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The Influence of Physical Activity on Students' Psychological Well-Being

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Abstract: Purpose: study of influence of physical activity to person's psychological well-being.
Material: The study involved 198 respondents aged of 18 to 22 years, including 89 cadets of the Military Institute and 109 civilian students of Taras Shevchenko National University of Kyiv. The Riff's Scale of Psychological Well-Being (adapted by T.D. Shevelenkova and T.P. Fesenko) and Danilchenko's questionnaire "Subjective social well-being" were used. Results: The discuss influence of physical activity on students' psychological and subjective social well-being. The performed study found that students who do physical exercises periodically have the highest psychological well-being. High psychological well-being was found at the group of students who are systematically engaged in physical activities. Significant differences were not found between the three groups of students (divided by the periodicity of their physical activity) as for their subjective social well-being. The higher scores were shown by students engaged in team-based physical activities in comparison with those who prefer individual forms. The article presents recommendations for the use of psycho diagnostic instruments, depending on a research purpose and the specific of examinees' activities.
Conclusions: The students who periodically engaged in physical activities have the highest psychological well-being; they show higher subjective sense of happiness, more content with their lives and demonstrate higher satisfaction with their social relationships.

Keywords: *Physical activity; team and individual physical activity; psychological well-being; subjective social well-being.*

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1. Introduction

Currently, the problem of an individual's psychological well-being is discussed often in the Western psychological science.

The basis for understanding of psychological well-being as a complex concept was laid by C. Riff (1989; 1995), who distinguished its six main components:

- Self-Acceptance (positive assessment of oneself and one's life);
- Positive relations with others (the ability to empathize and to be open to communications);
- Autonomy (the ability to be independent, not to be afraid to oppose opinions of the majority);
- Environmental mastery (successful mastery of various activities, the ability to achieve what is desired, to overcome difficulties);
- Purpose in life (existing life goals, which creates a sense of awareness on existence);
- Personal growth (the desire to be developed, to learn, to reveal something new).

The modern studies of psychological well-being and physical activity in young people are shown the regular physical activity appears to be an essential ingredient for human well-being (Biddle & Asare, 2011, Martinez et al., 2012; Min et al., 2017).

Psychological well-being in the works of national scientists is defined as the systematic unity of a person's optimal psychological qualities and states: personal maturity, self-actualization, harmony of personality and subjective well-being (Korobeynikov, 2001; Casas, 2011).

Subjective social well-being is an integrated social-psychological phenomenon reflecting awareness and assessment of a person's social life on the basis of correlations between the person's level of aspirations and satisfaction of his/her social needs, so the person determines his/her social life as optimal and feels pleasantness (Casas, 2011).

Discussions about links between the concepts of "subjective social" and "psychological" well-being indicate that their interpretation is most often dependent on an author's concept. In particular, some researchers believe that subjective social well-being is a component of psychological well-being (Javorska & Filonenko, 2014; Serdiuk, 2017), others regard subjective social well-being as an independent phenomenon (Benko 2015), or believe that these concepts are synonymous (Zhuravlev & Yurevich, 2014; Kokun et al., 2019).

The study of psychological well-being is accompanied by searches for factors influencing it. They include:

- personal traits: extraversion, optimistic attributive style and emotional stability (Rigby & Huebner, 2005);
- academic success (Chang et al., 2003);
- achievements (Suldo et al., 2008);
- life circumstances, including social support (Gilman et al., 2006; Suldo et al., 2008);
- social-psychological factors: safety and comfort of the home environment; an atmosphere of love in family characterized by joys, closeness and harmony; openness and trust in interpersonal relationships; parental control and involvement in children's lives; a sense of importance in family; family support for children's relations with other people and activities outside their family (Joronen & Åstedt-Kurki 2005; Kokun et al., 2018).

At the same time, Deci E. L. and Ryan R. (2000) note a strong link between physical health and psychological well-being; illness often causes functional limitations that reduce life satisfaction. Therefore, subjective resilience correlates with physical fitness.

Physical activity is a leading factor of human health, as it aims to stimulate the body's defence forces and to increase the health potential. Optimal physical activity is beneficial for human health, but insufficient physical activity is cause of many disorders and premature aging. Under physical exercises, a person's body structure and work of all organs and systems are improved; their efficiency is increased (Korobeynikov et al., 2019).

Purpose: study of influence of physical activity to person's psychological well-being.

2. Materials and methods

The study involved 198 respondents aged of 18 to 22 years, including 89 cadets of the Military Institute and 109 civilian students of Taras Shevchenko National University of Kyiv. The group of students was identical for age and academic level and were divided on three groups according to level of physical activity:

- group 1 - students not doing physical exercises (23%);
- group 2 - students exercising from time to time (49%);
- group 3 – student engaged in physical activities systematically (28%).

