

Investigating various factors that influence perceived mental health in physical activity participation in West Sumatera, Indonesia: An approach using SEM-PLS

Investigación de diversos factores que influyen en la salud mental percibida en la participación en actividades físicas en Sumatra Occidental, Indonesia: un enfoque que utiliza SEM-PLS

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Abstract. *Problem Statement.* Individual involvement in physical activity or sports is significant for the survival of a healthy and quality life, so the supporting and influencing factors need to be investigated. *Purpose.* This study aims to test a model related to factors that influence perceptions of mental health, including cognitive awareness, emotions, spirituality, and social environment for sports participants. *Methods.* A total of 1,351 volunteers from 18 regions in West Sumatera participated in this study. The data collection technique used a survey via Google Forms, distributed via WhatsApp social media. Data were analyzed using the Partial Least Square (PLS) method by assessing content validity, Average Variance Extracted (AVE), Inner Model, and hypothesis testing. *Result.* The results showed that cognitive awareness significantly affects awareness of the social environment ($t = 13.142$; $P < 0.05$) and perceptions of mental health ($t = 4.458$; $P < 0.05$). Emotional awareness significantly affects the relationship between awareness of the social environment ($t = 5.572$; $P < 0.05$) and perceptions of mental health ($t = 4.870$; $P < 0.05$). Environmental and social awareness significantly affects mental health perceptions ($t = 7.397$; $P < 0.05$). Spiritual awareness significantly affects awareness of the social environment ($t = 4.014$; $P < 0.05$) and perceptions of mental health ($t = 5.851$; $P < 0.05$). *Conclusions.* Cognitive, emotional, and spiritual awareness and social environment are essential in influencing perceptions of mental health in individuals participating in sports. The findings highlight the importance of paying attention to cognitive, emotional, spiritual, and social environmental aspects of mindfulness for the sports community or other stakeholders to help create an environment that supports the quality of life of participants involved in sports.

Key Words: Mental health, Cognitive, Emotional, Spiritual, Environment, Sports participants.

Resumen. Planteamiento del problema. La implicación individual en la actividad física o deportiva es muy importante para la supervivencia de una vida sana y de calidad, por lo que es necesario investigar los factores que la apoyan e influyen. Objetivo. Este estudio pretende probar un modelo relacionado con los factores que influyen en la percepción de la salud mental, incluyendo la conciencia cognitiva, las emociones, la espiritualidad y el entorno social de los participantes en deportes. Métodos. Un total de 1.351 voluntarios de 18 regiones de Sumatra Occidental participaron en este estudio. La técnica de recogida de datos utilizó una encuesta a través de Google Forms, distribuida a través de las redes sociales WhatsApp. Los datos se analizaron mediante el método de mínimos cuadrados parciales (PLS) evaluando la validez del contenido, la varianza media extraída (AVE), el modelo interno y la prueba de hipótesis. Resultados. Los resultados mostraron que la conciencia cognitiva afecta significativamente a la conciencia del entorno social ($t = 13,142$; $P < 0,05$) y a las percepciones de salud mental ($t = 4,458$; $P < 0,05$). La conciencia emocional afecta significativamente a la relación entre la conciencia del entorno social ($t = 5,572$; $P < 0,05$) y la percepción de la salud mental ($t = 4,870$; $P < 0,05$). La conciencia del entorno social afecta significativamente a las percepciones de salud mental ($t = 7,397$; $P < 0,05$). La conciencia espiritual afecta significativamente a la conciencia del entorno social ($t = 4,014$; $P < 0,05$) y a las percepciones de salud mental ($t = 5,851$; $P < 0,05$). Conclusiones. Se puede concluir que los aspectos de la conciencia cognitiva, emocional y espiritual y el entorno social son esenciales para influir en las percepciones de salud mental de los individuos que practican deportes. Los resultados ponen de relieve la importancia de prestar atención a los aspectos cognitivos, emocionales, espirituales y del entorno social de la atención plena para que la comunidad deportiva u otras partes interesadas ayuden a crear un entorno que apoye la calidad de vida de los participantes que practican deportes.

Palabras clave: Salud mental, Cognitiva, Emocional, Espiritual, Entorno, Participantes en deportes.

