ORIGINAL ARTICLE

Adaptation and validation of the shortened version of the Recreation Experience Preference scales for students of the Carpathian Region of Ukraine

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Abstract

Background and Study Aim	Recreational activity of students is an important factor in their physical and psychological well-being, and its study requires reliable and valid instruments. The aim of this study was to adapt and validate a shortened version of the Recreation Experience Preference scale (REP-10), designed to assess the motivational aspects of recreational experience among university students.
Material and Methods	The study involved 149 students of the Faculty of Physical Education and Sport aged 17–24 years (122 men and 27 women). All participants attended a health and educational program in a mountain camp in the Carpathians (Ukraine). Data were collected using a Google Form survey. Statistical analysis included the Shapiro-Wilk test, Cronbach's alpha, Spearman's correlation, and exploratory factor analysis (EFA) with varimax rotation.
Results	Tests for normality indicated a non-normal distribution of responses, which determined the use of nonparametric methods. The scale demonstrated high internal consistency (Cronbach's $\alpha = 0.8852$). Correlation analysis confirmed the validity of most items, with the highest values observed for Q4, Q6, and Q7. Factor analysis revealed a two-factor structure comprising the clusters "Physical and Nature Experience," "Social Interaction and Learning," and "Calmness and Solitude."
Conclusions	The shortened version of the REP scale (REP-10) showed high reliability and construct validity in a student sample. It can be applied in studies of recreational activity among young people, providing insights into priority motives and structural features of recreational experience.

Keywords: recreational experience; students; REP-10 scale; validity; reliability.

Introduction

Recreational activity is closely associated with the level of physical health, psychological well-being, and social development of students. At this age, recreation goes beyond simple leisure and encompasses educational, physical, and social components that contribute to personal growth. Particular attention should be given to the motivational aspects of recreational experience, as they reflect the complex interplay of physical activity, contact with nature, and social interaction. At the same time, this approach requires the use of adequate assessment methods, among which short questionnaires are of particular importance.

Recreational activity of students is considered a key factor in strengthening health, developing stress resilience, and fostering social skills. Contact with the natural environment has a pronounced positive effect on cognitive functions, psychophysiological condition, and mental health of young people [1]. Participation in outdoor activities enhances engagement, supports the development of social competences, and improves self-esteem [2]. Regular physical activity and recreational practices are closely associated with improved mental health and a reduced risk of anxiety among students [3]. Involvement in outdoor recreation increases the subjective sense of well-being and helps maintain a balance between academic workload and personal

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development [4]. Moreover, analysis of student participation in recreational activity emphasizes its importance for shaping sustainable behavioral patterns and value orientations within the educational environment [5].

To study the motivational aspects of recreational activity, psychometric instruments based on self-assessment are widely applied. One of the most well-known instruments is the Recreation Experience Preference (REP) scale, systematically analyzed by Manfredo et al. [6]. The authors concluded that the scale proved its effectiveness in identifying the structural components of recreational experience. Another important instrument is the Leisure Motivation Scale (LMS), developed by Beard and Ragheb [7]. This scale made it possible to assess key motivational domains such as intellectual, social, and relaxation needs. Further methodological development led to the creation of integrative questionnaires, for example, the Physical Activity and Leisure Motivation Scale (PALMS), designed for comprehensive measurement of factors related to physical activity and leisure [8]. Recent studies demonstrate the adaptation and validation of these instruments for different age groups, including adolescents and students, which confirms the universality and reliability of questionnaire-based approaches [2, 3, 9].

Adaptation and validation procedures for questionnaires require strict adherence to international standards to ensure accuracy and comparability of data across different cultural and linguistic contexts. The International Test Commission (ITC) in its guidelines emphasizes the need for a stepwise process that includes forward and backward translation, expert evaluation, and pilot testing [10]. In recent years, the COSMIN initiative has developed detailed recommendations for assessing the methodological quality of studies aimed at developing and adapting measurement instruments [11, 12]. These documents include quality checklists, reporting standards, and criteria for evaluating the reliability and validity of scales. Contemporary practical guidelines provide a systematic algorithm for translation, cross-cultural adaptation, and psychometric testing, which makes it possible to obtain instruments valid under specific research conditions [13]. Applying these approaches to the creation of shortened versions of scales ensures their scientific soundness and suitability for use in student samples.

Examples of psychometric studies confirm the successful application of various questionnaires in student populations. The International Physical Activity Questionnaire (IPAQ) has undergone extensive international validation [14] and demonstrated reliability and reproducibility in a university setting in Brazil [15], as well as in a study involving college students [16]. Similarly, the Behavioral Regulation in Exercise Questionnaire (BREQ-2) showed high construct validity at its initial development [17], and subsequent adaptations confirmed response reliability in student samples [18]. More recent instruments, such as the Physical Activity and Leisure Motivation Scale (PALMS), originally developed for different age groups [8], have demonstrated stable psychometric properties in university contexts, including the Chinese student population [19]. Additional data on the specifics of recreational motivation among university youth are presented in the study [20]. These findings emphasize that validation of questionnaires in student samples is an important step in confirming their universality and applicability in studies of recreational activity.

Recreational activity in universities plays a significant role in shaping the educational environment by creating conditions for health promotion, social integration, and academic resilience of students. Studies have shown that participation in campus recreation programs contributes to student retention and re-engagement during crisis situations, including the COVID-19 pandemic [21]. At the same time, outdoor recreation programs are regarded as an important component of the educational experience, enhancing the integration of academic and practical dimensions [22]. Additional evidence indicates that involvement in recreational activities strengthens students' emotional attachment to the university and increases their satisfaction with the educational process [23]. Moreover, participation in nature-based recreation is positively associated with subjective well-being and reduced stress levels [4]. Finally, contemporary interventions based on recreational practices have demonstrated effectiveness in promoting health and psycho-emotional well-being among students in STEM fields [24] as well as in other student groups. For instance, a systematic review showed that physical activity programs significantly reduce levels of anxiety, depression, and stress among students [25]. Another study confirmed the effectiveness of such interventions in improving mental health and quality of life in learners [26]. The pilot study *PEAK Mood, Mind, and Marks* revealed a positive impact of exercise on students' mental state, cognitive functioning, and academic performance [27].

In the context of applied research and practical applications, there are often limitations related to time, participant attention, and resources, which makes compact versions of measurement instruments preferable. Shortened versions of scales make it possible to collect high-quality data without overburdening respondents while preserving psychometric adequacy and sensitivity. For example, the German versions of the short and ultra-short forms of the Big Five Inventory-2 (BFI-2-S and BFI-2-XS) demonstrated psychometric

characteristics comparable to the original, including test–retest stability and criterion validity [28]. In the sport psychology context, the Chinese version of the Sport Mental Health Continuum – Short Form successfully underwent cross-cultural adaptation and validation among student-athletes, confirming the scale structure and high item consistency [29]. Similar results were obtained in the development and testing of the short version of the Positive Mental Health Questionnaire (PMHQ-SF) in university students, which showed high internal consistency and applicability in the educational setting [30]. In addition, validation of three short questionnaires on physical activity among students demonstrated their comparability with objective accelerometer-based measurements [31]. These examples indicate that the methodology of scale reduction (through the selection of informative items) can be implemented with minimal loss of reliability and validity, which makes it particularly relevant for adaptation tasks in student samples.

