

Comparative research into values and motives of university students with different physical activity levels

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Abstract:

This study compared the values and motives among university students with varying levels of physical activity. The sample included 120 second- and third-year full-time students aged 18–20 from Ukrainian universities. Participants were categorized into three groups based on physical activity levels (PALs): low (Group 1), medium (Group 2), and high (Group 3), with gender balance maintained across the randomly selected sample. **Results.** The diagrams of values and motives of respondents with different physical activity levels were created. Superiority across the groups was observed in the following values ($p < .001$): Group 1 – “universalism”, “self-direction”, “stimulation”, “achievement”, “power”, and “security”; Group 2 – “conformity”, “self-direction”, and “hedonism”; Group 3 – “universalism”, “self-direction”, “stimulation”, “achievement”, “power”, and “security”. Superiority across the groups was observed in the following motives ($p \leq .050$; $p \leq .010$; $p < .001$): Group 1 – “avoidance motive”, “motive for changing activity”, “regularity of results”; Group 2 – “assessment of results achieved”; Group 3 – “self-respect motive”, “regularity of results”, “assessment of results achieved”, and “assessment of one’s potential”. For the grouping variable “gender differentiation”, five superiorities in the male subsample were identified in the following values: “tradition” ($d = -.468$), “benevolence” ($d = -.612$), “universalism” ($d = -.395$), “stimulation” ($d = -.462$), and “security” ($p = .011$; $d = -.476$). For the grouping variable “gender differentiation”, superiority was observed in the “self-respect motive” ($d = .385$) in the female subsample. Correlation matrices showed significant close relationships between PALs and values (nine correlations) and between PALs and motives (three correlations). **Discussion and conclusions.** It was substantiated that values, unlike motives, are deep beliefs that determine what students consider valuable and important. It was underscored that a scientific value can be assigned to the successful study of the role and place of physical activity in the dimensions of values and motives among university students.

Keywords: sphere of values and motives, worldviews, mental health, health-saving technologies, self-respect motive, adolescence, student sports.

Introduction

Student sports are a multi-component complex system encompassing physical culture, physical education, and sports competitions at universities aimed at performing a number of functions. Through various events, tournaments, and sports competitions, student sports shape university students’ leadership qualities, strengthen team spirit, improve young people’s health, and contribute to utilising health-saving technologies. The individual’s self-discipline and development of moral and volitional qualities depend on physical culture and sports. Active participation in physical activities and sports contributes to students’ physical and mental development, shapes healthy behavioural patterns, prepares them for future professional and personal trials, and forms the basis for engaging in professional sports (Kozin et al., 2023; 2025; Kurova et al., 2023; Popovych et al., 2026). A considerable portion of prize winners in the Olympic Games and World championships are university students.

Numerous studies demonstrate that university students’ values and motives in the context of physical culture and sports are characterised by a wide range of meanings: a lack of direct relationship between physical activity and a future profession, the intention to have better grades for the subject, adjusted body weight, and the desire to lead a healthy lifestyle and maintain physical health. In the current system of students’ physical education, researchers differentiate between three levels of classes based on the degree of regulation: Level 1 – scheduled academic classes, which are mandatory courses; Level 2 includes optional classes, which are conducted in sports

sections or clubs; Level 3, the highest one, involves self-training ranging from individual or group classes to tourist trips (Krutsevykh & Petrovskiy, 2008). The outlined aspects of the research subject attest to the importance and complexity of student sports. Scientific value can be assigned to examining the parameters of values and motives of university students with different physical activity levels. The attempt to associate values and motives in a comparative study is considered new and highly relevant.

The research by M. Olanescu (2021) compares students' motivation to engage in sports and establishes that a small portion of young people regularly participate in physical activity despite their awareness of the advantages of physical exercise and understanding of the consequences of low physical activity. This share accounts for about 30.00% of respondents. The World Health Organisation (2018) recommends that people should participate in physical activity for at least 30 minutes, at least 3–5 times a week. It was also found that male students engage in sports more than female students.

The study draws an interesting conclusion: the share of respondents who participate in physical activity depends on their participation in sports before entering university. Researchers P. Prieto-González et al. (2025) compared motivation for participation in physical activity aimed at health improvement among university students from three countries with different cultures: Mexico, Saudi Arabia, and Spain. Identified regulation and intrinsic motivation were found to be the most common motivation types among students from three countries. Despite cultural differences, the identified common motivation models actualise the universal value of health and well-being goals. Another study by T. Sampaio et al. (2026) compared students' physical preparation and physical activity and found that these parameters were higher before entering university. At the same time, the influence of institutional environments on these variables remained unclarified. Using university students' sociodemographic characteristics, researchers compared respondents' motivation for physical activity and established that fifth-year students had the highest motivation levels. Significant gender differences were not recorded; however, age, place of residence, marital status, and family size significantly affect motivation for physical exercise (Ahsan et al., 2024).

