

## Quality of life and physical activity of kindergarden teachers

### Authors' Contribution:

A - Study Design  
B - Data Collection  
C - Statistical Analysis  
D - Manuscript Preparation  
E - Funds Collection

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**Abstracts.** *The contribution presents the relationship between the frequency of physical activity during the week and fields of life quality of kindergarden teachers in three mature parts. In the research took part kindergarden teachers from Slovakia (n = 211) who were divided into groups according to their ontogenesis. The life quality was observed with a modified questionnaire SQUALA and the physical activity level frequency during the week. The data is presented by descriptive characteristics (n, M, SD) and statistic importance of differences, let us say relationships which are measured by non-parametric methods (W, U, r<sub>s</sub>), by the importance level (p<0.05; p<0.10). The results showed the most numerous correlations between the physical activity during the week and fields of life quality of teachers in age group from 36-46 years (middle mature) who do the physical activity M: 3.250 during the week by SD: 2.761. In this group were proved positive correlations with the field of physical well-being (p<0.01), psychosocial well-being (p<0.01), material well-being (p<0.01), education (p<0.10), free time (p<0.05), appearance and property of things (p<0.01). Specially this age is characteristic by reaching the highest goals of physical and mental performance. In the groups of younger and older mature we do not find so many important relationships between the physical activity and some fields of life quality. In these groups we did not find any important correlations of physical activity with physical well-being where the group of young mature reached the same level of physical activity as the group of middle mature.*

*The conclusions show the importance of physical activity in life of kindergarden teachers, they show some possibilities of influencing the life quality through the physical activities but also creating the optimal conditions possibilities to increase the life quality in social environment. The contribution is part of the Ministry of Education grant KEGA 014UKF-4/2013 Improving the quality and level of health of adolescents by means of physical activity in primary and secondary schools.*

*Keywords: activity, life quality, ontogenesis, age, relations, teachers, kindergarden*

## INTRODUCTION

Adulthood is characterised by social maturity (human is economically independent), emotional maturity (human who is independent from parents), psychological maturity (stabilization of behaviour, thinking and experiences), biological maturity (physical maturity, ability to become a parent), socio-logical maturity (ability to satisfy own social needs, adapt to new social roles, especially to start a family and turn out to work), mental maturity (to be able

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to be responsible) and juridical maturity (get rights and duties).

Adulthood is divided from ontogenetic point of view into three periods [13]: *Young adulthood* is a period around 20 - 30 years. It is characteristic for relative completion of mental maturity and also reaching the top of humans' physical and mental performance. Cognitive and emotional involvement is implementing on the development level of perception and intellect. The sense is finished and the memory is efficient. The thinking focuses on development of formal operations, searching for problems and radical decisions. Human is staid and pragmatic, has sense of responsibility, emotionally stable. Social development is characteristic by a desire to marry, hence the need for intimate emotional and satisfying sexual cohabitation with the desire to have children. This period is also characteristic by the implementation into the working process with the need of own realisation. This implementation has 4 basic motives: tangible comforts, effort to help people, apply in work own dispositions, find friends and contacts.

*Middle adulthood* is period around 30 to 45 years. For this period is characteristic reaching the top of humans' physical and mental performance. From the point of cognitive development, the memory does not reach the level mentioned before. From the point of emotional and social development it is characteristic for stable emotions, better relationships or breaking up. Breaking up, cheating or trying to give as much as possible to children is very common.

*Older adulthood* is period around 45 to 60 years. Characteristic sign is the beginning of climacterium by women and andropause by men. The older adulthood is characterized by evaluation of life, the need to teach the younger generations, the volition and intellectual abilities are reducing, fixing stereotypes of life, appears depressing mood. Later we encounter the decline in performance, the end of the reproductive period with the departure of children from home and retirement.