Analysis of research findings has shown that recreational activity plays a key role in maintaining students' psycho-emotional well-being and fostering social resilience. Researchers emphasize that psychometric instruments make it possible to identify significant motives and factors influencing engagement in recreational activities. It is highlighted that in the educational environment it is important to apply adapted and practical scales capable of reflecting the specific context and characteristics of the sample. At the same time, there remains a need for instruments that combine brevity, reliability, and construct validity, which determined the focus of the present study. The aim of this research was to adapt and validate a shortened version of the Recreation Experience Preference scale (REP-10), designed to assess the motivational aspects of recreational experience among university students.

Materials and Methods

Participants

The study involved 149 students aged 17 to 24 years. All participants were students of the Faculty of Physical Education and Sport at the Carpathian National University (Ukraine). They took part in a health and educational program conducted in a mountain camp in the Carpathians (Mykulychyn, Ivano-Frankivsk region, Ukraine). The sample included all students who participated in the program, with no exclusions applied. Among the respondents, there were 122 men and 27 women.

Ethical Considerations. The research was conducted in accordance with ethical standards. Participants were informed about the purpose of the study, the voluntary nature of participation, and the anonymity of responses. All students provided consent to participate, understanding that their answers would be used exclusively for scientific purposes.

Research Design

To assess the motivational aspects of recreational activity, an adapted version of the Recreation Experience Preference Scales (REP) was used. As the theoretical basis, the review by Manfredo et al. [6] was selected. Based on the original item pool, a shortened 10-item version was developed and adapted for students. Each item was rated by respondents on a 5-point scale (from 1 – "not important at all" to 5 – "very important").

The study was conducted in a mountain camp in the Carpathians as part of the educational and health program of the Faculty of Physical Education and Sport. The activities of the participants were supervised by university lecturers with experience in mountain environments, as well as instructors responsible for safety and organization of the recreational program.

The survey was administered electronically using Google Forms. Before completing the questionnaire, respondents were provided with general instructions regarding the purpose and structure of the REP-10 scale. They then independently interpreted and rated the proposed items. This format ensured confidentiality and integrity of data collection.

Data Processing and Analysis

Preliminary data processing included checking for errors, missing responses, and incorrect values. After initial cleaning, the data were stored in the working dataset. Minimum and maximum values were then determined for each parameter. Records containing obviously incorrect values were excluded from the analysis. The data table had the following structure: Name; Participant ID; Age; Gender; Height; Q1–Q10. The items Q1–Q10 corresponded to the following statements:

- Q1 – To feel calm and experience solitude.
- Q2 – To be with friends or family.
- Q3 – To learn new skills in nature.
- Q4 – To enjoy natural landscapes.
- Q5 – To escape from everyday routine.
- Q6 – To challenge myself physically.
- Q7 – To feel close to nature.
- Q8 – To experience excitement and adventure.
- Q9 – To reflect on my own thoughts.
- Q10 – To improve physical fitness.

The Shapiro–Wilk test was applied to check the normality of data distribution. In the student group, the results showed a lack of normal distribution, which determined the use of nonparametric methods of statistical analysis.

Reliability of the questionnaire was assessed using Cronbach's alpha coefficient. For the student group, the value was Cronbach's $\alpha = 0.8852$, indicating high internal consistency of the Q1–Q10 scale and confirming its reliability in this sample.

Validity was evaluated using Spearman's correlation, since this method does not require normality of distribution and is suitable for the analysis of ordinal and interval scales, which include the Q1–Q10 indicators.

Although the Recreation Experience Preference scale (REP-10) demonstrated high reliability (α = 0.8852) and construct validity in the student sample, an Exploratory Factor Analysis (EFA) was conducted to gain a deeper understanding of its internal structure. This method makes it possible to identify meaningful clusters within the scale and clarify which latent variables underlie its items. Applying EFA to the student subsample strengthens the empirical justification of the scale's structure and confirms its suitability for further research. Despite the scale including only ten items, this number is considered sufficient for the analysis. The theoretical preliminary structure and the sample size allow for the extraction of several latent factors. Even with a limited number of factors, their interpretation can provide valuable insights into the substructure of the scale. The results of the analysis make it possible to determine the number of latent factors and to evaluate the contribution of individual items to each of them, thereby broadening the understanding of its conceptual foundation.

To assess the construct validity of the Recreation Experience Preference scale (REP-10) in the student sample (n = 149), an Exploratory Factor Analysis (EFA) with varimax rotation was performed. Based on the eigenvalue criterion (>1) and the analysis of the scree plot, a two-factor structure was identified, explaining a substantial proportion of the total variance.

Statistical Analysis

Statistical data processing was performed using the Python programming language in the PyCharm Community Edition environment. At the stage of preliminary preparation, the data were checked for errors, missing values, and incorrect entries. Minimum and maximum indicators for each parameter were used to identify and remove records with unreliable data, after which a cleaned dataset was formed for analysis.

Normality of distribution was tested using the Shapiro–Wilk test. For the student sample, normality was not confirmed, which served as the basis for applying nonparametric methods. Reliability of the scale was assessed using Cronbach's alpha, which demonstrated high internal consistency of the items (α = 0.8852).

Construct validity of the scale was evaluated using Spearman's correlation (ρ), which does not require normality of distribution and is suitable for ordinal and interval data. To gain a deeper understanding of the internal structure, an Exploratory Factor Analysis (EFA) with varimax rotation was performed. The number of factors was determined based on the eigenvalue criterion (>1) and the scree plot.

Results

The analysis of the anthropometric characteristics of the study participants is presented in Table 1. The data reflect the distribution of the sample by sex, age, height, body weight, and body mass index (BMI), as well as the proportion of students with normal weight and overweight.

The analysis of the data in Table 1 indicates several trends. The mean age of participants was approximately 19 years, reflecting the specificity of the student sample. Among women, the average values of height and body weight were lower compared to men, which was also consistently reflected in a lower mean BMI. In both groups, students with normal BMI values predominated (74.1% in women and 76.2% in men). The proportion of students classified as overweight was higher among men (19.7%) than among women (11.1%).

The distributions of responses on the REP scale (Q1–Q10) were analyzed using the Shapiro–Wilk test (Table 2).

The results of the normality test using the Shapiro–Wilk procedure (Table 2) showed that the response distributions did not follow a normal distribution. Therefore, nonparametric methods were applied for further analysis.