To summarise, the retrospective analysis of comparative studies on physical activity mostly focused on motivation. In these publications, health improvement was regarded as a value. Our attempts to find comparative studies on values in the context of physical activity were unsuccessful. However, the systematic review of university students' physical activity in the study by V. Kljajevic et al. (2022) examines value differences in cultures, which formed the basis for educational systems, that determine the varying levels of young people's physical activity. The research by C. Brown et al. (2024) found that values such as resources, social impacts, and goals are the most essential for maintaining physical activity. No impact was observed for such values as memory, attention, decision-making processes, and optimism. Attention should also be paid to a value component such as students' mobility, which allows them to improve competitiveness, broaden their horizons, and grow as individuals. At the same time, migration flows as a forced mobility element of the most active part of the population, students and young graduates (Blynova et al., 2019), and adverse living conditions (Plokhikh et al., 2025) actualise defence mechanisms and realisation of their inner potential, which can change respondents' value judgements considerably.

A comparative study of the dimensions of values and motives among university students with different physical activity levels is based on a confirmatory strategy with elements of comparison, which aims to identify significant differences and establish psychological correlations. Students' sphere of values and motives is a system of beliefs, worldviews, purposes, and driving forces that determine the young individual's growth and development. A scientific value can be assigned to the attempt to study the role and place of physical activity in the dimensions of this complex phenomenon. The outlined research contours are important for understanding young people's development during training, physical education classes, and sports activities.

Hypothesis: 1) the comparison of respondents' values based on their physical activity levels will show significant differences; 2) the comparison of respondents motives based on their physical activity levels will reveal a number of significant differences; 3) the comparison of the parameters of the sphere of values and motives based on the grouping variable "gender differentiation" will show significant differences; 4) physical activity levels will have psychological correlations with the parameters of respondents' values and motives.

Aim. To compare the dimensions of the sphere of values and motives among university students with different physical activity levels.

Methods

Participants. The comparative research involved second- and third-year full-time university students, who stayed in Ukraine. They represented Kherson State University (Kherson region, Ukraine – relocated to Ivano-Frankivsk region, Ukraine), Vasyl Stefanyk Carpathian National University (Ivano-Frankivsk region, Ukraine), and Dragomanov Ukrainian State University (Kyiv region, Ukraine). The sample consisted of a total of $n = 120$ participants aged 18 to 20 ($M = 17.12$; $SD = \pm 3.29$). An equal number of respondents were randomly selected based on three physical activity levels, with $n = 40$ (33.33%) participants representing each level. Students who attended universities, participated in professional sports, and represented individual and team sports at the

national and international levels were not involved in the research. In terms of gender, the sample was represented by an equal number of females ($n = 60$; 50.00%) and males ($n = 60$; 50.00%).

Procedures and Instruments. University students' physical activity levels as a key research variable were determined using the authors' screening questionnaire. The questionnaire included different types of physical activity, sports classes, interests, needs, and motives related to physical education and sports. The questionnaire was used to reveal the characteristics of physical activity, which was represented by the time spent on physical culture and reflected the regularity of physical exercise and other types of physical activity. Based on the questionnaire data, three physical activity levels were empirically established (PALs): low – up to two hours per week; medium – up to six hours per week; and high – more than six hours per week. A corresponding group (Group 1, Group 2, and Group 3) was formed for each level.

The methodology "Portrait Values Questionnaire" (PVQ), developed by S. Schwartz (1992) and adapted for a Ukrainian sample by I. Semkiv (2013), was employed to identify respondents' dominant values. This psychodiagnostic tool is designed to assess the dynamics of values under altered conditions. This methodology was selected because the proposed list of values effectively reflected the most important value markers and value-based meanings characteristic of university students. Ten scale of the methodology were used: conformity (CN), tradition (TR), benevolence (BN), universality (UN), self-direction (SD), stimulation (ST), hedonism (HD), achievement (AC), power (PW), and security (SC). Respondents answered forty statements, identifying the proposed definition of each characteristic with their values and beliefs. The research employed a unipolar six-point Stapel scale with the following answer options: "very similar" – 6; "like me" – 5; "almost like me" – 4; "a little bit like me" – 3; "not like me" – 2; "not at all like me" – 1.

The survey data were weighted; therefore, values on each scale did not depend on the number of statements. This allowed for creating a hierarchical structure indicating the dominance of the values at the top. Statistical reliability of the questionnaire's empirical data was confirmed using Cronbach's alpha (α), which was recorded at a medium level ($\alpha = .787$). To qualitatively reflect respondents' motivation profiles, a psychodiagnostic tool containing fifteen scales of the most relevant motives was used.

