

Relationship Between Sports Participation and Sports Experience with the Mental Health of Malaysian Paralympic Athletes

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Abstract

The athletes have proven that their disability is not a barrier for them to gain experience with participation in the field of sports, excitement, positive emotional response and succeed in creating success at the highest level. Studies related to participation and experience in sports that have an impact on mental health among athletes still receive little attention. Therefore, the study of the relationship between participation and sports experience on mental health among Malaysian Paralympic Athletes is an effort to identify the relationship between the items. This study uses a cross-sectional research design because it allows to combine actual surveys, semi-structured interviews and literature on mental health studies. A purposive sampling technique was used to distribute questionnaires to respondents consisting of 2018 Asean Para Athletes. All data will be analyzed using Statistical Software for Social Sciences (SPSS). The results of the analysis reveal two important findings: first, Sports Participation is significantly correlated with Athletes' Mental Health ($\beta=0.579$; $t=11.589$). Second, Experience has a significant correlation with Athlete Mental Health ($\beta=0.656$; $t=15.226$). This result explains that the elements of sports participation and sports experience are predictors of mental health among paralympic athletes in Malaysia. Participation and experience in sports are elements that very important to help improve the level of mental health of athletes, especially para-athletes. Therefore, the measurement of the level of mental health in general needs to be monitored by making more studies of various factors to build a positive level of mental health.

Keywords: Participation, Experience, Mental Health, Paralympic Athletes

Introduction

Paralympic Sports serve as a platform to celebrate outstanding achievements and endurance of athletes with disabilities. Although much attention has been paid to the physical excellence of Paralympic athletes, their mental health and well-being are also equally important for overall performance and life satisfaction. This paper explores the relationship between participation and experience in Paralympic Sports with the mental health of Malaysian Paralympic athletes. By studying the unique challenges and opportunities faced by these athletes, the study aims to clarify factors that can affect their mental wellness and provide insights to improve the support systems and intervention.

Paralympic Sports have gained remarkable recognition worldwide, being proof of the persistent human spirit and breaking obstacles for athletes with disabilities. In recent years, Malaysia has emerged as a strong competitor in the Paralympic arena, with its athletes consistently showing outstanding performances in a variety of sports. Since the athletes continuously strive for excellence, it is important to realize that their mental health and well-being are intrinsically linked to their overall success and satisfaction.

Participation in Paralympic Sports is characterised by unique challenges and opportunities that are different from those faced by competent athletes. Malaysia's Paralympic Athletes embrace physical disabilities, community stigma and emotional constraints, making their mental health one of the most concerned areas. Understanding that these factors affecting the mental well-being of these athletes can contribute to the development of effective support systems and intervention to improve their overall experience and performance.

Research Objectives

This study aims to study the relationship between sports participation and the experience of sports in Paralympic Sports with the mental health of the Malaysian Paralympic athletes. Specifically, it aims to: First, is to investigate the relation between the participation in sports and the mental well-being of the athlete. Second, is to study the relationship between sports experience and the mental health of athletes.

Literature Review

Tahira (2022) conducted a literature study by searching different databases using keywords such as "sports participation" and "mental health". Participation in sports has been found to be positively linked to psychological well-being, which is a mental health problem. Participation in sports can also influence the risk of anxiety, depression, and lower social behavioural inhibition among adolescents. This activity can lead to a reduction in smoking and the type of personality that can help to refrain from alcohol and drug addiction. Participation in sports clubs, high or moderate sports participation, involvement in outdoor sports, team sports and sports competitions can all benefit the mental health of children, adolescents, and adults. Sports clubs and team sports are highly beneficial for mental health due to social and psychological support while creating opportunities that can lead to promoting better mental health.