To assess the internal consistency of the scale, Cronbach's alpha coefficient was calculated. In the student sample, the value was 0.8852, indicating high internal consistency of the scale items and confirming its reliability in this sample.

To assess the construct validity of the Recreation Experience Preference scale (REP-10) in the student group, Spearman's correlation (ρ) was calculated between each item of the scale (Q1–Q10) and the total score. This approach makes it possible to determine the degree of consistency of each statement with the overall concept of measuring recreational experience and provides empirical confirmation of the scale's validity. Detailed Spearman's correlation coefficients are presented in Table 3.

Table 1. Anthropometric characteristics of students (n = 149)

Gender	Count	Age	Height	Weight	BMI	BMI Normal (%)	BMI Overweight (%)
Female	27	19.26 ± 1.99	166.15 ± 5.84	59.63 ± 11.74	21.47 ± 3.14	74.1	11.1
Male	122	19.57 ± 1.44	177.78 ± 6.72	73.17 ± 11.21	23.12 ± 3.1	76.2	19.7

Table 2. Test of normality for REP-10 responses (Shapiro–Wilk test, Q1–Q10)

Question	W-statistic	p-value	Interpretation
Q1	0.884	0.0	Not normal
Q2	0.8263	0.0	Not normal
Q3	0.8171	0.0	Not normal
Q4	0.8114	0.0	Not normal
Q5	0.851	0.0	Not normal
Q6	0.8263	0.0	Not normal
Q7	0.8797	0.0	Not normal
Q8	0.8682	0.0	Not normal
Q9	0.8237	0.0	Not normal
Q10	0.7179	0.0	Not normal

Table 3. Spearman's correlation coefficients between REP scale items (Q1–Q10) and the total score

Question	Spearman_r	Interpretation
Q1	0.6713	Good
Q2	0.5099	Moderate
Q3	0.7148	Good
Q4	0.7738	Strong
Q5	0.6057	Good
Q6	0.7631	Strong
Q7	0.7951	Strong
Q8	0.7378	Good
Q9	0.7219	Good
Q10	0.6986	Good

The analysis of the data in Table 3 showed that items Q4, Q6, and Q7 had the highest consistency with the overall scale and can be considered central elements of the construct. Most of the other items (Q1, Q3, Q5, Q8, Q9, Q10) also demonstrated good validity indicators. Only item Q2 showed a moderate correlation ($\rho = 0.51$), indicating a weaker association with the main construct, although this value remains acceptable. Thus, the Q1–Q10 scale demonstrates high construct validity in the student sample. All items have acceptable or high correlations with the total score, which confirms the consistency of the scale in measuring recreational experience.

To gain a deeper understanding of the internal structure of the Recreation Experience Preference scale (REP-10) in the student sample ($n = 149$), an Exploratory Factor Analysis (EFA) with varimax rotation was conducted. Although the scale includes only ten items, this number is sufficient for performing the analysis. The theoretical preliminary structure and the sample size made it possible to expect the extraction of several latent factors.

The results of the analysis revealed a two-factor structure that explained a substantial proportion of the total variance (Table 4). The scree plot confirmed that the first two factors had eigenvalues greater than one, followed by a sharp decline (Figure 1). This configuration corresponds to the "elbow rule" and indicates the presence of two significant latent factors underlying the REP scale.

Table 4. Factor loadings of REP-10 items (Q1–Q10) based on exploratory factor analysis (varimax rotation method)

Question	Factor1	Factor2
Q1	0.446	0.4
Q2	0.064	0.799
Q3	0.552	0.456
Q4	0.528	0.561
Q5	0.589	0.068
Q6	0.489	0.556
Q7	0.739	0.319
Q8	0.641	0.287
Q9	0.645	0.27
Q10	0.398	0.604

The scree plot (Figure 1) shows that the first two factors have eigenvalues greater than one, followed by a sharp decline, which corresponds to the "elbow rule." This indicates the presence of two significant latent factors underlying the REP scale in the student sample. Thus, the two-factor model is considered optimal for further interpretation of the scale's structure.

Interpretation of the extracted factors made it possible to identify two meaningful clusters. The first factor (*Physical and Nature Experience*) included items Q5, Q6, Q7, Q8, and Q9, reflecting aspects related to physical activity and interaction with nature. The second factor (*Social Interaction and Learning*) was represented by items Q2, Q4, Q6, and Q10, emphasizing the importance of social connections and cognitive elements. Item Q1 showed a separate tendency toward Calmness and Solitude, but its eigenvalue did not exceed 1.0, so it was not retained as an independent factor.

Thus, the factor analysis confirmed the two-dimensional structure of the REP10 scale, where each cluster of items reflects specific aspects of recreational experience. These results strengthen

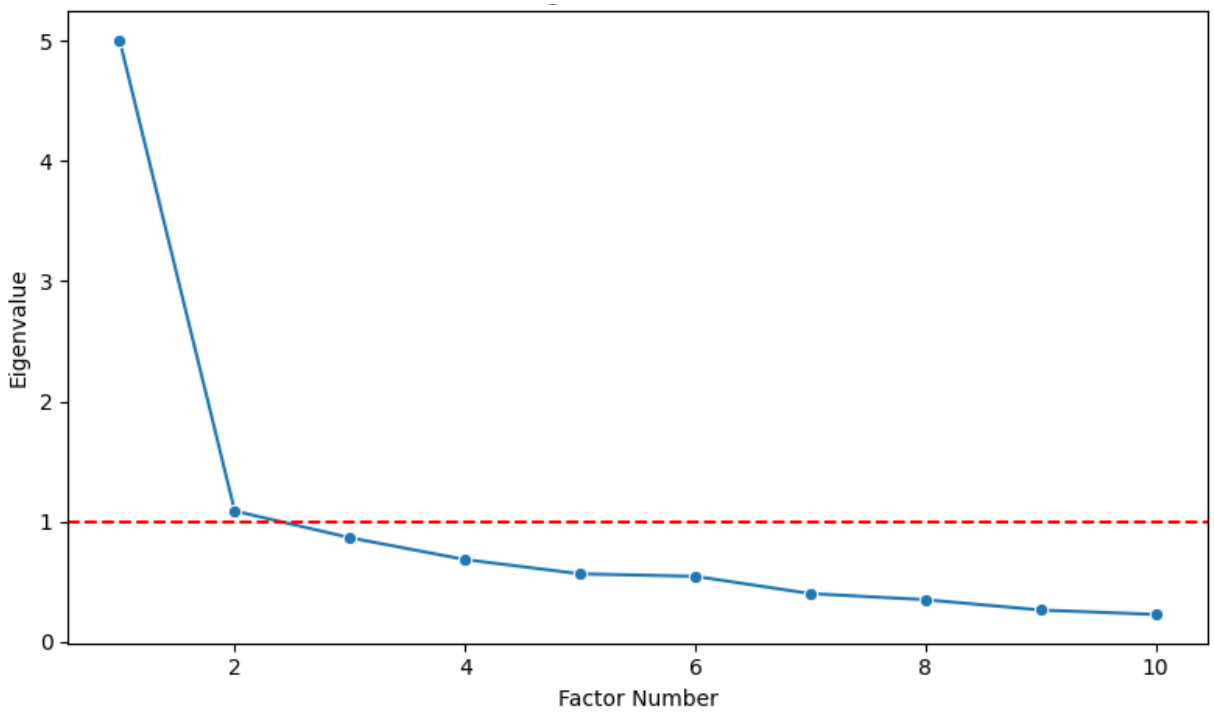

Figure 1. Graphical representation of the factor structure of the REP scale (Q1–Q10) based on the results of exploratory factor analysis

the empirical basis of the scale's validity and demonstrate its suitability for application in studies of youth recreational practices.

