance circuit training can be implemented. Personalized sports-specific training should prioritize neuromuscular performance, and nutrition and hydration should be emphasized, including Vitamin D and protein. Strategies must be established to regulate body composition,

and proper recovery methods should be used to manage mental fatigue. Daily monitoring should be put in place. During these challenging times that have affected the entire world, this presents an opportunity for athletes to reflect on their personal lives and cultivate new perspectives (Jukic et al., 2020).

The Covid-19 pandemic resulted in varying lengths of mandated restrictions in the United States, generally from late March/early April to mid to late May 2020, with gym and fitness center closures and restrictions against public gatherings and participation in outdoor activities, including physical activity (PA) and sports. As a consequence, the daily PA routine of millions of people was significantly disrupted, leading to a decrease in physical activity and an increase in sedentary behavior, according to various reports. These changes could result in deconditioning, reduced cardiorespiratory fitness, and an increased risk of chronic health conditions, including obesity and cardiometabolic disease, as well as all-cause mortality. Therefore, maintaining physical activity and exercise during the Covid-19 pandemic is crucial to mitigate negative outcomes and improve survival, as recommended by S. Nicole Fearnbach (2017).

Lockdown measures imposed in most countries in response to the Covid-19 pandemic have led to the closure of fitness centers and the cancellation of sports events. Although there are some exceptions, gyms in East Asia and Europe are facing difficulties in maintaining their businesses. A survey conducted by the Korean government has shown that the closure rate of stadiums, gyms, and sports service businesses was higher than that of the sporting goods industry. The fitness industry, in particular, has been severely affected, with limited sales and a high number of laid-off employees. This industry has been impacted more severely than the entire sports industry. Various fitness sectors such as Taekwondo, yoga, Pilates, and fitness centers have experienced high layoff rates. The Covid-19 pandemic has caused significant damage to the global fitness industry (Park & Kwon, 2022). The impact of Covid-19 on sports activities in secondary schools was analyzed using the Sports Development Model, with a focus on three key stages: recruitment, retention, and transition. The recruitment stage highlights the significance of promoting "mass participation" and providing equal opportunities for all individuals to participate in sports (Munyaradzi et al., 2021). By combining the results from various studies on post-pandemic sustainability, valuable insights can be gained by governments, authorities, practitioners, and policymakers regarding the areas where they need to concentrate their efforts in promoting sports development after Covid-19. Additionally, it can aid in identifying the gaps in current research and guiding future research in this field (Ranjbari et al., 2020).

Most of the research on exercise and fitness during the Covid-19 pandemic has concentrated on areas such as home-based workouts, the connection between exercise and immunity, and new gym regulations. Although such studies have offered policy recommendations and advice on how to maintain a fitness routine at home, little attention has been paid to the ongoing crisis affecting gyms. While some research has investigated crisis management in fitness centers, this work is separate from other efforts that aim to tackle the pandemic's impact on the fitness industry (Park & Kwon, 2022). The objective of this research is to investigate the critical factors for managing crises in fitness centers during the Covid-19 pandemic. The goal is to develop effective strategies that can enhance sustainable development in crisis management for fitness centers. Through the use of IPA analysis, the perspectives of fitness center executives and managers will be examined to determine the effectiveness of well-run fitness centers. The study will focus on four main areas, including maintaining the status quo, intensive improvement, subpar performance, and avoiding over-exertion, by utilizing matrix analysis. These findings can offer valuable insights to improve the ongoing and future development of fitness centers amidst and beyond the pandemic (Park & Kwon, 2022).

To enhance student health and academic performance, promoting behavioral changes in physical education and sports classes is a critical policy for the National Sports University of Thailand, particularly in the context of the Covid-19 pandemic. One undergraduate school in Chiang Rai has introduced new behavior adjustments for students in studying and socializing with friends, while the Rajamangala Institute of Technology in Campus Tak has noted a high level of student adjustment in learning and interactions with teachers and peers, as well as mid-level adjustments in institute activities and the environment. Moreover, there is a positive correlation between learning achievement and behavioral adjustment (S. Nicole Fearnbach, 2017).

