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SUMMER OUTDOOR ACTIVITIES IN DIFFERENT EDUCATIONAL SETTINGS – TWO "MODELS" OF PRACTICAL COURSE ORGANIZATION REGARDING CAMP LOCATION

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Abstract: The study aimed to assess specific segments of the anthropological status (AS) of PE Students (PES) concerning Age and Basic anthropometry, Body composition, and Functional/Health status parameters considered as potential cardiovascular risk factors. These segments are vital in addressing the students' preparation problems for the PE study's success. During their studies in higher education, one of the main tasks of PES is to strengthen and improve their health and continue developing their abilities and competencies for future professions as elementary and secondary PE teachers. PE Students need to be good role models for behavior to promote a healthy lifestyle among children and youth. Young adults who enter the university fall under the influence of specific factors associated with the need to creatively assimilate large amounts of information due to the necessity of forming professional skills and abilities in unique conditions of students' lives. Students have to meet and understand that the functional, practical training system has two mutually related aspects – pedagogical/educational and social/recreational. This aspect suggests that modern physical culture is a holistic (socio-educational) system that PES did not experience during their former education. This study was realized within a total sample of fifty-six (56) Males, PES of the first (n=28) and third-study-year (n=28), during Summer Outdoor Activities in different education settings ("Models"), regarding the camp locations: Gazivode Lake (Kosovo*) G-1, and the coast of Aegean Sea (Korinos) K-2 in Greece. The authors evaluated the study data (three segments of AS, including 13 variables) with descriptive statistics (Mean, SD, Min-Max, C.var.%, confidence interval/range, MANOVA, and DISCRA analysis) and a test of the normality of results distribution. Descriptive statistics and data analysis presentation are in tables for the three segments of AS and 13 variables. Results analysis indicates only statistically significant AGE differences. There were some numerical differences among variables, but they were not statistically significant. Considering the Omron classification scale and recommendations, the two intervention groups have different variations and distributions. This cross-sectional experimental study points out some hypothetical differences regarding the organization of two "Models" of summer outdoor activities, according to the practical course location on Gazivode Lake or Korinos Coast at the Aegean Sea.
Keywords: *Male PE students, Outdoor Activities Course, Evaluation, Comparison.*
Field: Social sciences

1. INTRODUCTION

This research delves deeply into the complex relationship between physical activity and health status, focusing on assessing body composition. Historically, body mass index (BMI), calculated from height and weight, has been the primary method in population-based studies for estimating body composition, as highlighted in the works of Zaccagni, Barbieri, and Gualdi-Russo (2014). Several innovative techniques for measuring body composition are in use in the pursuit of advanced understanding. These methods have shown considerable potential in clarifying the impact of physical activity on body composition and fat distribution, as by Purenović-Ivanović, T. et al. (2025); Stojanović, S. et al. (2021). he curriculum at the Faculty of Sport and Physical Education (FSPE) is comprehensive, integrating psychological aspects such as cognitive skills and personality traits alongside a broad spectrum of morphological, physical, and functional/physiological characteristics, as evidenced by Popović et al. (1988).

The role of physical education in promoting healthy lifestyles from an early age in Serbia is in scope, highlighting the efforts of schools and academic staff in fostering these habits among children, according to (Purenović-Ivanović et al., 2022).

1.1 Purpose

This study primarily aims to assess fundamental anthropometric parameters, body composition,

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and health status, which are crucial for academic success in sports and physical education studies. A cross-sectional study design evaluated these parameters in specific groups of male PE students. An additional objective is a comparative analysis to discern potential group differences and provide insights into particular segments' status based on the estimated results. This objective could also reveal potential shortcomings in the initial evaluation process at the entrance exams for PE studies, as pointed out by Popović et al. (1988).

2. MATERIALS AND METHODS

2.1. Sample

This study involved fifty-six (N=56) undergraduate male students from the FSPE in Leposavić, University of Pristine, enrolled in the study year. The first research elaboration was during the 2021/2022 academic year. In June 2022, measurements were realized during the Practical Lessons of the Outdoor Activity Course at Gazivode Lake in Kosovo—Model Gazovode-1 (n=28). The second course was realized in September (2024), at the Aegean Sea—Model Korinos-2, Greece (n=28).