Fecha recepción: 28-03-24. Fecha de aceptación: 16-05-24

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Introduction

Indonesia is a country that prioritizes high values as social beings. Various factors influence the perspective of Indonesian society as a social being, and they have many facets. For example, gender representation in Indonesian folklore provides insight into society's perspective on gender roles and expectations (Andalas & Bhakti, 2022). Then, related to religious freedom and media representations, explain the intersection between societal values, religious beliefs, and media influence (Andina, 2023). Furthermore, Indonesia's historical, political, and socio-political experiences shape the educational and

pedagogical landscape, reflecting the values and norms of society that influence the development of the country's culture and identity (Ikasari, 2020). Based on some of these opinions, it is concluded that Indonesian society has self-awareness as a social society by prioritizing logical thinking, emotional awareness, spirituality, and the establishment of relationships with the social environment so that it is expected to achieve holistic welfare.

An integral aspect of holistic human well-being is mental health. One approach receiving increasing attention to achieve mental health well-being is participation in sporting activities (Kardi et al., 2020; Abdullah et al., 2022). In some countries, research on mental health has become a

significant focus. Researchers explore not only the direct impact on mental health but also factors that mediate the relationship, including cognitive awareness, emotional awareness, spiritual awareness, and social-environmental awareness (Handayani et al., 2020; Lane & Smith, 2021; Suprpto et al., 2021). Under normal societal conditions, these factors are significant in a person's mental health. However, whether these factors can moderate mental health within the scope of participation in sports activity is not yet known.

Participation in sports is about physical activity and reflects a complex social life (Kustria et al., 2021). In sports, individuals interact in teams, compete in competitions, and learn to appreciate diversity. Through these experiences, participants develop critical social skills, such as cooperation, leadership, and tolerance, which are also relevant in everyday life (Rawe, 2023). Each must be cognitively, emotionally, spiritually, and environmentally aware to perform these skills. Thus, sports participants get social benefits that affect mental health. Therefore, sports are not only a means to improve physical health but also a miniature of the dynamics and values in social life that affect mental health.

In this context, this study aims to investigate a model of mental health perspectives through sports participation, focusing on how cognitive, emotional, spiritual, and social environment awareness can influence perceptions of mental health for sports participants. Based on these objectives, several research questions emerged that needed to be answered in this study: 1) how does cognitive, emotional, and spiritual awareness affect the perception of mental health for sports participants? 2) how does awareness of the social environment affect the perception of mental health for sports participants? 3) how does cognitive, emotional and spiritual awareness affect awareness of the social environment? This research resulted in a model that aims to provide deeper insights into the complexity of the interaction between physical activity and perceived mental health and its practical implications in promoting holistic human well-being.

Literature Review and Hypothesis

Awareness of social environment on mental health perception

Awareness of the social environment plays an important role in mental health perception outcomes. The social environment can be a source of mental health problems if not appropriately managed (Husada et al., 2022). This highlights the importance of understanding and addressing social factors in promoting mental well-being. In addition, factors such as a sense of community and social control are critical in explaining how the social environment affects mental health (Wang et al., 2023). This underscores the need to consider social capital and community dynamics in mental health interventions.

In addition, changes in the social environment, such as

those caused by events like the COVID-19 pandemic, can have heterogeneous effects on mental health (Mancini, 2020). While some changes may pose challenges, others may improve psychological functioning, suggesting a complex interplay between social factors and mental well-being. Understanding these dynamics is critical to developing targeted interventions to support mental health. Furthermore, Beek et al. explored the experiences of young Moroccan-Dutch individuals about their social environment and mental health (Beek et al., 2022). This research highlights the importance of considering cultural and ethnic factors in understanding how social environments impact mental health outcomes in specific populations. By recognizing the unique experiences of different groups, interventions can be tailored to address specific social determinants of mental health (Astuti et al., 2024). How people perceive these determinants of mental health is crucial to know in addressing mental health-related issues.

In conclusion, the social environment significantly influences mental health outcomes, and one needs to understand their perceptions of mental health. Social support, community dynamics, and cultural context are essential in shaping an individual's mental health. By recognizing the impact of the social environment on mental health and addressing relevant social determinants, interventions can become more effective in promoting positive mental health outcomes.

