THE RELATIONSHIPS BETWEEN MATURATION, PHYSICAL ACTIVITY AND OBJECTIFIED BODY CONSCIOUSNESS IN THE SAMPLE OF ADOLESCENTS

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ABSTRACT

Research background and hypothesis. Although trends of decline in physical activity during adolescence are determined by most authors, the association of biological maturation with physical activity has not been commonly studied. It is thought that the effect of changes occurring in adolescent physical activity during maturation may be associated with psychological factors, for instance, body dissatisfaction.

Research aim was to determine the relationships between maturation, physical activity and objectified body consciousness in the sample of adolescents.

Research methods. The study comprised adolescents of fifteen 9th forms of Kaunas education institutions (4 gymnasiums, 10 secondary schools and one main school). The studied sample consisted of 293 schoolchildren, 57 of them did not fill in questionnaires (because of refusal or absence). Thus the data of 236 students were analyzed, 115 (48.7%) of them were boys. Mean age (SD) of participants was 15 (0.38) years, the youngest was 14, the oldest – 16 years old. The anonymous questionnaires were used to determine physical activity, (*Leisure-Time Physical Activity Questionnaire,* LTPAQ; Godin, Shephard, 1985) objectified body consciousness (*Self-Objectification Questionnaire*, SOQ; Noll, Fredrickson, 1998) and the sexual maturation level of adolescents (*Tanner Sexual Maturation Scale*, SMS; Marshall, Tanner, 1969; Marshall, Tanner, 1970).

Research results. Late maturing adolescents were found only in the group of boys. Slightly more than one-third of boys and almost one-fifth of girls were early maturing. The analysis of association between the stage of maturation and adolescent physical activity showed a negative relationship in the group of adolescent boys. The study revealed that with an increase in sexual maturation stage girls reported higher rate of objectified body consciousness, however, this trend was not detected in boys. With an increase in maturation stage the rate of drive for thinness grew in girls and boys. Rates of body dissatisfaction, drive for thinness, objectified body consciousness were higher in adolescent girls than in boys, however, the rate of exercising was lower. Body dissatisfaction, drive for thinness, objectified body consciousness were not associated with physical activity in the sample of adolescents.

Discussion and conclusions. The study contributes to the research asserting that sexual maturation is associated with lower adolescent physical activity, however, it is common only among boys. Objectified body consciousness in girls and drive for thinness in both genders grow when sexual maturation increases. Rates of body dissatisfaction, drive for thinness, objectified body consciousness are higher in adolescent girls than in boys, however, their exercising rate is lower. Body dissatisfaction, drive for thinness, objectified body consciousness were not related to adolescent physical activity in the sample.

Keywords: maturation, physical activity, objectified body consciousness.

INTRODUCTION

Adolescence is one of the most complicated stages in human body development. This period is marked by rapid biological, psychological and social changes (Patton, Viner, 2007). Most researchers determined that adolescence was associated with a decline in physical activity (Bradley et al., 2011; Finne et al., 2011). Although trends of decline in physical activity during adolescence are determined by most authors, the association of biological maturation

with physical activity has not been commonly studied (Sherar et al., 2010). It is thought that the effect of changes occurring in adolescent physical activity during maturation may be associated with psychological factors, for instance, body dissatisfaction (Finne et al., 2011). According to the study performed by S. P. Cumming et al. (2010), physical attractiveness perceived by adolescent girls had a close association with the effect of maturation on physical activity. It has been stated that adolescent girls reported having too much fat, and adolescent boys were dissatisfied with their bodies since they perceived themselves as thinner and less muscular (McCabe et al., 2010). Early individual sexual maturation (acceleration) may be linked to overweight resulting from improper diet in childhood (Dunger et al., 2005). Nutrition is an important factor manifesting in children growth and obesity, in addition, it may be linked to early maturation (Dunger et al., 2006).

Swedish researchers (Michaud et al., 2006) determined that a bigger percentage of early maturing girls reported body dissatisfaction and functional disorders. According to the same authors, early or late maturing boys reported higher rates of improper eating habits and depressive symptoms. These conclusions suggest that adolescents and their parents need an appropriate councelling in the field of mental health and health behavior.