Eather et al (2023) studied nine electronic databases that were the result of a study published between 2012 and March 2020. The qualitative and quantitative studies are about the relationship between sports participation and mental health in the adult population. The search strategy found 8528 articles, of which, 29 involving adults 18-84 years old have been included for the analysis. Data has been extracted for demographics, methodologies, and survey results, and the results are presented according to the design of the study. Evidence

suggests that the participation in sports (community and elite) is associated with better mental health, including better psychological well-being (for example, higher self-esteem and life satisfaction) and lower psychological illnesses (for instance, decreased levels of depression, anxiety and stress), and better social outcomes (for example, increased self-control, prosocial behaviour, interpersonal communication and nurturing the spirit of weakness). Overall, adults who participate in team sports have better mental health outcomes than those who participated in individual sports. The findings of this study also confirm that participation in sports in any form (team or individual) is beneficial for improving mental health and social outcome among adults. However, team sports may provide stronger benefits for better mental and social health outcomes.

Congsheng et al (2022) in a study found that physical activity and sport are very important elements for physical and mental health among adolescents. Around 30% of 16 years of age and older in Malaysia have mental health problems. For this purpose, 512 university students from Malaysia have been reviewed through social media, with a response rate of 74%. The least square partial structural equation model (SEM-PLS) is used to study the effects of PA and sports on mental health. The findings show that both PA ($b = 0.402$, $p < 0.001$) and sports ($b = 0.330$, $p < 0,001$) significantly predict mental health among university students. The model explains 35.8% variance in mental health. The study suggests that PA and sports activities should be encouraged among university students to control mental health issues that occur among adolescents.

In addition, there is some research that has shown that participation in physical activity and sport plays a major role in improving the mental health of individuals at all stages of life (Tamminen et al., 2020; Teychenne et al., 2020). Physical activity can carry a variety of functions such as exercise, work or physical exercise. The primary purpose of physical exercise is to improve the health and physical capacity of an individual. Biopsychosocial models confirm that physical activity and exercise are among the best strategies to deal with mental health problems. Physical training is focused on improving performance and maximum capacity. On the contrary, physical inactivity is sedentary behaviour in which body movement is absent. Physical inactivity leads to an increased risk of poor health, which can affect the well-being of an individual (Malm et al., 2019).

According to a study by Pluhar (2019), "team" sports that have positive experiences with good guidance, skills development, and peer support while participating in sports activities can improve adolescent mental health by improving social acceptance, reducing dissatisfaction, and ultimately reducing depression. According to research results, athletes who play team sports experience less anxiety or depression than athletes who play individual sports. This may be due to the fact that having sports experience can help them overcome the difficulties in their own sport. For example, they can deal with severe feelings of shame or guilt after losing a competition.

Research conducted by Newman, Howells and Fletcher (2016) also revealed a complex relationship between athlete experience and performance. The study aims to study the relationship between the sporting experience that causes depression for athletes and this stage of experience with their sporting performance. Analysed twelve autobiographies of prominent athletes representing eight sports. The results of the study show that the element of experience can contribute to the symptoms of depression. Depression symptoms can be caused by external stresses, such as experiencing chaos, or internal stress, like a lack of self-confidence. This study shows how important it is to know the symptoms of depression early

and use proactive strategies to prevent and manage symptoms, which can affect the mental health of athletes.

Meanwhile, Souter, Lewis, and Serrant (2018) looked at the relationship between experience and mental health among athletes who shared their personal experience. Involvements in sports affected athlete psychology, although athletes were more likely to talk about their emotional well-being when they were injured. Bad experiences usually leave an impact and stress due to competition and performance factors. Athletes may be worried about their performance and subsequently become depressed because of the stress they experienced throughout their sports career which continued until they retired. Athletes who experience symptoms of mental illness can affect their performance, causing them to be more susceptible to more severe psychological symptoms. Athletes can experience overtraining syndrome if they face high performance stress.

Based on the study of literature, a hypothesis was formed for this study:

Ho1: There is no significant link between sports participation and the mental health of athletes.

Ho2: There is no significant relationship between sports experience and athlete mental health.

Research Methodology

The study uses the cross-cutting study design as it allows researchers to combine real-life surveys, semi-structured interviews and literature on mental health studies. Researchers benefit from the design of this study when they collect accurate, unbiased and high-quality data (Sekaran & Bougie, 2019; Cresswell, 2014).

