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Original scientific paper

Physical Activities of Adolescents and the Level of Knowledge on the Impact of Their Diet on Their Overall Health

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Abstract: The period of adolescence is a period of rapid biological, physical and social changes. Diet of adolescents is based on eating large amounts of fast food. The aim of this research was to determine the relationship between high school students in several cities of the Republic of Srpska (Banja Luka, Gradiška, Srbac, Teslić and Čelinac) and their attitude towards food and the consumption of fast food, as well as food products that are commonly found in their menu.

In this paper, a survey among high school students of both sexes, aged between 15 and 19 was conducted. The survey included 12 questions that can be classified into three groups: general information about the students, the data on physical activities of adolescents who consume "fast food" in their diet and information about their knowledge about the impact of the diet on their overall health.

A great number of students (89.90%) do not think that fast food belongs to the group of "healthy" food, and they think (82.70%) that it has impact on their overall health. More than half of the students (52.90%) are satisfied with their body weight. There is about the same number of students who think that they are overweight (23.90%) or underweight (23.20%). The vast majority of students (92.80%) have not still had acute health problems due to the consumption of fast food. 58.60% of the students are partially satisfied with their diet, 31.10% are satisfied with their diet, and 61.3% of them would like change their diet.

Key words: fast food, diet of adolescence, physical activities

Introduction

the period of adolescence includes various biological and psychosocial changes. That is the reason why diet and physical activities are extremely important for growth and development of adolescents (Shepherd et al., 2006; Bech-Larsen, 2010; Kamenko-Marčeta et al., 2014; Lovrenović et al. 2015). Adolescents mainly eat food poor in nutrients and consume a large amount of fast food, which has impact on their overall health. To maintain desirable body weight, besides a balanced diet (Grujić, 2000 Grujić and Miletić, 2006), a proper physical activity is very important too. Body weight is increasing not only due to consumption of large amounts of food but also due to lack of physical activity. In developed countries, the number of overweight children and overweight adolescents is increasing due to lack of movement and physical inactivity.

Physical activity has a remarkable role to maintain and preserve functions of the human body. Balanced physical activity has positive effects on respiratory system and helps increasing utilization of oxygen in tissues. It also contributes to increase muscle mass and strengthens the immune system. Besides, it optimizes the functioning of physiological systems in the human body. Physical activity has a positive effect on physical and mental health. Physical inactivity contributes to coronary heart disease, hypertension, hyperlipidemia, malignant diseases (e.g., carcinoma of the colon) and depression (Kljakić, 2000; Darnton-Hill et al., 2003; Delisle, 2005).

A series of studies was conducted among young people about their knowledge of the quality of food they usually buy (Byrd-Bredbenner et al., 2006; Lynch et al., 2007; Becker, et al., 2011; Grujić et al., 2012;

and Grujić Grujić, 2012; Grujić et al., 2013a, b). However, there are no proper data on the relationship between eating habits and food which young people consume and physical activities that they normally do.

According to the research of Mihajlović and his assistants (Mihajlović et al, 2000), more than 20% of girls in Serbia do not do any forms of physical activity except on classes of Physical Education. According to his opinion, doing sports in clubs is a privilege of the talented, and sports hall are rarely available for recreation (Mihajlović et al, 2000). Besides on classes of Physical Education, boys spend more time actively exercising (1-3 hours per week) than girls (up to 1 hour per week). According to the survey, 15.2% of the students never do any exercise (Kljakić, 2000).

In their free time adolescents usually have fun, do sports and watch TV (Wadden et al., 2002; Radnitz et al., 2009; Higgs and Woodward, 2009). The research which was conducted by Kljakić (2000) points to the problem of physical inactivity among a large number of high school students in Serbia. He found out that almost every high school student watches TV every day, whereof more than half of the students (59.3%) do that more than 2 hours a day. Boys are bigger fans of watching TV, who, besides watching TV, spend a great part of the day working on their computer. More than 10% of high school students play video games even more than 4 hours a week (Janković et al., 2000; Bech-Larsen et al., 2010).

According to these studies, about 59% of high school students do a certain physical activity a few times a week. 35% of young men and 14% of girls are physically active every day. It must be noted that these studies (Kljakić, 2000 Jankovic et al., 2000) were done 15 years ago and today number of high school students who spend their free time in front of computer is increasing.

Children and adolescents who spend a lot of time sitting, are getting used to sedentary lifestyle. They are at much greater risk of developing health problems associated with sedentary lifestyle. People who are physically inactive have an increased risk of obtaining cardiovascular diseases later in life. Changes that occur in the body during the physical activity are reversible, so it is necessary to do exercise to maintain health. Physical activity should be established as a daily routine. It is recommended that we should spend at least 60 minutes a week doing some kind of physical activity. Examples of moderate **physical activities that are given** in literature are brisk walking, moving around the glade, playing, swimming or riding a bike on rough terrain. (Kljakić, 2000; Till,2001; Tingchi et al, 2007)

Material and Methods

The survey in this paper was carried out as a part of a larger research on the eating habits of adolescents in the cities of Banja Luka, Gradiška, Srbac, Čelinac and Teslić. The survey was conducted in 2014 and included a sample of 1000 teenagers (Lovrenović et al., 2015). A questionnaire was used as a tool in survey research. It consisted of questions related to: general information about the students, information on physical activities of adolescents who use “fast food” in their diets and information about the level of knowledge on the impact of this diet on their health.

There were 1000 students who participated in the research, 530 were female and 470 were male. The age of the students ranged between 15 and 19, the average age of females was 17.16 and the average age of males was 16.97 (Lovrenović et al., 2015).