During above mentioned ontogenetic periods come to changes in particular areas of life quality. Subjective comfort has influence on thinking and human acting what can be proved [4]. We understand the subjective life quality as confidence with own life on the base of emotional experiences and cognitive evaluation. On the other hand we understand the objective quality as a fulfilment of basic material and social life conditions, physical health and social status [10]. Dragomerická [5] unitizes components of life quality, which were considered as parts of life quality, into four groups as health state, everyday activities, social area and inner reality. Life quality is in medical branch connected with mental health [14]. Ryff and Keyes cit. in [9] mention some basic dimensions of personal well-being as self-acceptance, positive attitude towards others, autonomy, handling the environment, sense of life and personal development. Ábelová according to article [12] mentions two components of physical well-being, physical struggles and body abilities. Basic structural elements of physical subjective comfort are according to this model, habitual experienced positive physical feelings [12].

Psychologists found out that people who do a physical activity at least three times a week are in comparison with those who do not do a sport more confident with their lives. In the body are released some substances during the physical activity, such as endorphine (activates good mood, calm feeling, feeling of comfortable relaxation, improves the quality of sleeping and sexual desire) and enteramin (fibre hormone which influences the coagulation, increases the temperature and stimulates hypothalamus - inferior part of diencephalon) which act as desirable harmless "drugs" improving ones mood. According to the regular physical activity our body forms, our condition gets better, physical ability improves and also we learn how to control our body posture. Physical activity brings us joy and intensifies ones confidence; it is an important element of illness prevention and stress degradation. Especially the activity on fresh air affects anti-depressive because the body produces melatonin - an anti-depressive hormone [6].

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The dimension content of evaluation of life quality depends on monitoring a specific sample of population. The former questionnaire SQUALA quality of life was created in France in 1992 [17] and it was dedicated to psychiatric patients but according to words of the author it is also suitable for common population. Očetková [11] recommends focusing on areas such as physical comfort, psycho-social comfort, spiritual comfort, and material comfort, area of education, free time, appearance and possession of things, orientation into the future.

Similar researching methods were applied on specific groups of adolescents, university students and adults. In the works from [1,2,3,7,8] were proved positive relations between the frequency of physical activity during the week and particular areas of life quality in the groups of adolescents, university students who performed physical activities 3-5 times during the week. Physical activities with lower or higher frequency during the week did not show any important relations with the areas of life quality.

We focus in our contribution on pedagogical employees in kindergartens where we are trying to find again a relationship between the physical activity and life quality. As one of the most important factors which should influence mentioned causality in the relation to results are ontogenetic periods in women's adulthood.

The aim of the work is to show the causality between the physical activity during the week and life quality of the women teachers in kindergartens in the Nitra district in different ontogenetic periods of adulthood.

How does a different physical activity during the week influence the quality of life (in areas of physical comfort, psycho-social comfort, spiritual comfort, and material comfort, area of education, free time, appearance and possession of things, orientation into the future) by the women teachers in kindergartens in ontogenetic periods in adulthood?

## METHODS

The questionnaire research was attended by 211 women kindergarten teachers from the Nitra district. Average age was 41.924 with standard deviation 10.608 (min. 21 years and max 62 years). The researching file was divided according [18] into three groups, groups according the ontogenetic point of view: younger adulthood (A 20-35 years), middle adulthood (B 36-46 years) and older adulthood (C 47-62 years), see table 1 and 2.

For the objective we show in the table 1 the division also from the point of subjective evaluation of sport level:

1. Passive sportswoman - does not seek a physical activity, she only participates in compulsory sport activities;
2. Occasional sportswoman - seeks physical activity, not organized physical activity;
3. Active sportswoman - regularity, organisation, state level.