Research Samples

The survey involved a total of 140 respondents consisting of ASEAN Athletes who represented Malaysia in 2018. In the early stages of data collection, the survey questions were formulated based on mental health literature. Next, semi-structured interviews were conducted involving experienced officials managing paralympics athletes in Malaysia. The information gathered from this interview method is used to understand the nature and characteristics of the mental health of the athlete, sports participation and experience and the relationship between the variables in the context of this study. After that, a pioneering study was conducted by discussing the survey question with the respondent to confirm the content as well as to make sure the words, sentences and meanings of a question are in line with the language used for the Malaysian athletes in the actual study. Therefore, back-translation techniques are used to translate the contents of the survey into Malay and English versions to improve the validity and reliability of the study findings. (Sekaran & Bougie, 2016; Cresswell, 2014).

Research Sampling Technique

Purposive sampling techniques are used to distribute 160 questionnaires to respondents consisting of ASEAN Athletes 2018. The sampling technique is used because the researcher has selected individuals and groups that have connections and have the characteristics necessary for the study. A total of 140 out of 160 surveys could be used and analysed by researchers, resulting in an 87.5 percent response rate. Surveys were answered by respondents on their consent and voluntarily. This figure adheres to a good decision model as suggested by Krecjcie and Morgan (1970), and exceeds the minimum probability sample

that has been proposed, suggesting it can be analysed using inferential statistics. (Sekaran & Bougie, 2011). Furthermore, SmartPLS 3.9 as recommended by Hair et.al (2017); Henseler et al (2019); Ringle and al (2009) to use psychometric assessment of data on survey surveys and test study hypotheses.

Research Instruments

The survey question review has three main parts: first, there are 6 adapted items from athletes mental health literature namely the Minnesota Multiphasic Personality Inventory (MMPI-2) Rogers et al (2016), sports participation has 4 items (Aicinena & Eldridge, 2006) and sports experience has 7 items (Larson, 2002). The dimensions used to measure the mental health of athletes are from the aspects of anxiety, mood, and feelings. On the other hand, the dimensions that are used for measuring sports participation reflect on how they feel about professional participation in international sports. Last, sports experience has 7 items adapted from the literature of sports experience (Hansen & Larson, 2005). The dimension used to measure the sporting experience is to evaluate the experience of athletes who participate in a variety of structured activities that include sports. All items used in the questionnaire are measured using a likert scale of 1 to 5 items starting from "(1 = very disagreeable, 2 = disagreed, 3 = less agreed, 4 = agreeable, 5 = very agreeable).The demographic variable is used as a controlling variable as the study focuses on the 2018 ASEAN Athletes.

Findings

In terms of sample profiles, the majority of respondents were men (77.9%), aged between 21 and 25 (52.1%), part from individual sports categories (58.6%), part of them were SPM educated (41.4%), the period of experience or involvement of athletes was between 1 to 3 years (40%), and most of the sporting events excavated by athlete were sports (18.6%).

Table 1 shows that the mental health of athletes, sport participation, and sports experience have an extracted average variance value (AVE) greater than 0.5, indicating that they meet acceptable focus effectiveness standards (Henseler et al., 2015; Barclay et al., 1995; Fornell & Larker, 1981). Furthermore, all constructions that have an angle value \sqrt{AVE} are greater than the power correlation of the two with other constructions within the outside of the angle, indicating that all the constructions meet acceptable discrimination validity standards (Henseler et al., 2015).

