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G Funds Collection

Wellness in male and female versus judo training (a pilot study)

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Summary

Background: The aim of this paper was to verify the hypothesis that the level of wellness in the men and the women was different. Furthermore, the persons who practise judo are more likely to enjoy a higher sense of wellness than those abstaining from sports.

Material/Methods: This research survey by means of the questionnaire called the :Wellness Inventory" was carried out among young people (n=53). There were involved men (M; n=30) and women (W; n=23) included judoists (J; n=24) from Wisla Club and respondents abstaining sport (Not; n=29) studying teacher's specialities at the Academy of Physical Education in Krakow. We used an ANOVA with the inclusion of the gender factors and participation in judo.

Results: The inclusion of the gender factor revealed a medium effect (Cohen's d) only on the social dimension of wellness (in the W group was greater than in the M group). It also was proved that judo training contributes to the intensification of a sense of wellness in the general wellness and physical dimension, but not psychological and social dimensions, and the spiritual dimension.

Conclusions: We have drawn a conclusion concerning the optimisation of these elements of lifestyle on which depends the improvement of the level of psychological, social, and spiritual dimensions of wellness in judoists.

Key words: **judo • male • female • wellness**

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Background

In the training system of competitive sport, physical exercises are treated as training resources and methods preparing the athlete to participate in competitions. At the same time, the resources used for biological recovery are applied to accelerate natural recreational processes [1]. It can be assumed that the attaining of high achievements in sports is connected with some improvement of competitors' moods and the intensity of their sense of wellness. This is at variance with a huge accident risk, which is created by the practice of judo. The greater the frequency of training sessions a week, the greater the risk of traumatic injuries to the body [2]. Students frequently take dietary supplements on their own account during their therapeutic treatments in order to accelerate recovery [3]. As a consequence, judo competitors' motivations, their aspirations to conserve health and enhance the level of physical fitness turn out to be a necessity, that is, more than once, more important than the winning of medals and the obtaining of their diplomas [4]. It is assumed that a person undertaking regular physical activities will lead a healthy lifestyle, will achieve a high level of indices indicating good health, the correct BMI and body composition, emotional self-control, self-acceptance, good relations with other people, and will also appreciate the natural environment wherein he or she lives, etc. In the theory of physical education and sport, the following correlations are often considered as they occur between gender, health-related indices, physical activities and motor efficiency. When thinking and doing, the following paradigm is true, namely, that the adequately high value of health-related indices at a given age is indispensable to begin physical activities, which, in turn, contributes to an increase in motor efficiency and to a flourishing state of health. At the same time, one has to bear in mind that physical fitness, health and wellness are not only influenced by physical activities, but also heredity, lifestyle or behaviour, environmental factors and individual traits. These complicated correlations are illustrated in Figure 1.

Wellness is defined as a multidimensional state of being, describing the existence of positive health in an as exemplified by quality of life and a sense of well being. This state has many dimensions, but the following are mentioned most often: physical, social, intellectual, emotional and spiritual. The notion of wellness coincides with health. Individual dimensions of wellness do not appear separately, but they mutually influence each other. Likewise, such factors, as healthy behaviours and a healthy environment influence every dimension of wellness separately and them all together [5].

It is assumed that a better index of wellness appears not only when the grand mean is higher, but also when the differences between the mean values of individual dimensions are not great.

The aim of the present study is to verify the main hypothesis the level of wellness in women would be different from that in men. Furthermore, the persons who practise judo are more likely to enjoy a higher sense of wellness than those abstaining from sports.

Material and Methods

This research involved men (M; n=30) and women (W; n=23) included judoists (J; n=24) from Wisla Club and respondents abstaining sport (Not; n=29) studying teacher's specialities at the Academy of Physical Education in Krakow. The age in the groups compared was similar. It amounted from 13 to 22 years in the M Group (17.9 years on mean value), from 14 to 21 years in the W Group (18.4 years on mean value). Twenty four persons (group 1), 53 surveyed subjects out of the total number, practised judo, whereas 29 persons (group 0) did not participate in this form of physical activities. The training experience in Group 1 ranged from of 1 year to 11 years (6.1 years on mean value). The frequency of participation in sports was lower in the women (30.4%) than in the case of men (56.7%).

According to the commonly applied criteria of the BMI classification, the women more often (8.7%) than the men (0.0%) were characterized by underweight (BMI <18.5 kg/m^2), in the case of overweight (BMI ≥25 kg/m^2) whereas was inversed (26.7: 0.0%).