Some studies revealed that adolescent body dissatisfaction was associated with health risk behaviors (McCabe et al., 2010), and was one of the factors influencing physical inactivity (Slater, Tiggemann, 2010 a, b). The maturation stage is significant for physical self-assessment and its related behavior. It is determined that early maturing boys who were dissatisfied with their weight more frequently used food supplements that were the predictors for steroid use and disordered eating risk compared with their peers. Early maturing girls who reported body dissatisfaction had weight reducing measures and more frequently consumed food supplements that were the predictors for disordered eating (McCabe, Ricciardelli, 2004). Maturation stages among girls were associated with the traits of self-objectification (focus on the body and body shape), however, such associations among boys were not found (Lindberg et al., 2006).

Although adolescent physical activity is one of the main sources of health (Hallal et al., 2006), schoolchildren's physical activity is insufficient in our country (Zaborskis, Lenciauskiene, 2006). Thus, the development of programmes for an increase in physical activity among adolescent girls, should be based on the problem of body dissatisfaction. In particular, this problem may be relevant to early maturing adolescents. It is known that early maturing girls experience higher social physique anxiety, and if they are motivated to exercise by body-related reasons, social physical anxiety may contribute to lower levels of physical activity. (Niven et al., 2009). On the other hand, the studies of adolescents aged 12 years reveal that physical activity depends not on the stage of maturation, but on objectified body consciousness (Knowles et al., 2009).

Thus, there is still a lack of studies, particularly, regarding adolescent boys, that investigate the relationships between adolescent sexual maturation, objectified body consciousness, physical activity and eating-related behaviors. The study may contribute to better understanding of associations of adolescent lifestyle with physical activity and weight management, and therefore could be the main focus of the development of preventive health education programmes. The results could assist school specialists of public health and teachers of physical education in adolescent physical activity motivation and/or developing adolescent physical inactivity preventive programmes. **The aim of the study** was to determine the relationships between maturation, physical activity and objectified body consciousness in the sample of adolescents.

RESEARCH METHODS

Design of the study. The study included adolescents from fifteen 9th forms of Kaunas education institutions (4 gymnasiums, 10 secondary schools and one main school). Permission from the Department of Education of Kaunas Municipality was obtained. All headmasters of schools consented to the project. The agreement with every school that participated in the study was signed. The study was approved by Kaunas Committee of Bioethics (Nr. BE-2-62). An survey was carried out by the authors of the study and trained investigators. The interview was performed in the beginning of October, 2010, by receiving an invitation from school. The questionnaires were filled in by schoolchildren with the participation of school public health specialists or class teachers. The school children were informed about anonymity.

This study presents the greater part of the results (the data from the first survey).

The studied sample comprised 293 school children, 57 of them did not fill in questionnaires (because of refusal or absence). Thus the data of 236 students were analyzed. The mean age (SD) of participants was 15 (0.38) years, the youngest was 14, the oldest – 16 years old. The sample consisted of 115 (49%) boys and 121 (51%) girls.

The stage of sexual maturation was determined using Tanner Sexual Maturation Scale, SMS (Marshall, Tanner, 1969; Marshall, Tanner, 1970). For this purpose, the questionnaires to evaluate the subjective stage of sexual maturation were developed individually, for boys and girls. The development of questionnaires was based on the studies performed earlier determining that adolescents might perform self-assessment of sexual maturation (Williams et al., 1988; Matsudo, s. M. M., Matsudo, V. K. R., 1994). Such questionnaires may be used in epidemiological studies when a direct adolescent study to determine maturation stage is impossible (Taylor et al., 2001). One part of the questionnaire had pictures illustrating the secondary sexual characteristics with a description of sexual maturation stage. The studied persons were asked to mark one of the five stages that corresponded best their body status in every description of sexual maturation stage and pictures,. I-II stages corresponded to the beginning of sexual maturation, III–IV – the middle, V – the end.

Objectified body consciousness was determined by the objectified questionnaire (*Self-Objectification Questionnaire,* SOQ; Noll, Fredrickson, 1998). The questionnaire is designed to determine whether an individual assesses his/her body by body-related reasons (e. g. body image), or body functions (e. g. vitality). The participants were asked to rank 10 body characteristics attributing a score from 0 to 9 depending on how a certain characteristic is important for him/her. Five characteristics were attributed to the body functional perception, the other five – to the body assessment as an object. Summing up the characteristics related to body image and functions, two variables are received. The first minus the second is a score of objectified body consciousness which ranges from 25 to –25. The higher the score, the more objectified body consciousness the person has.