2.2. Measure Instruments and Techniques

2.2.1. Age and Anthropometry: Anthropometric measurements were taken for both groups of male sub-samples using International Biological Program (IBP) standards with Martin's anthropometry (Weiner & Lourie, 1969).

Measurements included Body Height (BH) and Body Weight (BW) estimation in controlled conditions.

2.2.2. Body Composition Status: Parameters like Body Mass (Weight), BMI, Basal Metabolism Rate (RMR), Body Fat Percentage (BF%), and Visceral Fat Level (ViscF) were estimated using the Omron BF511 bioimpedance device (Omron Operating Manual, 2017).

2.2.3. Health Status: Following the study design, three Physiological parameters are used to interpret PE students' "functional status." Popović, R., Đurašković, R., Purenović-Ivanović, T. (2012). A set of cardiovascular risk factor measurements consisted of three measures: blood pressure (SYS, DIA, RHR) and waist circumference (W-C), which were used to estimate the actual health status of PES. Cardiovascular risk factors assessment used a digital tensiometer PRIZMA for systolic and diastolic blood pressure and resting heart rate. The study adhered to the Helsinki Declaration guidelines (WMA, 2002), with ethical approval from the Faculty's Representatives and verbal informed consent from participants.

2.3. Statistical Procedures

Data analysis realization was with the Agency for Multivariate Data Analysis's "Smart Line." The analysis included descriptive statistics (mean, standard deviation, range, Coefficient of variation, confidence interval), the Kolmogorov-Smirnov test for normality of distribution, multivariate (MANOVA), and discriminative (DISCRA) data analysis.

2.4. Program of Summer Outdoor Activities

The practical teaching on-site at the Center for Ecology and Development of Sports at Gazivode Lake involved various activities, including Mountaineering, Camp Life Basics, Rope Work, Water Rescue, Applied Swimming, Paddling, Rafting, and Theoretical Lectures. Teaching was conducted in small groups, focusing on immersive, all-day learning experiences – Gazivode-1 Model. According to (Popović et al., 2023), the Outdoor activities schedule, arranged as a Table, is available at (Popović & Miletić, 2023).

The second, the Korinos-2 Model, was conducted at the coast of the Aegean Sea, focusing on swimming in the pool and the open sea. The primary educational task was to achieve concentrated teaching, i.e., to provide students with all-day engagement with the program mentioned above. Future physical education teachers had the opportunity to acquire the presented knowledge and see the breadth of teaching in nature, practically shown to them through two types of organization Models of Outdoor activities at the different localities mentioned above.

3. RESULTS

This chapter interprets the results for basic anthropometry, body composition, and health status of male Physical Education Students (PES), according to Omron Healthcare (2017). The study presents data in various tables and focuses on "Model" differences in the abovementioned measures, calculating averages and analyzing Min-Max results alongside individual achievements of selected role model students within the groups.

The study emphasizes the significance of body composition analysis in evaluating baseline anthropometric status and the risks of diseases linked to abnormal body fat and physiological parameters considered cardiovascular risk factors. Key findings are represented through tables, offering a clear view of the Age and basic anthropometric parameters, body composition, and health status of PE male students of both “Models.” This approach allows for a detailed group-based comparative analysis and insights into intra-group variances, elevating the scientific understanding of these parameters in a higher academic context. This section interprets male PE students’ estimated body composition and health status, referencing the Omron table, according to Omron Healthcare (2017, pp. 16-17).

The study presents data in various tables, showing 13 parameters divided into three segments of the Anthropological status of PES. The role model student selection within groups was according to the best-achieved results in most Body Composition and Health Status Parameters, with a particular scope of the ViscFat level (1) and Age affiliation (first and third study year of FSPE).