The analysis of response distributions on the REP-10 scale revealed several key features. The highest mean values were observed for item Q10 (4.28) *To improve physical fitness*, Q3 (4.10) *To learn new skills in nature*, Q2 (4.04) *To be with friends or family*, and Q4 (4.07) *To enjoy natural landscapes*. This reflects the importance for students of such motives as improving physical fitness, acquiring new skills in the natural environment, social interaction with close peers, and enjoyment of natural landscapes.

The distributions for most items were characterized by moderate negative skewness, most pronounced for Q10 (−1.34) *To improve physical fitness*, indicating a predominance of high ratings (4–5 points). This suggests a positive perception by students of most aspects of recreational experience. Standard deviations of approximately 1.0 and moderate kurtosis values (close to zero) indicate a relatively even distribution of responses, with a slight tendency toward clustering at the upper end of the scale.

Lower mean values were recorded for items Q1 (3.56) *To feel calm and experience solitude*, Q5 (3.68) *To escape from everyday routine*, and Q7 (3.66) *To feel close to nature*, which may reflect the comparatively lower importance of individual solitude and physical challenges in the student environment.

Overall, the results of the analysis confirm that the distribution of students' recreational motives is relatively balanced, with the greatest emphasis placed on emotional release, social engagement, and personal development through interaction with nature.

Descriptive statistics for each item of the REP-10 scale (Q1–Q10) are presented in Table 5.

Interpretation of the identified priorities in the student group is based on the mean values for each item of the REP scale (Table 4). The highest scores were recorded for the following statements: Q10 – *"To improve physical fitness"* (mean = 4.28), Q3 – *"To learn new skills in nature"* (mean = 4.10), Q4 – *"To enjoy natural landscapes"* (mean = 4.07), and Q2 – *"To be with friends or family"* (mean = 4.04). This reflects the high importance for students of physical activity, self-development, aesthetic appreciation of nature, and social interaction.

The lowest mean values were observed for Q1 – *"To feel calm and experience solitude"* (mean = 3.56), Q7 – *"To feel close to nature"* (mean = 3.66), and Q5 – *"To escape from everyday routine"* (mean = 3.68). These results may indicate a lower need among students for solitude and "escape" compared with more dynamic and socially oriented forms of recreational activity.

Overall, students demonstrate a strong orientation toward development, physical activity, and social engagement in the natural environment, which is consistent with the age-related characteristics and educational context of the group.

To identify the priority motives of students' recreational activity, an analysis of mean values for the REP-10 scale items was conducted. The results

Table 5. Descriptive statistics of REP scale responses (Q1–Q10): mean values, standard deviations, range, quartiles, skewness, and kurtosis

Question	mean	std	min	25 %	50 %	75 %	max	Skewness	Kurtosis
Q1	3.56	1.02	1.0	3.0	4.0	4.0	5.0	-0.5	0.09
Q2	4.04	1.0	1.0	3.0	4.0	5.0	5.0	-0.86	0.23
Q3	4.1	0.9	1.0	3.0	4.0	5.0	5.0	-0.77	0.33
Q4	4.07	1.03	1.0	3.0	4.0	5.0	5.0	-0.91	0.14
Q5	3.68	1.12	1.0	3.0	3.0	5.0	5.0	-0.28	-0.75
Q6	3.97	1.05	1.0	3.0	4.0	5.0	5.0	-0.83	0.2
Q7	3.66	1.09	1.0	3.0	4.0	5.0	5.0	-0.32	-0.7
Q8	3.74	1.06	1.0	3.0	4.0	5.0	5.0	-0.58	-0.07
Q9	4.0	1.04	1.0	3.0	4.0	5.0	5.0	-0.91	0.43
Q10	4.28	1.01	1.0	4.0	5.0	5.0	5.0	-1.34	1.23

are presented in Table 6, which shows the mean scores and the ranking structure of the importance of each motive.

Table 6. Student priorities by REP scale items (Q1–Q10): mean values and ranks

Question	Mean	Rank
Q10	4.28	1
Q3	4.1	2
Q4	4.07	3
Q2	4.04	4
Q9	4.0	5
Q6	3.97	6
Q8	3.74	7
Q5	3.68	8
Q7	3.66	9
Q1	3.56	10

Table 6 shows that the highest values were obtained for motives related to improving physical fitness (Q10 *To improve physical fitness*, mean = 4.28), acquiring new skills in nature (Q3 *To learn new skills in nature*, mean = 4.10), enjoying natural landscapes (Q4 *To enjoy natural landscapes*, mean = 4.07), and social interaction with friends and family (Q2 *To be with friends or family*, mean = 4.04). These results reflect students' orientation toward active forms of recreation that combine physical activity, personal development, aesthetic appreciation, and social engagement.

Lower values (Table 6) were recorded for the motives of calmness and solitude (Q1 *To feel calm and experience solitude*, mean = 3.56), closeness to nature (Q7 *To feel close to nature*, mean = 3.66), and escape from everyday routine (Q5 *To escape from everyday routine*, mean = 3.68). This indicates the lower importance of introverted and "avoidant" motives compared with dynamic and socially oriented forms of activity. The overall structure of priorities demonstrates the predominance of motives related to physical and social development, which is consistent with the age-specific characteristics of the student sample and the educational context.

Overall, the analysis showed that the shortened version of the REP-10 scale (Q1–Q10) demonstrates high reliability and construct validity in the student sample. The normality test indicated the need for nonparametric methods, the correlation analysis confirmed the consistency of individual items with the overall construct, and the factor analysis revealed the multidimensional structure of the scale, reflecting physical, social, and individual aspects of recreational experience. These results confirm the suitability of the modified scale for further application in studies of students' recreational activity.