This study examines the significance and accomplishments of managing crises in fitness centers, and identifies several factors that are crucial for effective crisis management. The results indicate that the most important factor is preventive management, which scored 4.08, followed closely by finance with a score of 4.06, disinfection management with a score of 3.91, social distancing with a score of 3.88, hygiene with a score of 3.66, and management business with a score of 3.56. Preventive Management is the factor considered most important in this situation. This may include actions taken to prevent or reduce the risk of the spread of a disease or situation. This factor was given a score of 4.08, which may indicate that preventive measures have a key role in addressing the situation. The financial factor received a score of 4.06, indicating that financial aspects, such as management of financial resources, spending, or financial planning, were also considered very important. This might reflect the importance of allocating funds to address a particular situation or crisis.

Disinfection management scored 3.91, indicating that actions related to disinfection and sanitation may have a significant role in controlling the situation. This could include procedures related to cleaning and keeping the environment clean and the social distancing factor scored 3.88, which describes the importance of maintaining physical distance or reducing social contact to reduce the spread of disease or certain risks. This may include measures such as crowd restrictions, working from home, or maintaining distance in social interactions.

Cleanliness was given a score of 3.66, indicating the importance of maintaining a high level of hygiene in the environment, especially in the context of the situation discussed. This could include regular handwashing, cleaning surfaces, and maintaining personal hygiene. Next, the business management factor had a score of 3.56, which may indicate that operational management or business management also has a role to play in addressing certain situations. This might include stock management, supply chain, or business strategy during a crisis. Some of the key values that were highlighted include obtaining non-contact thermometers, finding ways to reduce monthly rent, regular gym disinfection, implementing social distancing measures between employees and customers, educating employees about hand washing, and providing advance notice of closing days.

METHOD

This qualitative research uses a systematic literature review method. A systematic literature search regarding promotional strategies in post-covid 19 sports development was carried out in the Sage, Scopus, Google Scholar, and Researchgate databases. There are four stages in this PRISMA: the first stage, identifying the selected articles, must meet the requirements, such as articles published from 2016 to 2022; the second stage is a screening of 30 articles obtained from Sage, Scopus, Google Scholar, and Researchgate, which are then evaluated, and the selected articles are assessed for relevance; the third stage, the feasibility of the article, was analyzed and evaluated for its feasibility. Evaluation of the significance of the article at the feasibility stage was assessed based on the title and abstract which was carried out by two independent reviewers. The fourth stage is the explanation of the results. Articles that

meet the exclusion criteria will be deleted. The fourth stage is the inclusion of screening results under the criteria.

The selected articles must meet predetermined criteria. The databases used in the literature review are Sage, Scopus, Google Scholar, and Researchgate. The articles used were those published from 2016 to 2022. The database article search process uses keywords such as Promotion Strategy in Sports Development Post Covid 19 Pandemic, Post Covid -19 strategies: Envisaging learning in a post-Covid -19 pandemic world, and others- other. keywords that are focused on the Post-Covid 19 Pandemic Sports Development Promotion Strategy. After searching for keywords, the next step is to determine the inclusion and exclusion criteria, were: scientific articles, international journals, and published within 2016 to 2022. The selected articles must meet the inclusion criteria to answer the research questions. At this identification stage, 30 articles were obtained, with details of 8 articles from Sage, 7 from Scopus, 9 from Google Scholar, and 6 from Researchgate.