Cognitive, emotional, and spiritual awareness on mental health perception

Cognitive awareness of mental health is essential in maintaining individual psychological well-being. Research shows that awareness related to mental health still needs to be improved, especially among university students. This aligns with the finding that cognitive awareness of mental health is a form in which individuals realize the importance of mental health in maintaining positive psychological well-being (Lestari et al., 2021). In addition, cognitive awareness of mental health is also related to aspects of mindset towards ageing, where age stereotypes may mediate its effect on physical and psychological health (Kornadt et al., 2020). Research has also highlighted that low mental health literacy may be associated with depression, anxiety, and poor sleep quality among older adults in China (Ding et al., 2022). In addition, research shows that cognitive awareness of mental health is also related to work productivity, especially in individuals with multiple sclerosis, where psychological and physical health factors contribute to presenteeism (Egmond et al., 2021). Thus, a better understanding of cognitive awareness of mental health may help improve individuals' quality of life, reduce stigma, increase work productivity, and ensure that individuals are adequately treated and engaged in society.

Spirituality awareness is increasingly recognized as essential in mental health, with increasing interest in understanding the relationship between spiritual awareness and psychological well-being. Research has highlighted the

reciprocal relationship between spiritual awareness, mental health, and physical health, emphasizing the importance of spiritual well-being for overall health (Lassiter & Mims, 2021). Research has shown that spirituality is uniquely human and relates to self-awareness and consciousness, contributing to emotional and mental health (Kishan et al., 2021). Interventions to increase spiritual awareness of mental health and reduce stigma in religious communities have also been researched, with findings that factors such as support from religious leaders, utilization of existing mental health networks, and belief in a particular religion can influence the implementation of such interventions (Codjoe et al., 2021). Moreover, in public mental health settings, there is an increasing interest in integrating spirituality awareness into mental health care to meet spiritual needs and improve mental well-being (Yamada et al., 2020). Subsequently, spiritual intelligence has been identified as an essential factor that integrates different aspects of human intelligence, leading to higher levels of consciousness and improved cognitive and emotional well-being (Drigas & Mitsea, 2020). Research has consistently shown that awareness of spirituality and religiosity is associated with physical and mental health, indicating a positive impact of spiritual beliefs on overall well-being (Lucchetti et al., 2021). In conclusion, spiritual awareness of mental health is essential to provide a holistic approach centred on the individual's spiritual needs.

Emotional awareness is also essential to mental health, including recognizing, understanding, and managing one's and others' emotions (Lane & Smith, 2021). These skills are essential for overall emotion regulation. Research has shown that low emotional awareness can be a transdiagnostic mechanism underlying various forms of psychopathology in adolescence (Weissman et al., 2020). The capacity to label and understand emotions is closely linked to effective emotion regulation, which highlights the importance of emotional awareness in promoting mental health. Furthermore, emotional well-being is crucial to mental health (Pokharel & Adhikari, 2020). This underscores the importance of mindfulness education in improving perceptions and reducing barriers to accessing mental health services. In conclusion, emotional awareness is an essential element of mental health perception that influences emotion regulation, psychopathology, and overall well-being. By promoting emotional awareness and providing education on emotional health, individuals can develop better coping strategies, improve perceptions of mental health, and contribute to a more supportive and understanding society.

Sports Participation and Mental Health Perception

Participation in sports has been studied extensively in terms of mental health outcomes. Research by Hoffmann et al. (2022) found that team sport participation was associated with fewer mental health difficulties, while individual sport participation was associated with more significant mental health challenges. Similarly, Murray et al.

(2021) highlighted a consistent relationship between team sport participation and better mental health outcomes. These findings suggest that the social and collaborative nature of team sports may contribute positively to mental health; in addition, sports participation has been shown to have a protective effect against mental health problems, especially among children and adolescents (Akbar et al., 2024). Liddel et al. (2022) emphasized that engaging in sports can help prevent issues such as depression and anxiety in this demographic. In addition, Tahira (2023) reported a positive association between sports participation and psychological well-being across the lifespan, indicating the long-term benefits of engaging in sporting activities. Despite the overall positive impact of sports participation on mental health, elite athletes face unique challenges. This underscores the importance of addressing mental health support systems specifically designed for elite athletes to overcome these barriers.