3.1 Age and Basic Anthropometry - Segment 1 (S1)

Table 1 presents baseline statistical parameters in Segment 1. In both AGE variables, the abnormality in the results distribution is significant in AgeM1 (p = .000) in G-1 and K-2 (p = .025). Similar results are in AgeY2 (p = .000) in G1 and K2 (p = .046). MANOVA and DISCRA analysis confirmed (p = .002) that there is a difference and a clearly defined boundary between “Models” in Segment 1 (AGE).

The role model student (P.N.) belongs to the same generation and is 19 years old (232 AgeM), the youngest student within the Gazivode-1 Group. According to the Korinos-2 Group, the role model student (B.S.) belongs to the third study year and is 21 years old (259 AgeM). The Kolmogorov-Smirnov test indicates a lack of normality in both AGE variables.

Table 1. Baseline statistics parameters of S1 in Male PES regarding “Models” (Gazivode-1/ Korinos-2)

• Age and Anthropometry – Segment 1 (N=56)									
Variables	**Group**	**Mean±SD**	**Min – Max**	**Range**		**Co.var.%**	**Sk**	**Ku**	***p***
(1) AgeM1	G-1	271.64±65.46	232.0 – 468.0	246.25	297.03	24.10	1.96	2.44	.000
	K-2	246.32±38.40	235.0 – 435.0	249.43	279.21	14.53	3.30	12.19	.025
(2) AgeY2	G-1	22.21±5.48	19.0 –39.0	246.25-	297.03	24.67	1.98	2.57	.000
	K-2	21.93±3.15	20.0 – 36.0	20.71	23.15	14.36	3.36	12.48	.046
(3) BH (cm)	G-1	184.25±7.63	172.0 – 199.5	181.29	187.21	4.14	.32	-.79	.674
	K-2	183.63±7.84	168.0 – 199.5	180.58	186.67	4.27	.01	-.66	.907
(4) BW (kg)	G-1	83.13±10.23	62.2 – 102.9	79.16	87.09	12.31	.05	-.58	.990
	K-2	85.70±17.81	52.1 – 130.0	78.79	92.61	20.79	.71	.40	.364

Legend: G-1/Gazivode Model, K-2/Korinos Model, Mean–Average value, SD–Standard deviation, **Min**–**Max**–values, **Range** – confidence interval, Co.var%–Coefficient of variation, **Sk-Skewness, Ku**-Kurtosis, p probability; AgeM1-Age/Month, **AgeY2**-Age/Years, BH - Body Height, BW-Body Weight, *absence of normal distribution (level p<0.05)

Source: Authors research

Tabela 2. Significance of the difference between Models: Segment 1 about the applied DISCRA analysis

Analysis of differences	n	F	*p*	Segment 1	F	*p*	C.disc
MANOVA	2	6.499	.002	AgeM1	.261	.612	.259
DISCRA	2	6.768	.002	AgeY2	.057	.812	.255

Source: Authors research

Based on the values of p = .002 (MANOVA) and p = .002 (DISCRA) analysis, there is a difference and a clearly defined boundary between “Models” at Segment 1 (AGE). The Coefficient of discrimination indicates that variables in Segment 1 contribute most significantly to between-model discrimination: the difference is the biggest at AgeM1 (.259) and AgeY2 (.255). Regarding Anthropometry, Table 1 presents Body Height (in cm) and Body Weight (in kg). The statistically significant differences in the normality of the results distributions were not established. The distribution of results within the four classification levels is presented below in Tables 3 and 4. Role model students recorded a BH of 199.5 cm, which fell to the ++ (very high) Classification level. Regarding PES’s body weight (kg), role model students recorded 70.0 kg, in the below average zone.

Table 3. Body Height (BH) distribution				Table 4. Body Weight (BW) distribution			
BH (cm)	Level	Gazivode-1	Korinos-2	**BW (kg)**	Level	Gazivode-1	Korinos-2
168-175	- (low)	4/28) (14.28%)	4/28) (14.28%)	**52-70**	- (low)	4/28) (14.28%)	3/28) (10.71%
176-183	0 (medium)	12/28 (42.86%)	12/28 (42.86%)	**71-85**	0 (medium)	12/28 (42.86%)	14/28 (50.0%)
184-191	+ (high)	6/28 (21.43%)	8/28 (28.57%)	**86-100**	+ (high)	11/28 (39.28%)	(6/28 (21.43%)
192-200	++ (very high)	6/28 (21.43%)	4/28) (14.28%)	**101-130**	++ (very high)	1/28 (3.57%)	5/28) (17.86%)

