Validity and reliability of a sport participant psychosocial well-being instrument: a preliminary study

Validez y fiabilidad de un instrumento de bienestar psicosocial del participante deportivo: un estudio preliminar

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Abstract

Purpose: This study aims to evaluate the validity and reliability of an instrument designed to measure the psychosocial well-being of sports participants.
Method: This study has four phases: preparation, translation, field trials, and validation methods. Seven experts evaluated the study based on content, clarity, and feasibility. The study involved 55 participants in 12 different sports using the test-retest approach. The participants were 19 women and 36 men, with an average age of 15 years and 7 months.
Result: The analysis results show that each item meets the validity criteria, with a Pearson correlation value higher than the r table value (0.266). Intraclass correlation test shows the reliability of each sub-variable is 1) Psychosocial Well-being of 0.938, Social Integration of 0.871, Social Contribution of 0.923, Social Actualisation of 0.926, Social Coherence of 0.916, and Social Acceptance of 0.995 indicating all sub-variables have high consistency. With valid and reliable results, this instrument is ready for further research.
Conclusion: This study shows that the Psychosocial Well-being Instrument for sports participants has excellent validity and reliability, with validation results from experts and test-retest tests showing strong consistency. This instrument is ready for further research and practical applications, such as assisting coaches, psychologists, and counselors in assessing the psychosocial well-being of sports participants and supporting psychosocial development programs that improve the performance and mental well-being of sports participants. In addition, this instrument can support the development of policies that pay attention to psychosocial aspects in sports participant development and open up opportunities for further research on the relationship between psychological well-being and other factors in sports

Keywords

Instruments; psychosocial well-being; reliability; sports participants; validity.

Resumen

Propósito: Este estudio tiene como objetivo evaluar la validez y fiabilidad de un instrumento diseñado para medir el bienestar psicosocial de los participantes en deportes.
Método: Este estudio consta de cuatro fases: preparación, traducción, pruebas de campo y métodos de validación. Siete expertos evaluaron el estudio basándose en tres criterios: contenido, claridad y viabilidad. En el estudio participaron 55 personas de 12 deportes diferentes y se utilizó el método test-retest. Los participantes eran 19 mujeres y 36 hombres, con una edad media de 15 años y 7 meses.
Resultados: Los resultados del análisis muestran que cada ítem cumple los criterios de validez, con un valor de correlación de Pearson superior al valor de la tabla r (0,266). La prueba de correlación intraclase muestra que la fiabilidad de cada subvariable es 1) Bienestar psicosocial de 0,938, Integración social de 0,871, Contribución social de 0,923, Realización social de 0,926, Coherencia social de 0,916 y Aceptación social de 0,995, lo que indica que todas las subvariables tienen una alta consistencia. Con resultados válidos y fiables, este instrumento está listo para futuras investigaciones.
Conclusiones: Este estudio muestra que el Instrumento de Bienestar Psicosocial para participantes deportivos tiene una excelente validez y fiabilidad, con resultados de validación de expertos y pruebas test-retest que muestran una fuerte consistencia. Este instrumento está listo para futuras investigaciones y aplicaciones prácticas, como ayudar a entrenadores, psicólogos y consejeros a evaluar el bienestar psicosocial de los participantes en deportes y apoyar programas de desarrollo psicosocial que mejoren el rendimiento y el bienestar mental de los participantes en deportes. Además, este instrumento puede apoyar el desarrollo de políticas que presten atención a los aspectos psicosociales en el desarrollo de los participantes deportivos y abrir oportunidades para futuras investigaciones sobre la relación entre el bienestar psicológico y otros factores en el deporte.

Palabras clave

Bienestar psicosocial; deportistas; fiabilidad; instrumentos; validez.

Introduction

Measuring psychosocial aspects of sports has an important role in understanding the impact of sports participation on individual well-being(Bravo et al., 2020). Psychosocial well-being includes various aspects, such as mental health, social interactions, and satisfaction and achievement obtained through sports activities(Eather et al., 2023)(Sepdanius et al., 2023). This is supported by previous research that social support, especially from teammates, is a key protective factor for the mental health and well-being of athletes and sport participants (Graupensperger et al., 2020; Hagiwara et al., 2021). In addition, coaches also play an important role in fostering a positive team environment and supporting athletes' psychosocial development over time (Kassim et al., 2020). Therefore, it is necessary to know how much the role and psychosocial development of athletes is, an instrument is needed that is able to see this development and role in athletes or sports participants. Furthermore, the instrument used must fulfil the instrument method, namely valid and reliable. Valid and reliable instruments are needed to accurately and consistently measure the psychosocial well-being of sports participants to support more in-depth research in this area.

Validity and reliability are two primary components in evaluating research instruments(Olayinka, 2022; Yukhymenko–Lescroart, 2014). Validity refers to the extent to which an instrument measures what it is supposed to measure. In contrast, reliability refers to the consistency of results obtained when the instrument is used under the same conditions at different times. Both aspects are very important in ensuring that the data generated from the instrument are reliable and have scientific relevance(Barquero-Ruiz, 2023).

This article aims to evaluate the validity and reliability of an instrument designed to measure the psychosocial well-being of sports participants. Through this approach, it is hoped that the instrument can be widely used in various sports contexts, thereby contributing to understanding the role of sports participation on the well-being of individuals from different backgrounds. Validation of this instrument will also provide a strong foundation for further research on sports interventions aimed at improving participants' mental and social health.