The questionnaire "Individual's Level of Aspirations" (ILA) was developed by V. Gerbachevsky (2003) and tested on a students' sample by I. Popovych et al. (2019). Respondents answered forty-two statements, using a seven-point bipolar Stapel scale. The answer options ranged from -3 – "strongly disagree" to +3 – "strongly agree". The following questionnaire scales were used: internal motive (IM); cognitive motive (CgM); avoidance motive (AM); competitive motive (CmM); motive for changing activity (MCA); self-respect motive (SM); significance of results (SR); task complexity (TC); volitional effort (VE); assessment of results achieved (ARA); assessment of one's potential (AOP); anticipated level of effort mobilisation (ALEM); expected level of results (ELR); regularity of results (RR); personal initiative (PI). Statistical reliability for this questionnaire was also recorded at a medium level ($\alpha = .823$).

Organisation of Research. Between September and November of the 2025–2026 academic year, the plan of empirical research was developed, psychodiagnostic tools were selected, the pilot stage was completed, the research design was agreed on, approval was given by the university departments, consent to empirical data collection was received from university administrations, and the agreement of the Committee for Research Ethics was obtained. Empirical data were collected in November 2025, using a mixed format: a face-to-face survey and respondents completing questionnaire forms via Google Forms.

At this stage, respondents already had the right to choose. After providing informed consent to voluntary participation in the survey, respondents were provided with necessary instructions and a set of questionnaire forms to complete the survey. All participants were informed that they were free to terminate participation and not to submit questionnaire forms or cancel the completed Google Forms at any time, without explanation, if they felt discomfort or unwillingness to participate in the survey. The organisers' responsible attitudes to collecting empirical data, the approval of the research from all administrative subjects of the universities, and the instructions to the survey participants allowed for gathering valid empirical data. The research organisers considered the ethical requirements for scientific research (World Medical Association, 2013).

Statistical Analysis. All statistical operations, including the empirical data processing, identification of respondents' physical activity levels, initial statistical processing (descriptive frequency characteristics and testing data for normality), and the statistical operations aimed at finding differences and establishing patterns were performed, using the computer programs "IBM SPSS Statistics", version 29.0.0.0 (241), "MS Excel", and "Jamovi", version 2.7.2 (The jamovi project, 2025). Three levels of significance, $p \leq .050$; $p \leq .010$, and $p < .001$, were considered and interpreted in the research.

Results

The research employed a confirmatory strategy with elements of comparison for the studied parameters and grouping variables. According to the research design, the studied parameters were compared in subsamples with different physical activity levels. Tabl. 1 presents the results of the comparison and the main descriptive characteristics for the methodology "PVQ" (Schwartz, 1992).

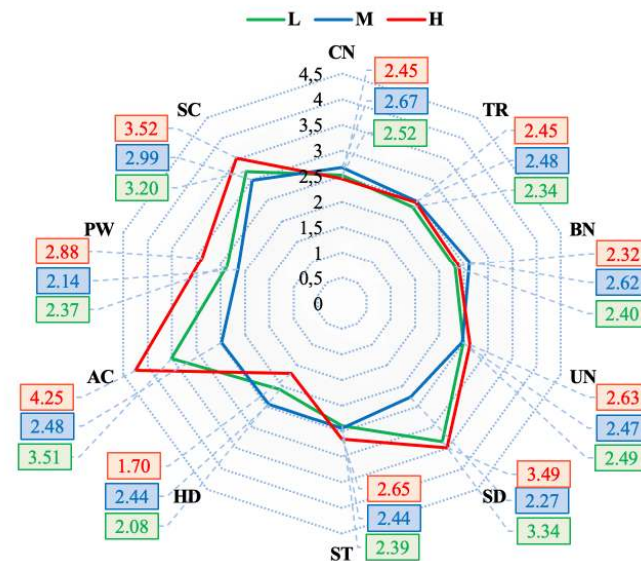
Table 1. Comparison of the values of respondents with different physical activity levels (n = 120)