In conclusion, these studies suggest that participating in sports, especially team sports, can benefit mental health by improving social relationships, physical activity, and overall well-being. However, it is important to recognize and address specific mental health needs to ensure that sports participants receive adequate support and resources to maintain their mental health in sports. This study needs to further understand how sports participants perceive mental health.

Methods

Research design

This study aimed to identify the variables linked to opinions about mental health and involvement in sports. Four contributing aspects are the subject of this study: 1) Social environment awareness, 2) Cognitive awareness, 3) Emotional awareness, and 4) Spiritual awareness. All those who assisted with sporting events before and after the survey were eligible to participate in this study. Participants are willing to spend some time scanning a barcode or filling out a Google form sent via WhatsApp.

This study used percentage sampling to determine the minimal sample size. This method entails figuring out the intended confidence level and the anticipated percentage in the population. At a 95% confidence level, the p-value utilized is 9%. Based on information about West Sumatra's population in 2022, the estimated proportion of the population (p) yields the p-value (Sedarmayanti & Hidayat, 2011). As a result, 1,351 participants from 18 districts and cities in West Sumatra province participated in this study.

Research structure and hypothesis

This study seeks to determine the association between elements that influence mental health views and a number of influencing factors, including social environment awareness, emotional awareness, spiritual awareness, and cognitive awareness in sports involvement. Figure 1 depicts the study's organizational framework.

Definitions and measuring tools of the research dimensions

All dimensions in this study refer to the pertinent literature for the operational definitions of the variables that have been determined. The study's definitions and statement items are shown in Table 1. The interval on the Likert scale utilized in this study is 1 to 5.

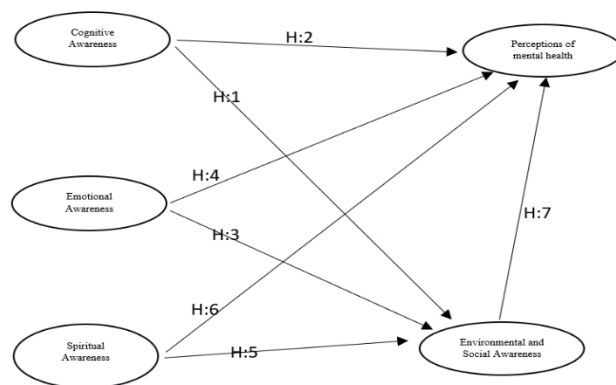


Figure 1. Research models and hypotheses

Table 1. Research Instruments

Variable	No	Item
Perceptions of mental health refer to the understanding that physical activity can improve one's mental well-being. This includes a wide range of physical activities, from structured sports to light physical activity	Y5	by exercising, I can think positively
	Y6	by exercising, I can make good decisions
	Y7	My mental health is maintained by doing the exercises even during difficult times.
Awareness of the Social Environment: how awareness of the environment affects one's choice of physical activity	X1	I do exercises so that I get to know my social environment
	X2	I do the exercises to develop a sense of caring for my social environment.
	X3	By engaging in physical training, I have made many friends.
	X4	The social environment in my place allows me to interact with others while exercising.
Cognitive awareness refers to one's mindset to participate in sports and have self-regulation skills.	X9	By doing the exercise, I can think critically in solving problems.
	X10	By exercising, I can communicate well.
	X11	By exercising, I can think analytically in making decisions.
Emotional Awareness: refers to recognizing and managing emotions that affect motivation to participate in physical activity.	X12	By exercising, I can regulate my emotions.
	X13	By exercising, I can restrain my anger.
	X14	I can apply health protocols patiently during physical activity.
	X15	I feel that with a fit physique, I can carry out worship well
Spiritual Awareness refers to physical activity that can support spiritual activities.	X16	With good fitness, I can easily access places of worship.
	X17	I believe that exercising properly has improved my physical condition, thus increasing my devotion to worship.

Methods of data collection and analysis

An analytical method known as partial least squares structural equation modelling (PLS-SEM) is used to find or create prediction models. PLS-SEM as a data analysis approach is very appropriate in this study because it tests a model, especially for testing causality models in exploratory research involving latent variables (Pavlou & Fygenon, 2006). Ten times the size of the question items should be the minimum required PLS sample size (Chin & Newsted, 1998). The principle of statistical conservatism states that appropriate research should have a larger sample size. Therefore, this study requires a minimum sample size of 120, which has been met by involving 1,351 volunteers. Using Smart PLS version 3 software, the Partial Least Square (PLS) approach was used to evaluate the data in this study. The validity of the variables is tested using a measurement model that includes finding reliability, convergent validity, discriminant validity, Average Variance Extracted (AVE), inner model, and testing the validity of the variables.