Discussion

The aim of this study was to adapt and validate a shortened version of the Recreation Experience Preference scale (REP-10) for university students. The main focus was on assessing the reliability and construct validity of the instrument in the context of an educational and health program. The results showed high internal consistency of the scale (Cronbach's α = 0.8852), confirming its reliability for use in a student sample. Correlation analysis demonstrated the consistency of most items with the overall construct, while exploratory factor analysis confirmed a multidimensional structure that included physical, social, and individual aspects of recreational experience. Thus, the REP-10 scale demonstrated psychometric stability and applicability for studying recreational activity among young people.

The obtained results (Cronbach's α = 0.8852) indicate high internal consistency of the REP-10 and are comparable to the range of values reported for the full version of the REP scale (0.70–0.96) [6]. This value is consistent with indicators of other motivational instruments: the PALMS demonstrated an overall α of about 0.82 [8], while the LMS consistently showed values in the range of 0.89–0.91 [7]. Recent studies confirm the relevance of such indicators: the Spanish adaptation PALMS-e for adolescents showed α values ranging from

0.79 to 0.87 [32], and the application of the PSS-10 among students in Ukraine and neighboring countries revealed high factor reliability (α = 0.87 and α = 0.79), confirming the stability of the instrument even under conditions of armed conflict [33]. Additional data also demonstrate high psychometric stability of other adapted instruments: for example, validation of the SAPPE questionnaire in a Ukrainian student sample yielded α = 0.894 [34], while a study of physical activity motivation during wartime using the short form of the PAQ reported α = 0.872 [35]. These results confirm that the REP-10 indicators are in line with contemporary scales and their adaptations, making it a reliable and valid instrument for assessing students' recreational activity.

The exploratory factor analysis (varimax rotation) revealed a two-factor structure of the REP-10, confirming the multidimensionality of the construct of recreational experience in the student sample and aligning with earlier studies on REP scales, where stable multifactor solutions for different domains of motivation and experience were also described [6]. The identified clusters (*Physical and Nature Experience, Social Interaction and Learning*) conceptually correspond to the typology of motivational domains identified in other instruments. The item related to Calmness and Solitude (Q1) showed an isolated loading but was not retained as a separate factor. For instance, the PALMS subscales for physical activity and leisure demonstrate differentiation of similar motivational directions and confirm the construct validity of a multidimensional model [8, 32]. A similar pattern of multidimensionality is also observed in recent adaptations and validations of motivational questionnaires among adolescents and students, where several latent factors with meaningful interpretation have been confirmed, including "social/educational" and "affective/health-related" components [9, 34].

Along with the similarities, some expected differences were observed: the reduction to 10 items and the specifics of the educational context (field conditions, natural environment, organized program) may have enhanced the prominence of the *Physical and Nature Experience* and *Social Interaction and Learning* factors compared with more general leisure scales. At the same time, the *Calmness and Solitude* component remains a separate latent variable, which is consistent with the idea of disjunctive motives in leisure theories [6, 8]. Taken together, the comparison with international data confirms the construct validity of the REP-10: the model remains multidimensional, interpretable, and aligned with recognized structures of motivation for recreation and physical activity [9, 32, 34]. Additional contemporary studies also confirm the stability of multidimensional models: the development and validation of the CRCNQ questionnaire in student populations [36], the creation of the Leisure Activity Scale for young adults [37], and the validation of the EMAPS motivational scale in the Spanish population [38] demonstrate similar structural consistency.

The analysis of motivational structure showed that the leading priorities among students are the desire to enjoy nature, relieve stress, and maintain social contacts. These results largely coincide with findings from international studies: in the Spanish adaptation of PALMS-e, the leading factors were also social interaction and emotional release [32]; a Japanese study using the Leisure Activity Scale in young adults confirmed the importance of motives related to interpersonal communication and recovery [37]; and the validation of the EMAPS motivational scale in Spain highlighted the dominance of affective–health-related and socially oriented components [38]. At the same time, in the Ukrainian student sample under conditions of armed conflict, particular importance is attached to motives related to stress management and preservation of psycho-emotional health [33, 35], as well as to the perception of the educational and recreational environment as a resource for personal and social resilience [34].

Recent studies also broaden the understanding of construct validity and factor structure in motivational scales. For example, the development and preliminary validation of the RESQ questionnaire demonstrated reliability and factor consistency in assessing commitment to recreational sport [39]. The revision and adaptation of the MCPES scale in the Chinese educational context confirmed structural stability and the relevance of motivational climate factors in physical education [40]. At the same time, the latest works go beyond traditional instruments: the creation of the AI Motivation Scale (AIMS) for university students, based on self-determination theory, demonstrated validity and multidimensionality of constructs reflecting motivation in the context of a digital learning environment [41].

Thus, the overall trends confirm the universality of basic recreational motives, while national, cultural, and contextual factors determine their specificity and relative priority.

The use of shortened and adapted questionnaires in student populations is becoming increasingly important, as it combines the quality of psychometric data with convenience and time efficiency. The development and validation of the new Recreation Activity Motivation Scale (RAMS) demonstrated that even relatively compact instruments are capable of effectively capturing key motivational factors while maintaining high reliability [42]. Similar trends are observed in the psychometric testing of the short form of the Leisure Satisfaction Scale (LSS), where Rasch calibration models confirmed

sufficient accuracy and stability of the instrument [43]. Validation of the "Physical Activity and Social Support" scale in a Chinese student sample showed that a compact format does not reduce validity while ensuring high practical applicability in the educational context [44]. Comparable conclusions were drawn from testing the English short version of the Physical Activity Enjoyment Scale (PACES-S), the results of which confirmed the invariance and reliability of its structure in student samples [45]. These examples highlight that the shift toward shortened instruments is a stable global trend, and the REP-10 fits organically into this context by offering a balance between comprehensiveness and practical applicability.

An analysis of publications from the Web of Science database shows that contemporary studies devoted to students' physical and recreational activity confirm the regularities identified in the present research, particularly those related to physical development, motivation, and the educational environment.

The findings of Nugroho et al. [46] demonstrated that muscular strength and intellectual ability directly influence the quality of sports skills, which corresponds with the present data emphasizing the high importance of physical self-improvement (item Q10) within the structure of students' recreational motivation. These results are supported by Fraile-Martínez et al. [47], who identified a positive relationship between muscular strength and academic performance at the college and university level, as well as by Kljajević et al. [48], who showed that university students' physical fitness, including strength components, is closely associated with their overall academic achievement and well-being.

The practical orientation of physical activity was reflected in Abdullah et al. [49], where the use of auxiliary tools in tennis technique training improved movement acquisition. Similar outcomes were reported by Choi et al. [50], who demonstrated the positive effects of the sport-education model on students' activity levels, and Wang & Zhang et al. [51], who confirmed the efficiency of virtual-reality (VR) training in enhancing engagement and emotional well-being. These findings highlight the value of practice-based and interactive forms of physical activity, comparable to the recreational programs applied in the present study.