Psychosocial well-being of sports participants

Participation in sports has been widely recognized for its positive effects on psychosocial well-being across age groups. Several studies highlight that leisure activities and sports significantly contribute to psychological well-being, emphasising that involvement in sports are associated with better life aspirations and mental health outcomes(R. Eime et al., 2013)(Sepdanius et al., 2018)(Rinaldi et al., 2024)(Astuti et al., 2024). This is further supported by Eime et al (2013), who found that adults who participated in sports, particularly team sports, experienced greater mental health benefits than those who did not participate, with higher frequency and competitive level correlating with lower mental distress. In children and adolescents, the benefits of sports participation are equally evident. Eime et al. conducted a systematic review showing that participation in sports is associated with improved social skills and positive psychological outcomes, including increased self-esteem among shy and aggressive children(R. Eime et al., 2013). Oberle et al. also noted that extracurricular sports can alleviate internalizing problems and foster positive mental well-being in childhood(Oberle et al., 2019). These findings suggest that structured sports environments can provide important social interactions for developing emotional and social competencies. Furthermore, longitudinal studies suggest that the benefits of sport participation extend into adolescence and young adulthood. Graupensperger et al. found that sports participation was associated with favorable mental health outcomes, highlighting its protective role against mental health problems during these formative years(Graupensperger et al., 2021). Similarly, Murray et al. emphasize that early involvement in team sports can result in sustained levels of physical activity and better mental health outcomes throughout life(Murray et al., 2021). This is reinforced by the work of Liddle et al., who showed that community sports can serve as a protective factor against mental health problems in adolescents, including anxiety and depression(Liddelow et al., 2022). However, it is important to recognise that the relationship between sports participation and mental health is complex and may be influenced by a range of factors. For example, while many studies report positive results, some studies suggest that not all forms of organised sport produce the same benefits, with individual sports sometimes associated with a higher incidence of mental health problems(Liddle et al., 2016). This underlines the importance of context, including the type of sport, the

competitive environment, and the quality of training and support provided(Liddle et al., 2016). In conclusion, the evidence strongly supports the idea that participation in sport contributes positively to psychosocial well-being across demographics. However, the nuances of these relationships require further investigation to optimize the positive impact of sport participation on mental health.

Although the literature has identified the positive benefits of sport participation on psychological and social well-being, there is a lack of comprehensive instruments to specifically assess the psychosocial health of sport participants. Most studies rely on generalised measures of mental health or well-being that are not specifically designed for sport participant populations and do not include social aspects. The absence of instruments specifically designed to measure the unique aspects of psychosocial well-being that arise in the context of sport participation, such as the impact of team structure, competition, coach support and social relationships, is an important gap in this research. This is crucial given the variation in outcomes found between different sports and environments. As such, the development of instruments to measure the psychosocial well-being of sport participants will help provide a deeper understanding

Validity and reliability of an instrument

The importance of validity and reliability in sport research instruments cannot be overstated, as these attributes are critical to ensuring that the findings derived from the research are accurate and applicable. Validity refers to the degree to which an instrument measures what it is intended to measure, while reliability relates to the consistency of the instrument's results over time or across different populations. Both factors are essential to the credibility of research findings and to the development of effective interventions in sport settings(Rifki, M. S., Sepdanius, E., & Husni, 2020).

In the context of psychology, the development of valid and reliable instruments is crucial. For example, the Organisational Citizenship Behaviour (OCB) scale is essentially an instrument designed for the general organizational work environment, so it does not reflect the unique dynamics in sports. Studies highlight the importance of building valid and reliable measurement tools to explore the relationship between OCB and other variables in sport environments (S. Kim et al., 2021). Similarly, Gershgoren et al. developed the Perceived Performance in Team Sports Questionnaire (PPTSQ), which has its construct validity through rigorous testing to capture the psychological mechanisms underlying team performance. While the PPTSQ is designed to measure individuals' perceptions of sports team performance, with a primary focus on performance aspects, it does not consider dimensions of psychosocial well-being, such as motivation, social support, or stress management, which also influence team performance(Gershgoren et al., 2021).

n addition, validation of psychological instruments is critical to understanding athletes' experiences and needs. Monteiro et al. validated scales assessing satisfaction and frustration among young athletes, demonstrating the importance of having reliable measures that can accurately reflect the psychological state of athletes (Monteiro et al., 2020). This is in line with the research of Milavić et al. who developed the Psychological Skills Inventory for Sport, emphasising that psychological skills are crucial for athletic performance and should be measured with valid and reliable tools (Milavić et al., 2019). From some of these studies, it explains that many researchers focus on psychological aspects, so the role of the social environment is slightly neglected, so there is a void in assessing social aspects that can affect psychological changes in sports players.

The implications of using valid and reliable instruments extend beyond academic research; they are critical for practical applications in athlete coaching and development. For example, Fronso et al. validated the 33-item Recovery-Stress Questionnaire, which can be used to assess athletes' recovery and stress levels, thereby informing athlete coaching and management strategies(Fronso et al., 2021). In this case, the RSQ only focuses on aspects of recovery and stress, thus excluding other psychosocial dimensions. Similarly, the ACL-RSI scale, which assesses psychological readiness to return to sport after injury, has been validated across multiple populations, reinforcing its usefulness in both clinical and sport settings (Harput et al., 2016; Slagers et al., 2019). Therefore, the ACL-RSI is only relevant for athletes who are injured and in the recovery process. This limits its applicability to evaluate the psychosocial well-being of healthy or non-injured athletes.