Scale	Group 1 (n = 40)			Group 2 (n = 40)			Group 3 (n = 40)			H-test K-W	
	<i>Me</i>	min	max	<i>Me</i>	min	max	<i>Me</i>	min	max	H	p
CN	2.50	1.67	3.00	2.67	2.50	2.67	2.50	2.00	2.50	67.305***	<.001
TR	2.50	1.67	3.00	2.50	2.00	2.50	2.50	2.00	2.50	6.894	.052
BN	2.50	1.67	2.50	2.67	2.00	3.00	2.50	2.00	2.50	97.901***	<.001
UN	2.67	1.67	3.00	2.50	2.00	2.67	2.67	2.00	3.00	69.072***	<.001
SD	3.75	1.50	3.75	2.00	2.00	3.75	3.75	2.00	4.00	81.577***	<.001
ST	2.67	1.67	2.67	2.50	2.00	2.67	2.67	2.00	3.00	60.028***	<.001
HD	1.67	1.67	4.00	2.50	1.67	3.00	1.67	1.67	2.00	61.966***	<.001
AC	4.25	1.67	4.25	2.50	2.00	4.25	4.25	4.25	4.25	63.887***	<.001
PW	2.50	1.67	3.00	2.00	2.00	3.00	3.00	2.00	3.00	68.223***	<.001
SC	3.60	1.67	4.00	3.00	2.00	3.60	3.60	2.00	3.60	51.882***	<.001

Note: Group 1 – a subsample with a low physical activity level; Group 2 – a subsample with a medium physical activity level; Group 3 – a subsample with a high physical activity level; H-test K-W – H-test of Kruskal-Wallis; *Me* – median of a distribution (given in *italics*); min – the minimum; max – the maximum; H – the value of the Kruskal-Wallis test; *p* – the level of significance; * – $p \leq .050$; ** – $p \leq .010$; *** – $p \leq .001$; CN – conformity; TR – tradition; BN – benevolence; UN – universalism; SD – self-direction; ST – stimulation; HD – hedonism; AC – achievement; PW – power; SC – security.

The descriptive characteristics in Tabl. 1 allowed for revealing the content features of the comparison. The median (*Me*) made it possible to track significant differences among respondents with different PALs. The minimum (min) and maximum (max) values for each parameter were used to identify the range of dispersion. All parameters, except for the value “tradition”, demonstrated significant superiority ($p < .001$) depending on the studied groups. Moreover, all compared groups exhibited significant superiority in individual values, at least over one of the other two groups. Superiorities across groups are as follows: Group 1 – “universalism”, “self-direction”, “stimulation”, “achievement”, “power”, and “security”; Group 2 – “conformity”, “benevolence”, and “hedonism”; Group 3 – “universalism”, “self-direction”, “stimulation”, “achievement”, “power”, and “security”. To visualise the hierarchical superiorities of respondents’ values across three groups, a value profile of university students with different physical activity levels was created using a petal diagram template (Fig. I). The mean of a distribution (*M*) was used to make a diagram for each value in the studied groups.

Diagram of the values of students with different physical activity levels



Note: — a low physical activity level; — a medium physical activity level; — a high physical activity level; CN – conformity; TR – tradition; BN – benevolence; UN – universalism; SD – self-direction; ST – stimulation; HD – hedonism; AC – achievement; PW – power; SC – security.

Fig. I. Diagram of the values of university students with different activity levels

The diagram reflected superiority in the following values across the three studied groups: 1) achievement; 2) security; 3) self-direction. The value “hedonism” was found to be the least pronounced, which may indicate low interest in entertainment and enjoyment among respondents in the sample. Tabl. 2 presents the results of the comparison and the main descriptive frequency characteristics for the methodology “ILA” (Gerbachevsky, 2003).

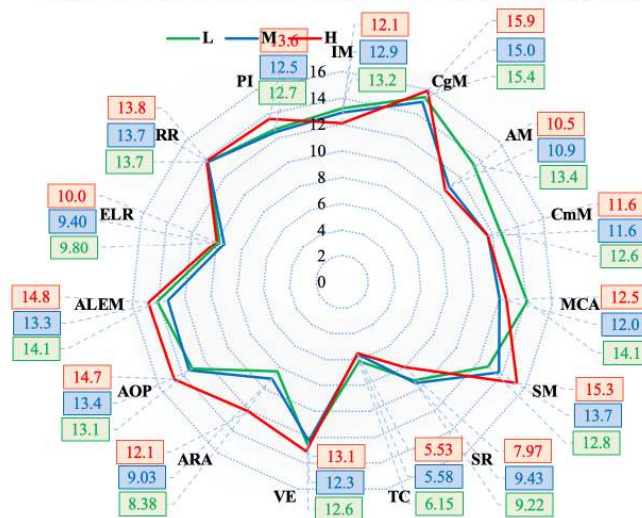
Table 2. Comparison of the motives of respondents with different physical activity levels (n = 120)

