

Family leisure-time physical activities – results of the “Juniors for Seniors” 15-week intervention programme

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Summary

Study aim: Both adequate time and quality time are important for the wellbeing of a family. The study evaluated the effectiveness of a 15-week family-based physical activity (PA) intervention entitled “Junior for Seniors”. It included both children and parents. The paper focuses on an important topic – family-based leisure-time physical activity (LTPA). It is set in Polish primary schools, which is a novel approach. Regular physical activity for young people and their parents improves health and fitness including strength and endurance, promotes development of healthy bones and muscles, helps control weight and increases self-esteem.

Material and methods: In 2015, 24 children (“juniors”, 14 girls and 10 boys, aged (mean \pm SD) 7.96 ± 0.69 years) and 22 parents (“seniors”, 14 mothers aged 38.86 ± 2.96 years and 8 fathers aged 37.38 ± 2.97 years) were voluntarily enrolled in a study encompassing three primary schools in the city of Poznań, Poland. To measure factors associated with LTPA, selected questions from the Health Behaviour in School-aged Children (HBSC) questionnaire were used.

Results: As a result of the intervention, children increased both the amount of time they spent on intense LTPA and the frequency with which they undertook LTPA (values for “time spent on intense physical exercises during leisure time” were statistically significantly higher in the post-test; $Z = -2.57$; $p < 0.05$). In the post-test, statistically significant relations were obtained between the following variables: reason for physical activity: for better sport results – with family: playing together; $r = 0.41$, $p < 0.05$. In the parents’ group no statistically significant increase was observed in any of the variables measured.

Conclusions: The research issues presented in this paper require further exploration in larger scale studies. However, based on the present study, it may be concluded that one important goal has been achieved: that of more frequent family social behaviours and improved quality of LTPA.

Key words: Leisure time– Physical activity – Parent-child intervention – Family – Health promotion

Introduction

Leisure is an important source of family cohesion, where the family is the first and most important educational environment for both parents and children [9]. This is a space where all participants have the chance to discover the world of different values. This is also an environment where children’s worries, opinions and attitudes are shaped, as well as where traditions are passed on and recognized. Moreover, it secures and organizes their lifestyle, by prioritizing certain activities.

The type, richness, content and organization of leisure time is influenced by many factors. The most important determinants of leisure time are: studying at home, parents’ material conditions and the cultural home environment, learning at school, help in the household, time spent on the way to and from school, sleep, meals, out-of-school educational institutions, and family atmosphere [3, 21, 47, 51]. During the educational phase of one’s life the extent of leisure time available also depends on the amount of classes and school day schedule. Parents’ working time is an additional issue that can have a level of influence. The combined impact of individual components

can shape various criteria of priorities, values and attitudes towards the allocation of leisure time. The most negative manifestations in this regard include the formation of personality which is sometimes characterized by greed, thus driving the translation of all values into material goods with the focus on raising the standards of living. This not only leads to impoverishment of the content and forms of leisure time, but also to its excessive reduction and sometimes even to the complete abandonment of leisure time in the family [2, 15, 25, 38, 30, 43, 44]. One also needs to mention here the issue of new technology. While increased use of mobile phones and the Internet seems to influence the level of physical activity (PA), especially in children and youth, there are efforts undertaken to use eHealth technology (e.g., internet, mobile phones) to encourage young people to develop physical activity behavioural skills (i.e., self-monitoring and goal setting) [27] and prevent the decline in physical activity typically observed during adolescence [33].

There is evidence that without parental behavioural role modelling promoting physical activity (LTPA), adolescents are less engaged in sports activities [7, 42]. Although girls' engagement in sport is usually linked only to their mothers' LTPA, sons' sports activities are related to both parents' LTPA, but more strongly to that of fathers [16]. On the other hand, parental pressure on children to achieve sports results can reduce their motivation to participate in LTPA [26].

Participation in recreational activities and sports varies according to a number of situational variables, including age, sex (women spend on LTPA an average of 16 min/day, men 25 min/day), level of education, occupation, place of residence and income, and the fact that we are, especially in Poland, a society with peasant roots, in which a broader tradition of LTPA was not widespread. Parents did not pass the models of physical culture and specific motor skills on to their children, because they did not possess them themselves [32].