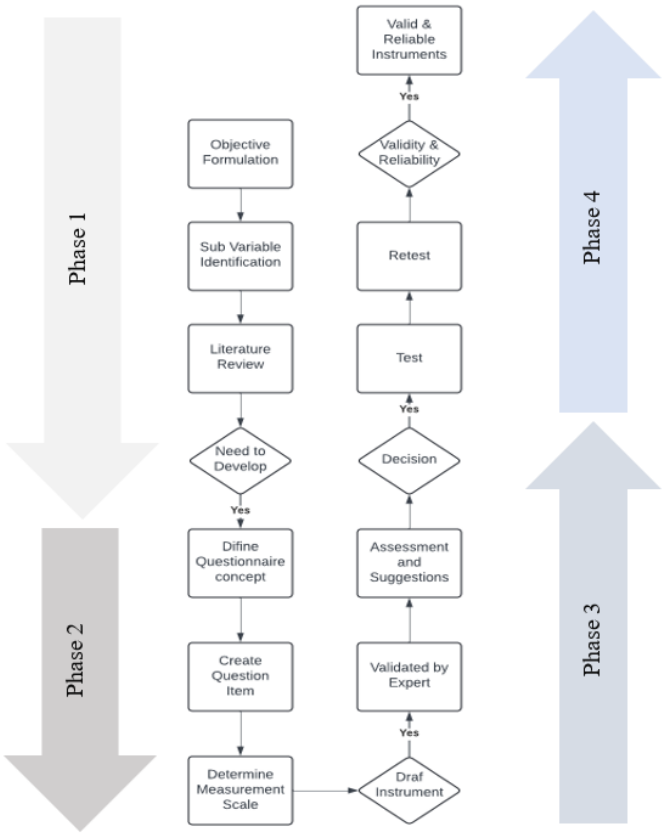
Based on the needs and shortcomings of previous instruments to obtain data related to the psychosocial well-being of sports participants, a psychosocial well-being instrument for sports participants was

developed. The instrument developed must fulfill the stages of development and meet the validity and reliability of the instrument as a measuring tool. As the field continues to evolve, the development of a robust instrument will facilitate a deeper understanding of the psychosocial aspects of sport.

Method

This study was reviewed and approved by the Universiti Teknologi MARA (UiTM) Research Ethics Committee under number REC/10/2024 (PG/MR/538); the study procedures were in accordance with the Declaration of Helsinki and based on the Malaysian Good Clinical Practice Guidelines.
There were four stages to this study. As seen in Figure 1, the preparation and translation stages come first, followed by validation and pilot testing.

Figure 1. The process of developing the psychosocial well-being Instrument for sports participants



Phase 1. Preparatory Phase

The researcher develops the main purpose of the questionnaire, or what it will measure, at this first stage. This includes determining which variables are important to the research and how to assess them. To determine if an existing tool or survey can be used or if a new tool or survey should be created by conducting a literature review. In this case, the Psychological Well-being (PWB) Scale(Ryff & Keyes, 1995) is the instrument most considered for use, but some shortcomings need to be developed, namely: 1) It focuses more on individual well-being in a general context and is not specific to situations involving sports dynamics such as teams, competitions, or relationships between athletes, coaches, and communities. 2) Psychosocial factors, including social contribution, social integration, social actualisation, social coherence and social acceptance in managing competitive pressures and team integration, are often not deeply emphasised. Based on these considerations, it was decided to develop a psychosocial well-being instrument for sport participants.

Phase 2. Development Phase

The next step is the development phase. The development phase produces questionnaire items based on the variables being measured after the objectives and conceptual framework of the questionnaire have been established. The process of developing questionnaire items followed a structured approach, starting with a thorough review of the variables, including psychosocial factors, social contribution, social integration, social actualization, social coherence, and social acceptance. Then, ensure alignment with the research objectives. At this stage of development, several considerations became priorities in creating statement items including 1) using simple and easy-to-understand language to maximize respondents' understanding, 2) choosing a Likert scale because it is considered more appropriate to the needs of the research, 3) deciding that the statements in this questionnaire are closed with the aim of facilitating data analysis and increasing data consistency because the answer choices are limited, 4) ensuring the length of the questionnaire remains measurable and in accordance with the time availability of respondents.

Criteria for selecting and constructing the final items include relevance to the topic being measured, clarity of delivery, and potential to capture meaningful data in accordance with the research objectives. This process requires derivation from research variables, sub-variables, and indicators to statement items. This rigorous process ensures each item is highly relevant and can effectively measure the intended variable.

Phase 3. Expert Validation

At this stage, the instruments were evaluated by several qualified experts in each domain. Some of the criteria for expert selection are 1) the expert has in-depth knowledge of the research topic or field, 2) has significant practical or academic experience of at least 10 years in the field, 3) published related articles, books, or research in reputable journals or contributed to the development of the field, 4) the expert is willing to provide feedback during the iterative process, 5) the expert comes from a variety of backgrounds to ensure diverse and comprehensive input, 6) the experts have no conflict of interest that may affect the objectivity of their input to the questionnaire development.

Each expert has knowledge and experience of the intended variables. The following are the expertise and qualifications of the experts who contributed to validating the instrument:

Table 1. Experts along with their qualifications, expertise and experience

Expert	Institution	Qualified
Physical Activity and Health	Istanbul Aydin University, Turkey	The expert has 14 years of experience in the field of Physical Activity and Health and has publications in reputable international journals
Sports Science and Coaching	MARA University of Technology, Malaysia	The expert has 35 years of experience in the field of sports science and has publications in reputable international journals
Sport and Recreation Management	University of Malaya, Malaysia	The expert has 35 years of experience in the field of Sport and Recreation Management and publications in reputable international journals
Sports Psychology	Universitas Negeri Padang, Indonesia	The expert has 10 years of experience in the field of Sports Psychology and is a psychology practitioner in Futsal team
Counselling	Universitas Negeri Padang, Indonesia	The expert, with 10 years of experience in guidance and counseling, is included in the list of 500 best researchers in Indonesia.
Child Psychology	Adzkia University, Indonesia	The expert has 35 years of experience in child psychology, including as a speaker on parenting and as governor of West Sumatra Province from 2010 to 2015 and 2016 to 2021.
Sociology of Sport	Universitas Negeri Padang, Indonesia	Expert has 35 years of experience in the field of Sociology of Sport and as a presenter in the field of sociology in various seminars.