Scale	Group 1 (n = 40)			Group 2 (n = 40)			Group 3 (n = 40)			H-test K-W	
	<i>Me</i>	min	max	<i>Me</i>	min	max	<i>Me</i>	min	max	H	p
IM	13.00	7.00	20.00	13.00	6.00	19.00	12.00	5.00	19.00	3.699	.157
CgM	15.00	11.00	21.00	15.00	8.00	21.00	15.50	10.00	21.00	1.495	.474
AM	13.00	10.00	20.00	10.00	6.00	20.00	10.50	3.00	17.00	17.613***	<.001
CmM	13.00	4.00	17.00	12.00	5.00	17.00	12.00	4.00	19.00	2.546	.280
MCA	15.00	4.00	21.00	11.00	9.00	18.00	12.00	5.00	20.00	10.702**	.005
SM	14.00	8.00	20.00	14.00	8.00	21.00	15.00	9.00	21.00	10.846**	.004
SR	10.00	3.00	17.00	9.50	3.00	16.00	8.00	3.00	15.00	6.266*	.044
TC	6.50	2.00	14.00	6.00	2.00	9.00	5.00	2.00	18.00	2.735	.255
VE	13.00	7.00	16.00	12.50	7.00	18.00	13.00	5.00	19.00	1.195	.550
ARA	8.00	6.00	14.00	9.00	4.00	14.00	12.00	11.00	14.00	71.564***	<.001
AOP	13.00	5.00	19.00	13.00	9.00	19.00	15.50	8.00	20.00	7.381*	.025
ALEM	14.50	9.00	21.00	13.50	9.00	19.00	14.00	10.00	21.00	5.065	.079
ELR	10.00	5.00	14.00	9.00	3.00	14.00	10.00	7.00	14.00	1.384	.501
RR	14.00	5.00	18.00	14.00	9.00	18.00	14.00	7.00	21.00	.022	.989
PI	12.00	9.00	21.00	12.00	9.00	19.00	13.50	9.00	21.00	4.560	.102

Note: Group 1 – a subsample with a low physical activity level; Group 2 – a subsample with a medium physical activity level; Group 3 – a subsample with a high physical activity level; H-test K-W – H-test of Kruskal-Wallis; *Me* – the median of a distribution (given in italics); min – the minimum; max – the maximum; H – the value of the Kruskal-Wallis test; *p* – the level of significance; * – $p \leq .050$; ** – $p \leq .010$; *** – $p \leq .001$; IM – internal motive; CgM – cognitive motive; AM – avoidance motive; CmM – competitive motive; MCA – motive for changing activity; SM – self-respect motive; SR – significance of results; TC – task complexity; VE – volitional effort; ARA – assessment of results achieved; AOP – assessment of one's potential; ALEM – anticipated level of effort mobilisation; ELR – expected level of results; RR – regularity of results; PI – personal initiative.

Superiorities were observed in six motives: “avoidance motive” ($H = 17.613$; $p < .001$), “motive for changing activity” ($H = 10.702$; $p = .005$), “self-respect motive” ($H = 10.846$; $p = .004$), “significance of results” ($H = 6.266$; $p = .044$), “expected level of results” ($H = 71.564$; $p < .001$), and “assessment of one's potential” ($H = 7.381$; $p = .025$). It is noteworthy that all the groups compared have significant superiorities in certain motives, at least over one of the other two groups. Superiorities across groups are as follows: Group 1 – “avoidance motive”, “motive for changing activity”, and “regularity of results”; Group 2 – “assessment of results achieved”; Group 3 – “self-respect motive”, “regularity of results”, “assessment of results achieved”, and “assessment of one's potential”. The largest number of superiorities was recorded in Group 1 and Group 3. To visualise the hierarchical superiorities of respondents' motives across three groups, a motivation diagram for university students with different physical activity levels was created (Fig. II). The mean of a distribution (*M*) was used to make a diagram for each motive in the studied groups.

Diagram of the motives of students with different physical activity levels



Note: — a low physical activity level; — a medium physical activity level; — a high physical activity level; IM – internal motive; CgM – cognitive motive; AM – avoidance motive; CmM – competitive motive; MCA – motivation for changing activity; SM – self-respect motive; SR – significance of results; TC – task complexity; VE – volitional effort; ARA – assessment of results achieved; AOP – assessment of one's potential; ALEM – anticipated level of effort mobilisation; ELR – expected level of results; RR – regularity of results; PI – personal initiative.

Fig. II. Diagram of the motivation of university students with different physical activity levels

Superiorities were observed in the following motives: 1) cognitive motive; 2) self-respect motive; 3) anticipated level of effort mobilization. The “task complexity” motive was found to be the least pronounced, which may be explained by the respondents’ lack of motivation to perform complex tasks. Tabl. 3 presents the results of the comparison based on the grouping variable “gender differentiation” for the parameters of the “PVQ” (Schwartz, 1992).