Result

Background variable analysis

Table 2 presents descriptive data collected from the participants. Of the participants, 46% were female, and

54% were male. In addition, information on whether they were employed or students, the type of sports activity, frequency, and duration of the activity were also collected. Table 2 below explains the data.

Table 2. Characteristics of the participants

Age	±21.18 years old	
Gender		
Male	620	46%
Female	731	54%
Work		
Student	1064	79%
Work	287	21%
Types of physical activity		
Individual	872	57%
Team	659	43%
Frequency of exercise in a week		
1-2 times a week	656	49%
3-4 times a week	475	35%
5-6 times a week	220	16%
Duration		
1-30 minutes	622	46%
31-60 minutes	331	25%
More than 1 hour	398	29%

Validity and reliability

According to Hair et al., the factor loading test verifies that the measurement employed is practical if its value is more than 0.60 (Hair et al., 2012). Table 3 indicates that the factor loading value is higher than the 0.60 threshold. It

means the validity of the measurement. Then, for every construct, the composite dependability (CR) score is more than 0.70. It suggests that every variable is trustworthy (Hair et al., 2011). It is supported by Cronbach's Alpha values, which show that all variables are reliable and are

above the required value of 0.60 for all constructs (Hair et al., 2011). Hair et al. (2011) state that the Average Variance Extracted (AVE) Output Value is greater than 0.50. Furthermore, all construct values are found to be greater than 0.50. Therefore, they are valid.

Table 3.

Measurement model parameter estimation

	Cronbach's Alpha	Rho A	Composite Reliability	Average Variance Extracted (AVE)
Cognitive Awareness	0.870	0.870	0.870	0.690
Emotional Awareness	0.855	0.858	0.856	0.665
Environmental and Social Awareness	0.866	0.869	0.866	0.619
Perceptions of mental health	0.837	0.840	0.837	0.632
Spiritual Awareness	0.837	0.837	0.837	0.631

A validity discriminant test is used to ascertain whether other latent variables do not influence the questions for each latent variable. According to Kock & Lynn (2012), the variance extracted indicator is greater than the correlation

involving these latent variables, as Table 4 demonstrates. In light of this, every variable in this study satisfies discriminant validity.

Table 4.

Discriminant validity test (Fornell-Larcker Criterion)

Source	Cognitive Awareness	Emotional Awareness	Environmental and Social Awareness	Perceptions of mental health	Spiritual Awareness
Cognitive Awareness	0.830				
Emotional Awareness	0.949	0.816			
Environmental and Social Awareness	0.844	0.794	0.787		
Perceptions of mental health	0.857	0.843	0.846	0.795	
Spiritual Awareness	0.833	0.847	0.718	0.807	0.794

Structural equation modelling analysis

Finding the SRMR value is the next stage. The model describing the relationships between the observable variables is appropriate if the SRMR value is less than 0.10 (Hu & Bentler, 1999). According to Table 5, the SRMR value is 0.060 < 0.10. As a result, the observed association fits the model. Then, we look up the Normal Fit Index or NFI value.

As Hu and Bentler (1999) indicated, the model is better constructed when its value approaches 1. The NFI value is 0.880, as the table demonstrates. It is quite nearly at one. As a result, the model created is appropriate.

Table 5.

Model FIT

Source	Saturated Model	Estimated Model
SRMR	0.015	0.015
d_ULS	0.032	0.032
d_G	0.033	0.033
Chi-Square	237.824	237.824
NFI	0.984	0.984

Testing the structural model (inner model) comes next, provided the estimated model satisfies the requirements for the outer model. The R-square values, also known as the Coefficient of Determination R², are shown in Table 6.

Table 6.