The experts rated according to their expertise in relation to the three components of assessment: content, clarity, and feasibility, each with three statement items. The elements of the evaluation conducted by the experts were questionnaires made with a scale of 5. (1 = Strongly Disagree, Disagree=2, Undecided = 3, Agree = 4 and 5 = Strongly Agree).

This questionnaire is used for assessment and as a suggestion space for experts to provide input.

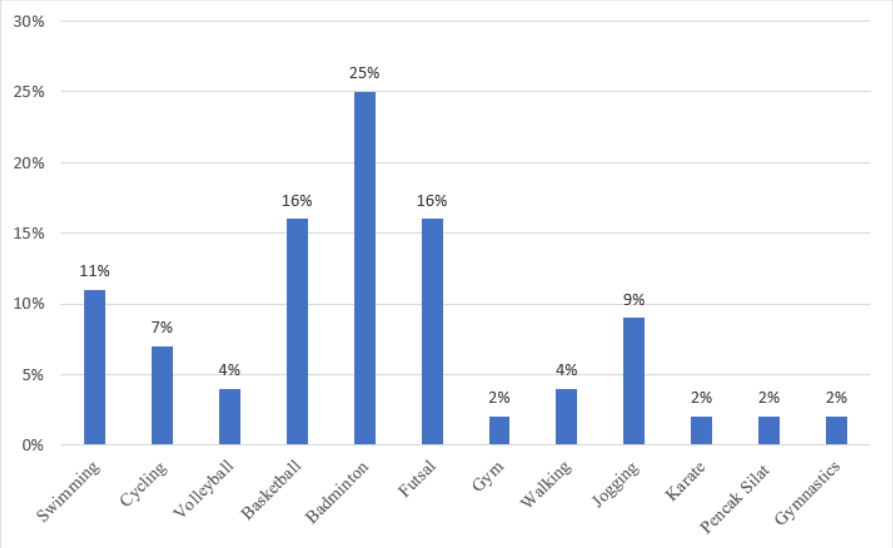
Table 2. Expert assessment of the developed psychosocial well-being instrument of sports participants.

No	Statement
A	Material
1	This instrument covers all relevant aspects.
2	The statements contained in this instrument are consistent with the purpose of the instrument.
3	This instrument has sufficient coverage to measure the variables studied.
B	Clarity
1	This instrument is easy for respondents to understand.
2	The language used in this instrument is unambiguous.
3	Every statement in this instrument is not open to misinterpretation.
C	Feasibility
1	This instrument is suitable for use in the context of its purpose.
2	This instrument is able to measure the variables studied accurately.
3	This instrument can be applied to research samples effectively.

Phase 4. Pilot Study

The prepared questionnaire should be trialled on a small sample of participants representing the research population to be tested on a small scale. At this stage, the researcher will assess the reliability (consistency of measurement results) and validity of the questionnaire (whether the questionnaire measures what it intends to measure). Content validation, construction, and reliability tests such as Cronbach's Alpha and Test-Retest coefficient are part of this procedure. The pilot study, which involved 55 participants with an average age of 15 years and 7 months, was conducted at a public high school in Bukittingi, Indonesia. The participants consisted of 19 girls and 36 boys. Figure 1. shows the participants' propensity to participate in sports activities with the following types of sports selected: 1) swimming, 2) cycling, 3) volleyball, 4) basketball, 5) badminton, 6) futsal, 7) gym, 8) walking, 9) jogging, 10) karate, 11) pencak silat, and 12) gymnastics. SPSS 27 provides significant advantages over previous versions, especially in terms of new analysis features, data management, and compatibility with modern tools. With these advantages, it is expected that data analysis will be more accurate.

Figure 2. Percentage of students by preferred sport



Results

Development Phase

At this stage, sub-variable items were determined, and question items were created. Table 2 shows the sub-variables and items. In addition, at this stage, the scale used is also determined, namely the Likert scale 1 to 7, where 1 = Strongly Disagree 2 = Disagree 3 = Somewhat Disagree 4 = Neutral 5 = Somewhat Agree 6 = Agree 7 = Strongly Agree.

Table 3. The items of psychosocial well-being Instrument of sports participants

	Psychosocial Well-being
PPO1	I feel like I have better relationships with my friends since I started participating in sports.
PPO2	I find it easier to build new relationships when I participate in sports activities.
PPO3	I receive emotional support from my teammates while participating in sports.
	Social Integration
PPO4	I feel like I am part of a particular community or group through participation in sports.
PPO5	Sports activities help me feel more connected to my social environment.
PPO6	Participating in sports strengthens team members' sense of community and mutual support.
	Social Contribution
PPO7	Through sports, I can contribute to the success of my team or community.
PPO8	Participation in sports makes me feel more meaningful and useful socially.
PPO9	Active participation in sports allows me to contribute to creating a more harmonious environment in society.
	Social Actualization
PPO10	I feel that I can realize my potential through participation in sports.
PPO11	I feel satisfied with my achievements in sports.
PPO12	I feel that participating in sports has taught me to communicate well in conveying my goals.
	Social Coherence
PPO13	Sports activities provide structure and routine that helps me feel more connected to society.
PPO14	Participation in sports in the community helps me develop a sense of mutual trust.
PPO15	Participating in sports helps me build a sense of community and cohesiveness
	Social Acceptance
PPO16	I feel accepted by my teammates in sports activities.
PPO17	Sports give me the opportunity to feel valued in my community.
PPO18	I feel open to interacting with people while participating in sports

Expert Validation

Material experts assessed the instruments from several parties with experience in their fields. The Psychosocial well-being instrument for sports participants was validated by several experts, namely sport psychology experts from Padang State University-Indonesia (Expert 5), Counseling experts from Padang State University (Expert 9), Sport Sociology from Padang State University (Expert 11). Physical Activity and Health experts from Istanbul Aydin University Turkey (Expert 1). Sport and Health Science expert from Universiti Teknologi MARA Malaysia (Expert 2), Sport and Recreation Management expert from Universiti Malaya Malaysia (Expert 2), and child psychology expert from Adzkia University Indonesia (Expert 10). From the assessment of these experts, the results are shown in table 4 below.