The persons practising judo had a slightly higher of body mass index from 19.3 to 36.5, BMI on mean value =23.7 kg/m^2, while those abstaining from sports 16.9 to 29.5; BMI on mean value =22.1 kg/m^2. Among the surveyed subjects, there were individuals with underweight (in groups 0 and 1 6.9% and 0.0% respectively%), with normal weight (79.3 and 83.3%) and with overweight (13.8 and 16.7%).

We used a Polish version of the survey questionnaire called "Wellness Inventory" [6], which embraced four dimensions of wellness: physical, psychological, social and spiritual. Each part of the questionnaire contained five different statements, on which the respondents took their stance, expressing their answers according to a six-point scale with the choice preset from 0 – no, never to 6 points – almost always. The final part included a short note on the respon-

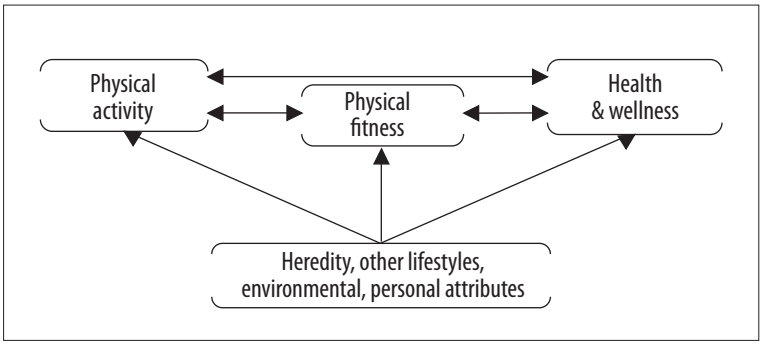

Figure 1. Comprehensive correlations between physical activities, physical fitness, health, wellness and other factors [5].

Table 1. The comparison of the mean values of wellness in groups formed according to gender and participation in judo.

Variables*	Gender		F;p;d	Judo Practice		F; p; d
	W (n=23)	M (n=30)		0 (n=29)	1 (n=24)	
Total (pts)	3.8(0.40)	3.7(0.50)	0.97; =0.330	3.6(0.47)	3.9(0.39)	6.60;<0.05; 0.72
Ph (pts)	3.9(0.68)	3.7(0.69)	0.39; =0.536	3.4(0.63)	4.2(0.50)	22.90;<0.001; 1.35
Ps (pts)	3.5(0.63)	3.8(0,60)	3.28; =0.076;	3.6(0.59)	3.7(0.66)	0.74;=0.393
So (pts)	4.2(0.56)	3.7(0.71)	5.63;<0.05; 0.67	3.8(0.74)	4.1(0.55)	3.45;=0.069
Sp (pts)	3.8(0.45)	3.5(0.59)	3.21; =0.079	3.6(0.58)	3.6(0.51)	0.00;=0.999

* W – women, M – men; 0 – abstaining from sports, 1 – practising judo; Total – general points for wellness; Ph – physical dimension, Ps – psychological dimension; So – social dimension, Sp – spiritual dimension.

Table 2. The results of the ANOVA analysis of the four dimensions of wellness in the group of women abstaining from sports (W0).

Source	Sum of squares	Df	Mean square	F-Ratio	P-Value
Between groups	2.7025	3	0.900833	3.06	0.0350
Within groups	17.675	60	0.294583		
Total (Corr.)	20.3775	63			

dent that contained the following data such, as: age, gender, and participation in sports.

During the analysis of the collected material, we computed the basic descriptive statistics concerning wellness in its total aspect and each dimension of wellness separately. An ANOVA analysis was carried out, in which we examined the influence of the factors of gender and participation in sports on the level of wellness in its total aspect and also individual dimensions of wellness. Whenever we found that the influence of a given factor was statistically significant, we calculated the magnitude of that effect according to Cohen's d-formula [7], in addition to which we adopted the interpretation proposed by Thalheimer and Cook [8]: negligible effect (⩾–0.15 and <0.15), small effect (⩾0.15 and <0.40), medium effect (⩾0.40 and <0.75), large effect (⩾0.75 and <1.10) very large effect (⩾1.10 and <1.45), huge effect >1.45. Additionally, we carried out an ANOVA in the subgroups of women abstaining from judo (W0; n=16), women practising sports (W1; n=7), men abstaining from sports (M0; n=13) and men practising sports (M1; n=17).

During the ANOVA analysis, we verified differences between individual dimensions of wellness. When significant statistic differences were found, we identified such pairs of mean values of dimensions of wellness by means of Tukey's repetitive comparison test. In order to confirm the results, we used an analysis of the mean values of individual dimensions of wellness in comparison with the grand mean value; i. e. the ANOM method. All calculations were performed by means of STAGRAPHICS program v. 5.1.