Drive for thinness was determined by thinness subscale of the questionnaire (Eating Disorder Inventory-3 (EDI-3; Garner, 2004). It comprises 7 statements with the answers in the four point scale of Likert from "always" (0 or 4 scores) to "never" (0 or 4scores). *Body dissatisfaction* was found using the subscale of body dissatisfaction of the same questionnaire that comprises 10 statements. The number of Lithuanian copies of these scales was obtained from *Psychological Assessment Resources (PAR)*, which holds the copyright for the questionnaire.

Physical activity (rate of exercising). Schoolchildren's exercising rate was determined by the modified leisure time exercise questionnaire (*Leisure Time Exercise Questionnaire,* LTEQ; Godin, Shephard, 1985; Godin, 2011). Respondents were asked to report weekly frequencies of light, moderate and strenuous activities, if the individual exercised longer than 15 minutes. These frequencies were adjusted to metabolic equivalents – 3, 5 and 9, respectively, and later the scores of all intensity levels were summed up. Health-related physical activity may be assessed as strenuous and moderate sum of activities (Godin, 2011), however, in this study we evaluated general physical activity as it was recommended in the initial stage of the design of the questionnaire (Godin, Shephard, 1985). LTEQ instructions comprised the examples of physical activity that were adapted to the common physical activities of adolescents in our country. The questionnaire also contained the second question: "During a typical 7-Day period, in your leisure time, how often do you engage in any regular activity long enough to work up a sweat?" the possible answers: "often", "sometimes", "never/rarely". The study revealed that LTEQ questionnaire was reliable and valid (Jacobs et al., 1993). Average weekly leisure time (excluding lessons) of the sample formed the total of 57 (32.37) scores. The lightest physical activity was 0, and the most strenuous – 259.

Statistical analysis. Statistical data analysis was performed using SPSS 13.0 (*Statistical Package for Social Sciences for Windows).* The non-parametric Mann-Whitney U and Kruskal-Wallis tests were used to calculate the distribution of mean variables. The Spearman's correlation coefficient rho was applied to calculate correlations between variables. The results were valued as statistically significant if $p < 0.05$.

RESEARCH RESULTS

Normally, the secondary sexual characteristics are becoming more expressed in maturing adolescents aged from 14 to 16 years (the third and fourth stages). The majority of our studied boys and girls reached the fourth stage of sexual maturation, 49.6% and 67.8%, respectively (Table 1). Late maturing adolescents were found only in the boys' group (4.35%). The early maturing adolescents who had the fifth stage of secondary sexual characteristics included 35.7% boys and 14% of girls. Body mass index (BMI) in the sexual maturation stages did not differ. Mean BMI was 20.15, SD = 2.79 kg/m². The lowest BMI was 14.0, the highest – 32.91 kg/m².

Table 1. **Expression of sexual maturation in boys and girls in the sample ($\chi^2 = 22.23$; df = 3; p < 0.001)**

The stage of sexual maturation	Boys (n, %)	Girls (n, %)	Totally in the groups by sexual maturation (n, %)
1	5 (4.3)	0	5 (2.1)
2	–	–	–
3	12 (10.4)	22 (18.2)	34 (14.4)
4	57 (49.6)	82 (67.8)	139 (58.9)
5	41 (35.7)	17 (14.0)	58 (24.6)
Totally in groups by gender (n, %)	115 (100)	121 (100)	236

The mean physical activity was M = 57.63 (32.11) in the group. Physical activity ranged from 0 to 207 points. Boys were physically more active than girls, their score was 65.96 (29.71) and 49.12 (32.39), respectively, Mann-Whitney U = 2602.5; p = 0.0001. Then, the associations of sexual maturation stage with physical adolescent activity were studied. Confident difference was determined in boys between the first and the fifth stages of maturation, Mann-Whitney U = 29.000, p = 0.02 (Table 2). Physical activity in girls did not differ between maturation stages, e. g. comparing the third and the fifth stages, Mann-Whitney U = 63.5, p = 0.291.