Adult LTPA concerns are often related to the early behaviours of participation seen among children and youth. Emphasis must be placed on individuals when they are children, in order to improve their later LTPA participation as adults [11]. A review of related literature [47] indicated that LTPA levels in adulthood can be traced back to and are often influenced by earlier behaviours. In addition, the theory of continuity relates to the individual desire to maintain self-conceptions of the past [4], which continues a focus on values and rewards established in early behaviours to continue as one ages [11]. Furthermore, increased participation in LTPA is often observed among individuals who used to participate in organized sports activities in their childhood [47]. Sport participation during childhood also allows for early health behaviours to be

established, preventing potential health concerns later in life [3, 17, 52].

Leisure-time physical activity (LTPA) is essential for health and is one of the most important components of total PA [40, 41]. Regular LTPA controls diabetes and obesity, reduces hypertension, cardiovascular diseases and some cancers, and provides numerous other health benefits [46, 52].

The transition from childhood to adolescence has been identified as a period of marked decline in LTPA, particularly amongst girls [23, 31, 45], despite this period being the most appropriate time for adoption of LTPA behaviours. Studies show [13] a decline in LTPA levels from age 9 up to 18. In this context LTPA practices depend mostly on awareness, abilities and one's willingness to be physically active. The time spent on sedentary activities such as watching TV, sitting either at school or home, reading, playing or working on computers is crucial since it consequently limits the time available for LTPA [5, 37, 49, 55]. World Health Organization [57] guidelines recommend that all young people should participate in LTPA of at least moderate intensity daily. Children and young people aged 5–18 need to maintain a basic level of health, by practising at least 60 minutes of LTPA every day. For adults aged 18–64, inclusion of LTPA can improve cardiorespiratory and muscular fitness and bone health. People should practise at least 150 minutes of moderately intense aerobic activities throughout the week.

However, at issue is the fact that many young people are not interested in being physically active anymore and instead prefer sedentary lifestyles [28, 35]. If children are to lead a physically active lifestyle, involvement (with younger children) and support (in adolescents) provided by parents are essential [14].

Both adequate time and quality time are important for family wellbeing. The utilization of time as a resource for the functioning of a family generally refers to the time that family members make available for themselves and for one another [60]. If other family resources are to be mobilized and used, time must be available. Among the various patterns in the use of family time, there is ample evidence of a positive relationship between participation in family leisure and family functioning [18, 28, 36, 58, 59].

A comprehensive understanding of the potential influence of parental involvement in LTPA is needed. The present study was carried out to assess the amount of LTPA and sedentary behaviour among school children and their parents, as well as to identify the associated factors and to evaluate the relationship between motives and forms of family leisure time from two different age-based perspectives: children and parents. It was hypothesized that the 15-week intervention programme "Juniors for Seniors" would reveal a significant relationship between parental

socialization processes and children’s perceived physical competence and attraction to LTPA. The aim of the study was to investigate the physical activity level among children and their parents during leisure time. The study was carried out to assess the prevalence of LTPA and sedentary behaviour and their associated factors among participants of the programme.

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Material and methods

Participants

In 2015, 24 children (14 girls and 10 boys, aged 7.96 ± 0.69 years), called ‘juniors’, and 22 parents (14 mothers aged 38.86 ± 2.96 years, and 8 fathers aged 37.38 ± 2.97 years), called ‘seniors’, were enrolled in a study on a voluntary basis in three primary schools in the urban area of Poznań. Written consent was obtained from all parents (or careers) of all children participating in the programme. Parents were also informed about the anonymous and voluntary nature of their participation, that the study records would be kept confidential, and that their individual contributions would be unidentifiable in the final report.

Detailed data are presented in Table 1. The study protocol was approved by the Local Bioethics Committee of the Karol Marcinkowski University of Medical Sciences in Poznań (decision no. 947/14). Pre- and post-test examinations were done prior to, and immediately after the end of the programme. All questionnaires with children were carried out based the on ‘one-on-one’ rule with a trained member of staff and in comfortable conditions for the child (away from their parent).

