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BODY FAT AND THE CONSTITUENTS OF PRO-SOMATIC ATTITUDES IN PRACTICE OF AN OUTDOOR PHYSICAL EDUCATION CLASS — A DIGEST

Introduction. The phenomenon of excess body weight, as well as obesity, although increasingly common in every age range, is an especially dangerous one for children and adolescents, who have usually very slim chances of solving the problem in later life. Development of obesity is linked to many complications, of somatic as well as psychological nature. The primary role in etiology of obesity should be attributed to the lifestyle involving unhealthy dietary habits along with insufficient levels of physical activity, a symptom of which is spending large amounts of time in interaction with technology. Accordingly, development of obesity should be linked with the increase of sedentary life style and the associated isolation from the natural environment.

The aim of this paper was to provide a comprehensive, synthetic view on the most important research connected to the link between obesity and physical activity, within the context of the natural environment surrounding human beings.

Scope and method. The research was conducted in 2013, and it concerned publications in books as well as in periodicals, both scientific and didactic. It encompassed publications in Polish and in foreign languages, mostly in digital sources. Most of the publications were concentrated on students of primary as well as secondary schools; some more general studies sampled all the age groups. Polish literature noticed the link between obesity and levels of physical activity. Additional

research on the influence of places where the activity is conducted is rare; nevertheless, we have been able to find several foreign publications on that subject.

Results. In accordance with the common opinion, the student's levels of physical activity revealed themselves to be in correlation with the level of body fat, as confirmed by the earlier research on the connections of body fat levels and the associated body mass index and physical activity and fitness as well as the remaining components of attitudes towards physical culture [8; 9].

In the years 1970—1990 growth curve of the number of obese people was in direct accordance parallel to the number of cars sold and the average number of hours in a week spent in front of a television set [11]. Limitations of activity can also be secondary and caused by difficulties of movement by an obese person experiences may what leads to further gain in body mass, and at the same time completing the vicious circle. At the same time, many surveys point out at the correlation between long periods of increased physical activity and decrease, or slowed in-time increase in body mass [10], as well as generally improved mental state [13].

Obese adolescents take part in extracurricular physical activities less often than their normal body-weight peers. Overweight children tend to choose individual forms of extracurricular physical activity, not requiring presence of a group and minimising the element of competition [3].

The publication concerning adolescents entering middle school informs about the problem of attitudes towards physical activity as well as Physical Education classes [2]. Most (78%) of the surveyed obese teenagers assessed themselves as physically active or very active, with the remaining 22% considering themselves inactive or not very active. Compared to their normal body mass peers, this percentage (for both boys and girls) was doubled ($p < 0{,}001$). Compared to normal body mass boys, obese boys took part in significantly less physical exercise ($p < 0{,}001$). Only 38% of them were adequately active — the percentage in non-obese boys was 46% ($p < 0{,}001$). Obese girls had similar levels of adequate physical activity to those of their non-obese peers (34% and 36%, respectively) 2/3 (67%) of the obese boys regularly took part in extracurricular activities — this result is not relevantly different from the one obtained for the non-obese boys. For girls, however, the percentage of obese students taking part in the activities was smaller, than the respective percentage of non-obese ones ($p < 0{,}05$).

The few foreign publications on the associations between excess weight and obesity and attitudes towards physical activity are inconclusive. Obese children tended to rate endurance training lower, and flexibility training higher than slim children did [16], but another survey found no difference in attitudes between slim and obese children, nor any correlation to levels of obesity in their mothers [12]. Activity typically employed in obesity treatment consists of general cardiovascular exercises of medium or low

intensity, usually determined by setting a target heart rate [1; 14; 15; 17]. Examples of cardiovascular activities include: walking, jogging, cycling, team sports or cross-country skiing, all associated with the outdoor. Earlier research on physical activity in preschoolers shows that the greatest heart rates in children used to occur during walks and playing outdoor [4]. An American study of school children examined the difference between energy expenditure during physical education class held indoors and one held outdoors. The results of outdoor classes turned to be more beneficial for health [7].

Although there are many environmental factors contributing in excess weight and obesity, so besides the social and economical factors, the local infrastructure is also considered. It is assumed that the lack of opportunity to interact with the natural environment increases the tendency for passive entertainment, which may correspond to energetic imbalance and the risk of weight gain and obesity [6].

Reasons of the development of city spaces that favourable to encouraging physical activity seem obvious — the greater access to such places, the more active the local inhabitants become [5]. Development of infrastructure adapted for pedestrians and cyclists may, except of the obvious results of reducing noise and air pollution, also cause decrease of obesity in population.

Summary and results. Obese students dislike Physical Education classes. The main cause reluctance of the obese in school PE lessons are mainly lower physical endurance and fitness of such students, preventing them from keeping up with their peers. Frequently exercises prove to be overly difficult and tiring for them. Obese students are usually the last, or next to last ones, to be chosen to a team during the lesson. Their clumsiness is generally noticed, and causes embarrassment. The weight based discrimination is harmful for their personality and self-esteem. Sensing the lack of acceptance, a young person bears grudge against the others, what leads to rebellion against parents and teachers as well as refusal to cooperate with peers. As a result, he begins to see school as an unfriendly place, plays truant and, in extreme cases, stops attending school at all [18].

Overweight and obesity are an increasing problem for children and adolescents. Effective educational programmes and early prevention are necessary — a growing number of studies suggest that outdoor physical activity may constitute such prevention.

The results reinforce the idea of innovations in the educational process as well as the human needs to remain in direct relation to nature. The slimmer may treat outdoor physical activity as the most efficient mean of obesity prevention. To those with higher BMIs such activities provide an effective possibility of reducing the psychophysical limitations resulting from overweight and obesity.

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