Source: Authors research

3.2. Body Composition Status – Segment 2

The study analyzed Body Composition Status among Physical Education Students (PES), using the Omron BF511 system to evaluate Body Mass Index (BMI) and Body Fat Percentage (BF%), Relative Skeletal Muscle Mass (SkM%), Resting Metabolism Rate (RMR), and Visceral Fat (ViscF).

Table 5. Baseline statistics parameters of S2 in Male PES regarding “Models” (Gazivode-1/ Korinos-2)

• Body composition – Segment 2 (N=56)									
Variables	**Model**	**Mean±SD**	**Min – Max**	**Range**		**Co.var.%**	**Sk**	**Ku**	***p***
(5) BMI (kg/m^2)	G-1	24.53±3.02	18.2 – 31.9	23.36	25.70	12.31	.21	.14	.943
	K-2	25.27±4.11	18.5 – 33.5	23.68	26.87	16.25	.41	-.72	.682
(6) BF%	G-1	19.45±6.44	7.5 – 33.7	16.95	21.95	33.11	.36	-.33	.904
	K-2	20.92±7.82	7.5– 37.1	17.89	23.95	37.37	.27	-.91	.710
(7) SkM%	G-1	39.60±3.98	31.3 – 45.7	38.06	41.15	10.04	-.38	-.67	.990
	K-2	38.85±5.22	26.1– 47.4	36.83	40.88	13.44	-.57	-.35	.994
(8) RMR (kCal)	G-1	1748.04±369.02	1408.0–2074.0	1604.91	1891.16	21.11	-.94	16.29	.167
	K-2	1856.39±226.66	1415.0– 2414.0	1768.48	1944.31	12.21	.62	.45	.624
(9) ViscF (level)	G-1	7.25±3.53	1.0 - 18.0	6.44	10.93	48.69	.50	23.03	.807
	K-2	6.71±3.51	1.0 – 13.0	5.36	8.07	52.20	.25	-.15	.842

Legend: G-1/Gazivode Model, **K-2**/Korinos Model, **Mean**–Average value, **SD**–Standard deviation, **Min–Max**–values, **Range** – confidence interval, **Co.var**%–Coefficient of variation, **Sk-Skewness, Ku-Kurtosis**, p probability; **BMI** – body mass index, **BF%** - Relative Body Fat, **SkM**% - Relative Skeletal Muscle Mass, **RMR** – resting metabolism rate, **ViscF** – Visceral Fat, *absence of normal distribution (level $p<0.05$)

Source: Authors research

3.2.1 Body Mass Index (BMI). In the current study of PE Students, Body Mass Index (BMI) was evaluated using the ratio of weight (kg) to squared height (m²). Based on the Omron BF511 system, this assessment helps determine the risk of disease-related fat levels, though it does not measure all fat types. Table 5 displays BMI results for both educational Models of male PE Students. The minimum BMI recorded was 18.2 for the Gazivode-1 group, aligning with the role model student. The average BMI value of 24.53 kg/m² for G-1 and 25.27 kg/m² for K-2 are within the normal obesity range. In the G-1, 13/28 (46.43%) students have BMI values in the standard obesity zone, but with a maximum of 31.9 kg/m², and 2/28 (7.14%) students are in the (++ obesity) zone, indicating increased health risk. (Table 6). Regarding the K-2, the minimum BMI recorded was 18.5, aligning with the role model student. In the K-2 Group, 14/28 (50.00%) respondents have standard BMI values in the (normal obesity zone, and 9/28 (32.14%) respondents are in the + (pre-obesity) zone. However, a Maximum of 33.5 kg/m² in 4/28 (14.28%) respondents are in the very high obesity zone, indicating increased health risk. Role models are within the low obesity zone (18.2; 18.5).