Results

Table 1 juxtaposes the results of the comparison of the mean values of wellness in groups formed according to gender and participation in judo. The inclusion of the gender factor revealed a medium effect (Cohen's d) only on the social dimension of wellness (in the W group > in the M group). Participation in judo factor revealed medium effect on the general wellness (in the in group 1 > group 0). Simultaneously the effect of participation in judo on the level of physical wellness was very large (in group 1 > in group 0). Furthermore, on the basis of the ANOVA method, it was showed that in the four subgroups that had been formed both according to the criterion of gender and participation in sports (W0,W1, M0, M1) there appeared statistically significant differences in individual dimensions of wellness.

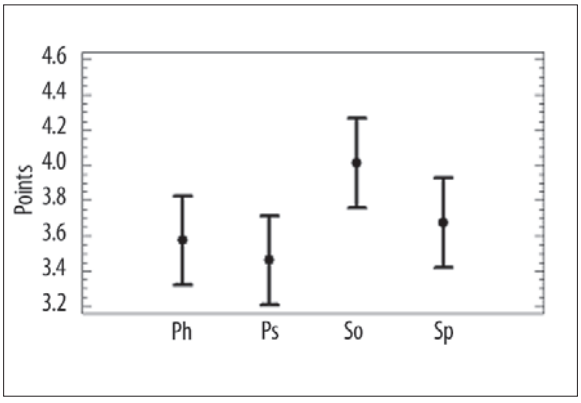

Figure 2. Arrangement of mean values of dimensions of wellness (Ph – physical; Ps – psychological; So – social; Sp – spiritual) in the subgroup of women abstaining from sports (W0).

In the women abstaining from judo (W0) the values of the four dimensions of wellness were significantly different (Table 2, Figure 2).

Table 3. The results of the ANOVA analysis of the four dimensions of wellness in the group of women practising judo (W1).

Source	Sum of squares	Df	Mean square	F-Ratio	P-Value
Between groups	4.08429	3	1.36143	4.92	0.0084
Within groups/	6.64	24	0.276667		
Total (Corr)	10.7243	27			

Table 4. The results of the ANOVA analysis of the four dimensions of wellness in the group of men abstaining from sports (M0).

Source	Sum of squares	Df	Mean square	F-Ratio	P-Value
Between groups	1.66462	3	0.554872	1.09	0.3625
Within groups	24.4431	48	0.509231		
Total (Corr.)	26.1070	51			

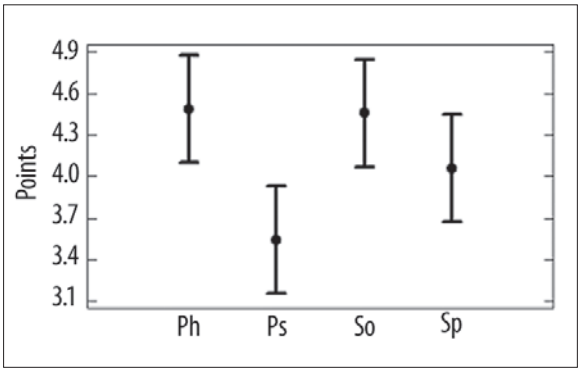

Figure 3. Arrangement of mean values of dimensions of wellness (Ph – physical; Ps – psychological; So – social; Sp – spiritual) in the subgroup of women practising judo (W1).

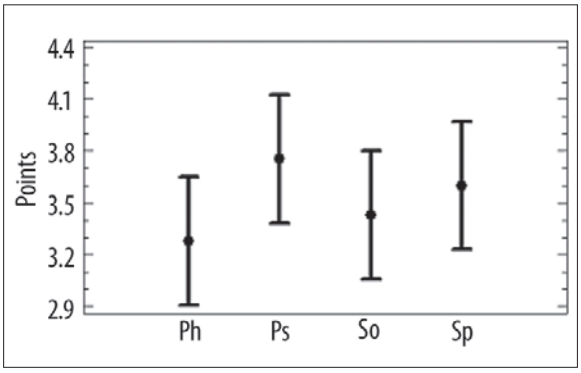

Figure 4. Arrangement of mean values of dimensions of wellness (Ph – physical; Ps – psychological; So – social; Sp – spiritual) in the subgroup of men abstaining from sports (M0).

The mean value of social wellness prevailed significantly over that of psychological wellness. The low rank was attributed to physical wellness which has similar level as psychological wellness, and spiritual dimensions. The mean values and Tukey's 95% HSD intervals are presented in Figure 2.