Table 1

Convergence Effectiveness and Discrimination Analysis Results

Construct	AVE	Athletes Mental Health	Sports Experience	Sports Participation
Athletes Mental Health	0.508	0.713		
Sports Experience	0.563	0.641	0.712	
Sports Participation	0.508	0.559	0.436	0.750

Table 2 shows the correlation between items and factors of different constructs, and the reliability analysis of the constructs. Variables loaded more strongly on their own constructs in the model, exceeding the specified minimum, 0.7, show that the validity of the measurement model meets the criteria (Fornell & Larker, 1981; Chin, 1998; Gefen & Straub, 2005). In addition, the reliability of the composite (CR) and Cronbach's Alpha (CA) had a value

of more than 0.7, indicating that the instruments used in this study maintained a high and satisfactory internal stability (Henseler et al., 2009; Nunally & Bernstein, 2006).

Table 2

Composite Reliability Results, Cronbach Alpha and Fornell-Larcker for Construction Reliability Analysis

Konstruk	Fornell-Larcker (FL)	Composite Reliability (CR)	Cronbach Alpha (CA)
Athletes Mental Health	0.713	0.859	0.801
Sports Participation	0.750	0.837	0.741
Sports Experience	0.712	0.878	0.837

Table 3 shows the results of a test analysis of a model of direct effects for this study. The study finds that sports participation has a significant positive relationship with the mental health of athletes ($\beta = 0.579$; $t = 11.589$). Hence, Ho1 was rejected. Meanwhile, the findings also show that sports experience has a significant positive relationship with the mental health of athletes ($\beta = 0.656$; $t = 15.226$). Thus, Ho2 was rejected. Meanwhile, in terms of the strength of this model, the sporting participation element describes a change of 33.5 percent ($R^2 = 0.335$) against the change in the mental health of paralympic athletes. On the other hand, the experience element describes a change of 43.1 percent ($R^2 = 0.431$) in the changes in the mental health of paralympic athletes. This connection also explains that the element of participation and sporting experience is a predictor of mental health among paralympic athletes in Malaysia.

Table 3

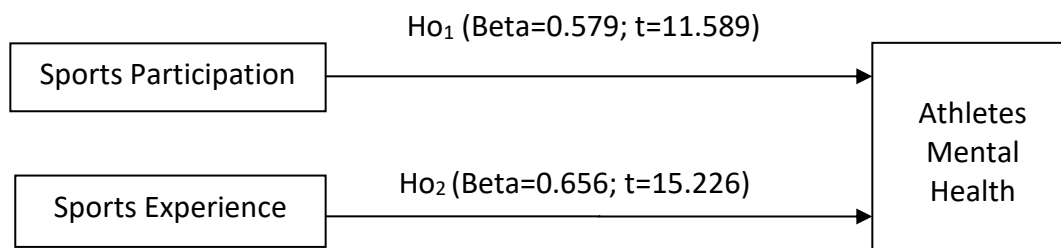
Summary of Direct Impact Model Test Results

Hypothesis	β	sd	t	p	f^2	R^2	VIF	Results
Ho1	0.579	0.050	11.589	0.000	0.121	0.335	1.332	Hypothesis rejected
Ho2	0.656	0.043	15.226	0.000	0.141	0.431	1.698	Hypothesis rejected

Note: Significance of $t > 1.645$; $t > 2.33$

Figure 1 shows the results of the PLS path model test. Entry Sports Participation and Sports Experience has shown 50 percent variance in Athlete's Mental Health. SmartPLS path model analysis results reveal two important findings: first, Sports participation correlates significantly with Athlete Mental Health ($\beta=0.579$; $t=11.589$), so Ho1 is rejected. Second, Experience has a significant correlation with Athlete Mental Health ($\beta=0.656$; $t=15.226$), so Ho2 was rejected. In conclusion, this finding explains that the element of sport participation and sport experience is a predictor of mental health among paralympic athletes in Malaysia.

$R^2=0.507$



Note: Significance of $t > 1.645$; $t > 2.33$

Figure 1: Results of PLS Path Model Test

Discussion

Relationship between sports participation and mental health of athletes

The results of the study show that there is a significant and positive relationship between sports participation and the mental health of athletes. Rosenbaum, Tiedemann, Sherrington, Curtis and Ward (2014) support this finding with their research results showing that physical activity has a strong and beneficial effect on mental well-being and some mental illnesses. Regular physical activity can increase self-confidence and reduce anxiety and stress. Mental health problems can be prevented by doing physical activity, which can also improve their quality of life. In addition, Tahira (2022) also acknowledged that participation in sports and physical activity is important because it has long-term effects on the mental health of young athletes. The results showed that students involved in school sports showed better scores on all three mental health assessments than students who did not play sports at all; they also showed lower stress symptoms, lower depression, and better mental health than younger adult students.