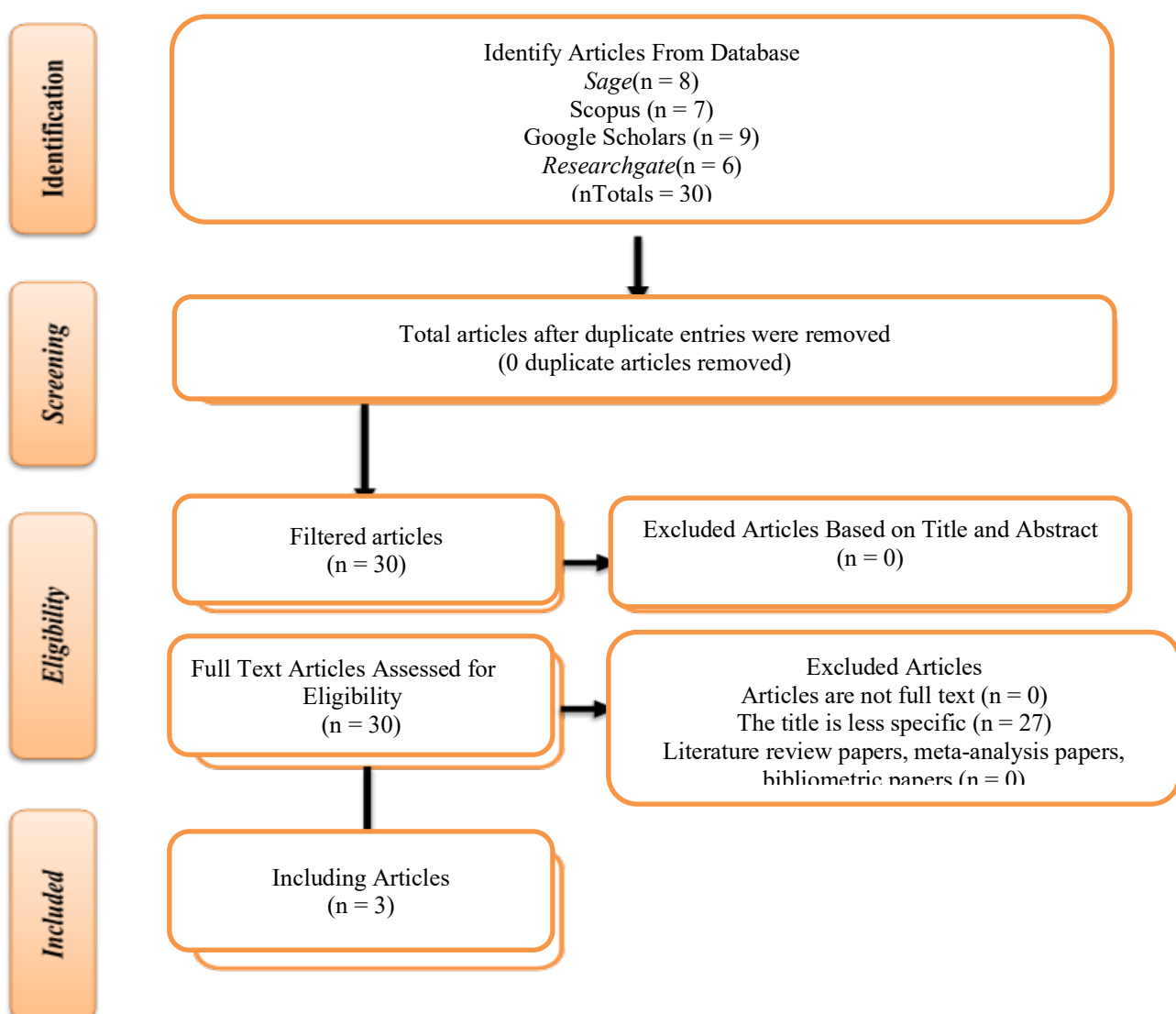


Figure 1. Systematic Review Process Flowchart (PRISMA)

In the filtering stage, the identification results of 30 articles obtained from Sage, Scopus, Google Scholar, and Researchgate were evaluated to identify duplicates or articles indicating the same content. Subsequently, in the appropriateness stage, the articles were analyzed and assessed for feasibility, with a focus on the title and abstract by two independent reviewers.

Articles meeting the inclusion criteria were then reviewed in detail as a whole. Based on the PRISMA stage, three articles met the inclusion criteria, and these three articles are the ones reviewed in this study. A detailed summary of the PRISMA process can be seen in figure 1. Based on the systematic review process, three articles were selected that met the criteria for a Promotional Strategy in Sports Development Post-Covid 19 Pandemic: A systematic literature review.