Mocanu et al. [52] revealed differences in explosive-strength indicators among students with varying body-mass-index (BMI) categories, which corresponds with our findings, where most participants had a normal BMI and prioritized motives related to physical development. A similar trend was observed by Kung et al. [53], who reported higher explosive-strength levels among students with normal BMI, and by Wang and Qian et al. [54], who found that students with a "healthy" body composition demonstrated superior upper-limb strength and anaerobic power. These results confirm that physical development and maintaining an optimal body composition are linked not only to physiological characteristics but also to students' internal motivation for self-improvement, as reflected in the REP-10 items focused on fitness enhancement and health promotion. Collectively, these studies reinforce our conclusion that the pursuit of physical development is a key element of students' recreational experience and an indicator of their conscious attitude toward personal health.

Anam et al. [55] established a relationship between BMI, foot morphology, and injury risk, emphasizing the need for a comprehensive assessment of students' physical condition. Their results align with those of Wu et al. [56], who demonstrated that both underweight and overweight students exhibited poorer strength, endurance, and overall fitness, as well as with Aydoğan et al. [57], who reported that excessive body weight negatively affected trunk-muscle endurance and balance, increasing the risk of functional impairments during physical activity. Together, these studies confirm that maintaining a normal BMI and balanced physical condition is not only a prerequisite for physical development but also reflects students' recreational motivation aimed at health maintenance, injury prevention, and self-improvement.

The comparative analysis shows that the results of the present study are consistent with international research emphasizing the interrelation between students' physical fitness, motivation, and recreational engagement. The evidence confirms that optimal physical development, particularly sufficient muscular strength and normal body mass index, contributes to better functional performance, health, and motivation for recreation. It also highlights the importance of practice oriented and interactive forms of physical activity such as sport education models and virtual reality training, which enhance students' engagement and emotional well-being. Altogether, these findings support the conclusions of the present study, indicating that students' pursuit of physical improvement and health maintenance represents a central motivational aspect of their recreational experience and reflects a conscious attitude toward personal well-being.

Overall, the comparison of the adaptation and validation results of the REP-10 with a range of international studies confirms its reliability, construct validity, and conceptual consistency with current trends in psychometric development. The representative data on the two-factor structure identified in the student sample are consistent with previously established multidimensional models of motivation for recreation and physical activity. The comparison of Ukrainian students' priority motives

with international samples revealed both the universality of basic domains (enjoyment of nature, social contacts, stress relief) and the specificity associated with the context of armed conflict. Furthermore, the global trend toward the reduction and adaptation of instruments demonstrates a stable movement toward the use of short but reliable questionnaires, which enhances the practical significance of the REP-10 in educational and recreational settings.

Limitations of the Study

Despite the positive results obtained, this study has several limitations. First, the sample was limited to students of a single educational field, which may reduce the generalizability of the findings to a broader population of learners. Second, the applied design was cross-sectional, which does not allow for tracing the dynamics of changes in motivational attitudes over time. Third, only self-report methods were used, which are potentially subject to the influence of subjective factors and social desirability.

Future research perspectives include expanding the geography and diversity of samples, which would make it possible to test the universality of the REP-10 structure in different cultural and educational contexts. It is also important to conduct longitudinal studies to analyze the stability of the identified factors and possible changes in student motives during the course of study. An additional direction may involve comparing the REP-10 with other psychometric instruments applied in related fields, which would allow for the assessment of convergent and discriminant validity of the shortened scale.

Conclusions

The conducted study confirms the relevance of developing and adapting shortened psychometric instruments for the university environment. The REP-10 emerges as a practical and conceptually grounded tool for exploring the motivational aspects of students' recreational activity. Comparison with international examples demonstrates that short questionnaires can maintain high validity and reliability while preserving informativeness. Thus, the application of the REP-10 contributes to a deeper understanding of the role of recreational activity in the educational environment and supports the integration of modern methodological approaches into the practice of pedagogical and health-related research.

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Conflict of interests

The authors declare that there is no conflict of interests.

References

1. Jimenez MP, DeVille NV, Elliott EG, Schiff JE, Wilt GE, Hart JE, et al. Associations between Nature Exposure and Health: A Review of the Evidence. *International Journal of Environmental Research and Public Health*, 2021;18(9): 4790. https://doi.org/10.3390/ijerph18094790
2. Mann J, Gray T, Truong S, Brymer E, Passy R, Ho S, et al. Getting Out of the Classroom and Into Nature: A Systematic Review of Nature-Specific Outdoor Learning on School Children's Learning and Development. *Frontiers in Public Health*, 2022;10: 877058. https://doi.org/10.3389/fpubh.2022.877058
3. Han X, Li H, Xiao C, Wang W, Gao K, Yan S, et al. Physical activity enhances college students' mental health through social adaptability and exercise behavior chain mediation. *Scientific Reports*, 2025;15(1): 21127. https://doi.org/10.1038/s41598-025-07791-z
4. Puhakka R. University students' participation in outdoor recreation and the perceived well-being effects of nature. *Journal of Outdoor Recreation and Tourism*, 2021;36: 100425. https://doi.org/10.1016/j.jort.2021.100425
5. Meryem Akoğlan Kozak, Ece Doğantan. An Assessment of Students' Recreation Participation. *US-China Education Review B*, 2016;6(8). https://doi.org/10.17265/2161-6248/2016.08.001
6. Manfredo MJ, Driver BL, Tarrant MA. Measuring Leisure Motivation: A Meta-Analysis of the Recreation Experience Preference Scales. *Journal of Leisure Research*, 1996;28(3): 188–213. https://doi.org/10.1080/00222216.1996.11949770
7. Beard JG, Ragheb MG. Measuring Leisure Motivation. *Journal of Leisure Research*, 1983;15(3): 219–228. https://doi.org/10.1080/00222216.1983.11969557
8. Molanorouzi K, Khoo S, Morris T. Validating the Physical Activity and Leisure Motivation Scale (PALMS). *BMC Public Health*, 2014;14(1): 909. https://doi.org/10.1186/1471-2458-14-909
9. Ruiz MC, Hassandra M, Aypar E, Knittle K, Tolvanen A, Robazza C. Validation of the 21-item Physical Activity and Leisure Motivation Scale (PALMS) among Finnish late adolescents. *Psychology & Health*, 2025; 1–24. https://doi.org/10.1080/08870446.2025.2476625
10. International Test Commission. *The ITC Guidelines for Translating and Adapting Tests (Second edition)* [Internet]. 2017. [updated 2025 Jun; cited 2025