Table 4. Expert assessment of the psychosocial well-being instrument of sports participants

Item	Expert 5	Expert 9	Expert 11	Expert 1	Expert 2	Expert 3	Expert 10
X1	5	5	5	5	5	4	4
X2	4	5	5	4	5	4	4
X3	5	5	5	5	5	4	5
X4	5	4	5	4	5	5	4
X5	5	5	5	4	5	5	4
X6	4	4	5	4	5	4	4
X7	5	5	5	5	5	5	5
X8	5	5	5	4	5	4	5
X9	5	5	5	4	5	5	5
	43	43	45	39	45	40	40
r value	0.96	0.96	1.00	0.87	1.00	0.89	0.89

Overall Value r = 0.94

Table 5. Suggestions for instrument improvement

Expert	Comment
Expert 3	Everything is okay except no. 7. I added the word socially at the end of the sentence. So that becomes the focus that this question is about social contribution, not about personal ability, for example
Expert 1	The instrument is robust and well-structured; However, slight modifications in wording could further improve clarity and reduce the risk of misinterpretation. Additionally, expanding on specific psychosocial dimensions might provide a more comprehensive assessment.
Expert 2	For the questionnaire, it is better to use a 5-point Likert Scale instead of a 7-point Likert Scale.

The table shows the assessment results of material experts selected based on expertise in the field to assess the psychosocial well-being instrument of sports participants, and the overall value obtained is 0.94. According to Tuckman (1999), the lower limit value recognized to state that a sound stage has been reached is 0.60. So, based on the assessment values of several experts, the psychosocial well-being

instrument for sports participants has a high level of validity from experts. In addition to the quantitative assessment, the experts also provided the following suggestions

Pilot Study

The pilot study, which involved 55 participants with an average age of 15 years and 7 months, was conducted at State Senior High School No. 3 Bukittingi. The participants consisted of 19 girls and 36 males. A pilot research used a test-retest methodology to ascertain the instrument's dependability. This indicates that two data collections were conducted on the same sample, September 9, 2024, and September 18, 2024, with a roughly nine-day gap between the first and second data collections. Table 3 demonstrates that the calculated r value for each set of data from the first test (test) and the second test (retest) is higher than the r table (0.266). This indicates that the acceptable standards cover every item.

Descriptive data

Based on Table 6 above, 1) the small differences in each dimension indicate the relative stability of the scores, with little fluctuation. 2) In some dimensions, such as Social Acceptance, the standard deviation is quite high (0.590 for the Test and 0.587 for the Retest), indicating that individuals have more varied levels of perception in this dimension than in other dimensions. 3) Stedev (Standard Deviation) is the square root of the variance used to measure the spread of the data from the mean value. The standard deviation for all dimensions shows a similar pattern to the variance.

Table 6. Mean, variance, and Standard Deviation of each test and retest sub-variable

	Psychosocial Well-being		Social Integration		Social Contribution		Social Actualization		Social Coherence		Social Acceptance	
	Test	Retest	Test	Retest	Test	Retest	Test	Retest	Test	Retest	Test	Retest
Mean	3.697	3.655	3.848	3.764	3.824	3.770	3.861	3.806	3.836	3.776	3.806	3.806
Variance	0.310	0.329	0.242	0.295	0.242	0.279	0.258	0.303	0.263	0.305	0.349	0.344
Stedev	0.557	0.574	0.492	0.543	0.492	0.528	0.508	0.551	0.513	0.552	0.590	0.587

Table 7. Frequency distribution of interval classes

Category	Interval	Test		Retest	
		frequency	%	frequency	%
Low	≤41	0	0%	0	0%
Moderate	42-65	18	33%	21	38%
Good	≥66	37	67%	34	62%
∑		55	100%	55	100%

There were no individuals in the Low category on both measure, indicating generally good judgment results. There was an increase in the number of individuals in the Moderate category (from 33% to 38%) and a slight decrease in the Good category (from 67% to 62%) between the Test and Retest. These results indicate a slight shift from the highest category (Good) to the middle category (Moderate).

Item Validation

Table 8. Item Validation for the Sport Participant Psychosocial Well-being Instrument

Item	Pearson Correlation (Test)	Pearson Correlation (reTest)	r table	Criteria
PPO1	0.687	0.727	0.266	Valid
PPO2	0.576	0.626	0.266	Valid
PPO3	0.609	0.687	0.266	Valid
PPO4	0.673	0.669	0.266	Valid
PPO5	0.615	0.758	0.266	Valid
PPO6	0.621	0.700	0.266	Valid
PPO7	0.684	0.771	0.266	Valid
PPO8	0.794	0.816	0.266	Valid
PPO9	0.701	0.721	0.266	Valid
PPO10	0.661	0.710	0.266	Valid
PPO11	0.715	0.731	0.266	Valid
PPO12	0.684	0.715	0.266	Valid
PPO13	0.672	0.720	0.266	Valid
PPO14	0.674	0.742	0.266	Valid
PPO15	0.724	0.745	0.266	Valid
PPO16	0.753	0.772	0.266	Valid
PPO17	0.691	0.678	0.266	Valid
PPO18	0.667	0.638	0.266	Valid

Reliability Test-Retest

The next stage is to determine the reliability of the instrument from the average value of the instrument's sub-variables using the test-retest technique. According to Cohen, a reliability value greater than 0.85 is the highest value in the reliability of an instrument (Cohen-Swerdlik, 2009). The following are the results of the test-retest with assessment criteria

Table 9. Instrument reliability using test-retest

Sub-Variable	Intraclass Correlation	Criteria
Psychosocial Well-being	0.938	Reliable
Social Integration	0.871	Reliable
Social Contribution	0.923	Reliable
Social Actualization	0.926	Reliable
Social Coherence	0.916	Reliable
Social Acceptance	0.995	Reliable

Overall, the IC values of all sub-variables are in the 'Reliable' category. This indicates that the measurement instruments used have a very good level of internal consistency, making them suitable for research to analyze aspects of psychosocial well-being.