The mean score of objectified body consciousness scale in the sample was 9.13 (11.50). The lowest score–25, the highest – 23. Objectified body consciousness was higher in girls compared to boys, 6.49 (12.86) and 11.93 (9.12), respectively, Mann-Whitney U = 4470; p = 0.003. Objectified body consciousness did not significantly differ only among girls of the third and fourth stages of sexual maturation, Mann-Whitney U = 451; p = 0.01 (Table 3).

Table 2. **Expression of physical activity (SD) in the groups by sexual maturation stages and gender**

The stage of sexual maturation	Boys	Girls
1	7.8 (13.59)	–
3	69.09 (19.26)	48.17 (22.20)
4	69.32 (34.48)	47.51 (34.09)
5	58.33 (25.91)	57.71 (31.70)

Table 3. **Distribution of the mean score of objectified body consciousness scale (SD) in the groups by gender**

The stage of sexual maturation	Boys	Girls
1	–10.20 (7.43)	–
3	–12.85 (8.96)	–13.37 (8.99)
4	–12.85 (9.37)	–4.43 (13.39)
5	–10.69 (8.75)	–8.06 (11. 61)

The mean score of drive for thinness in the sample was 0.8 (1.03). The lowest possible mean score was 0, the highest – 4. Drive for thinness was more expressed in girls than boys 1.07 (1.11) and 0.5 (0.85), respectively, Mann-Whitney U = 3629.5, p = 0.0001 as well as body dissatisfaction: Mann-Whitney U = 4457.50, p = 0.003, respectively. Statistically significant difference of rate of drive for thinness was found in girls who were in the third and fourth, and the third and fifth stages of maturation, Mann-Whitney U = 463, p = 0.009 and Mann-Whitney U = 108, p = 0.05, respectively (Table 4). Body dissatisfaction with an increase of sexual maturation stage showed an increasing trend in both, boys and girls, but the differences were not statistically significant.

We performed the analysis of correlation and determined that sexual maturation in boys slightly correlated with their physical activity (Spearman rho = –0.20, p = 0.048), however, it did not have statistically significant associations with the analyzed variables. Physical activity in girls was not statistically significantly related to the stage of sexual maturation or other analyzed variables.

Table 4. **The mean score of thinness and dissatisfaction scales (SD) in the groups by gender**

The stage of sexual maturation	Boys		Girls	
	Drive for thinness M (SD)	Body dissatisfaction M (SD)	Drive for thinness M (SD)	Body dissatisfaction M (SD)
1	0.17 (0.33)	0.63 (0.48)	–	–
3	0.59 (0.98)	1.11 (1.27)	0.52 (0.69)	1.42 (0.86)
4	0.47 (0.91)	1.16 (1.08)	1.13 (1.05)	1.74 (1.23)
5	0.56 (0.78)	1.54 (1.09)	1.47 (1.50)	1.90 (1.22)

DISCUSSION

This study is a part of larger educational research. In the analysis of primary survey data of the studied sample we aimed at finding out the associations of body perception, physical activity (exercising habits) with the level of sexual maturation in adolescents aged 15 years. The study revealed that higher rates of body dissatisfaction, drive for thinness, objectified body consciousness were linked to sexual maturation level only in later stages suggesting that girls in the fourth and fifth stages of sexual maturation frequently gained more weight, and boys after growth jump sometimes had poorly developed muscles. P. D. Dunkan et. al., (1985) determined that early maturing boys were mostly satisfied with their height and weight. Early maturing girls reported higher rate of dissatisfaction with their weight, and almost 69% of girls wanted to be slimmer. Another study revealed that adolescent girls' perceived body attractiveness was related to sexual maturation and physical activity (Cumming et al., 2011).

In our study, the analysis of associations of sexual maturation stage with physical activity showed a negative relationship in boys. The data of other studies (Sallis, 2000; Gordon-Larsen et al., 2004; Lampert et al., 2007), also showed a decline in physical activity during adolescence. The relationship between girls' sexual maturation and physical activity was not found because of the absence of girls in the first and second sexual maturation stages. On the other hand, the other researchers revealed that physical activity did not depend on maturation stage but on physical self-perception (Knowles et al., 2009).