Leisure-time activity

To measure factors associated with leisure-time activity, selected questions from the Health Behaviour in School-aged Children (HBSC) questionnaire were used

[10]. Among the items used were questions concerning leisure-time activities:

Q1: *Below is a list of reasons why children undertake physical activity in their leisure time. Please indicate how important each of these reasons are.* There were 12 reasons to perform the leisure-time activity and the answers ranged from ‘very important’ to ‘does not matter’;

Q2: *How much time a day do you spend watching TV?* The answers ranged from ‘none’ to ‘7 hours a day’ and were separated into school and weekend days;

Q3: *How much time a day do you spend playing computer games, including using tablets and smartphones?* The answers ranged from ‘none’ to ‘7 hours a day’ and were separated into school and weekend days;

Q4: *How often, in your spare time outside school, do you usually perform physical exercises, during which your physical effort is large, i.e., lack of breath, sweating?* Possible answers ranged from every day, 4–6 times a week, 2–3 times a week, once a week, once a month, less than once a month, to never);

Q5: *How many hours a week do you spend your spare time outside school activities for physical exercise, during which your physical effort is large, i.e., lack of breath, sweating?* Possible answers ranged from none, about half an hour, about 1 hour, 2–3 hours, about 4–6 hours to 7 hours or more;

Q6: *How often do you spend time with your family: 1) watching films, 2) playing board/computer games, 3) eating meals, 4) going for a walk, 5) visiting places, 6) visiting relatives, 7) doing sports, 8) sitting and talking?* Possible answers ranged from every day, most days of the week, once a week, less than once a week, never).

Intervention

The 15-week “Junior for Seniors” programme was designed to target and improve the perceived sports competence of both children and their parents and to re-initiate and increase PA of family units. The focus was on the development of fundamental bodily skills and sport-specific skills adjusted to the age group. The idea was that the environment should be fun and challenging, and skills should be practised through child-oriented play, exercises and small games. Intervention was divided into 5 sport activity types of 3 weeks each (Movement Plays and Games,

Table 1. Descriptive statistics of program participants (mean and standard deviation)

	N	Body height [cm]		Body mass [kg]		BMI	
		Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Children	24	127.1 ± 6.0	128.5 ± 6.2	25.2 ± 4.8	26.5 ± 4.8	15.5 ± 2.4	16.0 ± 2.2
Mothers	14	165.5 ± 4.3	165.5 ± 4.5	67.6 ± 12.5	67.5 ± 12.9	25.2 ± 3.8	25.1 ± 3.9
Fathers	8	175.6 ± 7.2	177.5 ± 8.2	82.9 ± 13.5	83.4 ± 11.5	26.6 ± 3.9	26.2 ± 3.6

Traditional Sports, Tennis Activities, Nordic walking, Fitness and Dance activities). There were two (45-minute) sessions every week led by a trained instructor. Sessions took place in the afternoons in sport facilities of local schools. Participation was free of charge, voluntary and no record of presence was kept. The only criterion was that both child and parent/parents participate together. There was also an additional one hour a week dedicated to various aspects of nutrition.

Statistical analysis

To compare pre – and post-test values the Wilcoxon test with correction for ties and zeros was used. The variables were expressed on the ordinal scale and therefore the median was calculated for both pre- and post-test. However, in some analysed comparisons medians were not adequate to differentiate distributions and therefore sum of ranks and numbers of differences (positive, negative, zeros) were additionally presented.

Next, Spearman's correlation coefficients between variables in pre-test and post-test were calculated for both groups. First, the correlations between two groups of variables were calculated. The variables from the first group were 12 reasons for undertaking physical activity in their leisure time, and the variables from the second group were answers to the question: How often do you spend time with your family: 1) watching films, 2) playing board/computer games, 3) eating meals, 4) going for a walk, 5) visiting places, 6) visiting relatives, 7) doing sports, 8) sitting and talking. Next we calculated

correlations between variables from the second group (How often do you spend time with your family?) and variables such as watching TV during free time (school/work and weekend days), playing computer games (school/work and weekend days), intense physical exercise (frequency), and time spent on physical exercise during leisure time (during the week).