RESULTS AND DISCUSSION

Based on the systematic review process, there were 30 early-stage articles published in the last six years, from 2016 to 2022, from four databases: Sage, Scopus, Google Scholar, and Researchgate. Based on the title and abstract as well as the entire article to obtain a total of three articles that match the criteria for articles to be reviewed in this study. The descriptions of the three studies can be seen in Table 1.

Tabel 1. The Studies Description Result

No.	Author	Title	Country	Method	Subject	Results
1	Jukic et al., (2020)	Strategies and Solutions for Team Sports Athletes in Isolation due to Covid-19	Croatian	Qualitative	training athletes in home isolation	Based on the findings, it is recommended to establish a strategy to manage body composition and anticipate and manage mental fatigue. Adequate recovery methods should also be made available, and daily monitoring should be implemented. These challenging times, which have affected nearly the entire world, present an opportunity for individuals to reflect on their personal lives and gain a better understanding of their situation.

No.	Author	Title	Country	Method	Subject	Results
2	Wunsch et al., (2022)	Changes in Physical Activity Patterns Due to the Covid-19 Pandemic: A Systematic Review and Meta-Analysis	German	Qualitative	Overall, 57 studies with a total sample size of 119,094 participants (N between 10 and 60,560 subjects) from 14 countries worldwide with participants aged between four and 93 years were included.	The results show that the downward trend should be considered and the government should try to activate physical activity during the pandemic restriction period or promote alternatives such as digital training to avoid the negative health consequences in the population.
3	Sukdee & Chankuna, (2021)	Factors Influencing Adjustment in Physical Education and Sports Learning after the Covid-19 Pandemic among Students in the Faculty of Education at Thailand National Sports University	Thailand	Quantitative (experimental)	595 students	The study's results suggest that adjustments made to physical education and sports learning at the Thai National Sports University's Faculty of Education after the Covid-19 pandemic can be predicted by five variables. These variables include activities aimed at promoting knowledge about Covid-19 prevention in universities, university policies that encourage Covid-19 prevention, facilities available in the university environment, the

No.	Author	Title	Country	Method	Subject	Results
						behavior of classmates that is modeled, and learning in the classroom. Together, these variables can predict post-pandemic physical education and sports learning adjustments for the group studied with an accuracy rate of 73.60%.

The Covid-19 pandemic has had a profound impact on mortality rates worldwide, with suicide being one of the adverse and deadly consequences. Social isolation, financial stress, depression, and pandemic-related stress are among the factors that can increase suicidal behavior, which is an extreme outcome of the pandemic. The pandemic has introduced several challenges that can intensify suicidal tendencies. Tragically, over 700,000 individuals die by suicide annually. The World Suicide Prevention Day, observed on September 10th, aims to increase awareness about mental health and resilience. The Covid-19 pandemic has severely affected mental health globally, with women, younger age groups (≤ 40 years), individuals with chronic/psychiatric illnesses, the unemployed, and those frequently exposed to Covid-19-related news on social media being disproportionately affected. Regrettably, the pandemic has caused significant harm to mental health worldwide. (de Macêdo et al., 2022; Morusupalli et al., 2022).

The Covid-19 pandemic was officially declared by the World Health Organization (WHO), owing to its far-reaching effects. In an attempt to contain the spread of the virus, various governments across the world have implemented "lockdown" measures, which include prohibiting large gatherings and closing public spaces such as restaurants, playgrounds, and parks, as well as mandating distance learning and mandatory quarantine for travelers. Despite these measures, as of September 10, 2021, the WHO has reported 223,022,538 confirmed cases of Covid-19, including 4,602,882 deaths globally. To minimize the adverse impact of lockdown measures on prevention and control efforts during a pandemic, it is crucial to comprehend their impact. One such impact is lockdown fatigue, a phenomenon characterized by tiredness or exhaustion resulting from the widespread changes caused by Covid-19 in people's daily lives.