As a consequence of the comparison of the mean values of individual dimensions of wellness in the women practising sports (W1) – similarly to the previous subgroup (W0) – we found statistically significant differences (Table 3, Figure 3).

Tukey's tests captured a prevalence of the mean value of physical and social wellness over psychological wellness. Physical and social wellness formed a homogeneous group with spiritual wellness. Among the men abstaining from sports (M0) the differences between the mean values of dimensions of wellness were not statistically significant (Table 4, Figure 4).

The mean value level of the physical, social and spiritual dimensions was similar to the mean value of the psychological dimension (Ps), forming a homogeneous group with it (Figure 4).

Tukey's test showed not statistically significant differences between all mean values. In this subgroup we noticed an balance between the level of physical dimension with the other three dimensions of wellness. The men practising sports (M1) were characterised by a statistically significant diversification of the mean value values of the four dimensions of wellness (Table 5, Figure 5).

The mean values of physical dimension, psychological dimension, and social dimension formed a homogeneous group in their case. The hierarchy of components of wellness was dominated by physical dimension, which was not different from the mean value of psychological and social wellness (Tukey's test). As it can be seen, in a one case, the comparison of the mean values of dimensions, i. e. physical dimension > spiritual one HSD Tukey's intervals do not overlap, indicating significant differences. The mean values of physical dimension, psychological dimension and social dimension were similar to each other.

The ANOM analysis allowed to represent the diversification of mean values of dimensions of wellness in comparison with the grand mean value (see the central line, CL). This analysis (Figure 6) indicates that against the background

Table 5. The results of the ANOVA analysis of the four dimensions of wellness in the group of men practising judo (M 1).

Source	Sum of squares	Df	Mean square	F-Ratio	P-Value
Between groups	3.49	3	1.16	4.16	0.0094
Within groups	17.89	64	0.28		
Total (Corr.)	21.38	67			

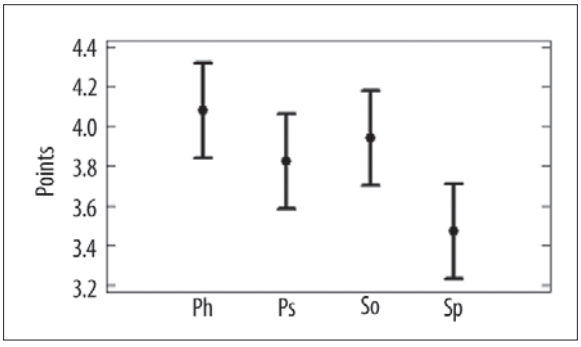

Figure 5. Arrangement of mean values of dimensions of wellness (Ph – physical; Ps – psychological; So – social; Sp – spiritual) in the subgroup of men practising sports (M1).

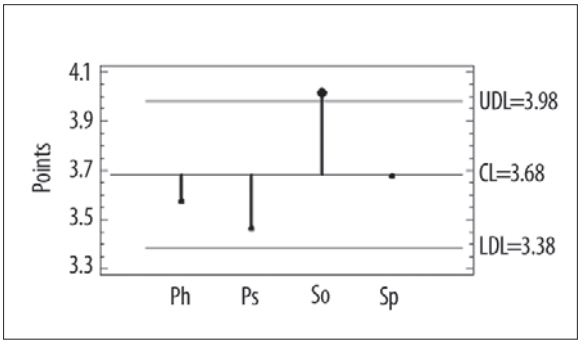

Figure 6. Arrangement of mean values of dimensions of wellness (Ph – physical; Ps – psychological; So – social; Sp – spiritual) in comparison with the grand mean value in the subgroup of women abstaining from sports (W0).

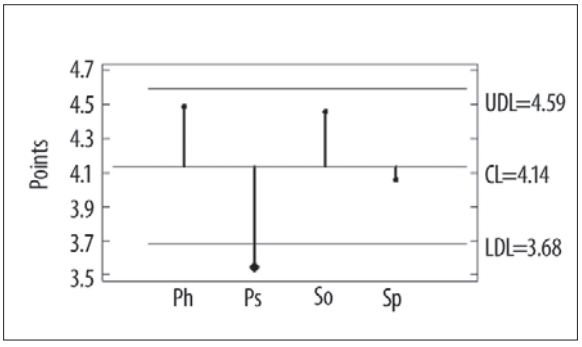

Figure 7. Arrangement of mean values of dimensions of wellness (Ph – physical; Ps – psychological; So – social; Sp – spiritual) in the subgroup of women practising sports (W1).

