

Review Article

Does regular physical activity in children affect the quality of life?

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Abstract

Purpose: The purpose of this study was to investigate the effect of regular physical activity on quality of life. **Procedure:** The participants were 60 children (aged 8-12) composed of girls ($n=15$ age: 10.67 ± 0.89 year; height: 145.66 ± 5.40 cm; weight: 43.6 ± 5.51 kg) and boys ($n=15$ age: 10.66 ± 0.81 year; height: 142.2 ± 5.05 cm; weight: 42.73 ± 6.76 kg) who were performing regular physical training, and girls ($n=15$ age: 11 ± 0.81 year; height: 144.33 ± 3.04 cm; weight: 47.8 ± 4.47 kg) and boys ($n=15$ age: 10.66 ± 0.81 year; height: 142.2 ± 5.05 cm; weight: 42.73 ± 6.76 kg) who were not performing regular physical training. Height - weight measurements and The Inventory of Turkish Children's Quality of Pediatric Life 4.0 (PedsQL 4.0) were implemented. All collected data's descriptive analysis and the difference between 2 groups were compared with test of significance of difference between two independent groups. **Main findings:** There was no statistically significant difference in quality of life of between the girls who were performing regular physical training and not ($p>0.05$). Boys' who were performing regular physical training quality of life in terms of physical health and social functions was higher than those who were not performing regular physical training ($p<0.05$). Girls who were performing regular physical training had lower quality of life with regard to physical status than boys ($p<0.05$). **Conclusions:** According to results of this study, it was determined that children especially boys who were performing regular physical activity had better quality of life in terms of physical health and social functions.

Keywords: children, quality of life, regular physical activity

Introduction

Quality of life came into question in health applications and investigations after the definition of health by World Health Organization (WHO) in 1948 that was not only don't have any disease and disability, but also being physically, mentally and socially well. In one's life happiness and satisfaction in important fields for its own sake is evaluated as quality of life. Although there were many scales prepared for adults, studies are limited that conducted by collecting information from children (1,2,3,4).

Development of various quality of life scales is necessary for different age groups and children's answers are thought to be unreliable, because of depending on children's development level their answers are different (1). Due to children's limited cognitive abilities, language and problems with reading also may lead to problems, for these reasons it is suggested that previous questionnaires reliability may be affected negatively (5).

Opinions of parents are important while evaluating children. In addition to this, owing to reasons that stated above parents' ideas might be thought as enough. However, since the parents have a tendency of their children's positive aspects they are inadequate evaluating peer-relationship. Besides, it is reported that because of parents' former experiences, expectations and ideas they cannot be objective most of the time. The most accurate one is children who were at the age of evaluating themselves should give their answers themselves. Especially children under the age of 8 have difficulties in making their own assessment. It is stated that development of methods necessary to solve this problem (5).

Physical and psychological health is connected to child's physical fitness status. Increase of weight in children as a result of inactivity is one of the risk factors for many diseases such as; type 2 diabetes, sleep apnea, and asthma. Being overweight caused by many reasons including inactivity is also affect the child's quality of life. Conducted studies indicated that children who were overweight had lower quality of life than their peers who were in normal weight (3). Moreover, children who were attending regular physical activity had higher quality of life than others who were not attending regular physical activity. In addition to this, many studies revealed that regular physical training improves the physical fitness level and minimum 60 minutes regular physical training at medium intensity is useful on children (6,7,8). Therefore, the aim of this study was to research the effect of regular physical activity on quality of life.

Materials and Method

Participants

The participants of this study were 60 children (aged 8-12) composed of girls ($n=15$ age: 10.66 ± 0.89 year; height: 145.66 ± 5.40 cm; weight: 43.6 ± 5.51 kg) and boys ($n=15$ age: 10.66 ± 0.81 year; height: 142.2 ± 8.24 cm; weight: 41.40 ± 4.59 kg) who were performing regular physical training, and girls ($n=15$ age: 11 ± 0.84 year; height: 144.33 ± 3.15 cm; weight: 46.73 ± 3.82 kg) and boys ($n=15$ age: 10.53 ± 1.24 year; height: 142.2 ± 5.05 cm; weight: 42.73 ± 6.76 kg) who were not performing regular physical training. All participants volunteered for this study and they had no health problems. Subjects were within the age group range determined for this study. Before the implementation of questionnaire the exact nature of the studies' purpose was explained to subjects and informed consent was obtained from their parents and coaches.