Relationship between sports experience and mental health of athletes

The results of the study show that there is a significant and positive relationship between sports experience and the mental health of athletes. According to Firestone (2012), as a result of the experience and physical pain experienced by an athlete, many athletes may face worse mental health problems without receiving the help they need. Smith (2021) in his study also found that there is a link between the experience of an athlete and mental health. The findings found that sports experiences have an impact on the psychology of the athlete, although athletes are more likely to talk about their emotional well-being when they experience an injury. Bad experiences usually affect and stress them because they involve competition and performance. Then, research conducted by Newman et al (2016) showed a complex link between experience and mental well-being. The study aims to study the relationship between the sport experiences that cause depression for athletes and the level of pain that this experience subsequently affects their performance. The results show that less stress, such as stress, can contribute to symptoms, stress, and excessive stress.

Research Implications

The study provides three important implications, in terms of the theoretical contribution, the results of the study can contribute to existing knowledge in sports psychology by studying the relationship between sports participation, sports experience, and the mental health of athletes in particular among the Paralympic sportsmen. Next, the study could also contribute to a theoretical understanding of the intersection between disability and mental health. By exploring the challenges and factors affecting the mental well-being of Malaysian Paralympic

athletes, the research could provide an overview of a broader understanding of disability, and mental well-being in the field of sports psychology. The findings of this study are consistent and consistent with the study by (Tamminen et al., 2020; Teychenne et al., 2020).

With regard to the persistence of the study methodology, the survey questionnaire used in this study has met the standards of validity and reliability of the analysis with satisfactory results. This can lead to the production of accurate and reliable research findings. In addition, using a quantitative method, which is the survey form, this study can collect data from respondents in large quantities in a short time. Using the survey, the study has collected data in the form of numbers or scores that can be quantitatively analysed. This allows researchers to analyse the relationship between the variables being studied, in addition, researchers can also study the level of participation, experience and mental health of paralympic athletes in Malaysia. In this study, researchers carefully select samples to ensure that the Malaysian Paralympics athlete from various disciplines and representative levels of evaluation are equitably assessed. It can also provide a more comprehensive level of research, quality and generalisation of the study. However, using a quantitative study with an interview, i.e. qualitatively, can provide a more in-depth and comprehensive insight.

As far as practical contributions are concerned, the findings of this study can be used as a guide by practitioners to improve the ability of Malaysian Paralympic athletes to manage their mental health. The practical implications involve several key aspects: First, creating partnerships and fostering cooperation among relevant stakeholders is essential for effective implementation of mental health initiatives. This includes cooperation between sports organisations, mental health professionals, groups advocating people with disabilities, government agencies and educational institutions. With collaboration, these stakeholder groups can gather their resources, expertise and knowledge to develop comprehensive mental health support programmes for Malaysian Paralympic Athletes. Second, the development and implementation of an integrated support system that addresses the needs of a wide range of Paralympic athletes. This may involve the establishment of a multidisciplinary team consisting of psychologists, consultants, sports coaches, nutritionists and medical professionals. These professionals can work together to provide holistic support covering mental, physical and nutritional aspects to optimise overall athlete well-being. Third, the development of educational programmes aimed at improving mental health among paralympic athletes, coaches, officials and support staff. Workshops for practices, seminars and awareness campaigns can be conducted to improve understanding of mental health issues, reduce stigma, and promote early recognition and intervention. It can empower individuals in the paralympic community to recognize and deal with mental health concerns effectively. Fourth, the development of accessible and customised interventions designed specifically for Malaysian Paralympic athletes. This includes providing cultural-sensitive and inclusive disability mental health services that take into account the challenges faced by the athlete. Interventions may involve individual counselling, group therapy, peer support programmes, stress management techniques, and resilience building workshops, among others. Finally, allocation of sufficient resources to support mental health initiatives for Malaysian Paralympic athletes. This includes obtaining funding for mental health services, research, training programmes and infrastructure development. Adequate resources are essential to ensuring the sustainability and effectiveness of mental health support systems. Considering these practical implications, the aim is to create a comprehensive and sustainable framework that prioritises mental health and well-being of Malaysian Paralympic athletes.