Table 6. Classification levels and determinants for the Body Mass Index (BMI) evaluation (WHO, 2002)

BMI (kg/m^2)	BMI determinants	BMI value	Gazivode-1	Korinos-2
less than 18.5	- (low obesity)	7.0 – 10.7	-	-
	- (low obesity)	10.8 – 14.5	-	-
	- (low obesity)	14.6 – 18.4	1/28 (3.57%)	-
18.5 or more, and less than 25	0 (normal obesity)	18.5 – 20.5		1/28 (3.57%)
	0 (normal obesity)	20.6 – 22.7		
	0 (normal obesity)	22.8 – 24.9	13/28 (46.43%)	14/28 (50.00%)
25 or more, and less than 30	+ (pre-obesity)	25.0 – 26.5		
	+ (pre-obesity)	26.6 – 28.2		
	+ (pre-obesity)	28.3 – 29.9	12/28 (42.86%)	9/28 (32.14%)
30 or more	++ (obesity)	30.0 – 34.9		4/28) (14.28%)
	++ (obesity)	35.0 – 39.9	-	-
	++ (obesity)	40.0 – 90.0	2/28 (7.14%)	-

Source: Authors research

3.2.2. Relative Body Fat (BF%). Regarding BF%, the study used Bio-Impedance analysis to estimate the percentage of body fat mass relative to total body weight. This measurement helps distinguish between visceral fat, associated with health risks, and subcutaneous fat, which affects body proportions but is not directly related to disease risk.

The results in Table 7 revealed a wide variance among male students, indicating greater diversity regarding this parameter of the body composition in the Gazivode-1 group. In the Korinos-2 group, male PE students displayed similar homogeneity within the low and normal zones. The maximum BF% for males was significantly higher, reaching the “very high” category (35.71%). At the same time, the profile model for both groups indicated lower levels of body fat, aligning with the “low” zone.

Table 7. Body Fat% Classification Scale in Male PE students adapted to (Omron Healthcare, 2017)

Body Fat%	**- (low)**	**0 (normal)**	**+ (high)**	**++ (very high)**
Age (18 – 39) Model	**<8.0 %**	**8.0 - 19.9 %**	**20.0 - 24.9 %**	**≥ 25.0 %**
	Abs. (f) / Rel. (%)	abs. (f) / rel. (%)	abs. (f) / rel. (%)	abs. (f) / rel. (%)
Gazivode-1	**1/28 (3.57%)**	**14/28 (50.0%)**	**8/28 (28.57%)**	**6/28 (21.43%)**
Korinos-2	**1/28 (3.57%)**	**13/28 (46.43%)**	**4/28 (14.28%)**	**10/28 (35.71%)**

Source: Authors research

3.2.3. Relative skeletal muscle mass (SkM%). Skeletal muscle mass percentage (SkM%) in male PE Students, crucial for energy efficiency and lifestyle vitality, was assessed and is shown in Table 5, Segment 2. The study found no significant difference between the two intervention groups. They showed a broad range of relative SkM% within four classification levels (Table 6). The Role model student had an average of 39.6% in G-1, falling into the + (high) zone, and a MAX value of 45.7%, falling into the ++ (very high) zone. Notably, 57.14% of male PESs exceeded the average of relative SkM% values. Conversely, the Korinos-2 intervention Model of male PES demonstrated higher homogeneity in SkM%, with most results clustering within two middle classes. The MAX and role model values distribution for K-1 male PES were in the ++ (very high) zone. In contrast, their MIN (26.1%) and average values (38.85%) are in the low and standard range, according to Omron Healthcare’s classification (2017). This data underscores the model-based differences in relative skeletal muscle composition among active PE students. According to the Skeletal Muscle Mass Percentage Classification of Results in males, the role model value of (45.7%) BF% belongs to the ++ (very high) zone (Table 8).