The study revealed that an increase in sexual maturation increases objectified body consciousness in girls, however, this trend was not found in boys. The same trends were pointed out by other researchers (Lindberg et al., 2006). Girls and boys of higher stages of sexual maturation reported a greater rate of drive for thinness. Similar trends were also found by other authors (McCabe, Ricciardelli, 2004). However, body dissatisfaction, drive for thinness, objectified body consciousness were not associated with adolescent physical activity (exercising rate) in this sample. The further investigations should check this relationship by applying other questionnaires, the monitoring studies would be of great importance as well.

Our study as well as the other research revealed that lower physical activity was common in girls (Zaborskis, Lenciauskiene, 2006; Brunet, Sabiston, 2009; Caglar et al., 2010). According to other researchers, poorer body image is common in girls as well (Brunet et al., 2010; Kerremans et al., 2010; Kerremans et al., 2010).

CONCLUSIONS AND PERSPECTIVES

The study contributes to the research asserting that sexual maturation is associated with lower adolescent physical activity, however, it is common only in boys. Objectified body consciousness in girls and drive for thinness in both genders grow when sexual maturation increases. Rates of body dissatisfaction, drive for thinness, objectified body consciousness are higher in adolescent girls than in boys, however, their exercising rate is lower. Body dissatisfaction, drive for thinness, objectified body consciousness are not related to adolescent physical activity in the sample.

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REFERENCES

Bradley, R. H., McRitchie, S., Houts, R. M. et al. (2011). Parenting and the decline of physical activity from age 9 to 15. *The International Journal of Behavioral Nutrition and Physical Activity*, 15, 8–33.

Brunet, J., Sabiston, C. M., Dorsh, K. D. et al. (2010). Exploring a model linking social physique anxiety, drive for muscularity, drive for thinness and self-esteem among adolescent boys and girls. *Body Image*, 7, 137–142.

Brunet, J., Sabiston, C. M. (2009). Social physique anxiety and physical activity: A self-determination theory perspective. *Psychology of Sport and Exercise*, 10, 329–335.

Caglar, E., Bilgili, N., Karaca, A. et al. (2010). The psychological characteristics and health related behavior of adolescents: The possible roles of social physique anxiety and gender. *The Spanish Journal of Psychology*, 13, 741–750.

Cumming, S. P., Standage, M., Loney, T. et al. (2011). The mediating role of physical self-concept on relations between biological maturity status and physical activity in adolescent females. *Journal of Adolescence,* 34 (3), 465–473.

Duncan, P. D., Ritter, P. L., Dornbusch, S. M. et al. (1985). The effects of pubertal timing on body image, school behavior, and deviance. *Journal of Youth and Adolescence,*14 (3), 227–235.

Dunger, D. B., Ahmed, M. L., Ong, K. K. (2006). Early and late weight gain and the timing of puberty. *Molecular and Cellular Endocrinology,* 254–255, 140–145.

Dunger, D. B., Ahmed, M. L., Ong, K. K. (2005). Effects of obesity on growth and puberty. *Best Practice & Research in Clinical Endocrinology & Metabolism*, 19 (3), 375–390.

Finne, E., Bucksch, J., Lampert, T. et al. (2011). Age, puberty, body dissatisfaction, and physical activity decline in adolescents. Results of the German Health Interview and Examination Survey (KiGGS). *The International Journal of Behavioral Nutrition and Physical Activity*, 27 (8), 119–133.

Garner, D. M. (2004). *Eating Disorder Inventory*. Third edition (EDI-3). Lutz, FL: Psychological Assessment Resources.

Godin, G., Shephard, R. J. (1985). A simple method to assess exercise behavior in the community. *Canadian Journal of Applied Sport Sciences*, 10, 141–146.

Godin, G. (2011). The Godin – Shephard leisure – time physical activity questionnaire. *The Health & Fitness Journal of Canada,* 4 (1), 18–22.

Gordon-Larsen, P., Nelson, M. C., Popkin, B. M. (2004). Longitudinal physical activity and sedentary behavior trends: Adolescence to adulthood. *American Journal of Preventive Medicine,* 27, 277–283.