Implementation; Height measurement: Children's height measurement was performed as followed; as the head of the participant was on the frontal axis with the over-head board touching vertex point in 0.1 cm. During the height measurements participants were barefoot and in deep inspiration. Body weight was assessed with the subject's body in a perpendicular angle and barefoot (9).

Scale of Quality of Life; The Inventory of Turkish Children's Quality of Pediatric Life 4.0 (PedsQL 4.0) was used. (10,11). This is a multidirectional inventory that includes the Inventory of Quality of Pediatric Life's which is a modular approach of health related quality of life, 23 items ; 1- Physical Functions (8 Items), 2- Emotional Functions (5 Items), 3- Social Functions (5 Items), 4- School Functions (5 Items). In the Inventory that was prepared according to likert system 5, and the items defined as follows; 0= Never pose a problem, 1= Barely pose a problem, 2= Sometimes pose a problem, 3= Frequently pose a problem, 4= Always pose a problem. A linear method was used to calculate the scale's cumulative score and it transforms to a 0-100 score (0=100, 1=75, 2=50, 3=25, 4=0). Thus, this is the indication that high level score of Inventory of Quality of Pediatric Life (PedsQL 4.0) health related quality of life is better. Inventory's reliability and validity studies (α :0.78 reliability for children, α : 0.83 reliability for family) were done in Turkish language (12). All collected data's descriptive analysis and the difference between 2 groups were compared with test of significance of difference between two independent groups.

Results

Table.1. Descriptive Characteristics and Scores of Life Quality

	Girls n=30		Boys n=30	
	RPTG n=15 Mean(sd)	NRPTG n=15 Mean(sd)	RPTG n=15 Mean(sd)	NRPTG n=15 Mean(sd)
Age, mean (sd),year	10.66(0.89)	11(0.84)	10.66(0.81)	10.53(1.24)
Height, mean(sd)cm	145.66(5.40)	144.33(3.15)	145.20(8.24)	142.20(5.05)
Weight, mean(sd)kg	43.60(5.51)	46.73(3.82)	41.40(4.59)	42.73(6.76)
Training experience (year)	2.33(0.49)	-	2.60(0.50)	-

RPTG: Regular physical training group; NRPTG: No physical training group; sd: standard deviation

Table 2. Scores of Life Quality

	RPTG n=30		NRPTG n=30	
	Girls mean(sd)	Boys mean(sd)	Girls mean(sd)	Boys mean(sd)
Physical health	84.37(10.09)	95.37(5.43)	81.33(9.81)	81.45(14.04)
Emotional function	90.67(13.74)	90.33(6.11)	85.00(17.42)	85.33(10.43)
Social function	89.00(14.17)	93.33(7.94)	86.33(10.43)	77.33(12.52)
School function	81.67(13.18)	83.33(11.29)	72.67(15.10)	77.67(6.78)
Family questionnaire				
Physical health	77.29(18.04)	89.37(6.76)	77.70(8.58)	76.87(14.83)
Emotional function	85.33(16.09)	85.00(9.06)	80.33(13.95)	79.67(12.60)
Social function	80.33(17.57)	84.00(8.90)	83.00(11.15)	71.00(12.13)
School function	78.00(13.07)	74.67(9.15)	68.00(17.51)	71.67(5.23)

RPTG: Regular physical training group; NRPTG: No physical training group; sd: standard deviation; G-B: Differences in Girls and Boys; F-C: Differences in Family and child

There was no statistically significant difference ($p>0.05$) between the girls who participated in this study in terms of age ($p=.305$), height ($p=.416$) and weights ($p=.081$). Similarly between the boys who participated in this study there were no statistically significant differences ($p>0.05$) in age, ($p=.731$), height ($p=.240$) and weight ($p=.533$). There were no statistically significant differences ($p>0.05$) between the girls who perform regular physical activity and do not perform in terms of physical health ($p=.410$), emotional function ($p=.331$), social function ($p=.562$) and school function ($p=.093$). On the other hand, in the boys there were statistically significant differences ($p<0.05$) in terms of physical health ($p=.003$) and social function ($p=.000$). However not ($p>0.05$) in the school function ($p=.107$) and emotional functions ($p=.120$).

According to gender comparison between the girls and boys who were performing regular physical training, there was a significant difference ($p<0.05$) with regard to physical health ($p=.002$). But not in the social function, emotional function and school function ($p>0.05$) (Table 2). There were no statistically significant differences between the family surveys ($p>0.05$) for the girls who were both performing physical activity and not in respect to physical health ($p=.936$), emotional function ($p=.371$), school function ($p=.087$). On the contrary, there were statistically significant differences ($p<0.05$) between the boys who were performing physical activity and not in terms of physical health ($p=.006$), social function ($p=.002$). However, not ($p>0.05$) in the school function ($p=.280$) and emotional function ($p=.194$).