**Table 1.** Representation of teachers from the point of sport level in ontogenetic groups of adulthood.

Athletic level	Group adulthood			Sum
	A	B	C	
Passive sportswoman	20	17	47	84
Occasional sportswoman	42	47	29	118
Active sportswoman	4	4	1	9
Sum	66	68	77	211

Modified questionnaire according [5,17,11] contained the chosen elements from the questionnaire SQUALA. The items of questionnaire SQUALA were evaluated from the areas of [16]:

1. physical well-being (health, sleep, coping with daily life activities, has no problems)
2. psychosocial well-being (family, interpersonal relationships, intimate relationships, hobbies, safety)
3. spiritual peace (justice, freedom, beauty, art, true)
4. material well-being (money, good food)
5. education (to be educated, to go to school)
6. leisure time (possibility to spend your free time, have plenty of things for fun)
7. appearance and ownership of things (look good, to dress nicely, have things that I like)
8. orientation to the future (have children in the future, jobs that will entertain me)

The first item in the questionnaire defines the area from the point of view "how important it is for you ..." and the second point of view "how are you satisfied with ...". The first item judged respondents at 5 point scale (1. completely unimportant, 2. somewhat important, 3. moderately important, 4. very important, 5. quite important) according to the importance attributed to him in life, let us say how important was it for them in their lives. The second item was also judged on a scale of 5 points, except 8 items missed (1. very dissatisfied, 2. dissatisfied, 3. something in between, 4. satisfied, 5. very satisfied) according to that, how satisfied are they now.

By elaboration of the results, we used contingency tables and basic descriptive statistics (number - n, mean - M, standard deviation - SD, mathematical difference averages - d). Differences between importance and satisfaction in the quality of life of dependent groups we assessed the Wilcoxon Signed Ranks z test and the differences between independent groups, we considered the Mann-Whitney U test. In identifying relationships between variables "sports level and quality of life" used the Spearman correlation coefficient. In assessing statistical significance of differences and relationships, we used the significance level  $p < 0.05$  to  $p < 0.10$ . Data were processed in Microsoft Excel and SPSS.

## RESULTS

In the first part of results we focus on the comparison of three groups of women kindergarten teachers from the point of physical level and particular parts of quality life. We noticed statistically significant differences from the point of frequency of physical activity

during the week between the groups A (younger adulthood), B (middle adulthood) and C (older adulthood), groups A-B comparing with C ( $p < 0.01$ ). The group C performed lower level of activities during the week (M: 1.935; SD: 2.172). The groups A and B performed the physical activities in average M: 3.273 by SD: 2.428 and M: 3.250 by SD: 2.761 during the week where we did not noticed any statistically important differences (table 2 and 3).

**Table 2.** Descriptive statistics in teachers' groups PEP from the point of age, sports activity and life quality areas.

Indicators		Group adulthood					
		A		B		C	
		M	SD	M	SD	M	SD
Age		29.152	3.600	41.221	2.849	53.494	3.868
Sporting activity per week		3.273	2.428	3.250	2.761	1.935	2.172
How important for you ...	Physical well-being	4.200	.677	4.309	.479	4.179	.617
	Psychosocial well-being	3.797	.600	3.919	.445	3.709	.544
	Spiritual well-being	3.670	.695	3.849	.691	3.750	.608
	Material well-being	3.364	.862	3.500	.718	3.532	.718
	Education	4.083	.797	4.257	.632	4.078	.596
	Leisure time	3.515	.881	3.404	.830	3.169	.801
	Appearance and Property affairs	3.040	.940	3.133	.782	2.909	.798
	Focusing on the future	4.424	.865	4.544	.545	4.357	.734
How are you satisfied ...	Physical well-being	4.009	.761	3.818	.641	3.865	.573
	Psychosocial well-being	3.930	.591	3.821	.509	3.739	.468
	Spiritual well-being	2.765	.700	2.783	.690	2.659	.716
	Material well-being	3.439	.767	3.449	.703	3.390	.728
	Education	4.265	.583	4.081	.530	4.136	.600
	Leisure time	3.848	.690	3.640	.685	3.506	.829
	Appearance and Property affairs	3.899	.651	3.642	.599	3.602	.709
	Focusing on the future	4.364	.688	4.338	.655	4.409	.642

From the point of **quality life** assessment by the kindergarten teachers we find the biggest differences with group C from the point of realising the importance. Group C attributed lower relevance - importance to the area of psycho-social comfort ( $p < 0.05$ ) and education ( $p < 0.05$ ) as group B, lower importance to the area of free time ( $p < 0.05$ ) in the comparison to

group A.