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Table 8. Skeletal Muscle Mass Percentage Classification of Results (Omron 2017, classification scale)

“Model”	Scale	- (low)	0 (normal)	+ (high)	++ (very high)
Age (18-39)	**N=56**	**< 33.3%**	**33.3-39.3%**	**39.4 – 44.0%**	**> 44.1%**
Gazivode-1	Abs/Rel. frq.	3/28 (10.71%)	9/28 (32.14%)	12/28 (42.86%)	4/28 (14.28%)
Korinos-2	Abs/Rel. frq.	4/28 (14.28%)	10/28 (35.71%)	9/28 (32.14%)	5/28 (17.86%)

Source: Authors research

3.2.4. Resting Metabolism Rate (RMR). Table 9 illustrates (RMR) in (kcal) for both groups of PE Students. RMR values in Gazivode-1 varied moderately, distributed across three classes (low, standard, high) with a confidence interval of 286 kcal. The role model in the G-1 Group recorded a value of 1633 kCal in the low zone. These findings underscore distinct Model-based differences in metabolic rates among physically active PE students (Table 9).

Table 9. Resting Metabolism Rate Classification – arranged by the authors

RMR/kCal	Age (years)	- (low)	0 (standard)	+ (high)	++ (very high)
Model	**18-39**	**<1821**	**1821-1960**	**1961-2100**	**>2100**
Gazivode-1	**Abs. (f) / Rel. (%)**	16/28 (57.14%)	8/28 (28.57%)	4/28 (14.28%)	(-)
Korinos-2		12/28 (42.86%)	10/28 (35.71%)	2/28 (7.14%)	4/28 (14.28%)

Source: Authors research

3.2.5. Visceral Fat Levels (ViscF). The distribution of results in male PES was according to the adopted Omron classification scale (Table 10) to provide insight into possible significant differences between the two intervention groups of male PES regarding the “Model.” ViscF levels in the G-1 group show significant within-group differences, with most results falling within the standard classification level. In contrast, PES in the K-2 group displays more heterogeneity, indicating a broad range of 12 levels, underscoring the diversity in this parameter. This variability highlights the complex interplay of genetic, environmental, and lifestyle factors influencing PES’s body composition and health status. In the profile model, students in both groups have a low level (1).

Table 10. Visceral fat level classification (Omron Healthcare, 2017)

Visceral fat level	Classification level	Gazivode-1 (N = 28)	Korinos (N = 28)
1 - 4	- (low)	11/28 (39.28%)	9/28 (32.14%)
5 - 9	0 (normal)	15/28 (53.57 %)	10/28 (35.71%)
10 - 14	+ (high)	2/28 (7.14%)	(9/28 (32.14%)
15 - 30	++ (very high)	(-)	(-)

Source: Authors research

Body composition results, excluding ViscF level, exhibited expected intra-group variations, suggesting influences of genetic factors, environmental conditions, and lifestyle choices. Low percentages of higher body fat (BF%) and skeletal muscle mass (SkM%) imply heterogeneity in the student population, potentially stemming from varied sports orientation, physical activity levels, nutritional habits, and FSPE entry criteria. This information suggests that FSPE enrollment criteria might be more inclusive, accommodating general population individuals and non-athletes (Purenović-Ivanaović et al., 2013).

3.3. Health Status – Segment 3

The study’s design involved closely monitoring physiological parameters to assess the ‘functional status’ of male PES. Key cardiovascular risk factors measured included Systolic and Diastolic Blood Pressure (BP) parameters, Resting Heart Rate (PULSE), and waist circumference (W-C).

Table 11. Baseline statistics parameters of S3 in Male PES regarding "Models" (Gazivode-1/ Korinos-2)

• **Health status – Segment 3 (N=56)**

Variables	Groups	Mean±SD	Min – Max	Range		Co.var.%	Sk	Ku	*p*
(10) SYS (mmHg)	G-1	129.54±30.56	90.0 – 211.0	117.68	141.39	23.59	-1.53	8.33	.094
	K-2	133.04±13.71	102.0 – 170.0	127.72	138.35	10.31	.17	.71	.861
(11) DIA (mmHg)	G-1	76.36±17.97	54.0 – 136.0	69.39	83.33	23.53	1.80	3.25	.176
	K-2	75.75±11.86	52.0 - 99.0	71.15	80.35	15.66	-.20	-.60	.969
(12) RHR (bpm)	G-1	76.36±17.97	54.0 – 136.0	69.39	83.33	23.53	1.80	3.25	.176
	K-2	75.75±11.86	52.0 - 99.0	71.15	80.35	15.66	-.20	-.60	.969
(13) W-C (cm)	G-1	85.36±9.48	62.0 –102.0	81.68	89.03	11.10	-.33	-.11	.657
	K-2	88.57±11.99	67.0 – 113.0	83.92	93.22	13.53	.36	-.41	.620