Halla, P. C., Victora, C. G., Azevedo, R. et al. (2006). Adolescent physical activity and health. *Sports Medicine*, 36, 1019–1030.

Jacobs, D. R., Ainsworth, B. E., Hartman, T. J., Leon, A. S. (1993). A simultaneous evaluation of 10 commonly used physical activity questionnaires. *Medicine and Science in Sports and Exercise,* 25, 81–91.

Kerremans, A., Claes L., Bijttebier, P. (2010). Disordered eating in adolescent males and females: Associations with temperament, emotional and behavioral problems and perceived self-competence. *Personality and Individual Differences*, 49, 955–960.

Knowles, A. M., Niven, A. G., Fawkner, S. G. et al. (2009). A longitudinal examination of the influence of maturation on physical self-perceptions and the relationship with physical activity in early adolescent girls. *Journal of Adolescence,* 32, 555–566.

Lampert, T., Mensink, G., Romahn, N. et al. (2007). Körperlich-sportliche Aktivität von Kindern und Jugendlichen in Deutschland [Physical activity among children and adolescents in Germany. Results of the German Health Interview and Examination Survey for Children and Adolescents (KiGGS)] (in German). *Bundesgesundheitsblatt*, 50, 634–642.

Lindberg, S. M, Hyde, J. S., McKinley, N. M. (2006). A measure of objectified body consciousness for preadolescent and adolescent youth. *Psychology of Women Quarterly*, 30, 65–76.

Marshall, W. A., Tanner, J. M. (1970). Variation in the pattern of pubertal changes in boys. *Archives of Disease in Childhood*, 45, 13–23.

Marshall, W. A., Tanner, J. M. (1969). Variation in the pattern of pubertal changes in girls. *Archives of Disease in Childhood*, 44, 291–303.

Matsudo, S. M. M., Matsudo, V. K. R. (1994). Self-assessment and physician assessment of sexual maturation in Brazilian boys and girls: Concordance and reproducibility. *American Journal of Human Biology,* 6 (4), 451–455.

McCabe, M. P., Ricciardelli, L. A. (2004). A longitudinal study of pubertal timing and extreme body change behaviours among adolescent boys and girls. *Adolescence*, 39, 145–166.

McCabe, M. P., Ricciardelli, L. A., Holt, K. (2010). Are there different sociocultural influences on body image and body change strategies for overweight adolescent boys and girls? *Eating Behaviors,* 11, 156–163.

Michaud, P. A., Suris, J. C., Deppen, A. (2006). Gender-related psychological and behavioral correlates of pubertal timing in a national sample of Swiss adolescents. *Molecular and Cellular Endocrinology*, 254–255,172–178.

Niven, A., Fawkner, S., Knowles, C. et al. (2009). Social physique anxiety and physical activity in early adolescent girls: The influence of maturation and physical activity motives. *Journal of Sport Sciences*, 27, 299–305.

Noll, S. M., Fredrickson, B. L. (1998). A mediational model linking self-objectification, body shame, and disordered eating. *Psychology of Women Quarterly,* 22, 623–636.

Patton, G. C., Viner, R. (2007). Pubertal transitions in health. *The Lancet*, 369, 1130–1139.

Sallis, J. F. (2000). Age-related decline in physical activity: A synthesis of human and animal studies. *Medicine & Science in Sports & Exercise*, 32, 1598–1600.

Sherar, L. B., Cumming, S. P., Eisenmann, J. C. et al. (2010). Adolescent biological maturity and physical activity: Biology meets behavior. *Pediatric Exercise Science*, 22 (3), 332–349.

Slater, A., Tiggemann, M. (2010 a). Gender differences in adolescent sport participation, teasing, self-objectification and body image concerns. *Journal of Adolescence*, 2010, doi:10.1016/j.adolescence.2010.06.007.

Slater, A., Tiggemann, M. (2010 b). "Uncool to do sport": A focus group study of adolescent girls' reasons for withdrawing from physical activity. *Psychology of Sport and Exercise*, 11, 619–626.

Taylor, S. J., Whincup, P. H., Hindmarsh, P. C. et al. (2001). Performance of a new pubertal self-assessment questionnaire: A preliminary study. *Paediatric and Perinatal Epidemiology,* 15 (1), 88–94.