By the evaluation from the subjective point of satisfaction with the areas of life quality we find significant differences with group A. Group A mentions higher satisfaction with comparison to group B and C in the area of physical comfort ( $p < 0.05$ ), appearance and in possession of things ( $p < 0.05$  and  $p < 0.01$ ). Comparing the group A and C we find higher satisfaction of group A in the area of psycho-social comfort ( $p < 0.05$ ) and in free time ( $p < 0.05$ ). Group A also mentions high satisfaction with education ( $p < 0.05$ ) as group B. In the other areas of life quality were not noticed any important statistical differences (table 3).

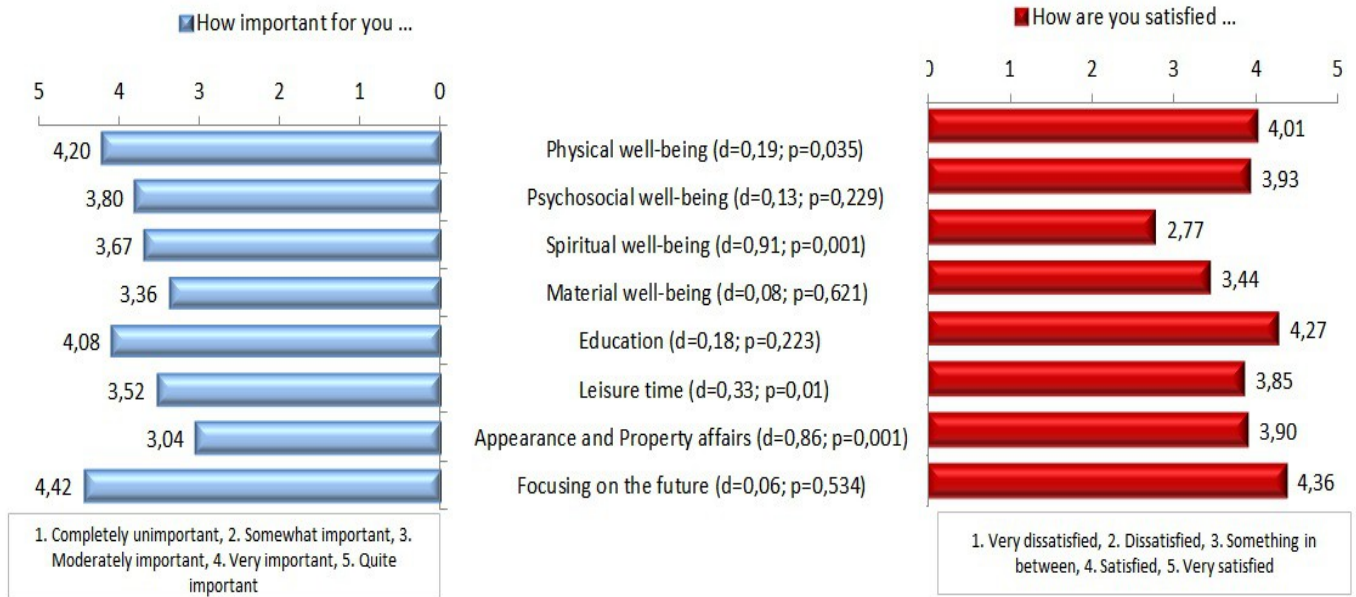
**Table 3.** Statistical importance of differences between the groups of teachers PEP from the point of age, sports activity and life quality area (**U**;  $p < 0.05$ ).