Legend: G-1/Gazivode Model, **K-2**/Korinos Model, **Mean**–Average value, **SD**–Standard deviation, **Min–Max**–values, **Range** – confidence interval, **Co.var%**–Coefficient of variation, **Sk-Skeewnes, Ku-Kurtosis**, p probability; **SYS**–Blood Pressure, **DIA**–Blood Pressure, **RHR**–resting heart rate, **bpm**–beep/per minute, **W-C** - Waist Circumference, *absence of normal distribution (level p<0.05)
Source: Authors research

Resting Heart Rate (RHR), a vital parameter in sports medicine, is efficiently measured in various states: at rest, during exercise, and in recovery phases. It provides direct insights into cardiovascular efficiency.

Blood Pressure (BP), comprising Systolic (SYSBP) and Diastolic (DIABP), is crucial for evaluating cardiovascular function and measuring the force exerted by circulating blood on arterial walls.

These measurements are pivotal in identifying potential cardiovascular anomalies, such as arrhythmias characterized by irregular heart rhythms (Table 11, Segment 3).

In the education G-1 group, male PES exhibited a lower range of average RHR (76.36 bpm), with diverse results ranging from bradycardia (17.86%) to tachycardia (3.57%). The role model indicated an RHR of 84 beats/min.

In the intervention K-2, male PES exhibited a standard range of mean RHR (75.75 bpm), with diverse results ranging from normotension (67.86%) to tachycardia (3.57%). This variation demonstrates a broad spectrum of cardiovascular responses, from well-trained athletic conditions to potential arrhythmias, reflecting the diverse fitness levels within the Group.

The role model indicated an RHR of 73 beats/min, aligning with higher cardiovascular exertion. This notice may be about past athletic involvement or reduced physical activity levels. The presence of bradycardia in an athletic student highlights the common phenomenon of "sports heart" among athletes, particularly in endurance sports (Doyen et al., 2019; Bahrain et al., 2016).

Bradycardia and tachycardia among the student population indicate "sports heart," a condition arising from long-term athletic training (Prior & La Gerche, 2012).

However, the variation in RHR could reflect transient states such as emotional stress, dehydration, or even measurement inaccuracies (Padwal et al., 2001) rather than solely indicating cardiovascular fitness. This fact underscores the sensitivity of RHR as a parameter and its variability based on numerous influencing factors (Popović et al., 2020; Purenović-Ivanović et al., 2022).

The study adhered to WHO's (2002) standards for blood pressure assessment, ensuring a comprehensive evaluation regardless of different "Models" of the Summer Outdoor Educational Settings (Table 13).

Table 12. Waist Circumference (W-C) distribution within four Classification levels – Age (18-39)

W-C (cm)	Classification	- (low)	0 (medium)	+ (high)	++ (very high)
Model	**Levels**	**80-93**	**94-107**	**108-121**	**122-135**
Gazivode-1	**Abs. (f) / Rel. (%)**	23/28 (82.14%)	5/28 (17.86%)	(-)	(-)
Korinos-2		19/28) (67.86%)	7/28 (25.00%	2/28 (7.14%)	(-)