A recent survey based on self-reported data reveals that individuals are spending more time at home during the Covid-19 pandemic and experiencing weight gain. The reduced physical activity resulting from the pandemic has been associated with higher insulin resistance and weight gain (Lim et al., 2020). It should be noted that the effects of Covid-19 on physical activity may vary across countries. In Finland, a sparsely populated nation, there has been a substantial increase in outdoor activities like trekking, cross-country skiing, and gardening as they allow for social distancing. Despite imposing restrictions on indoor activities, the country has not enforced a complete lockdown (Gu et al., 2022).

According to a survey of US parents, providing fair access to outdoor spaces and play equipment can promote physical activity among children during the Covid-19 shelter-in-place orders. Conversely, a decrease in outdoor activities, coupled with an increase in screen time and sedentary activities, such as using the internet, social media, and watching TV, can have a

negative impact on children's eating habits. An international online survey examining the lifestyle and behavioral consequences of Covid-19 restrictions found that home confinement has resulted in unfavorable changes in physical activity and dietary habits. Therefore, efforts to prevent Covid-19 may worsen unhealthy lifestyles and eating behaviors among the general population. The sports development model has identified three critical stages in sports development, recruitment, retention, and transition, and questions the impact of the Covid-19 outbreak on sports activities in secondary schools. The primary goal of the recruitment phase is to promote public participation and develop opportunities for everyone to engage in sports (Gill et al., 2022).

Neumann et al. (2021) suggest that the Covid-19 pandemic has revealed a gap between health promotion and national/global health emergency policies. In response to the pandemic, various health promotion initiatives were quickly established and implemented globally. Case studies conducted in five countries using the Socio-Ecological Health Promotion Model demonstrated the actual actions and challenges of health promotion interventions, research, and policy during the pandemic. These interventions targeted individuals/families, organizations, communities, health care, public health, education and media systems, health promotion settings, and policies (Solmi et al., 2020). The pandemic has emphasized the need for future health promotion strategies related to sports to prioritize equity, trust, a systemic approach, and sustainable action. It has also presented challenges and opportunities, including the need for prompt action, effective communication based on health literacy through sports, and interdisciplinary and inter-systemic collaboration across countries to achieve meaningful solutions for the global health crisis (Levin-Zamir et al., 2021).

Studies have shown that quarantine-related health issues can be described as having both physical and psychosocial aspects. Specifically, previous research has indicated that there have been significant negative shifts in nutritional habits and body weight as a result of the Covid-19 pandemic (Burtscher et al., 2021). Based on the study, it is apparent that different sectors exhibit various approaches in dealing with health issues, particularly in the context of sports and work during the pandemic. The surveyed individuals did not encounter any difficulties in engaging in physical activities, and risky behaviors, such as addiction, were generally discouraged during the pandemic. The majority of company employees formed positive, motivated, and lively communities, with most members being addiction-free. The findings suggested that employees who worked from home exhibited positive health behaviors, particularly in terms of nutrition and substance use. The study supported the theory of self-determination, indicating that the respondents felt autonomous and competent during the pandemic. Both personal health behaviors and working conditions were positively perceived, and negative indicators such as sickness, depression, and anxiety were less prevalent. The workers expressed aspirations primarily towards personal growth and physical fitness (Tánczos et al., 2022).

The Covid-19 pandemic has had a noticeable effect on the world of sports. In order to minimize the spread of the virus, large-scale sporting events have been prohibited. As a result of Covid-19, many competitions have been postponed or held without spectators, and even the 2020 Olympics were delayed. The implementation of social distancing guidelines has led to a reduction in daily physical activities. Additionally, several high-profile athletes have contracted the virus. Restrictions on accessing sports facilities have also been put in place during quarantine periods, making it challenging to conduct team training. This issue has prompted the development of innovative and effective training methods to address these limitations (Tareq N. Hashem, 2022).