		A <> B		B <> C		A <> C	
Indicators		d	p-value	d	p-value	d	p-value
Age		12.07	.000	12.27	.000	24.34	.000
Sporting activity per week		0.02	.662	1.31	.000	1.34	.000
How important for you ...	Physical well-being	0.11	.566	0.13	.213	0.02	.563
	Psychosocial well-being	0.12	.210	0.21	.013	0.09	.341
	Spiritual well-being	0.18	.141	0.10	.391	0.08	.458
	Material well-being	0.14	.395	0.03	.675	0.17	.214
	Education	0.17	.317	0.18	.048	0.01	.348
	Leisure time	0.11	.640	0.24	.103	0.35	.043
	Appearance and Property affairs	0.09	.686	0.22	.157	0.13	.375
	Focusing on the future	0.12	.990	0.19	.148	0.07	.210
	How are you satisfied ...	Physical well-being	0.19	.023	0.05	.828	0.14
Psychosocial well-being		0.11	.230	0.08	.184	0.19	.019
Spiritual well-being		0.02	.726	0.12	.419	0.11	.312
Material well-being		0.01	.716	0.06	.464	0.05	.404
Education		0.18	.043	0.06	.460	0.13	.187
Leisure time		0.21	.077	0.13	.311	0.34	.009
Appearance and Property affairs		0.26	.019	0.04	.611	0.30	.008
Focusing on the future		0.03	.721	0.07	.505	0.05	.792

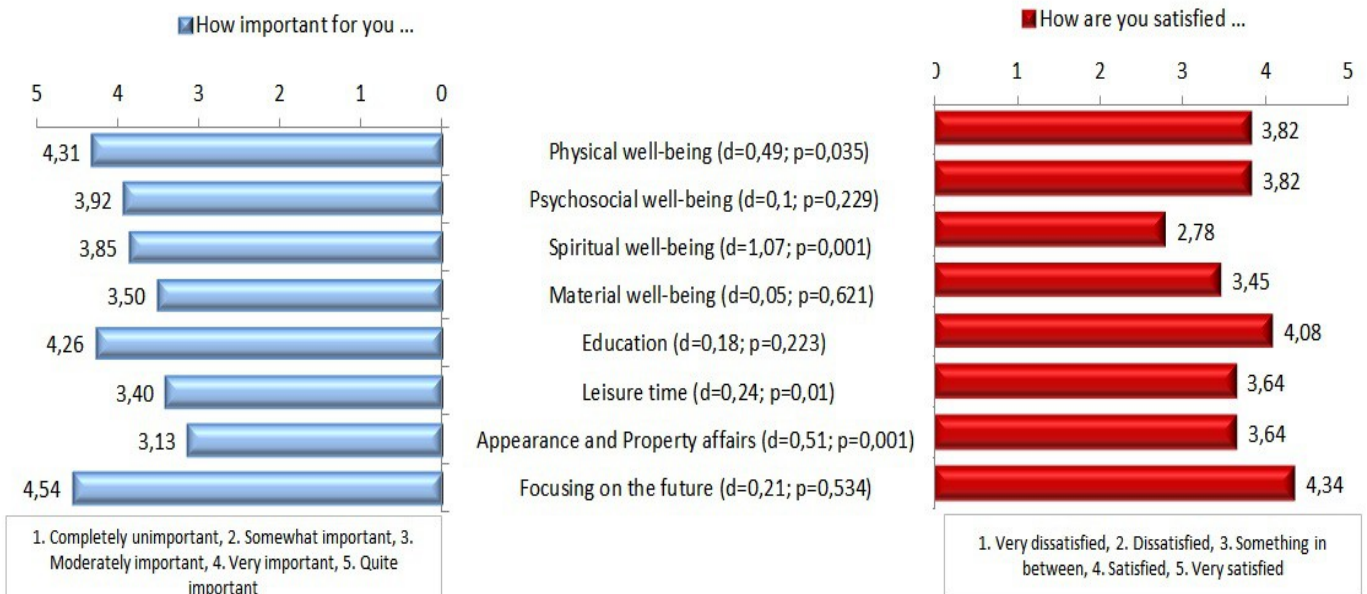
In the second part of the results we are focusing on comparison of *particular life quality areas* from objective site of importance and subjective site of satisfaction (fig. 1-3).

We find common signs in the monitored groups. Teachers in all of the three groups impute higher relevance (importance) to physical well-being ( $p < 0.05$  to  $0.01$ ) and spiritual well-being ( $p < 0.01$ ) how satisfied they are, they refer higher subjective satisfaction as ascribed importance to appearance and possession of things ( $p < 0.01$ ).