R-Square

Source	R Square	R Square Adjusted
Environmental and Social Awareness	0.713	0.713
Perceptions of mental health	0.814	0.814

Based on Table 6, the coefficient of determination R² or R-square in this study is that awareness of the social

environment in sports participation is influenced by cognitive awareness, emotional awareness, and spiritual awareness 71.3%. Furthermore, the remaining 28.7% is influenced by other factors not included in this model. Then, the perception of mental health in sports participants is influenced by cognitive awareness, emotional awareness, spiritual awareness, and environmental and social awareness by 81.4%, and the remaining 18.6% is influenced by other factors not examined in this study.

After that, by determining Q-square predictive relevance, or Q² (Vinzi et al., 2010), the impact of each latent variable is also observed, and the model's efficacy in this investigation is assessed. The computation's outcomes are as follows:

Table 7.

Construct cross-validated redundancy

Source	SSO	SSE	Q ² (=1-SSE/SSO)	Criteria
Cognitive Awareness	4053.000	4053.000		
Emotional Awareness	4053.000	4053.000		
Environmental and Social Awareness	5404.000	3241.413	0.400	Strong
Perceptions of mental health	4053.000	2090.053	0.484	Strong
Spiritual Awareness	4053.000	4053.000		

The Q² values that resulted from the computations in Table 7 above are 0.400 and 0.480. The model is considered predictively relevant when the computed Q² value is higher than zero (Q²>0).

Hypothesis testing

The T-test statistical analysis, performed using the data from Table 8, determines the acceptance or rejection of the

hypothesis. The hypothesis is deemed invalid or rejected if the T-table value (1.966) exceeds the T-test value (Vinzi et al., 2010). Table 8 presents the findings of the hypothesis testing using the T-Statistic values as follows: 1) Because the t-count value > t-table (13.142 > 1.966), cognitive awareness has a strong impact on social-environmental awareness. 2) The t-count > t-table (4.458 < 1.966) demonstrates a significant impact of cognitive awareness on perceptions of mental health. As t-count > t-table (5.572 > 1.966), emotional awareness significantly influences social-

environmental awareness. 4) The t-count > t-table (4.870 > 1.966) indicates that emotional awareness significantly influences evaluations of mental health. Social and environmental awareness significantly impact mental health perceptions since t-count > t-table (7.397 > 1.966). 6) T-count > t-table (4.014 > 1.966) indicates a substantial impact of spiritual awareness on social-environmental awareness; 7) T-count > t-table (5.851 > 1.966) indicates a significant impact of spiritual awareness on mental health perceptions.

Table 8. Path coefficients (Mean, STDEV, T-Values).

Source	O	M	STDEV	t	P
Cognitive Awareness -> Environmental and Social Awareness	0.474	0.475	0.036	13.142	0.000
Cognitive Awareness -> Perceptions of mental health	0.198	0.198	0.044	4.458	0.000
Emotional Awareness -> Environmental and Social Awareness	0.206	0.204	0.037	5.572	0.000
Emotional Awareness -> Perceptions of mental health	0.181	0.181	0.037	4.870	0.000
Environmental and Social Awareness -> Perceptions of mental health	0.327	0.327	0.044	7.397	0.000
Spiritual Awareness -> Environmental and Social Awareness	0.127	0.127	0.032	4.014	0.000
Spiritual Awareness -> Perceptions of mental health	0.205	0.206	0.035	5.851	0.000

Based on the hypothesis results, a model structure was tested significantly, and a predictive relevance value was obtained. Figure 2 presents the model of the PLS-SEM path analysis diagram.

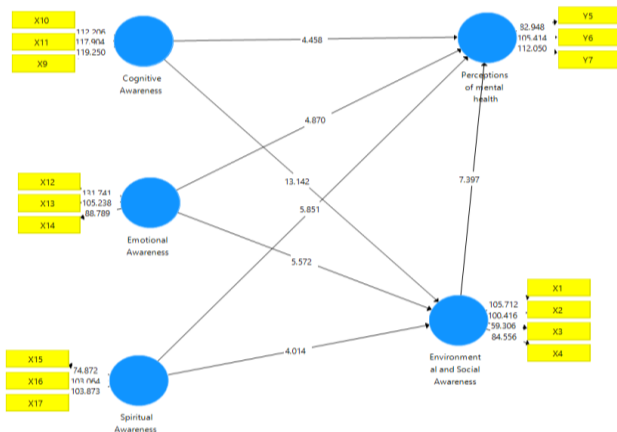


Figure 2. Model of PLS-SEM path analysis diagram

Discussion

Awareness of the social environment and mental health for sports participants

Awareness of the social environment is essential in sports participants' perception of mental health. The results show a significant influence between awareness of the social environment and the perception of mental health of sports participants 7.397, which is greater than the T-table. This can be explained by several previous studies related to this influence.