To determine the characteristics of students' psychological well-being, depending on frequency of physical exercising, we used:

- Riff's Scale of Psychological Well-Being (adapted by T.D. Shevelenkova and T.P. Fesenko as cited by Ryff, 1995);
- Danilchenko's questionnaire "Subjective social well-being" (Danilchenko, 2017). This test is an analogical of methods which used Casas F. (2011) in study of Subjective social indicators and child and adolescent well-being.

Subjective social well-being reflects a person's assessment of his social functioning. An important issue is who or what should ensure such well-being (the external environment or the individual), that is, where is the focus of responsibility for the result of social interaction. Already in the very term "well-being" the external source of good is clearly fixed. It is interesting that "well-being" (good being) indicates the result of the functioning of the individual, and not on his attribution. The Ukrainian equivalent of "well-being" is more concerned with the material support of a person (economic well-being). The question of the relationship between external and internal causality in social interaction is solved in the social sciences in various ways.

In European and American culture, individualism is postulated (the idea of "self-made"). The autonomy and ability of an individual to organize his life in such a way that it suits it in full is appreciated. A negative factor in the model of the external source of well-being is the inability of the community to ensure the satisfaction of individual needs through their constant growth.

Based on the foregoing, we assumed that three models of subjective social well-being are exactly probable: balanced, dependent and self-determined.

The balance (exchange) model assumes a constant exchange with the social environment (individuals, groups, communities) in the form of a social contribution. The balanced model is based on the idea of the existence of social justice, "retribution" for certain actions.

The dependent model is based on a person's perception of an external source of wealth. At the interpersonal level, this model manifests itself in extreme dependence in Ukraine on parents of even adult children (which rely on the constant support and assistance of the parental family), a rather wide spread of infertility and dependence on public opinion (low level of autonomy). And since it is difficult to answer diverse social beliefs about success and well-being, we can assume that the level of satisfaction with social functioning is low. A self-determined (independent) model assumes an internal source of responsibility for the results of social interaction. Its main

characteristics are socially positive activity, enterprise, gratitude for the positive actions addressed to oneself, charity (the term "kindness" is used in English literature - the creation of good deeds).

The "Riff's Scale of Psychological Well-Being" traditional used for determination of life course and socioeconomic correlates of well-being. Also biological correlates (cardiovascular, neuroendocrine, immune) of psychological well-being are reflects the living a life rich in purpose and meaning, continued growth, and quality (Ryff & Singer, 2008).

The following methods were used for statistical processing of the obtained data: descriptive statistics, the Mann-Whitney U test (for two samples), one-way ANOVA (for three or more samples). The empirical data were processed using the SPSS 18.0 software.

3. Results

By means of one-way ANOVA and subsequent use of a posteriori multiple comparison of values (Sheff's table), we determined that there is a statistically significant difference for student groups examined with Riff's Scale of Psychological Well-Being (Ryff, 1995). In particular, these differences exist for three scales: "Positive relations with others", "Purpose in life" and "Psychological well-Being in general" (Table 1).

Table 1. Indicators of students' psychological well-being depending on frequency of their physical activity

Scales	**Frequency of physical activity (M ±SD)**		
	not doing (group 1)	periodically (group 2)	systematically (group 3)
Positive relations with others	48.27±17.686**	60.66±9.297**	57.03±9.535
Autonomy	52.67±15.314	60.36±10.451	56.57±8.479
Environmental mastery	52.13±10.710	58.19±9.659	54.86±8.240
Personal growth	60.27±14.444	65.77±9.149	60.09±9.840

Purpose in life	53.27±14.474*	62.09±10.913*	60.40±9.518
Self-Acceptance	53.33±18.172	59.15±10.916	53.77±12.348
Psychological well-Being in general	320.20±18.641*	361.64±7.698*	350.31±8.474

Note: * - significance at $p \leq 0.05$; ** - significance at $p \leq 0.01$

The students of the group 2 (having periodic physical activity) estimated higher positive relations with others; they were more inclined to take care of others, to empathize with them. At the same time, the students of the group 1 had a rather limited number of trusting relationships with others, they may be reluctant to be open for others ($p = 0.001$). The students of the group 3 did not show significant differences with the two previous groups. But at the trend level, their positive relations with others are better in comparison with the group 1 and worse than those in group 2.

The students of the group 2 showed higher results for the "Purpose in life" scale. So, they have a clear purpose in life and they can direct their activities towards its realization. At the same time, the group 1 have significantly fewer perspectives or beliefs that determine their life purposes ($p = 0.037$).

The similar patterns are for the overall index of psychological well-being. The group 2 showed the highest indicators of psychological well-being. There are significant differences between the average values of psychological well-being shown by groups 1 and 2 (0.029). This may indicate higher experiencing of a subjective sense of happiness, satisfaction with one's personal life, oneself, one's own activities. The students in the group 3 had significantly lower psychological well-being compared to the group 2. This group consisted mainly of the Military Institute cadets. For them, physical exercises are obligatory, which may somewhat reduce their sense of satisfaction.

At the same time, we determined that the psychological well-being indicators do not differ significantly depending on physical activity forms, preferred by students (individual, team forms). Individual forms of physical activity is prevailed (71.6% of the studied students practice them) compared with team activities (28.4% of the students).