The two studied groups included females – Group A (n = 60; 50.00%) and males – Group B (n = 60; 50.00%). Student’s t-test was used to identify differences in the values between two independent subgroups (Group A and Group B). The effect size (Cohen’s d) was calculated to assess significant differences.

Table 3. Comparison of values for the grouping variable “gender differentiation” between Group A and Group B

Scale	Levene’s test		Student’s t-test		95 CI		Cohen’s d
	F	p	t	p	Lower	Upper	
CN ^a	11.203	.001	.316	.753	-.057	.079	.058
TR ^a	49.804	<.001	-2.565*	.013	-.182	-.023	-.468
BN ^a	33.587	<.001	-3.351***	.001	-.244	-.062	-.612
UN ^a	12.414	<.001	-2.162*	.034	-.218	-.009	-.395
SD ^a	17.637	<.001	.930	.354	-.151	.417	.170
ST ^a	30.411	<.001	-2.532*	.014	-.229	-.027	-.462
HD ^a	16.188	<.001	1.977	.051	-.001	.438	.361
AC ^a	18.155	<.001	-1.317	.190	-.586	.118	-.241
PW	.716	.399	1.325	.188	-.052	.264	.242
SC ^a	14.886	<.001	-2.609*	.011	-.354	-.048	-.476

Note: ^a – the data is given using Welch’s t-test; Group A – females; Group B – males; F – Levene’s test for the equality of variances; p – the level of significance; * – $p \leq .050$; ** – $p \leq .010$; *** – $p < .001$; t – Student’s t-test; 95 CI – confidence interval; Cohen’s d – effect size; CN – conformity; TR – tradition; BN – benevolence; UN – universalism; SD – self-direction; ST – stimulation; HD – hedonism; AC – achievement; PW – power; SC – security.

Based on the grouping variable “gender differentiation”, five superiorities were identified in the following values: “tradition” (t = -2.565; p = .013; d = -.468), “benevolence” (t = -3.351; p = .001; d = -.612), “universalism” (t = -2.162; p = .034; d = -.395), “stimulation” (t = -2.532; p = .014; d = -.462), and “security” (t = -2.609; p = .011; d = -.476).

These superiorities were recorded in the male sample. Tabl. 4 presents the results of the comparison based on the grouping variable “gender differentiation” for the parameters of the “ILA” methodology (Gerbachovsky, 2003).

Table 4. Comparison of motives for the grouping variable “gender differentiation” between Group A and Group B

Scale	Levene’s test		Student’s t-test		95 CI		Cohen’s d
	F	p	t	p	Lower	Upper	
IM	.000	.987	-.671	.504	-1.449	.716	-.122
CgM ^a	3.919	.050	-.129	.897	-1.087	.954	-.024
AM ^a	4.078	.046	1.648	.102	-.216	2.349	.301
CmM	1.525	.219	1.968	.051	-.008	2.374	.359
MCA	.015	.902	1.438	.153	-.346	2.179	.263
SM	.001	.971	2.111*	.037	.0745	2.326	.385
SR	3.845	.052	-.030	.976	-1.125	1.092	-.005
TC	1.374	.244	-1.238	.218	-1.560	.3599	-.226
VE	.372	.543	-.360	.720	-1.301	.901	-.066
ARA	1.492	.224	1.930	.056	-.019	1.519	.352
AOP	1.271	.262	.483	.630	-.827	1.361	.088
ALEM	.233	.630	.303	.762	-.829	1.129	.055
ELR	.514	.475	-.650	.517	-1.011	.511	-.119
RR ^a	8.007	.005	-.823	.412	-1.307	.540	-.150
PI	.225	.636	-.768	.444	-1.371	.605	-.140

Note: ^a – the data is given using Welch’s t-test; Group A – females; Group B – males; F – Levene’s test for the equality of variances; p – the level of significance; * – $p \leq .050$; ** – $p \leq .010$; *** – $p < .001$; t – Student’s t-test; 95 CI – confidence interval; Cohen’s d – effect size; IM – internal motive; CgM – cognitive motive; AM – avoidance motive; CmM – competitive motive; MCA – motive for changing activity; SM – self-respect motive; SR – significance of results; TC – task complexity; VE – volitional effort; ARA – assessment of results achieved; AOP – assessment of one’s potential; ALEM – anticipated level of effort mobilization; ELR – expected level of results; RR – regularity of results; PI – personal initiative.

Based on the grouping variable “gender differentiation”, one superiority was observed in the “self-respect motive” ($t = 2.111$; $p = .037$; $d = .385$). This superiority was characteristic of the females in Group 1. These comparisons showed medium and high effect sizes (Cohen’s d). Additionally, twelve critical values were revealed, using Levene’s F-test and Welch’s t-test. Then, psychological correlations between the studied variables and different physical activity levels were established using the Pearson correlation coefficient (R) (Tabl. 5).