Williams, R. L., Cheyne, K. L., Houtkooper, L. K. et al. (1988). Adolescent self-assessment of sexual maturation. Effects of fatness classification and actual sexual maturation stage. *Journal of Adolescent Health Care: Official Publication of the Society for Adolescent Medicine,* 9 (6), 480–482.

Zaborskis, A., Lenciauskiene, I. (2006). Health behavior among Lithuanian adolescents in context of European Union. *Public Health*, 47, 335–343.

PAAUGLIŲ LYTINIO SUBRENDIMO IR FIZINIO AKTYVUMO BEI KŪNO SUVOKIMO SĄSAJOS

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SANTRAUKA

Tyrimo pagrindimas ir hipotezė. Fizinio aktyvumo mažėjimo tendencijos paauglystės laikotarpiu daugelio autorių yra nustatytos, tačiau biologinio brendimo ir fizinio aktyvumo sąsaja dažniausiai netiriama. Manoma, kad brandos pokyčių poveikis paauglių fiziniam aktyvumui gali būti susijęs su psichologiniais veiksniais, pavyzdžiui, nepasitenkinimu savo kūnu.

Tikslas – nustatyti abiejų lyčių paauglių lytinio subrendimo, fizinio aktyvumo ir kūno suvokimo sąsajas.

Metodai. Buvo tiriama penkiolikos Kauno švietimo įstaigų (4 gimnazijų, 10 vidurinių mokyklų ir vienos pagrindinės mokyklos) po vieną devintą klasę. Tiriamąją imtį sudarė 293 moksleiviai, 57 iš jų neužpildė anketų (atsisakė arba apklausos metu nebuvo klasėje). Dėl to toliau buvo analizuoti 236 moksleivių duomenys, iš jų 115 (48,7%) buvo berniukų. Moksleivių amžiaus vidurkis (SD) – 15 (0,38) metų (jauniausiam – 14 m., vyriausiam – 16 m.). Anoniminės apklausos būdu nustatytas paauglių fizinis aktyvumas naudojant Fizinio aktyvumo laisvalaikio metu klausimyną (*Leisure-Time Physical Activity Questionnaire*, LTPAQ; Godin, Shephard, 1985), kūno suvokimas (*Self-Objectification Questionnaire*, SOQ; Noll, Fredrickson, 1998) ir lytinio subrendimo lygmuo naudojant *Tanner* lytinio subrendimo stadijų nustatymo metodą (Marshall, Tanner, 1969; Marshall, Tanner, 1970).

Rezultatai. Vėluojančio brendimo paauglių buvo tik berniukų grupėje. Šiek tiek daugiau nei trečdalis berniukų ir beveik penktadalis mergaičių bręsta anksčiau. Tiriant sąsajas tarp lytinio subrendimo stadijos ir moksleivių fizinio aktyvumo, aptiktas neigiamas ryšys berniukų grupėje. Tyrimas atskleidė, kad vis labiau lytiškai subrėstant didėja mergaičių sudaiktintas kūno suvokimas, tačiau tarp berniukų ši tendencija nenustatyta. Vis labiau mergaitėms ir berniukams lytiškai subrėstant, didėja liesumo siekimas. Mergaičių nepasitenkinimas savo kūnu, liesumo siekimas, sudaiktintas kūno suvokimas yra didesnis negu berniukų, tačiau mankštinimosi dažnis yra mažesnis. Nepasitenkinimas savo kūnu, liesumo siekimas, sudaiktintas kūno suvokimas nebuvo susiję su paauglių fiziniu aktyvumu tiriant šią imtį.

Aptarimas ir išvados. Tyrimas prisideda prie studijų, kurios teigia, kad lytinis subrendimas susijęs su mažesniu paauglių fiziniu aktyvumu, tačiau tai pastebima tik tarp berniukų. Vis labiau lytiškai subrėstant, didėja mergaičių sudaiktintas kūno suvokimas ir abiejų lyčių paauglių liesumo siekimas. Nepasitenkinimas savo kūnu, liesumo siekimas, sudaiktintas kūno suvokimas nebuvo susiję su paauglių fiziniu aktyvumu tiriant šią imtį.

Raktažodžiai: brendimas, fizinis aktyvumas, kūno suvokimas.

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