Source: Authors research

Table 13. Functional/Health Status Classification –arranged by the authors

Health status / Age 18-39	Models	Systolic BP (f/%)	DIA-BP (f/%)	RHR/bpm
Low (hypotension)		**≤ 90**	**< 60**	**< 60**
	G-1	(-)	2/28 (7.14%)	5/28 (17.86%)
	K-2	(-)	4/28 (14.28%)	(-)
Normal (normotension)		**≤91-120**	**≤ 61-80**	**60 - 80**
	G-1	4/28 (14.28%)	20/28 (71.43%)	10/28 (35.71%)
	K-2	5/28 (17.86%)	12/28 (42.86%)	19/28 (67.86%)
Elevated		**121 – 129**	**81 – 89**	**81 - 100**
	G-1	11/28 (39.28%)	3/28 (10.71%)	12/28 (42.86%)
	K-2	5/28 (17.86%)	10/28 (35.71%)	8/28 (28.57%)
Low (hypertension, stage 1)		**130 – 139**	**90 – 99**	**> 100**
	G-1	5 /28 (17.86%)	1/28 (3.57%)	1/28 (3.57%)
	K-2	11/28 (39.28%)	2/28 (7.14%)	1/28 (3.57%)
Moderate (hypertension, stage 2)		**140 – 159**	**100–119**	
	G-1	4/28 (14.28%)	2/28 (7.14%)	
	K-2	6/28 (21.43%)	(-)	
High (hypertension, stage 3)		**≥ 160**	**≥ 120**	
	G-1	3/28 (10.71%)	(-)	
	K-2	1/28 (3.57%)	(-)	

Source: Authors research

4. DISCUSSION

Our study revealed heterogeneity in Age, with a significant age range indicating varied generational affiliations. In body height (BH), male students showed a broad range and notable variability. Body weight (BW) findings for male students indicated substantial variability, with a significant percentage showing above-average weights.

The study also underlined the genetic and environmental influences on body composition, notably in BMI. Both Groups exhibited a balanced distribution of BMI, with only the maximum values indicating obesity. The role model’s BMI was notably lower, falling into the low obesity category per the OMRON scale. These findings offer insightful implications for sports and physical education students’ physical development and health status. This discussion explores BMI and body composition variations among FSPE students. Comparative global data reveal that over 50% of subjects of both sexes have standard BMI values, with a smaller percentage classified as overweight (WHO, 2002). Notably, non-athletes tend to be more overweight than athletes (Bubanj et al., 2013; Malina et al., 2011). Body fat estimations in male PE students vary based on measurement methods, suggesting a need for methodological consistency. Relative body fat (BF%) analysis shows significant variations within the Groups, with a substantial portion classified in the very high zone of BF%. The situation differs regarding relative skeletal muscle mass (Sk%). Gazovode-1 Group exhibits a more homogeneous skeletal muscle mass distribution than the K-2 Group of males, indicating a variance in physical fitness and nutritional status (Bubanj et al., 2013; Popović, Popović, Popović, 2020). Visceral fat levels in males show only significant within-group differences, with most results falling within the normal classification range (Omron Healthcare, 2017).

Basal metabolism rate (RMR) results in male PES also indicate a broad range, underscoring the diversity in this physiological parameter. This variability highlights the complex interplay of genetic, environmental, and lifestyle factors influencing body composition and health status in FSPE students. Adolescent assessment of Resting Metabolic Rate (RMR) presents challenges. The current study found that male students’ mean RMR slightly exceeds expected values for their Age, aligning with Bubanj et al. (2013) and Popović et al. (2024).

5. CONCLUSIONS

This study has a cross-sectional, experimental design focused on PE students in their first and third study years during their compulsory Summer Outdoor Activities courses at Gazivode Lake (G-1) and the Aegean Sea, Korinos (K-2). The primary objective was to analyze selected parameters of male Anthropological Status and explore Model-related differences across parameters within three segments. Key findings include Age and Anthropometry: The Kolmogorov-Smirnov test analysis revealed a non-homogeneous AGE distribution among male PES, indicating a lack of normalcy in age-related results. Body Composition was assessed using bioimpedance devices. Only numerical “Model” differences were observed in all parameters. Health Status with Cardiorespiratory risk factors, including Systolic and Diastolic Blood Pressure, Resting Heart Rate, and Waist Circumference, were found to be normally distributed, with no significant “Model” differences identified. The study underscores the necessity of contextualizing findings within the specific demographic of the first- and third-year PE Students at the University of Pristine, emphasizing that generalizations should be cautiously applied only to similar cohorts.

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