Table 5. Psychological correlations between the studied parameters and respondents’ physical activity levels ($n = 120$)

Motivation parameters	PAL	Portrait of values	PAL
Internal motive (IM)	-.077 .404	Conformity (CN)	-.156 .089
Cognitive motive (CgM)	-.215* .018	Tradition (TR)	.236** .010
Avoidance motive (AM)	.005 .954	Benevolence (BN)	.183* .046
Competitive motive (CmM)	.163 .075	Universalism (UN)	.420*** <.001
Motive for changing activity (MCA)	.197* .031	Self-direction (SD)	.193* .035
Self-respect motive (SM)	.000 .998	Stimulation (ST)	.435*** <.001
	.161		-
Significance of results (SR)	.079	Hedonism (HD)	.330*** <.001
Task complexity (TC)	-.005 .960	Achievement (AC)	.271** .003
Volitional effort (VE)	.052 .576	Power (PW)	.481*** <.001
Assessment of results achieved (ARA)	-.170 .063	Security (SC)	.277** .002
Assessment of one’s potential (AOP)	-.134 .145		
Anticipated level of effort mobilisation (ALEM)	-.112 .223		
Expected level of results (ELR)	.041 .653		
Regularity of results (RR)	-.116 .207		
Personal initiative (PI)	-.232* .011		

Note: PAL – physical activity level; R – the Pearson correlation coefficient; p – the level of significance; * – $p \leq .050$; ** – $p \leq .010$; *** – $p < .001$.

Three significant correlations were established between physical activity levels and motivation parameters ($p \leq .050$), including one direct correlation – with “motive for changing activity” ($r_s = .197$; $p = .031$) and two inverse correlations – with “cognitive motive” ($r_s = -.215$; $p = .018$) and “personal initiative” ($r_s = -.232$; $p = .011$). Nine significant correlations were established between physical activity levels and values ($p \leq .050$; $p \leq .010$; $p < .001$), including eight direct correlations – with “tradition” ($r_s = .236$; $p = .010$), “benevolence” ($r_s = .183$; $p = .046$), “universalism” ($r_s = .420$; $p < .001$), “self-direction” ($r_s = .193$; $p = .035$), “stimulation” ($r_s = .435$; $p < .001$), “achievement” ($r_s = .271$; $p = .003$), “power” ($r_s = .481$; $p < .001$), and “security” ($r_s = .277$; $p = .002$), and one inverse correlation – with “hedonism” ($r_s = -.330$; $p < .001$). Physical activity levels are more loaded with values than with motives.

Discussion

Theoretical analysis and the empirical results obtained demonstrate that the research into university students’ values and motives regarding the grouping variable “physical activity level” is a successful attempt to identify significant differences in the fundamental context of the young individual’s growth and development. Numerous comparative studies on individuals’ motivation (Ahmed & Al Salim, 2024; Durán-Vinagre et al., 2024) appear superficial and fail to explore adolescents’ worldviews, mindsets, values, and life-purpose orientations in depth (Schwartz & Cieciuch, 2021). The research into values and motives suggests considering the value-based focus of respondents’ activities. The focus of university students’ activities combined educational and professional activities, career goals, and personal growth and development. All these characteristics of adolescents are continuously influenced by the social environment and current personal needs.

The comparison of the values of respondents with different PALs (see Tabl. 1) revealed significant superiorities across the three studied groups. The identified differences between the studied groups can be explained by the fact that values are internal orientations and worldviews that crystallise relevant, important, appropriate, and desired things in the “here and now” (Fischer & Karl, 2025). It is noteworthy that Group 1, consisting of respondents with low PALs, and Group 3, including respondents with high PALs, surpass Group 2 (medium PALs) in the identical parameters. Notably, identical significant differences in Group 1 and Group 3 demonstrated in six out of ten values: “universalism”, “self-direction”, “stimulation”, “achievement”, “power”, and “security”, according to the “PVQ” methodology (Schwartz, 1992), cannot be accidental. This coincidence rather indicates a distinctive pattern. Obviously, the psychological mechanisms underlying the implementation of values in each studied group can be completely different. This difference can be explained as follows. Respondents in Group 1 may prefer compensatory mechanisms, replacing intentions of physical activity with mental activity or creativity, whereas Group 3 will choose other mechanisms. Respondents in Group 3 may prefer the defence mechanism of rationalisation. Such respondents take a rational approach to the importance of physical culture and a healthy lifestyle. However, analysing each case is recommended. The results of the comparison of motives among respondents with different PALs (see Tabl. 2) demonstrated fewer significant superiorities. Significant superiorities of Group 1 in the parameters “avoidance motive” or “motive for changing activity” are expected. Similarly, the expected superiorities of Group 3 include “self-respect motive”, “assessment of results achieved”, and “assessment of one’s potential”. These facts confirm the aforementioned arguments that motives are on the surface of university students’ PALs. In contrast, the sphere of values and motives allows for taking an in-depth look at the studied issue. It is also noteworthy that in both comparisons, namely of motives and values, Group 2 demonstrated the smallest number of significant superiorities. The average PAL in the group indicates a strong, balanced position maintained by the respondents. Only analysing individual cases allows for clarifying a true picture.