Promoting sports participation in neighbourhoods is essential to improve physical activity and mental health, especially among older adults and adolescents. Research results show that increasing social participation activities and involvement in sports clubs/groups and neighbourhood

associations are essential to prevent physical frailty in the older population (Abe et al., 2020). In addition, it has been found that young people in socioeconomically disadvantaged neighbourhoods may have fewer opportunities to participate in various sports than young people in more socioeconomically advantaged neighbourhoods (Mori et al., 2022). Collaboration with guardians and community leaders also plays a vital role in promoting sports participation. A study in an urban area of Japan revealed that collaboration with guardians was related to the individual experiences of community sports leaders involved in local sports from childcare and community collaboration, such as participation in non-community sports and their relationship with the neighbourhood leader (Hosokawa et al., 2022). In addition, it has been suggested that at least half of all adolescents in junior and senior high schools in low-income neighbourhoods participate in organized sports, indicating the importance of sport optimization approaches specific to mental health for adolescents in these neighbourhoods (Donohue et al., 2020). In addition, the built environment and socioeconomic factors at the neighbourhood level also play a role in sports participation. Using indoor and outdoor sports facilities was significantly associated with personal-level attributes rather than neighbourhood availability (Kajosaari & Laatikainen, 2020). Furthermore, neighbourhood-level socioeconomic factors were found to moderate the relationship between physical activity and relative age effects, indicating that youth in socioeconomically disadvantaged neighbourhoods may face barriers to participating in sports (Mori et al., 2022).

In conclusion, promoting awareness of neighbourhood sports participation is critical to improving physical activity and mental health, especially among older adults and youth from disadvantaged backgrounds. Collaboration with community leaders, adapting evidence-based therapies, and addressing socioeconomic disparities are essential in promoting neighbourhood sports participation.

Cognitive, emotional, and spiritual awareness of mental health for sports participants

Cognitive, emotional, and spiritual awareness are essential in encouraging better mental health for sports participants. This can be seen from the study results showing that these three components significantly influence mental health for sports participants, with T-values of 4.458, 4.870, and 5.851 more significant than the T-table. Cognitive awareness in sports is a multifaceted concept that includes various aspects of cognition and its impact on performance. Research has shown that cognitive abilities play an important role in sports performance, with studies suggesting that specific cognitive skills acquired through deliberate sports practice can significantly impact one's performance in sports (Glavaš, 2020). However, it is also important to note that basic cognitive abilities not directly related to sports training may also have relevance in sports performance (Glavaš, 2020). Comparative studies between traditional sports and e-sports have revealed exciting findings regarding cognitive abilities. Gamers have been shown to exhibit better executive function and spatiotemporal cognitive abilities compared to professional baseball players, while professional baseball players exhibit better intuitive perception (Argilés et al., 2022). These findings highlight the importance of considering different sports modalities and their unique cognitive demands, and cognitive awareness in sports extends beyond individual performance to team dynamics. Shared situational awareness among team members is critical in transforming a group of individual players into a coordinated elite team (Schei & Giske, 2020). The cognitive factors contributing to team cohesion and performance are critical in sports science research. Cognitive awareness in sports is not limited to on-field performance but extends to digital well-being and sensory-aware awareness among sports participants (Özsoy, 2023). The relationship between digital health and cognitive-sensory awareness in sports consumers underscores the interrelationship between cognitive factors and overall well-being in the context of sports participation. In conclusion, cognitive awareness in sports encompasses a range of cognitive abilities that influence individual and team performance, as well as consumer behaviour and well-being, and sports participants intelligently believe that engaging in sporting activities has many benefits.