Results

In children statistically significantly higher values for “to satisfy parents” were observed in the post-test ($Z = -3.63$; $p < 0.001$) (Table 2).

Values for “Playing computer games – school days” ($Z = 2.01$; $p < 0.05$) and “Intense physical exercises – frequency” ($Z = 2.55$; $p < 0.05$) were statistically significantly lower in the post-test and values for “Time spent on intense physical exercises during leisure time” were statistically significantly higher in the post-test ($Z = -2.57$; $p < 0.05$) (Table 3).

In the parents' group there were no statistically significant differences in the pre-test and post-test values for reasons for undertaking LTPA (Table 4).

Values for “Intense physical exercises – frequency” were statistically significantly lower in the post-test ($Z = 2.43$; $p < 0.05$) and values for “Time spent on intense physical exercises during leisure time” were statistically significantly higher in the post-test ($Z = -2.56$; $p < 0.05$) (Table 5).

Table 2. Comparison of pretest and posttest values for reasons to take physical activity in children's group

Reasons	Pre-test	Post-test	P(n)/N(n)/Z(n)	Wilcoxon test Z value
	Me	Me		
To have fun	3.0	3.0	97.5(5)/97.5(5)/105(14)	0.00
For better sport results	3.0	3.0	93(5)/141(8)/66(11)	-0.73
To meet new friends	2.0	2.5	54(3)/155(8)/91(13)	-1.59
For better health	3.0	3.0	74(4)/135(7)/91(13)	-0.96
To meet with friends	2.0	2.0	113.5(6)/95.5(5)/91(13)	0.28
To be in good shape	3.0	3.0	54(3)/155(8)/91(13)	-1.59
To look good	2.0	2.0	149(9)/96(5)/55(10)	0.79
To enjoy exercises	3.0	3.0	126(7)/119(7)/55(10)	0.11
To satisfy parents	1.5	3.0	12(1)/260(16)/28(7)	-3.63***
To be cool / trendy	1.5	1.5	104(5)/60(3)/136(16)	0.76
To control body mass	2.0	2.0	74(4)/190(12)/36(8)	-1.72
Because it stimulates me/it is exciting	3.0	2.0	166(10)/98(6)/36(8)	1.01

*** – $p < 0.001$, Me – median; P(n) – sum of positive ranks and number of positive differences (Pre-test > Post-test); N(n) – sum of negative ranks and number of negative differences (Post-test > Pre-test); Z(n) – sum of ranks for zeros and number of zeros differences (Pre-test = Post-test).

Table 3. Comparison of pretest and posttest values for activity in leisure time in children’s group

Variables	Pre-test	Post-test	P(n)/N(n)/Z(n)	Wilcoxon test Z value
	Me	Me		
Watching TV during free time – school days	3.0	3.0	153(10)/119(7)/28(7)	0.50
Watching TV during free time – weekend days	3.0	3.0	178(11)/86(5)/36(8)	1.35
Playing computer games – school days	2.0	1.5	195(11)/60(4)/45(9)	2.01*
Playing computer games – weekend days	2.5	3.0	172.5(10)/82.5(5)/45(9)	1.33
Intense physical exercises – frequency#	3.0	3.0	233(15)/57(5)/10(4)	2.55*
Time spent on intense physical exercises during leisure time (during the week)	3.0	4.0	48(4)/224(13)/28(7)	-2.57*

* – $p < 0.05$, Me – median # lower values corresponds to higher frequency; P(n) – sum of positive ranks and number of positive differences (Pre-test > Post-test); N(n) – sum of negative ranks and number of negative differences (Post-test > Pre-test); Z(n) – sum of ranks for zeros and number of zeros differences (Pre-test = Post-test).