Jun 12]. Available from: https://www.intestcom.org/files/guideline_test_adaptation_2ed.pdf?utm_source=chatgpt.com
11. Mokkink LB, Prinsen CAC, Patrick DL, Alonso J, Bouter LM, de Vet HCW, Terwee CB. *COSMIN Study Design checklist for Patient-reported outcome measurement instruments*. [Internet]. 2019. [updated 2019 Jul; cited 2025 Jun 12]. Available from: https://www.cosmin.nl/wp-content/uploads/COSMIN-study-designing-checklist_final.pdf
12. Prinsen CAC, Mokkink LB, Bouter LM, Alonso J, Patrick DL, de Vet HCW, Terwee CB. COSMIN guideline for systematic reviews of patient-reported outcome measures. *Qual Life Res*. 2018;27(5):1147–1157. https://doi.org/10.1007/s11136-018-1798-3
13. Cruchinho P, López-Franco MD, Capelas ML, Almeida S, Bennett PM, Miranda Da Silva M, et al. Translation, Cross-Cultural Adaptation, and Validation of Measurement Instruments: A Practical Guideline for Novice Researchers. *Journal of Multidisciplinary Healthcare*, 2024;Volume 17: 2701–2728. https://doi.org/10.2147/JMDH.S419714
14. Craig CL, Marshall AL, Sj??Str??M M, Bauman AE, Booth ML, Ainsworth BE, et al. International Physical Activity Questionnaire: 12-Country Reliability and Validity: *Medicine & Science in Sports & Exercise*, 2003;35(8): 1381–1395. https://doi.org/10.1249/01.MSS.0000078924.61453.FB
15. Matsudo S, Araújo T, Matsudo V, Andrade D, Andrade E, Oliveira LC, et al. Questionário internacional de atividade física (IPAQ): estudo de validade e reprodutibilidade no Brasil [International Physical Activity Questionnaire (IPAQ): validity and reproducibility study in Brazil]. *Revista Brasileira De Atividade Física & Saúde*, 2012; 6(2): 5–18. (In Portuguese).
16. Dinger MK, Behrens TK, Han JL. Validity and reliability of the International Physical Activity Questionnaire in college students. *Am J Health Educ*. 2006;37(6):337-43. https://doi.org/10.1080/19325037.2006.10598924
17. Markland D, Tobin V. A Modification to the Behavioural Regulation in Exercise Questionnaire to Include an Assessment of Amotivation. *Journal of Sport and Exercise Psychology*, 2004;26(2): 191–196. https://doi.org/10.1123/jsep.26.2.191
18. D'Abundo ML, Sidman CL, Milroy JJ, Orsini MM, Fiala K. Construct validity of college students' responses to the Behavioral Regulation in Exercise Questionnaire (BREQ-2). *Recreat Sports J*. 2014;38(1):40-9. https://doi.org/10.1123/rsj.2013-0009
19. Lin B, Teo EW, Yan T. Development and Validation of Chinese University Students' Physical Activity Motivation Scale Under the Constraint of Physical Education Policies. *Frontiers in Psychology*, 2022;13: 722635. https://doi.org/10.3389/fpsyg.2022.722635
20. Özdemir A. Exploring intrinsic leisure motivations of university students. *Eur J Educ Stud*. 2020;7(1):52-65. https://doi.org/10.5281/zenodo.3752640
21. Miller JJ, Croft JC. The Influence of University Recreation Centers on Student Return and Retention During COVID-19. *Recreational Sports Journal*, 2022;46(2): 131–140. https://doi.org/10.1177/15588661221097701
22. Dustin D, Furman N, Bricker N, Cederquist J, Schumann S. The Relevance of Campus Outdoor Recreation Programs to Higher Education: A University of Utah Example. *Journal of Outdoor Recreation, Education, and Leadership*, 2017;9(1): 3–9. https://doi.org/10.18666/JOREL-2017-V9-I1-7412
23. Koo GY, Dixon A, Shoffner S, Rainey T, Sung J. Effects of benefits derived from campus recreation on emotional attachment towards the university. *Glob Sport Bus J*. 2019;7(1):19-33.
24. Bocarro JN, Casper JM, Bush KA, Steptoe A, DuPree S, Blake V, et al. An Exploratory Study of a Health and Wellness Intervention on STEM College Students During COVID-19. *Recreational Sports Journal*, 2023;47(1): 35–48. https://doi.org/10.1177/15588661231154490
25. Huang K, Beckman EM, Ng N, Dingle GA, Han R, James K, et al. Effectiveness of physical activity interventions on undergraduate students' mental health: systematic review and meta-analysis. *Health Promotion International*, 2024;39(3): daae054. https://doi.org/10.1093/heapro/daae054
26. Donnelly S, Penny K, Kynn M. The effectiveness of physical activity interventions in improving higher education students' mental health: A systematic review. *Health Promotion International*, 2024;39(2): daae027. https://doi.org/10.1093/heapro/daae027
27. Brown CEB, Richardson K, Halil-Pizzirani B, Hughes S, Atkins L, Pitt J, et al. PEAK Mood, Mind, and Marks: a pilot study of an intervention to support university students' mental and cognitive health through physical exercise. *Frontiers in Psychiatry*, 2024;15: 1379396. https://doi.org/10.3389/fpsyt.2024.1379396
28. Rammstedt B, Danner D, Soto CJ, John OP. Validation of the Short and Extra-Short Forms of the Big Five Inventory-2 (BFI-2) and Their German Adaptations. *European Journal of Psychological Assessment*, 2020;36(1): 149–161. https://doi.org/10.1027/1015-5759/a000481
29. Wang X, Zhou Y, Li L, Kueh YC, Zeng L, Kuan G. Psychometric properties of the Sport Mental Health Continuum–Short Form scale (Sport MHC-SF): cross-cultural validation and measurement invariance of the Chinese adaptation. *BMC Psychology*, 2025;13(1): 183. https://doi.org/10.1186/s40359-025-02487-5
30. Sequeira C, Carvalho JC, Roldan-Merino J, Moreno-Poyato AR, Teixeira S, David B, et al. Psychometric properties of the positive mental health questionnaire: short form (PMHQ-SF18) in young adults. *Frontiers in Public Health*, 2024;12: 1375378. https://doi.org/10.3389/fpubh.2024.1375378
31. Rodríguez-Muñoz S, Corella C, Abarca-Sos A, Zaragoza J. Validation of three short physical activity questionnaires with accelerometers among university students in Spain. *The Journal of Sports Medicine and Physical Fitness*, 2017;57(12). https://doi.org/10.23736/S0022-4707.17.06665-8
32. Santos-Labrador RM, Melero-Ventola AR, Cortés-Rodríguez M, Sánchez-Barba M, Arroyo-Anlló EM.