Conclusion

The study suggests a conceptual framework based on the literature of mental health studies of athletes. The results of the validation factor analysis confirm that the tools used in this study meet the acceptable standards of validity and reliability analysis. Ho1 and Ho2 were rejected because SmartPLS path model analysis results showed a significant correlation between sports participation and sports experience with an athlete's mental health. The findings indicate that participation and experience in sports is a major factor in affecting mental health among Malaysian Athletes. Furthermore, the findings have supported and expanded studies on mental health in Malaysian athletes, most of which are published in Western countries. The impact on the mental health of athletes is low, though the findings of this study are important. Results show that effective participation can have a positive impact on mental health, covering aspects such as positive spirit, self-esteem, and increased social involvement. Experience in the sporting arena, achieving personal goals and building positive relationships, also plays an important role in forming the emotional well-being of athletes. While physical and emotional challenges are inevitable, the sporting experience helps Paralympic athletes to develop endurance and be emotionally resilient. Social support from the sporting community, including peers, coaches, and supporters, is an important element in maintaining mental health. To overcome this complexity, the article also emphasises the need to expand the mental health support programmes in the Malaysian Paralympic sports community, including a holistic approach that includes comprehensive mental training, emotional support, and mental health resources. Thus, an in-depth understanding of this dynamic can form the basis for better development of initiatives in support of the overall well-being of Malaysian Paralympic athletes.

Overall, exploring the relationship between participation and mental health-related experiences of Paralympic athletes in Malaysia reveals an interesting perspective. The findings emphasise the important role played by active involvement in the Paralympic sport in shaping the overall mental well-being of the athlete. Effective participation emerges as an incentive for positive outcomes, fostering a sense of achievement, self-esteem and greater social commitment. Experience in the field of Paralympic sports, including achieving personal goals and emphasising positive relationships, has emerged as an important contributor to the emotional welfare of these athletes. While the physical and emotional challenges that exist in the Paralympic endeavours cannot be overlooked, the experience gained through sport has proven to play an important role in fostering endurance and emotional endurance among athletes. Support from the community in Paralympic sports, involving friendship among peers, guidance from coaches, and support from supporters, is an essential component in maintaining an athlete's mental health. Being aware of the nature of these various forms of relationships and experiences, a holistic approach is necessary to deal comprehensively with the mental well-being of Malaysian Paralympic athletes. In addition, this study supports the development of mental health support programmes in the Malaysian Paralympic community. Such initiatives should encompass holistic frameworks, integration of mental training, emotional support, and comprehensive mental health resources. By investigating the complexity of participation and experience, this article aims to provide a foundation for the development of more effective initiatives aimed at nurturing the overall well-being of Paralympic athletes in Malaysia. Finally, this nuanced understanding serves as a leappoint towards creating a supportive environment that integrates Malaysian paralympics athletes in their mental health journey.