Subjective satisfaction with plenty of free time ( $p < 0.01$ ) mention teachers in groups of younger and older adulthood (fig. 1 and 3). Lower satisfaction with the orientation to the future ( $p < 0.05$ ) was recorded in the group of teachers on middle adulthood (fig. 2).

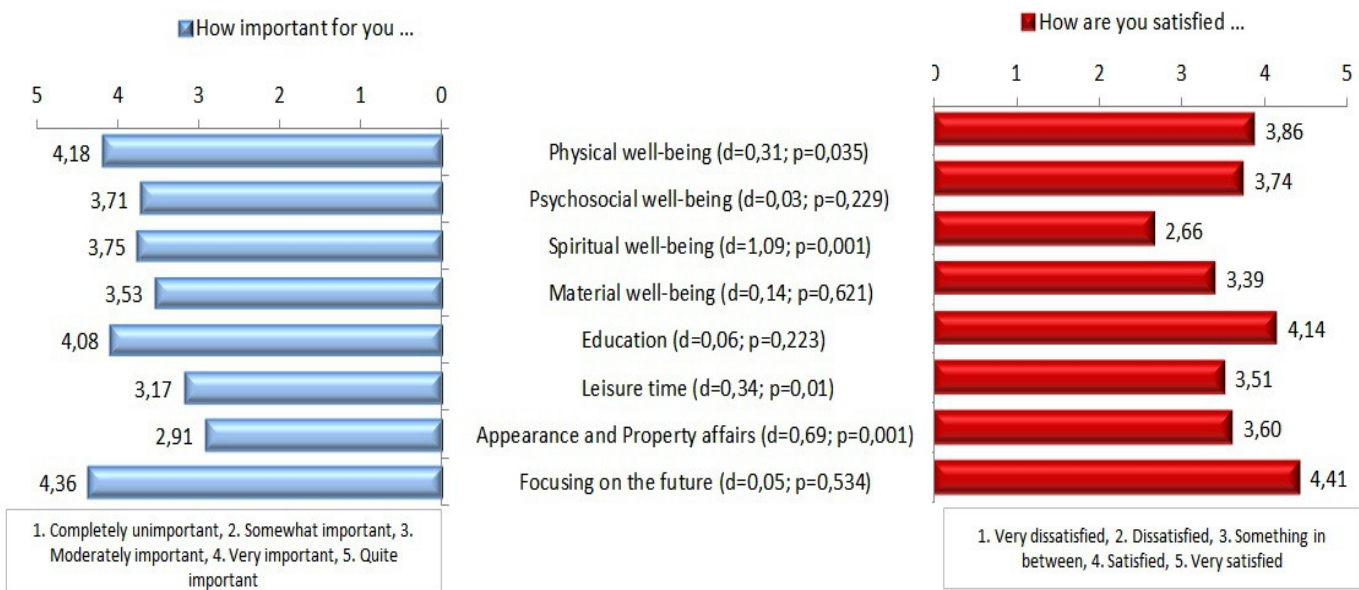


**Figure 1.** Comparison of particular areas of life quality from the point of importance and satisfaction by the teachers in group A - younger adulthood ( $z$ ;  $p < 0.05$ ).



**Figure 2.** Comparison of particular areas of life quality from the point of importance and satisfaction by the teachers in group B - middle adulthood ( $z$ ;  $p < 0.05$ ).





**Figure 3.** Comparison of particular areas of life quality from the point of importance and satisfaction by the teachers in group C - older adulthood ( $z$ ;  $p < 0.05$ ).

The third part of the results copes with the relation analysis between the frequency of physical activity during the week and particular areas of life quality in three ontogenetic groups of kindergarten teachers. From the point of objectivity of the relations between the physical activity and life quality we only focus on the subjective assessment of satisfaction (table 4).