Discussion

Regular physical activity has positive effects on children's physical, mental and quality of life (13,14). Quality of life is defined as; "subjective welfare" in other words; "person's condition of being satisfied by their own life". Similarly, the World Health Organization (WHO) defined the quality of life as; "individuals' way of self perception in life that is not only in the context of cultural and environment's value judgments but also expectations, goals, standards and interests" (15). Although, there are lots of studies related to effects of life style and regular physical activity on quality of life of adults (16,17) and children who were receiving therapy (18,19,20), there are very few studies in quality of life connected to regular physical activity and health in children.

Why we should know about the quality of life in children? It acts many important roles these are; to determine the both short and long term therapy methods that are used to cure children who are not healthy and also in the clinical researches, moreover, evaluating children in terms of anxiety and development of physical functions (2,21,22). As practically and theoretically identifying the quality of life in children is different when compared with the adults (22,23). Life-milieu, fireside or school atmosphere are more effective for social and psychological development in children. Children's complex connections with the environment affect their life quality (24). According to results of this study; girls, who were not performing regular physical activity had more difficulties in participating sportive activities or exercises, lifting a heavy object, taking a shower, doing daily routines at home, feel more fatigue and pain, when they were compared with the girls who were performing regular physical activity. To sum up, the girls who were performing regular physical activity had positive answers and the girls who were not performing regular physical activity had negative answers to the questions in the questionnaire. The same questionnaire was used in another study that is related to regular physical activity and its effects on quality of life in children with asthma and the results indicated when compared with the group who did only home exercises quality of life increased in the group who were trained regularly with 8 week basketball training. However, this study has limitations to make a comparison between the present and the other study. Because, in this study they evaluated both girls and boys together and worked children with asthma (25).

It was determined that girls who were not performing regular physical activity had more problems about anxiety related to their life, anger, fear, sadness, and sleep disorders than the girls who were performing regular physical activity. It was also indicated that, they had problems in their peer-relationships, the other children reluctant to be friend with them, and also they had a negative idea that the other children teasing with them. According to their opinions related to school; they had problems with gathering their attention in classes, also problems with not finishing their assignments in time and forget some things about the school. Moreover, they could not go to school when they did not feel good themselves. There were differences between the average scores of girls who were both performing regular physical activity and were not. However, there were no statistically significant differences. This could be explained that the children in this study were not only in the same environment but also in the same school. In addition to this, they were performing different kind of sport branches. Thus, it was suggested that if the same investigation were done with the subjects who were from different environments and also performing same physical activity there would be the different results.

Boys' quality of life researched and it was determined that the results of the boys were different when it's compared with the girls. Boys who were not performing regular physical activity had difficulties as physically when they are compared with the other boys who were performing regular physical activity. On the other hand, in the social function boys who were performing regular physical activity had problems in relationships with

their peers and they thought that they could not do the things that their peers could. Also, they believed that other peers did not want to be friends with them. Therefore, it was stated that boys who were performing regular physical activity had more significant ideas when it was compared to their peers who were not performing regular physical activity. There was no significant difference between two groups in terms of emotional and school function. However, it was determined that the boys who were performing regular physical activity think more positive than the others as in average. The results of the questionnaire that applied to both families and children were similar. It was identified that families' quality of life scores were lower than children's scores in average. Obtained scores showed similarity with the inspected resources in the literature (3,4).

Considering the effects of gender and regular physical activity on quality of life; girls had more problems in walking long distances, running, participating sportive activities or exercises, lifting a heavy object, taking a shower, and doing house chores than the boys. In addition to this, the girls felt more pain and fatigue when compared with the boys. Although boys' quality of life were higher than others, there were no significant differences between two groups in respect to other subtitles.

In the literature, there are mainly studies related to treatment techniques in children and patient children. But, children's reactions to exercise are important in order to evaluate with regard to type of exercise, duration of exercise and physical and social development in children. According to results of this study, it was determined that children especially boys who were performing regular physical activity had better quality of life in terms of physical health and social functions. In order to get different results, it can be advised that frequency, duration and the type of physical training should be associated with further studies.

Conclusions

Results of the present study indicated that children especially boys who were performing regular physical activity had better quality of life in terms of physical health and social functions. It was determined that regular physical activity effective on girls' and boys' quality of life. Besides, there are differences between genders in terms of quality of life.

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