Creating diagrams of values and motives is recommended for working with individual cases. The research proposed a complex variant of two diagrams of the values and motives of respondents with different PALs (see Fig. I and Fig. II). Another advantage of creating a diagram is the possibility to visualise the hierarchy of respondents’ values (see Fig. I) and motives (see Fig. II). The values “achievement”, “security”, and “self-direction” (see Fig. I) reflect a typical picture of value preferences among modern students (Subashkevych, 2016). Researchers’ opinions on low values of “hedonism” differ. Some respondents seek personal and professional development; therefore, they deny themselves entertainment and leisure time, whereas others spend time on entertainment and enjoyment. Notably, value profiles should be analysed individually. The “cognitive motive”, “self-respect motive”, and “anticipated level of effort mobilisation” (see Fig. II) are also regarded as a typical profile of modern university students’ motives and functional states (Kozin et al., 2022). The lowest value of the motive “task complexity” requires well-developed internal motivation and deep beliefs, which can pose difficulties at this age.

Interesting scientific facts were obtained when comparing the studied parameters based on the grouping variable “gender differentiation” (see Tabl. 3–4). Five significant superiorities in the values were identified in the male subsample, whereas one superiority in the motives was observed in the female subsample. The identified differences are partially confirmed by findings from other studies (Olanescu, 2021).

The correlation matrices of the studied parameters also demonstrate that values significantly load the key parameter, the PAL (nine correlations), as opposed to motives (three correlations). The correlation matrix showing nine loadings indicates the significance of physical activity and health-saving technologies for university students. This statistical operation also confirmed the importance of values for respondents regarding PALs. This can be explained by the fact that for university students, values, unlike motives, are deep beliefs that determine what they consider important and significant at the current moment.

Despite the reproducibility, validity, and logic of our conclusions, several limitations should be noted. Since participation was voluntary, and respondents were as informed as possible, only the active part of the general student population took part in the survey. The research into values and motives was limited by the applied psychodiagnostic tools. Other tools could show another list of the studied variables, and their hierarchy could be different. The division of respondents into three groups based on PALs and the selection of equal subsamples based on gender are conditional. The aforementioned limitations are important. However, they do not diminish the value of the research or question the principles and scientific facts established in this study.

Conclusions

It was substantiated that values, unlike motives, are deep beliefs that determine what university students consider valuable and important. Creating diagrams of values and motives was recommended for studying individual cases regarding university students’ values and motives. The generalised diagrams of the values and motives of respondents with different PALs were created. Respondents were empirically divided into three groups based on their PALs: Group 1 – a low PAL, Group 2 – a medium PAL, and Group 3 – a high PAL. The groups demonstrated superiorities in the following values ($p < .001$): Group 1 – “universalism”, “self-direction”, “stimulation”, “achievement”, “power”, and “security”; Group 2 – “conformity”, “benevolence”, and

“hedonism”; Group 3 – “universalism”, “self-direction”, “stimulation”, “achievement”, “power”, and “security”. The groups had superiorities in the following motives ($p \leq .050$; $p \leq .010$; $p < .001$): Group 1 – “avoidance motive”, “motive for changing activity”, and “regularity of results”; Group 2 – “assessment of results achieved”; Group 3 – “self-respect motive”, “regularity of results”, “assessment of results achieved”, and “assessment of one’s potential”. It was noted that the psychological mechanisms underlying the implementation of values and motives will differ across the studied group. Based on the grouping variable “gender differentiation”, five superiorities in the male subsample were identified in the following values: “tradition” ($d = -.468$), “benevolence” ($d = -.612$), “universalism” ($d = -.395$), “stimulation” ($d = -.462$), and “security” ($p = .011$; $d = -.476$). Based on the grouping variable “gender differentiation”, one superiority in the female subsample was identified in the “self-respect motive” ($d = .385$). Correlation matrices revealed significant relationships between PALs and values (nine correlations) and between PALs and motives (three correlations). These loadings were explained by the fact that PALs and health-saving technologies are valuable and important for university students. The aim was achieved, and four hypotheses were tested. The established and substantiated empirical facts can be assigned scientific novelty. They should be implemented in university education.

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