The most numerous correlations between the physical activity and life quality areas were showed on the teachers in group (B) with the middle adulthood age. In this group were found positive correlations with the subjective evaluation of the area of physical well-being ( $p < 0.001$ ), psycho-social well-being ( $p < 0.01$ ), material well-being ( $p < 0.01$ ), education ( $p < 0.10$ ), free time ( $p < 0.05$ ), appearance and possession of things ( $p < 0.01$ ).

In the groups of younger (A) and older (C) adulthood we find important relations between the physical activity and psycho-social well-being ( $p < 0.05$ ), free time ( $p < 0.01$ ) and appearance and possession of things ( $p < 0.05$ ). We also noticed with the spiritual area closeness of the relations only in the group of teachers in older adulthood. In the groups A and C we did not noticed any important correlations of physical activity with physical well-being.



**Table 4.** Correlations of frequency of physical activity during the week and particular areas of life quality in the teachers' groups PEP ( $r^s$ ;  $p < 0.10$ ).

		Group adulthood				
		A	B	C		
How important for you ...	Physical well-being	Correlation coefficient	-.164	-.101	.091	
		p-value	.187	.414	.431	
	Psychosocial well-being	Correlation coefficient	-.044	-.015	.173	
		p-value	.727	.902	.132	
	Spiritual well-being	Correlation coefficient	-.074	-.064	.136	
		p-value	.557	.605	.239	
	Material well-being	Correlation coefficient	.111	-.077	-.089	
		p-value	.376	.530	.442	
	Education	Correlation coefficient	.009	.114	.030	
		p-value	.946	.353	.793	
	Leisure time	Correlation coefficient	.207	.025	.184	
		p-value	.096	.840	.110	
	Appearance and Property affairs	Correlation coefficient	.193	.044	.202	
		p-value	.121	.722	.079	
	Focusing on the future	Correlation coefficient	.009	.041	.014	
		p-value	.941	.741	.905	
	How are you satisfied ...	Physical well-being	Correlation coefficient	.139	.421	.042
			p-value	.264	.000	.718
Psychosocial well-being		Correlation coefficient	.287	.410	.276	
		p-value	.019	.001	.015	
Spiritual well-being		Correlation coefficient	-.015	.195	.203	
		p-value	.902	.111	.077	
Material well-being		Correlation coefficient	.164	.387	.059	
		p-value	.188	.001	.610	
Education		Correlation coefficient	.109	.215	.018	
		p-value	.386	.078	.874	
Leisure time		Correlation coefficient	.330	.251	.349	
		p-value	.007	.039	.002	
Appearance and Property affairs		Correlation coefficient	.304	.318	.315	
		p-value	.013	.008	.005	
Focusing on the future		Correlation coefficient	.035	.197	-.075	
		p-value	.780	.107	.518	

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## CONCLUSIONS

In the contribution we were dealing with the question, how different physical activity during the week influences the quality of life of kindergarten teachers in ontogenetic periods of adulthood. By the kindergarten teachers we see many important relations between the frequency of physical activity during the week and particular areas of life quality, in particular age periods of adulthood.

The most numerous correlations between the physical activity and areas of life quality were found by the teachers in middle adulthood where the physical activity was performed during the week in average M: 3.250 by SD: 2.761. In this group were also proved positive correlations with subjective assessment of the area of physical well-being, psycho-social well-being, material well-being, education, free time, appearance and possession of things.

In the groups of younger and older adulthood we do not find so many important relations between the physical activity and particular areas of life quality. In the teachers' groups of younger and older adulthood were not proved significant correlations of physical activity with physical well-being. At the same time the teachers in young adulthood reach higher satisfaction level of physical comfort area at the same level of physical activity during the week as the group of middle adulthood.

It reflects that the middle adulthood period which is characteristic by reaching the top of physical and mental performance is the most perceiving period of realising the quality of life and the need for regular physical activity, let us say their connection.

The conclusions also show the importance of physical activity in the lives of kindergarten teachers, mention the possibilities of influencing the quality of life through physical activities, and also show the creation of optimal conditions for the possibilities to improve the quality of life in social environment.

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