The strategies for promoting sports focus on enabling and encouraging people to take charge of the factors that impact their overall health and wellness through participation. The success of this comprehensive approach has been demonstrated (Lang & Hofer-Fischinger,

2022). This approach involves incorporating sports into the fabric of daily living. One crucial aspect of promoting sports is to encourage corporate environments to adopt working conditions that facilitate participation in physical activities. In the aftermath of the pandemic, sports can be instrumental in aiding businesses and their employees to prepare for and overcome novel challenges in the workplace by taking appropriate steps. (Oliveira et al., 2021). This assertion is particularly accurate in the present stage of significant change in the working world, which is characterized by the advent of digitalization, flexibility, and the blurring of boundaries, among other factors (Neill et al., 2022). Despite the fundamental role of workplace conditions in fostering healthy employees and competitive companies, sports promotion has not received much attention, even when significant variables shift for both sports and work. Prioritizing sports promotion is essential to advancing contemporary organizations and corporate strategies, particularly for dynamic and adaptable companies. The prevalence of holistic approaches has made it increasingly crucial to implement or refine telework arrangements that promote good health.

In addition to influencing the working world, the circumstances surrounding sports development are also addressed in schools, which are a critical component in addressing the post-Covid-19 pandemic situation. Three aspects of promoting school sports can be distinguished in its implementation Covid-19-related support for students, health by promoting sport using the design of teaching, learning, and working conditions and principles of Schools Promoting Health.

There is a noticeable lack of implementation in teaching, learning, and working conditions (31%), participation (52%), and collaboration with community stakeholders (42%). The level of implementation varies depending on gender, age, and school type, with female principals, older schools, and primary schools reporting higher implementation status. Conversely, mixed federal states reported lower levels of implementation (Dowling et al., 2021). However, schools that have received health promotion certificates exhibit higher levels of implementation when involved in state health promotion initiatives (Kevin Dadaczynski, 2022). As Covid-19 infections began to stabilize, the idea of the "new normal" emerged, leading to significant adjustments in schools worldwide, including Thailand. The closure of schools and universities led to an urgent shift to remote learning, resulting in the inclusion of technology and distance learning content in physical education and sports classes during the resumption of learning for the first semester of the 2020 academic year at the Thai National Sports University's Faculty of Education. Strategies for teaching physical education during the Covid-19 pandemic include face-to-face education with strict protocols, distance education, and hybrid education involving both face-to-face and remote learning. A review protocol was developed to systematically evaluate the impact of Covid-19 on physical activity among school-aged adolescents (6-17 years old), which had not been previously undertaken. Although some studies have examined physical activity changes among youth (ages 5-17) during the pandemic, a systematic review is necessary to comprehensively understand the impact on physical activity among this population and to inform researchers, practitioners, and decision-makers (Do et al., 2020). The objective of this review was to identify, assess, and synthesize available literature up to May 10, 2021, on the impact of the Covid-19 pandemic on physical activity among adolescents. Understanding how the pandemic has affected physical activity among this population could help in developing interventions to promote healthy behaviors during and after the pandemic and other infectious disease outbreaks (Kelly et al., 2020).

CONCLUSION

The Covid-19 pandemic has had significant impacts on the world of sports. Collective sporting events have been banned to prevent the spread of the virus, leading to many competitions being postponed or held without spectators. Social distancing measures have also

reduced people's daily activities, and many famous athletes have contracted the virus. The pandemic has also made it difficult for sports teams to form, as visiting sports facilities has been forbidden during quarantine periods. In response to these challenges, stakeholders have developed modern and effective teaching methods to overcome these limitations, and a participatory and empowering approach to sports development has proven successful. Creating suitable working conditions for sports development in institutional settings is important for spreading the sport. Post-pandemic, sports can play a fundamental role in preparing and supporting companies and their employees to face new business challenges and take appropriate actions, particularly during the current radical transformation of the business world.

The Covid-19 pandemic has not only affected the business sector but also impacted the development of sports in schools, which is a crucial factor in combating the post-Covid-19 pandemic. The current situation highlights low levels of implementation regarding teaching, learning, and working conditions (31%), participation (52%), and collaboration with community stakeholders (42%). Notably, there are differences between senior and female principals in mixed federal states, with the latter reporting higher implementation status. Therefore, the main objective of this systematic review is to conduct an evaluation of the literature available to determine how the Covid-19 pandemic has affected physical activity among adolescents.