Table 4. Comparison of pretest and posttest values for reasons to take physical activity in parents’ group

Reasons	Pre-test	Post-test	P(n)/N(n)/Z(n)	Wilcoxon test Z value
	Me	Me		
To have fun	3.0	3.0	115.5(7)/101.5(7)/36(8)	0.24
For better sport results	2.0	2.0	89.5(5)/72.5(4)/91(13)	0.31
To meet new friends	1.0	2.0	53.5(3)/133.5(8)/66(11)	-1.41
For better health	3.0	3.0	42(2)/40(2)/171(18)	0.05
To meet with friends	2.0	2.0	38(2)/79(4)/136(16)	-0.86
To be in good shape	3.0	3.0	90(5)/72(4)/91(13)	0.33
To look good	3.0	3.0	114(6)/19(1)/120(15)	1.89
To enjoy exercises	2.0	2.5	73(4)/102(6)/78(12)	-0.52
To satisfy parents	2.0	2.0	90(5)/72(4)/91(13)	0.33
To be cool / trendy	1.0	1.0	41(2)/41(2)/171(18)	0.00
To control body mass	3.0	2.0	112(6)/36(2)/105(14)	1.45
Because it stimulates me/it is exciting	2.0	2.0	58(3)/90(5)/105(14)	-0.61

Me – median; P(n) – sum of positive ranks and number of positive differences (Pre-test > Post-test); N(n) – sum of negative ranks and number of negative differences (Post-test > Pre-test); Z(n) – sum of ranks for zeros and number of zeros differences (Pre-test = Post-test).

Correlations between variables in children group

In the pre-test statistically significant correlations were obtained between particular variables:

reason for physical activity: to have fun – with family: watching TV together: $r = 0.49$, $p < 0.05$;

reason for physical activity: to have fun – with family: eating together: $r = 0.54$, $p < 0.01$;

reason for physical activity: for better health – with family: together we visit different places: $r = 0.57$, $p < 0.01$;

reason for physical activity: to be in good shape – with family: we visit different places together: $r = 0.45$, $p < 0.05$;

reason for physical activity: to look good – with family: we play games (board, computer) at home: $r = 0.43$, $p < 0.05$;

reason for physical activity: to enjoy exercises – with family: eating together: $r = 0.55$, $p < 0.01$; reason for physical activity: to enjoy exercises – with family: walking together: $r = 0.42$, $p < 0.05$;

with family: playing together – intensity of physical exercise (apart from school activities): $r = -0.64$, $p < 0.001$;

with family: playing together – time spent on intense physical exercises during leisure time (during a week): $r = 0.45$, $p < 0.05$.

Table 5. Comparison of pretest and posttest values for activity in leisure time in parents group

Variables	Pre-test	Post-test	P(n)/N(n)/Z(n)	Wilcoxon test Z value
	Me	Me		
Watching TV during free time – working days	3.0	3.0	86.5(5)/121.5(8)/45(9)	-0.60
Watching TV during free time – weekend days	5.0	4.0	155.5(11)/76.5(5)/21(6)	1.31
Playing computer games – working days	1.0	1.0	63(3)/0(0)/190(19)	1.73
Playing computer games – weekend days	1.0	1.0	42(2)/21(1)/190(19)	0.58
Intense physical exercises – frequency #	4.0	4.0	175.5(11)/32.5(2)/45(9)	2.43*
Time spent on Intense physical exercises during leisure time (during the week)	2.0	3.0	16(1)/159(9)/ 78(12)	-2.56*

* – $p < 0.05$, Me – median # lower values corresponds to higher frequency; P(n) – sum of positive ranks and number of positive differences (Pre-test > Post-test); N(n) – sum of negative ranks and number of negative differences (Post-test > Pre-test); Z(n) – sum of ranks for zeros and number of zeros differences (Pre-test = Post-test).

In the pre-test other correlations between reasons for undertaking physical activity during leisure time and different forms of spending time with family were not at a statistically significant level (0.05). Similarly, other correlations between different forms of time spent with family and variables such as watching TV during free time (school and weekend days), playing computer games (school and weekend days), intense physical exercise (frequency), and time spent on physical exercise during leisure time (during the week) were also not statistically significant ($p > 0.05$).

In the post-test, statistically significant relations were obtained between particular variables:

reason for physical activity: for better sport results – with family: playing together: $r = 0.41$, $p < 0.05$;
 reason for physical activity: to meet new friends – with family: we visit different places together: $r = 0.52$, $p < 0.01$;
 reason for physical activity: to enjoy exercises – with family: we play games (board, computer) at home: $r = 0.44$, $p < 0.05$;
 reason for physical activity: to enjoy exercises – with family: we visit friends together: $r = 0.50$, $p < 0.05$;
 reason for physical activity: to enjoy exercises – with family: playing together: $r = 0.41$, $p < 0.05$;
 reason for physical activity: to satisfy parents – with family: we visit different places together: $r = 0.52$, $p < 0.01$.