In addition, higher sports participation tends to have higher emotional awareness, considered a relevant psychological skill in sports (Ouyang et al., 2022; Rubio et al., 2022)(Rubio, Ángel, Esteban, et al., 2022)(Rubio, Ángel, Esteban, et al., 2022)(Rubio, Ángel, Esteban, et al., 2022)(Rubio, Ángel, Esteban, et al., 2022). Emotional awareness is considered a subset of emotional intelligence identified as an essential determinant of performance in sports psychology, affecting emotional control, decision-making, and overall performance (Cetin et al., 2021; Rubio et al., 2022). Moreover, athletes who possess intelligent emotional awareness are associated with success in sports,

as they effectively manage their emotions (Pieroni et al., 2021; Rubio et al., 2022) (Rubio, Ángel, Ruiz, et al., 2022). So, emotional awareness affects sports participants' emotional control, decision-making, and overall performance in the morning. Participants with high levels of emotional awareness are often more motivated to exercise because they can effectively manage their emotions.

Furthermore, findings from a study confirmed the critical role of spiritual awareness as a mediating variable in the relationship between emotional awareness and psychological well-being (Ibrahim et al., 2022). However, it is essential to note that research also confirms that emotional intelligence (EQ) and spiritual intelligence (SQ) have no impact on ethical perceptions, indicating the need for a deeper understanding of the specific domains influenced by different forms of intelligence (Istiarani & Arifah, 2020). Then, it is essential to note that not all aspects of intelligence, such as spiritual intelligence, have been found to directly impact certain perceptions, as evidenced by a study that found no direct impact of emotional and spiritual intelligence on ethical perceptions (Istiarani & Arifah, 2020). In conclusion, the link between emotional intelligence and spiritual awareness has been highlighted, emphasizing the combined impact on psychological well-being. However, it is essential to recognize that the influence of spiritual awareness on perceived mental health can vary across different contexts and aspects of life. For example, physical activity, which is beneficial for health, can support spiritual activity to achieve psychological health. These findings highlight the multidimensional nature of awareness of spiritual intelligence and its implications for mental health perception in sports participation and other domains.

Cognitive, emotional, and spiritual awareness towards awareness of the social environment for sports participants

Based on the research results, cognitive, emotional, and spiritual awareness significantly influence sports participants' awareness of the social environment. This can be seen from the results of the T-count being more significant than the T-table, respectively 13.142, 5.572 and 4.014. This indicates that the nature of the sports environment can shape an individual's cognitive abilities and physical skills; the social environment in sports can also facilitate self-regulation and sports performance (Sakalidis et al., 2022). Sports participation is influenced not only by their internal processes but also by social dynamics and interactions in the sports context. For example, athletes' motivation and their inclusive participation in sports, especially for individuals with intellectual disabilities, can be influenced by the social environment (Sakalidis et al., 2023). Then, coaches play an important role in creating an environment that fosters motivation and inclusivity among athletes. In addition, in outdoor sports, the concept of social sports ecology emphasizes the reciprocal relationship

between outdoor sports participants and the natural environment (Trendafilova & Ziakas, 2022). This framework highlights the interrelationship between the individual, the social environment, and the natural world in the context of sports participation; in addition, cognitive awareness about sports is essential for forming social identity among sports fans (Pandey & Hassan, 2021). Emotional connections and cognitive engagement with sports contribute to an individual's sense of belonging and identity within the overall social group of sports fans. The social environment within a sports environment influences athletes' cognitive, emotional, and spiritual dimensions, which impacts their development, performance, and overall well-being in sports. Coaches, social workers, and the broader sports community play a critical role in creating a supportive and inclusive environment that encourages the growth of holistic sports participants and a holistic experience in sports. Cognitive, emotional, and spiritual awareness is vital in forming awareness of the social environment. This is essential to participants' involvement in community exercise to achieve mental health.

Conclusions

The results showed that cognitive, emotional, spiritual, and social environment awareness significantly influenced the mental health of sports participants. The newness of this study is that it is a robust structure model that can be used by institutions interested in increasing community participation in exercise. The implication is the importance of promoting sports participation in neighbourhoods to improve perceptions of mental health, especially among adults and adolescents from various socioeconomic backgrounds. Support from the sports community and other stakeholders can create a supportive environment and improve the quality of life of sports participants. Future research needs to examine how local culture plays a role in community sports participation.

Conflicts of interest

The authors declare no conflict of interest.

Acknowledgements

This research was sponsored by the Education Fund Management Institute (LPDP) with research contract number 027/E4.1/AK.04.RA/2021.

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