Discussion

Developing valid and reliable instruments in sport psychology and sociology is critical to advancing research and practice. Valid instruments ensure that the constructs being measured accurately reflect their theoretical framework, while reliable instruments provide consistent results across contexts and populations. This dual focus on validity and reliability is important for drawing meaningful conclusions from research data and applying findings to practical situations. In sport psychology, the need for valid and reliable instruments is emphasised by the diversity of psychological constructs that researchers seek to measure. For example, the development of the Collective Effectiveness Questionnaire for Sport (CEQS) has been adapted for various cultural contexts, such as the Brazilian version, which increases its ecological validity and allows for comparative studies across different sports and populations (Paes et al., 2021). Similarly, the Organizational Citizenship Behaviour (OCB) scale has been developed specifically for sport contexts, which addresses the unique characteristics of sport environments and allows researchers to effectively explore the relationship between OCB and other variables(M. Kim & Jang, 2023). The emphasis on context-specific instruments is also echoed in the development of the Performance Perfectionism Scale for Sport (PPS-S), which aims to capture the multidimensional nature of perfectionism in athletes(Hill et al., 2016). Moreover, the need for valid instruments is also highlighted in motivation research, where the Basic Needs Satisfaction Scale in Sport (BNSS) has been validated to assess psychological needs specific to sport, demonstrating adequate validity and reliability (Pineda-Espejel et al., 2019). Such instruments are important for understanding the psychological factors that influence athletes' performance and well-being. In the sociology of sport, the development of valid and reliable instruments is equally important to understand the social dynamics of sport. For example, adapting the Socio-Personal Responsibility Questionnaire among athletes provides a framework for evaluating programmes that promote positive development through sport (Margarida et al., 2022). Furthermore, Bourdieu's exploration of field theory in the sociology of sport emphasises the need for robust measurement tools to analyse the interaction between sport and social structures (Jia & Zhang, 2021).

These examples illustrate how customised instruments can provide more accurate insights into the psychological dynamics of sport and sociology. Moreover, the validation process of these instruments often involves a rigorous methodology, including expert consultation and statistical analyses, to ensure their reliability and validity. For example, the development of the Coach Task Presentation Scale involved several stages, including a literature review, expert evaluation, and reliability testing (Rodríguez et al., 2016). This comprehensive approach is important for establishing the credibility of instruments used in sport psychosocial research as it allows for a more in-depth understanding of how social and psychological factors influence sports participation and performance.

The development of the sport participant psychosocial well-being instrument has applied good methodological stages and absorbed suggestions from experts. Expert evaluation is one of the stages that has a very significant role in ensuring the validity and reliability of this instrument. The input provided by

the experts enabled the necessary adjustments to improve the structure and content of the instrument to make it more relevant, clear, and reliable, including; 1) Emphasis on Social Content: Experts highlighted the importance of emphasising the social dimension in the statement items. This aims to ensure the instrument can capture social aspects in more depth, thus providing a fuller picture of psychosocial well-being. 2) Wording Modifications: Feedback related to wording changes in the statement items was also very useful. These modifications aim to improve language clarity, reduce the risk of misinterpretation, and ensure that respondents can understand the statements well without confusion. 3) Expanding Psychosocial Dimensions: Some experts suggest the need to broaden the scope of certain psychosocial dimensions. This is considered important to provide a more comprehensive assessment of sports participants' psychosocial well-being, covering aspects that may have previously been overlooked. 4)Change in Rating Scale: The decision to move from a scale of seven to a scale of five was a significant change in the development of this instrument. The use of a scale of five was believed to be simpler and could reduce ambiguity in data interpretation, ultimately increasing the reliability of the measurement results. This expert input became an important foundation in the final stages of instrument development. With this input, the instrument can be adjusted to be more effective in measuring the psychosocial well-being of sports participants, according to the needs of the research and its practical application.

These instruments improve the quality of research and facilitate the real-world application of findings.

As the field evolves, efforts to refine and validate measurement instruments are important to ensure that research findings are meaningful and applicable. Psychosocial well-being instruments can be used to explore aspects of sport participants' social well-being, such as Social Integration (harmonious relationship with the team), Social Contribution (feeling of meaningful contribution to the team), Social Actualisation (belief that the social environment supports individual potential), Social Coherence (understanding and sense of order in the team's social dynamics), and Social Acceptance (self-acceptance of the social environment). The instrument allows exploration of the relationship of variables such as social support, self-efficacy, and team climate with social well-being, as well as its application in longitudinal, comparative, or experimental studies to examine differences between groups. In interventions, the results of this instrument can identify participants with low levels of any of these social aspects, allowing the development of social support programmes, improved team dynamics, or coach training to create a more inclusive environment. In addition, the results of this instrument could inform policies that promote social integration, individual contribution and acceptance in sport, supporting the creation of healthy and productive sporting communities.