REFERENCES

- Burtscher, J., Burtscher, M., & Millet, GP (2021). The central role of mitochondrial fitness on antiviral defenses: An advocacy for physical activity during the COVID-19 pandemic. *Redox Biology*, 43. <https://doi.org/10.1016/j.redox.2021.101976>
- Constantini, K., Markus, I., Epel, N., Jakobovich, R., Gepner, Y., & Lev-ari, S. (2021). Continued participation of Israeli adolescents in online sports programs during the covid-19 pandemic is associated with higher resilience. *International Journal of Environmental Research and Public Health*, 18(8). <https://doi.org/10.3390/ijerph18084386>
- de Macêdo, PFC, Nepomuceno, CMM, dos Santos, NS, Queiroz, VA de O., Pereira, EM, Leal, L. da C., Santos, LA da S., Nascimento, LF, Martins, PC, & de Santana, MLP (2022). Weight stigma in the COVID-19 pandemic: a scoping review. *Journal of Eating Disorders*, 10(1), 1–16. <https://doi.org/10.1186/s40337-022-00563-4>
- Do, B., Kirkland, C., Besenyi, GM, Carissa, MPH, & Lanza, K. (2020). Youth physical activity and the COVID-19 pandemic: A systematic review. *January*.
- Dowling, M., Mackintosh, C., Lee, S., & Allen, J. (2021). Community sport development: managing change and measuring impact. *Managing Sport and Leisure*, 26(1–2), 1–6. <https://doi.org/10.1080/23750472.2020.1854265>
- Dwipayanti, NMU, Lubis, DS, & Harjana, NPA (2021). Public Perception and Hand Hygiene Behavior During COVID-19 Pandemic in Indonesia. *Frontiers in Public Health*, 9(May). <https://doi.org/10.3389/fpubh.2021.621800>
- Gill, S., Adenan, AM, Ali, A., & Ismail, NAS (2022). Living through the COVID-19 Pandemic: Impact and Lessons on Dietary Behavior and Physical Well-Being. *International Journal of Environmental Research and Public Health*, 19(2). <https://doi.org/10.3390/ijerph19020642>
- Gu, P., Liang, Z., Zhang, H., & Zhang, D. (2022). Effects of Attitudes towards Exercise Behavior, Use of Sports Apps and COVID-19 on Intentions to Exercise. *Journal of Personalized Medicine*, 12(9). <https://doi.org/10.3390/jpm12091434>
- Huy, NT (2021). Perceived Stress of Quarantine and Isolation During COVID-19 Pandemic: A Global Survey. *Frontiers in Psychiatry*, 12(May). <https://doi.org/10.3389/fpsy.2021.656664>