References

- Aicinena, S., & Eldridge, J. (2006). The Sport Participation Model Questionnaire: A Tool for the Assessment of Sport Orientations. *Online Submission*.
- Barclay, D., Higgins, C., & Thompson, R. R. (1995). The Partial Least Squares (PLS) Approach to Causal Modeling: Personal Computer Adoption and Use as an Illustration. *Technology Study*, 2 (2), 285-309.
- Bougie, R., & Sekaran, U. (2019). *Research methods for business: A skill building approach*. John Wiley & Sons.
- Chin, W. W. (1998). *The Partial Least Squares Approach to Structural Equation Modeling*. In G.A. Marcoulides (Ed.), *Modern Methods for Business Research* (pp. 295-358). Mahwah, NJ: Lawrence Erlbaum Associates.
- Creswell, J. W. (2014). *A concise introduction to mixed methods research*. SAGE publications.
- Congsheng, L., Kayani, S., & Khalid, A. (2022). An empirical study of physical activity and sports affecting mental health of university students. *Frontiers in psychology*, 13, 917503.
- Davis, L.V. (1996). Role Theory and Social Work Treatment. In F.J. Turner (ed.). *Social Work Treatment. Interlocking Theoretical Approaches*. New York: The Free Press. pp. 581-600.
- Eather, N., Wade, L., Pankowiak, A., & Eime, R. (2023). The impact of sports participation on mental health and social outcomes in adults: a systematic review and the 'Mental Health through Sport' conceptual model. *Systematic Reviews*, 12(1), 1-27.
- Fornell, C., & Larcker, D. F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*, 18 (3), 328-388.
- Firestone, L. (2012). Risks to the Mental Health of Athletes. <https://www.psychologytoday.com/us/blog/compassion-matters/201211/risks-the-mental-health-athletes>
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (2006). *Multivariate Data Analysis*. New Jersey: Prentice Hall International, Inc.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (2017). *Multivariate Data Analysis*. New Jersey: Prentice Hall International, Inc.
- Hansen, D. M., & Larson, R. (2002). The youth experience survey 1.0: Instrument development and testing. University of Illinois.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of marketing science*, 43, 115-135.
- Henseler, J., Ringle, C. H., & Sinkovics, R. R. (2009). The Use of Partial Least Squares Path Modeling in International Marketing. *New Challenges to International Marketing Advances in International Marketing*, 20, 277-319.
- Khan, A., Ahmed, K. R., Hidajat, T., & Edwards, E. J. (2022). Examining the association between sports participation and mental health of adolescents. *International journal of environmental research and public health*, 19(24), 17078.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Journal of Education and Psychological Measurement*, 30, 607-610.
- Nunally, J. C., & Bernstein, I. H. (2006). *Psychometric Theory*. New York: McGraw-Hill.
- Ringle, C. M., Gotz, O., Wetzels, M., & Wilson, B. (2009). *On the Use of Formative Measurement Specifications in Structural Equation Modeling: A Monte Carlo Simulation Study to Compare Covariance-based and Partial Least Squares Model Estimation*

- Methodologies* (METEOR Research Memoranda RM/09/014). Maastricht, the Netherlands: Maastricht University.
- Rosenbaum S, Tiedemann A, Sherrington C. 2014. Physical Activity Interventions for People with Mental Illness: A Systematic Review and Meta-Analysis. *Journal of Clinical Psychiatry*;75 (9): 964-974
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.
- Smith, C. (2021). Not Feeling So Mega, but Still Being a Mega Star: Exploring Male Elite Athletes' Mental Health Accounts from a Gendered Perspective. In *Sport, Gender, and Mega-Events* (pp. 73-90). Emerald Publishing Limited.
- Tahira S. The Association Between Sports Participation and Mental Health Across the Lifespan. *Int J Sport Stud Health*. 2022;5(2): e134601. <https://doi.org/10.5812/intjssh-134601>.
- Tamminen, N., Reinikainen, J., Appelqvist-Schmidlechner, K., Borodulin, K., Mäki-Opas, T., and Solin, P. (2020). Associations of physical activity with positive mental health: a population-based study. *Ment. Health Phys. Act.* 18:100319. doi: 10.1016/j.mhpa.2020.100319
- Teychenne, M., White, R. L., Richards, J., Schuch, F. B., Rosenbaum, S., and Bennie, J. A. (2020). Do we need physical activity guidelines for mental health: what does the evidence tell us? *Ment. Health Phys. Act.* 18:100315. doi: 10.1016/j.mhpa.2019.100315