However, this study still has some limitations that need to be recognised to provide a deeper understanding of the results and their implications. Firstly, the sample selection of only Indonesian participants may limit the generalisability of the findings to a wider population. Data collection and piloting were conducted in Indonesian, with all statement items presented in Indonesian form. While the researcher has translated the instrument into English using expert assistance, more extensive language adaptation is still needed to ensure the accuracy of using this instrument in other countries with different cultural and linguistic contexts. Secondly, although the sample size met the minimum requirements using the test-retest technique, the analytical methods used, such as intraclass correlation, may have underestimated the more complex validity structure of this instrument. To support the development of a more robust instrument, it would be beneficial to apply factor analysis techniques to a larger sample in the future. Thirdly, the research design used, with its focus on reliability testing in a local context, has not tested the external validity of this instrument outside of the Indonesian population. This poses a major challenge for its use on a global scale. In addition, this study has not explored how differences in participants' culture and demographics may affect measurement outcomes, which is an important aspect in cross-cultural instrument development. As recommendations for future research, it is recommended to: 1) Involve a larger and more demographically and geographically diverse sample to increase external validity. 2) Conduct factor analyses to evaluate the construct and structural validity of the instrument in greater depth. 3) Integrate more standardised cultural and language adaptation methods to ensure cross-country compatibility. 4) Consider a longitudinal study to evaluate the stability of the instrument over a period of time. By overcoming these limitations, future research is expected to make a significant contribution to the development and validation of more comprehensive instruments, so that they can be applied globally while still considering cultural and linguistic diversity.

Conclusions

Based on the discussion results, this study opens up promising prospects for further research in the development of psychosocial instruments in the field of sport. Further efforts are needed to refine this instrument to be more adaptive and relevant in various cultural contexts and sports populations. In addition, the development of other instruments that are specific to various psychological dimensions, such as motivation and basic needs satisfaction in sport, is also urgently needed to expand the scope of research and practical application in the fields of sports psychology and sociology.

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References

Astuti, Y., Orhan, B., Setyawan, H., Karacam, A., & Susanto, N. (2024). Explorando la Conexión entre la Salud Física y Mental en Mujeres y la Tenencia de un Perro. *Retos*, *58*, 190–204. https://recyt.fecyt.es/index.php/retos/index

Barquero-Ruiz, C. (2023). Psychometric Validation of the Tactical Assessment Instrument in Football for Use in Physical Education and With Youth Sport Teams. *Perceptual and Motor Skills*, *131*(2), 589–611. https://doi.org/10.1177/00315125231225579

Bravo, A. E. R., Oliva, Á. d. J., & Castilla, F. J. G. (2020). Effect of Physical-Sports Leisure Activities on Young People's Psychological Wellbeing. *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.543951

Cohen-Swerdlik. (2009). *Psychological Testing and Assessment: An Introduction to Tests and Measurement 7th Edition*. 674.

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). https://doi.org/10.1186/s13643-023-02264-8

Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). *A systematic review of the psychological and social benefits of participation in sport for children and adolescents : informing development of a conceptual model of health through sport*.

Eime, R., Young, J., Harvey, J., Charity, M., & Payne, W. (2013). A Systematic Review of the Psychological and Social Benefits of Participation in Sport for Children and Adolescents: Informing Development of a Conceptual Model of Health Through Sport. *International Journal of Behavioral Nutrition and Physical Activity*, *10*(1), 98. https://doi.org/10.1186/1479-5868-10-98

Fronso, S. d., Robazza, C., Montesano, C., & Bertollo, M. (2021). Initial Validation of a 33-Item Recovery-Stress Questionnaire for Italian Athletes. *The Open Sports Sciences Journal*, *14*(1), 43–50. https://doi.org/10.2174/1875399x02114010043

Gershgoren, L., Blatt, A., Sela, T., & Tenenbaum, G. (2021). Does the League Table Lie? The Development and Validation of the Perceived Performance in Team Sports Questionnaire (PPTSQ). *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.615018

Graupensperger, S., Sutcliffe, J., & Vella, S. A. (2021). Prospective Associations Between Sport Participation and Indices of Mental Health Across Adolescence. *Journal of Youth and Adolescence*. https://doi.org/10.1007/s10964-021-01416-0

Harput, G., Tok, D., Ulusoy, B., Eraslan, L., Yıldız, T. İ., Turgut, E., Demirci, S., Düzgün, İ., Tunay, V. B., Baltaci, G., & Ergün, N. (2016). Translation and Cross-Cultural Adaptation of the Anterior

Cruciate Ligament-Return to Sport After Injury (ACL-RSI) Scale Into Turkish. *Knee Surgery Sports Traumatology Arthroscopy*, *25*(1), 159–164. https://doi.org/10.1007/s00167-016-4288-6

Hill, A. P., Appleton, P. R., & Mallinson, S. H. (2016). Development and Initial Validation of the Performance Perfectionism Scale for Sport (PPS-S). *Journal of Psychoeducational Assessment*, *34*(7), 653–669. https://doi.org/10.1177/0734282916651354

Jia, L., & Zhang, L. (2021). Exploration of the Research Paradigm of Sports Sociology From the Perspective of Field Theory. *Frontiers in Sport Research*, *3*(3). https://doi.org/10.25236/fsr.2021.030306

Kim, M., & Jang, J. (2023). I know you, you know me: the effects of customer empathy and employee self-disclosure on customer citizenship behavior. *Journal of Service Theory and Practice*. https://doi.org/10.1108/JSTP-01-2022-0018

Kim, S., Liu, J., Love, A., & Park, S. (2021). Organizational Citizenship Behavior in Sport: Scale Development and Validation. *International Journal of Sports Science & Coaching*, *17*(5), 1018–1032. https://doi.org/10.1177/17479541211054246