- Jukic, I., Calleja-González, J., Cos, F., Cuzzolin, F., Olmo, J., Terrados, N., Njaradi, N., Sassi, R., Requena, B., Milanovic, L., Krakan, I., Chatzichristos, K., & Alcaraz, PE (2020). Strategies and solutions for team sports athletes in isolation due to COVID-19. *Sports*, 8(4), 1–9. <https://doi.org/10.3390/sports8040056>
- Kelly, AL, Erickson, K., & Turnidge, J. (2020). Youth sport in the time of COVID-19: considerations for researchers and practitioners. *Managing Sport and Leisure*, 1–11. <https://doi.org/10.1080/23750472.2020.1788975>
- Kevin Dadaczynski. (2022). Workshop : School health during the COVID-19 Pandemic . Perspectives from the COVID-HL school principal study. 2022.
- Lang, G., & Hofer-Fischanger, K. (2022). Factors associated with the implementation of health-promoting telework from the perspective of company decision makers after the first COVID-19 lockdown. *Journal of Public Health (Germany)*, 30(10), 2373–2387. <https://doi.org/10.1007/s10389-022-01717-z>
- Levin-Zamir, D., Sorensen, K., Su, TT, Sentell, T., Rowlands, G., Messer, M., Pleasant, A., Saboga Nunes, L., Lev-Ari, S., & Okan, O. (2021). Health promotion preparedness for health crises – a 'must' or 'nice to have'? Case studies and global lessons learned from the COVID-19 pandemic. *Global Health Promotion*, 28(2), 27–37. <https://doi.org/10.1177/1757975921998639>
- Lim, S., Kong, AP, & Tuomilehto, J. (2020). Influence of COVID-19 pandemic and related quarantine procedures on metabolic risk. january.
- Morusupalli, RV, Bhandari, S., Yella, SA, & Gaddala, MS (2022). Will COVID-19-Pandemic and Lockdown Period , Magnify Suicide Rates ? june.
- Munyaradzi, E., Tarisayi, KS, & ... (2021). The COVID-19 Pandemic and Sport in High Schools: A Case of Selected Schools in Masvingo District. From High-Risk Sports to ..., December 2020. <http://alternation.ukzn.ac.za/Files/books/series/05/aasbs-05-full-text.pdf#page=192>
- Neill, SO, Chambers, FC, & Adamakis, M. (2022). SPORT AND PHYSICAL ACTIVITY ARISING FROM COVID-19 : A DESK STUDY SPORT AND PHYSICAL ACTIVITY ARISING FROM COVID-19 : A DESK STUDY AND CONCEPT-CENTRIC. February.
- Neumann, FA, Rohwer, E., Mojtahedzadeh, N., Makarova, N., Nienhaus, A., Harth, V., Augustin, M., Mache, S., & Zyriax, BC (2021). Workplace health promotion and COVID-19 support measures in outpatient care services in Germany: A quantitative study. *International Journal of Environmental Research and Public Health*, 18(22). <https://doi.org/10.3390/ijerph182212119>
- Oliveira, AP, da Conceição Farias Stern, M., de Almeida, CMOX, de Almeida Bolognani, F., Holandino, C., & Rocha, L. (2021). Homeopathic medicine as health promotion during COVID-19 pandemic period in Niteroi city. *International Journal of High Dilution Research*, 20(1), 15–16. <https://doi.org/10.51910/ijhdr.v20i1.1086>
- Park, TS, & Kwon, JY (2022). Analysis of Crisis Management for Sustainable Development of Fitness Center during the COVID-19 Pandemic. *Sustainability (Switzerland)*, 14(4). <https://doi.org/10.3390/su14042451>
- Ranjbari, M., Shams, Z., & Chiara, M. (2020). Three pillars of sustainability in the wake of COVID-19: A systematic review and future research agenda for sustainable development. january.
- Solmi, M., Fusar-poli, P., Gorwood, P., & Zydecka, KS-. (2020). The collaborative outcomes study on health and functioning during infection times in adults (COH-FIT-Adults): Design and methods of an international online survey targeting physical and mental health effects of the COVID-19 pandemic. january.

- Sukdee, T., & Chankuna, D. (2021). Factors Influencing Adjustment in Physical Education and Sports Learning after the COVID-19 Pandemic among Students in the Faculty of Education at Thailand National Sports University. *World Journal of Education*, 11(2), 24. <https://doi.org/10.5430/wje.v11n2p24>
- Tánczos, Z., Zala, BB, Szakály, Z., Tóth, L., & Bognár, J. (2022). Home Office, Health Behavior and Workplace Health Promotion of Employees in the Telecommunications Sector during the Pandemic. *International Journal of Environmental Research and Public Health*, 19(18), 1–12. <https://doi.org/10.3390/ijerph191811424>
- Tareq N. Hashem. (2022). The Impact of Covid -19 Pandemic on Sports Marketing in Jordan. *Journal of Tropical Animal Science and Technology*, 4(1), 10–16. <https://doi.org/10.32938/jtast.v4i1.2183>
- Wunsch, K., Kienberger, K., & Niessner, C. (2022). Changes in Physical Activity Patterns Due to the COVID-19 Pandemic: A Systematic Review and Meta-Analysis. *International Journal of Environmental Research and Public Health*, 19(4). <https://doi.org/10.3390/ijerph19042250>