In the post-test other correlations between reasons for undertaking physical activity in leisure time and different forms of spending time with family were not statistically significant ($p > 0.05$). Correlations between different forms of time spent with family and variables such as watching TV during free time (school and weekend days), playing computer games (school and weekend days), intense physical exercise (frequency), and time spent on physical exercise during leisure time (during the week) were also not statistically significant at the level 0.05.

Correlations between variables in the parents' group

In the pre-test statistically significant relations were obtained between particular variables:

reason for physical activity: to meet with friends – with family: playing together: $r = 0.53$, $p < 0.05$;
 reason for physical activity: to enjoy exercises – with family: we visit friends together: $r = -0.49$, $p < 0.05$;
 with family: we play games (board, computer) at home – watching TV during free time (weekend days): $r = -0.44$, $p < 0.05$;
 with family: we visit different places together – playing computer games (working days): $r = -0.45$, $p < 0.05$.

In the pre-test, other correlations between the reasons for undertaking physical activity during leisure time and different forms of spending time with the family were not statistically significant ($p > 0.05$). Similarly, other correlations between different forms of spent time with family and variables such as watching TV during free time (school and weekend days), playing computer games (school and weekend days), intense physical exercise (frequency), and time spent on physical exercise during leisure time (during the week) were also not statistically significant at the level 0.05.

In the post-test statistically significant relations were obtained between particular variables:

reason for physical activity: to meet with friends – with family: we play games (board, computer) at home: $r = 0.60$, $p < 0.01$;
 reason for physical activity: to enjoy exercises – with family: we visit different places together: $r = -0.43$, $p < 0.05$;
 reason for physical activity: to satisfy other people – with family: eating together: $r = 0.50$, $p < 0.05$;
 reason for physical activity: because it stimulates me/it is exciting – with family: walking together: $r = 0.46$, $p < 0.05$.

In the post-test other correlations between reasons for undertaking physical activity during leisure time and different forms of spending time with the family were not statistically significant ($p > 0.05$). Correlations between different forms of spending time with the family and variables such as watching TV during free time (school and weekend days), playing computer games (school and weekend days), intense physical exercise (frequency), and time spent on physical exercise during leisure time (during the week) were also not statistically significant ($p > 0.05$).

Discussion

The aim of this study was to analyse the relationship between motives for LTPA and active or more sedentary patterns of lifestyle among Polish families – children and their parents – participating in an intervention within the DEDIPAC programme. For a better understanding of young people’s health, well-being and health behaviours, in the present study LTPA motives and leisure time routine were analysed as well as their association with social factors.

Motivation is a personal characteristic that may be one of the key factors for understanding why some people are physically active in their leisure time [1]. Based on previous analyses by Kalman et al. [22] and Kopicakova et al. [24], motives can be divided into four components: “social motives”, “health motives”, “good child motives” and “achievement motives”. The theoretical basis for such a differentiation was the self-determination theory (SDT) of Deci and Ryan [12, 39]. Therefore in the present study motives for LTPA were similarly divided and structured in the same four subgroups.

Findings from our own research show that some of the most important reasons for the family members were the same for both groups (parents and their children): fun (social motive), health (“good child motive”), stay/get in good shape (health motive). For children important achievement was also recognized as important, as were other social motives such as: better results, “it stimulates me”, or “I enjoy it”. In comparison, for parents health motives such as good looks and control over body mass were more important.