There are many approaches interpreting the concepts of "psychological well-being", "subjective well-being", "social well-being". But

most researchers believe that subjective social well-being is a component of psychological well-being (Serdiuk, 2017). Therefore, at the next stage of our research we determined differences of subjective social well-being between the examined groups, in other word, depending on the physical activity frequency, with Danilchenko's method (Danilchenko, 2017) (Table 2).

The respondents belonging to different groups, depending on frequencies of their physical activity, have some general trends and peculiarities. In particular, the indicators of overall subjective social well-being, social approval, and good relationships with loved ones are significant and similar in all three groups. At the same time, there was a tendency for greater closeness of the indicators for the groups 2 and 3. The students from these two groups showed lesser social distance, dissatisfaction with social relationships, negative emotions and higher satisfaction with relationships and better supported and recognized by loved ones compared to the group 1.

Table 2. Subjective social well-being estimated with Danilchenko's questionnaire (Danilchenko, 2017) depending on the students' physical activity frequency (average values)

Scales	**Frequency of physical activity (M ±SD)**		
	not doing (group 1)	periodically (group 2)	pystematically (group 3)
Social noticeability	4.73±2.722	5.96±2.534	5.83±2.474
Social distance	5.67±2.093	4.62±2.356	4.88±1.788
Good relationships with loved ones	5.2±3.218	5.97±2.647	5.92±2.280
Social approval	5.93±2.808	6.12±2.411	5.5±2.174
Positive social beliefs	5.07±2.320	6.45±2.155	5.58±1.906
Subjective social well-being	5.47±2.712	6.26±2.309	5.96±2.149

The identified tendency needs further verification, because the results of one-way ANOVA and subsequent use of a posteriori multiple comparison of values (Sheff's table) showed statistically significant differences only for the scale of "positive social beliefs" between the students of the groups 1 and 2 ($p = 0.053$). That is, the students from the group 2 are more likely to have faith in people (their trust, kindness, honesty).

The statistical comparison of subjective social well-being of the respondents engaged in physical activities of different types, depending on interactions during such activities (individual, team forms), showed that the students preferring team physical activities (football, basketball, etc.) are more comfortable in their family relationships and friendships than those who prefer individual exercise (such as athletics) ($p = 0.043$).

4. Discussion

The problem of psychological well-being has become extremely popular recently in national and foreign psychology. Researchers discuss definitions of psychological well-being, correlating this concept with related concepts, and search for its factors for people of different ages (Yezerska, 2015), different professions (Pachol, 2017) and others.

The factors influencing psychological well-being are really diverse and ambiguous: personal traits, such as extraversion, optimistic style of attribution and emotional stability, self-regulation (Rigby & Huebner, 2005), life achievements (Chang et al., 2003; Suldo et al., 2008), as well as the social environment, feeling of safety, comfort, support, atmosphere of love, sense of importance (Gilman & Huebner, 2006; Joronen & Åstedt-Kurki, 2005;) and physical health (Deci & Ryan, 2000) make a person happy.

The research results show that there is a correlation between the frequency of physical exercises and psychological well-being. The group of students who are periodically engaged in physical activities is the most prosperous. Such results correlate with the opinion of experts in physical education and sports that physical activity should be dosed, and too large physical activity adversely affect both certain body organs and the organism as a whole (Mazur & Skavoronskiy, 2016). We can assume that the periodic physical activities bring pleasure and, therefore, have a positive effect on the student's psychological well-being. In addition, the students not doing physical exercises have the lowest psychological well-being, this fact is in line with the studies showing that reduced physical activity leads to many disorders and premature aging.

As for subjective social well-being, its level is higher at students who prefer physical activities is in the form of team games.

Thus, we obtained original data on the peculiarities of psychological and subjective social well-being of students, depending on frequency of their physical activities and the form of such activities (individual or team).

5. Conclusions

The students periodically engaged in physical activities have the highest psychological well-being, in particular, better relationships with others, clearly defined life purposes and stronger efforts to achieve them. They show higher subjective sense of happiness and more content with their lives and activities, than those who do not exercise. The students who exercise systematically or periodically demonstrate higher satisfaction with their social relationships, absence of social distance, positive emotions, stronger support and recognition of loved ones compared to the students who do not exercise. Namely periodic exercises have the most positive impact on the students' psychological well-being.

There are no significant differences between the three groups of students as for their subjective social well-being. However, students engaged in team activities (football, basketball, etc.) showed higher scores: they felt more comfortable in family and friendships than those who preferred individual exercises (e.g., running).

The used techniques have its specific application depending on the research purpose. In particular, Riff's Scale of Psychological Well-Being revealed significant differences between groups of students depending on the frequency of their physical activity. Danilchenko's questionnaire "Subjective social well-being" is more sensitive to measuring differences depending on the preferred types of physical activities (individual or team), which can be taken into account at studies of individual or collective activities in general.

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