Liddelow, C., Schweickle, M. J., Sutcliffe, J., Swann, C., Keegan, R., Rice, S., Okely, A. D., & Vella, S. A. (2022). Protocol for National Mental Health Guidelines for Community Sport in Australia. *BMJ Open Sport & Exercise Medicine*. https://doi.org/10.1136/bmjsem-2022-001426

Liddle, S. K., Deane, F. P., & Vella, S. A. (2016). Addressing Mental Health Through Sport: A Review of Sporting Organizations' Websites. *Early Intervention in Psychiatry*, *11*(2), 93–103. https://doi.org/10.1111/eip.12337

Margarida, A., Domingues, M., Manuel, J., Julio, J., Serrano, M., & Batista, M. (2022). Ana Margarida Martins Domingues; Jorge Manuel Folgado dos Santos, João Julio Matos Serrano, Marco Batista, João Manuel Duarte Petrica. *Retos: Nuevas Perspectivas de Educación Física, Deporte y Recreación*, *2041*, 328–334.

Milavić, B., Padulo, J., Grgantov, Z., Milić, M., Mannarini, S., Manzoni, G. M., Ardigò, L. P., & Rossi, A. (2019). Development and Factorial Validity of the Psychological Skills Inventory for Sports, Youth Version – Short Form: Assessment of the Psychometric Properties. *Plos One*, *14*(8), e0220930. https://doi.org/10.1371/journal.pone.0220930

Monteiro, D., Cid, L., Teixeira, D., Fonseca, T., Duarte-Mendes, P., Silva, L., & Rodrigues, F. (2020). Understanding Needs Satisfaction and Frustration in Young Athletes: Factor Structure and Invariance Analysis. *International Journal of Environmental Research and Public Health*, *17*(11), 4046. https://doi.org/10.3390/ijerph17114046

Murray, R. M., Sabiston, C. M., Doré, I., Bélanger, M., & O'Loughlin, J. (2021). Association Between Pattern of Team Sport Participation From Adolescence to Young Adulthood and Mental Health. *Scandinavian Journal of Medicine and Science in Sports*. https://doi.org/10.1111/sms.13957

Oberle, E., Ji, X. R., Magee, C., Guhn, M., Schonert-Reichl, K. A., & Gadermann, A. M. (2019). Extracurricular Activity Profiles and Wellbeing in Middle Childhood: A Population-Level Study. *Plos One*, *14*(7), e0218488. https://doi.org/10.1371/journal.pone.0218488

Olayinka, A. O. (2022). Determinants of Sports Participation in Extramural Competitions by Athletes in Tertiary Institutions in Ekiti State, Nigeria. *International Journal of Research and Innovation in Social Science*, *06*(06), 512–517. https://doi.org/10.47772/ijriss.2022.6612

Paes, M. R., Taconeli, C. A., Forbellone, A. A., Fernandes, G. J., Feltz, D. L., & Stefanello, J. M. F. (2021). A Cross-Cultural Adaptation of the Collective Efficacy Questionnaire for Sports (CEQS): Validity Evidence for a Brazilian Version. *Perceptual and Motor Skills*, *128*(5), 2304–2325. https://doi.org/10.1177/00315125211029907

Pineda-Espejel, H. A., Gaspar, I. L., Guimarães, A. C., Zavala, S. M., Sánchez, R. M., Morales-Sánchez, V., & Dantas, E. H. M. (2019). Psychometric Properties of a Spanish Version of the Basic Needs Satisfaction in Sports Scale. *Frontiers in Psychology*, *10*. https://doi.org/10.3389/fpsyg.2019.02816

Rifki, M. S., Sepdanius, E., & Husni, R. (2020). Volscert Game As Recreational Sport. *INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME*, *9*(02), 5259–5263.

Rinaldi, Akbar, A., Rama, A., Dermawan, A., Indrawan, Mahayunan, G. R., & Cahyani, F. I. (2024). Psychological insights into parental guidance for grassroots football players. *Retos*, *59*, 1–10. https://doi.org/10.47197/retos.v59.107447

Rodríguez, J. L. T., Walle, J. M. L., Tomás, I., Berrueto, A. C., García, J. A. P., & Castillo, I. (2016). Development and Validation of the Coach's Task Presentation Scale: A Quantitative Self-Report

Instrument. *Psychology of Sport and Exercise*, *25*, 68–77. https://doi.org/10.1016/j.psychsport.2016.04.002

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. In *Journal of Personality and Social Psychology* (Vol. 69, pp. 719–727). American Psychological Association. https://doi.org/10.1037/0022-3514.69.4.719

Sepdanius, E., Harefa, S. K., Indika, P. M., Effendi, H., Rifki, M. S., & Afriani, R. (2023). Relationship between Physical Activity, Stress and Sleep Quality and Emotional Intelligence. *International Journal of Human Movement and Sports Sciences*, *11*(1), 224–232. https://doi.org/10.13189/saj.2023.110126

Sepdanius, E., Komaini, A., & Dan Afriani, R. (2018). Standarization of experiential learning facilitator in West Sumatera. *Cakrawala Pendidikan*, *37*(2), 294–305. https://doi.org/10.21831/cp.v37i2.19745

Slagers, A., Akker-Scheek, I. v. d., Geertzen, J. H. B., Zwerver, J., & Reininga, I. H. F. (2019). Responsiveness of the Anterior Cruciate Ligament – Return to Sports After Injury (ACL-RSI) and Injury – Psychological Readiness to Return to Sport (I-Prrs) Scales. *Journal of Sports Sciences*, *37*(21), 2499–2505. https://doi.org/10.1080/02640414.2019.1646023

Yukhymenko–Lescroart, M. A. (2014). Students and Athletes? Development of the Academic and Athletic Identity Scale (AAIS). *Sport Exercise and Performance Psychology*, *3*(2), 89–101. https://doi.org/10.1037/spy0000009

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