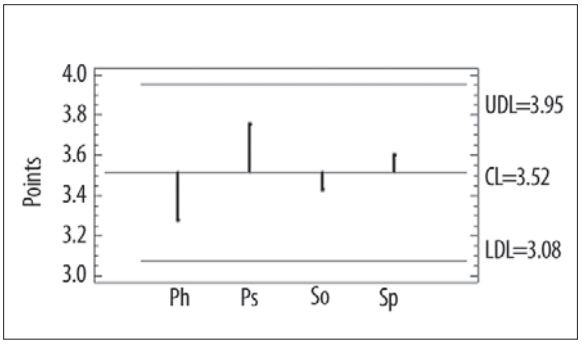

Figure 8. Arrangement of mean values of dimensions of wellness (Ph – physical; Ps – psychological; So – social; Sp – spiritual) in the subgroup of men abstaining from sports (M0).

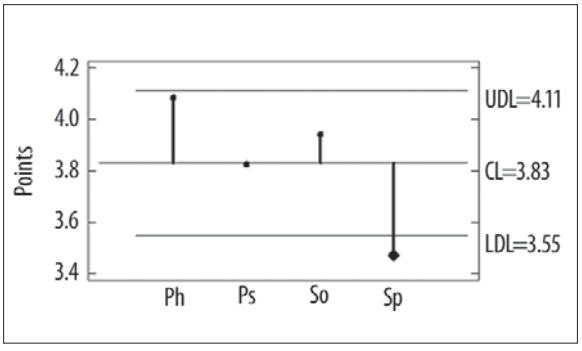

Figure 9. Arrangement of mean values of dimensions of wellness (Ph – physical; Ps – psychological; So – social; Sp – spiritual) in the subgroup of men practising sports (M1).

of the mean value of wellness in the subgroup W0 (grand mean =3.7 points) we noticed a significantly higher level of social wellness "So" (4.0 points). The physical and psychological, and spiritual dimensions were situated between to the lower (LDL) and the upper (UDL) decision-related limit (3.38-3.98 points).

The women, who practised judo (W1), during this research (Figure 7), assessed their physical wellness (4.5 points) and spiritual wellness (4.1 points), and social wellness (4.5) at the same level of the grand mean value (4.14 points), while that of psychological wellness (3.5 points) – was below the pre-set 95% of interval (3.68–4.58 points).

In the subgroup of M0 a profile of wellness dimensions (Figure 8) was very good balanced near grand mean (3.52 points). In the subgroup M1 (Figure 9) – against the background of the grand mean value (3.83 points) – we found statistically significant differences in relation to spiritual wellness (3.5 points).

Discussion

On the basis of our own research conducted in the circles of the young people practising judo and studying physical education teacher's speciality/abstaining from sport, we verified the main hypothesis and we found that the level of wellness in the men and the women was different only in social dimension. It also was proved that judo training contributes to the intensification of the sense of wellness in the physical dimension, and total wellness. A sense of social wellness prevailed among the surveyed students, who not practising any sports. The ANOM analysis confirmed a greater equilibrium of individual dimensions of wellness in the group of persons who abstaining from sports in comparison with those practising sports. Physical activities can be a remedy against the stress that is generated by teacher's specialities studies.

The results of our research survey indicate that the importance of the social dimension of wellness was the highest one in women group, and psychological dimension in men group. The survey conducted at the Medical School indicate that coping with the requirements imposed by the overloaded instruction syllabi puts the female students in a very difficult situation. Conversations with their female friends turned out to be the most useful mechanism adopted by them to cope with stress [9].

Conclusion

This survey conducted among those students and judo competitors allow us to express the following conclusions:

1. The persons practising judo – as compared with those abstaining from sports – were found to enjoy a higher level of wellness and higher values of physical dimension, greater balance between its dimensions: physical, psychological and social one.
2. On the basis of their detailed answers concerning the physical dimension of wellness, being essential regardless of gender, it was discovered its: importance should be increased by encouraging the respondents to eat meals more regularly (not excessive ones) rich in nutrients, consisting of fresh foodstuffs and wholesome snacks; performing physical exercises at least 3–4 times a week (this refers to those abstaining from sports – subgroups W0 and M0); taking more care for their own physical health by systematic medical check-ups; avoiding risky activities that are hazardous to health; and have a 7–9 hour-long sleep every night.
3. In judoists a crucial is the optimisation of these elements of lifestyle on which depends the improvement of the level of psychological, social, and spiritual dimensions of wellness.

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