As Molanorouzi et al. [29] suggest, strong and important motives for participation in LTPA are different across types of activity, age, and gender in adults. The systematic review by Teixeira et al. [50] likewise provides good evidence for the value of SDT in understanding exercise behaviour, demonstrating the importance of autonomous (identified and intrinsic) regulation in fostering LTPA. However, many studies show that fathers appear to play a crucial role in promoting the importance of LTPA and it is the father’s level of LTPA that predicts overall LTPA

among adolescents [14]. The literature is also consistent in that competence satisfaction and more intrinsic motives positively predict exercise participation across a range of samples and settings. Mixed evidence was found concerning the role of other types of motives (e.g., health/fitness and body-related) [50]. Understanding the motives that influence LTPA participation is critical for developing interventions to promote higher levels of involvement. The review study of Allender, Cowburn & Foster [3] shows that participation for young children was found to be more enjoyable when they were not being forced to compete and win, but rather encouraged to experiment with different activities. It was also important for children to feel parental support and have easy access to a safe play environment.

It is worth noting that one motive changed its importance for participants after the intervention. Satisfying parents (the ‘good child’ motive) turned out to be valued more highly. This might suggest that the child participants were stimulated by parents to take part in the exercises as both sides (parents and children) could sense the coming tension and pressure of participating in an organized LTPA programme together. Research by Kalman et al. [22] shows that those motives are more important for younger children than for adolescents, so this kind of motivation loses its significance with age. The age of children participating in the present study (7–9 years) is also crucial for using sport participation as a tool for children to gain a range of personal, social, and physical benefits because it allows them to explore their abilities and build positive self-perceptions. As Neely & Holt [34] have concluded, parents appeared to play the most important role in their children’s acquisition of benefits by seizing “teachable moments” from sport and reinforcing certain principles in the home environment.

Parents’ levels of LTPA are generally believed to be one of the strongest determinants of their children’s activity patterns. Several studies of school-aged children, based on self-reporting or parental reporting of PA, have found positive correlations among LTPA within families [20, 56]. Parents play an important role in shaping children’s health behaviours and may do so through direct modelling (i.e. engaging in LTPA behaviours observed by children – “do together”), which increases the likelihood that children will emulate their parents’ actions [20, 48, 53, 54]. Parents are the primary inhibitors of their children’s participation in LTPA [6], and they have a variety of direct and indirect ways of reinforcing children’s LTPA [8].

According to the leisure time routine, as a result of the analysed intervention, a decrease of the time spent on computer games during the week days among children was observed. The intervention mostly took place on weekdays, so this was one obvious and very positive result. It can be assumed that well-organized leisure time of

family members is the key solution for healthy and active lifestyle. School settings could play a crucial role in that process.

The findings from the study of Griffith et al. [20] suggest that primary prevention and intervention strategies for children at risk of overweight should be directed at increasing not only children's physical activity but also that of their parents, and especially mothers.

There are not enough programs for families as a whole; most of them are only for children or only for adults. There is a considerable gap in the active leisure time offers, and the "Juniors for Seniors" programme was one attempt to fill it. However, a limitation of the present study is the low response rate. It is possible that most of the parents are not ready yet to participate with their children in extra PA organized in school settings. A second limitation is our sample size, which limited our power to obtain significant results. Nevertheless, we do not anticipate that it would significantly impact our findings overall. Due to the small number of respondents, the validity and reliability of the new research tool, based on the HBSC questionnaire, were not assessed.

Conclusions

Activities undertaken in the family contribute to the educational impact on children's attitudes as well as on the so-called culture of leisure time. Recreation in the family environment makes it possible to influence the attitudes of children and contribute to the development of their personality, knowledge and understanding, whilst at the same time giving them the opportunity to experience various forms of culture. An integrating role among the family members is also attributed to recreational activities. Family recreational activities help parents gain authority, form a partnership with the child, and establish intergenerational dialogue, as well as creating the so-called culture of leisure time. The proper organization of a child's leisure time is one of the duties of parents. In addition to meeting the child's basic needs, one of the guardians' main duties is providing opportunities for the development of aptitudes and interests, which is closely linked to the issue of recreation within families, as discussed above. In the present study the most valuable motive for LTPA in 6–8-year-old children was the need to 'satisfy' parents' expectations. As a result of the intervention children increased their time spent on intense LTPA, which they undertook more frequently. As for the parents' group, no statistically significant increase was noted in any of the variables measured. However, high levels of responses 'for good health' and 'for fun' – as reasons for participation – in both groups (children and parents) indicate the positive level of interest of the families that took part in the intervention.

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