Validation of the Physical Activity and Leisure Motivation Scale in Adolescent School Children in Spain (PALMS-e). *Sustainability*, 2021;13(14): 7714. https://doi.org/10.3390/su13147714
33. Potop V, Vypasniak I, Ivanyshyn I, Lutskyi V, Kryventsova I, Shesterova L, Prusik K. Assessment of stress and health conditions among students in the context of the war in Ukraine. *Physical Culture, Recreation and Rehabilitation*. 2024;3(2):58-69. https://doi.org/10.15561/physcult.2024.0203
34. Vypasniak I, Boichuk R, Ivanyshyn I, Lutskyi V, Temchenko V, Jagiello M. Assessment of the physical education learning environment among Ukrainian university students during wartime: validation of the SAPPE questionnaire and gender-regional analysis. *Pedagogy of Health*. 2025;4(2):108-23. https://doi.org/10.15561/health.2025.0203
35. Yermakova T, Lutskyi V, Piatnytska D. Motivation for physical activity among university students residing in areas of military conflict in Ukraine. *Pedagogy of Health*. 2023;2(2):74-82. https://doi.org/10.15561/health.2023.0204
36. Newsome AM, Garcia JM, Dedrick RF. Initial Development and Validation of the Campus Recreation Constraints and Negotiations Questionnaire. *Recreational Sports Journal*, 2024;48(1): 14–26. https://doi.org/10.1177/15588661231219085
37. Kinkawa R, Ono M, Horiuchi S, Kikkawa M, Ito S, Shimasaki A, et al. Development of the Leisure Activity Scale for young adults: Reliability and validity. *Psychiatry and Clinical Neurosciences Reports*, 2025;4(1): e70070. https://doi.org/10.1002/pcn5.70070
38. González-García H, Martinent G, Vega-Díaz M. Validation of the motivation scale towards Health-Oriented physical activity (EMAPS) in Spanish Population. *Current Psychology*, 2023;42(33): 29048–29060. https://doi.org/10.1007/s12144-022-03766-9
39. Ling A, Teo EW, Chin NS. Assessing sport commitment: the development and preliminary validation of recreational sport commitment questionnaire. *BMC Public Health*, 2024;24(1): 3386. https://doi.org/10.1186/s12889-024-20843-9
40. Zhang Q, Sun Y, Fan E, Deng W. Revision and validation of the "Motivational Climate in Physical Education Scale" (MCPES) in Chinese educational context. *Scientific Reports*, 2024;14(1): 25799. https://doi.org/10.1038/s41598-024-76803-1
41. Li J, King RB, Chai CS, Zhai X, Lee VWY. The AI Motivation Scale (AIMS): a self-determination theory perspective. *Journal of Research on Technology in Education*, 2025; 1–22. https://doi.org/10.1080/15391523.2025.2478424
42. Özant Mİ, Durhan TA, Demirel M, Zorba E. Recreational Activity Motivation Scale Development Study. *Educ Adm Theory Pract*. 2024;30(6):410-8.
43. Kim SH, Cho D. Psychometric properties of Leisure Satisfaction Scale (LSS)-short form: a Rasch rating model calibration approach. *BMC Psychology*, 2022;10(1): 151. https://doi.org/10.1186/s40359-022-00861-1
44. Cao Y, Yuan J, Luo L. The physical activity and social support scale: a translation and psychometric validation study in a Chinese college student sample. *Frontiers in Psychology*, 2024;15: 1252561. https://doi.org/10.3389/fpsyg.2024.1252561
45. Weyland S, Kaushal N, Fritsch J, Strauch U, Jekauc D. Validation and invariance testing of the English Short Physical activity enjoyment scale. Tilga H (ed.) *PLOS ONE*, 2024;19(11): e0313626. https://doi.org/10.1371/journal.pone.0313626
46. Nugroho D, Hidayatullah MF, Doewes M, Purnama SK. The effects of massed and distributed drills, muscle strength, and intelligence quotients towards tennis groundstroke skills of sport students. *Pedagogy of Physical Culture and Sports*, 2022;27(1): 14–23. https://doi.org/10.15561/26649837.2023.0102
47. Fraile-Martinez O, García-Montero C, Fraile-Martinez M, Pekarek L, Barrena-Blázquez S, López-González L, et al. A comprehensive study of the academic benefits and practical recommendations to include resistance training programs in institutional education. *Frontiers in Psychology*, 2024;15: 1387162. https://doi.org/10.3389/fpsyg.2024.1387162
48. Kljajević V, Stanković M, Đorđević D, Trkulja-Petković D, Jovanović R, Plazibat K, et al. Physical Activity and Physical Fitness among University Students—A Systematic Review. *International Journal of Environmental Research and Public Health*, 2021;19(1): 158. https://doi.org/10.3390/ijerph19010158
49. Abdullah A, Zayed W, Naila B. The effect of exercise using auxiliary tools in learning the forehand and backhand skills of female tennis students. *Pedagogy of Physical Culture and Sports*, 2023;27(2): 158–164. https://doi.org/10.15561/26649837.2023.0208
50. Choi SM, Wang FJ, Sum RKW, Ching BHH, Leung EFL, Ho RWK. The motivational impact of sport education model on daily physical activity levels among university students: a mediation analysis. *Scientific Reports*, 2024;14(1): 27964. https://doi.org/10.1038/s41598-024-78446-8
51. Wang Y, Zhang F, Gao Z, Zhang Z, Liu W. Effects of Virtual Reality-Based Exercise Intervention on College Students' Mood States: An 8-Week Randomized Controlled Trial. *Games for Health Journal*, 2025; https://doi.org/10.1177/2161783X251360803
52. Mocanu GD, Murariu G, Potop V. Differences in explosive strength values for students of the faculty of physical education and sports (male) according to body mass index levels. *Pedagogy of Physical Culture and Sports*, 2023;27(1): 71–83. https://doi.org/10.15561/26649837.2023.0109
53. Kung YT, Chang CM, Hwang FM, Chi SC. The Association between Body Mass Index and Physical Fitness of Normal Weight/Overweight/Obese University Students. *International Journal of Environmental Research and Public Health*, 2020;17(15): 5391. https://doi.org/10.3390/ijerph17155391
54. Wang Q, Qian J, Pan H, Ju Q. Relationship between body composition and upper limb physical fitness among Chinese students: 4-Year longitudinal follow-up and experimental

study. *Frontiers in Physiology*, 2023;14: 1104018. https://doi.org/10.3389/fphys.2023.1104018
55. Anam K, Setiowati A, Indardi N, Irawan FA, Pavlović R, Susanto N, et al. Functional movement screen score to predict injury risk of sports students: a review of foot shape and body mass index. *Pedagogy of Physical Culture and Sports*, 2024;28(2): 124–131. https://doi.org/10.15561/26649837.2024.0206
56. Wu H, Lin P, Zeng G, Chen F. Associations between body mass index and physical fitness indicators among Chinese university students: a multicenter cross-sectional study. *BMC Sports Science, Medicine and Rehabilitation*, 2024;16(1): 234. https://doi.org/10.1186/s13102-024-01024-y
57. Aydoğan K, Kostanoğlu A, Törpü GC. Effect of Body Mass Index on Balance, Trunk Muscle Endurance, Functional Mobility and, Physical Activity in College Students. *Bezmialem Science*, 2024;12(4): 441–449. https://doi.org/10.14235/bas.galenos.2024.30633

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