The students came from families with different social status. The highest number of students came from four (45.2%) and five member families (35.0%). 14.8% of the students came from three member families, and 5% of them came from two member families.

Results and Discussion

Analysing data on physical activities of adolescents who eat "fast food"

More than half of the students (56% of responses) said they do sports (Chart 1). 40.18% of them do sports less than 30 minutes a day, 30.05% do sport between 30 and 60 minutes a day, and 29.76% do sports more than 60 minutes a day (Chart 2).

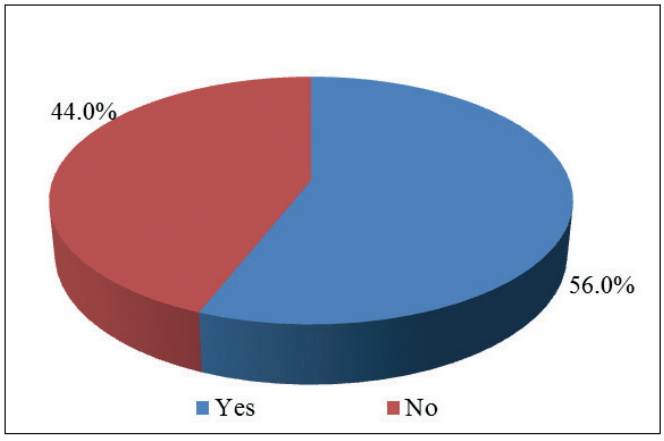

Chart 1. Answeres to the question "Do you play any sports?"

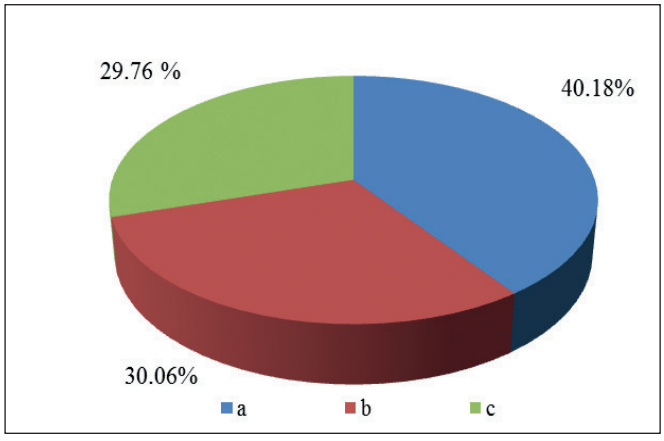

Chart 2. How much time do you spend doing sports activities?

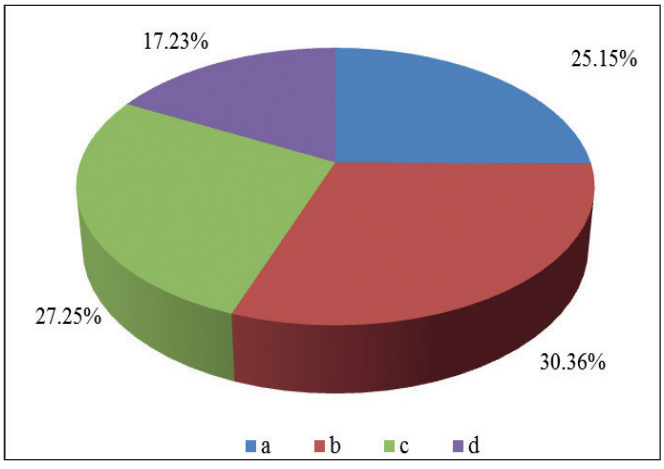

Chart 3. Answers to the question "How often do you do sports and what kind of sportsman are you?

More than one quarter of the students (25.15% of responses) do sports actively. 30.36% of students are amateur sportsmen, 27.56% of them sometimes do sports whereas 17.23% do sports rarely or not at all (Chart 3). Researches in the world (Tingchi Liu et al., 2007) showed a significant influence of famous athletes on the behavior of young people. Chan and Zhang (2007) pointed out that young people admire the extraordinary accomplishments of famous athletes and copy their way of behavior, including diet. Famous athletes can influence young people to choose clothes, shoes and other goods, including food products and they can have influence on their behavior at sports grounds and outside (Chan, 2008). In that way, athletes can directly affect the selection of food and make young people avoid bad eating habits (Till, 2001 Dix et al., 2010).

To the question "How much time do you spend in front of a computer or watching TV?", almost half of the students (49.80%) gave answers "two to four hours". More than a quarter of students (26.60%) spend less than 60 minutes a day, 13.70% spend more than five hours a day, while 9.90% of students spend even more than seven hours a day in front of a screen(Chart 4). Choi et al (2005) mentioned data of American researchers who found out that more than 20% of children in the United States do physical activity less than twice a week, while more than 26% of children watch TV more than 4 hours a day and 67% of children ages 8 -16 watch TV at least 2 hours a day. They considered that watching television contributes to obesity and reduces energy consumption due to physical inactivity and it increases energy intake because teenagers tend to eat a lot more snacks while they are watching TV.

In order to reduce the time that children and adolescents spend in front of TV, many countries like (Sweden, Norway, Finland) prohibited commercially advertising programs for children. In other countries it is prohibited to broadcast programs which promote poor eating habits. Choi et al. (2005) discovered that advertising of fast food restaurants in television programs has positive and statistically significant impact on increased body mass index and obesity of children and adolescents. Watching television contributes to the rapid increase in obesity of children and adolescents for three reasons: the time spent in front of TV significantly reduces the time which children spend doing physical activities; watching TV encourages the consumption of unhealthy food and at the end, watching food advertisements affects children and adolescents to establish poor eating habits which affect their lifelong diet.

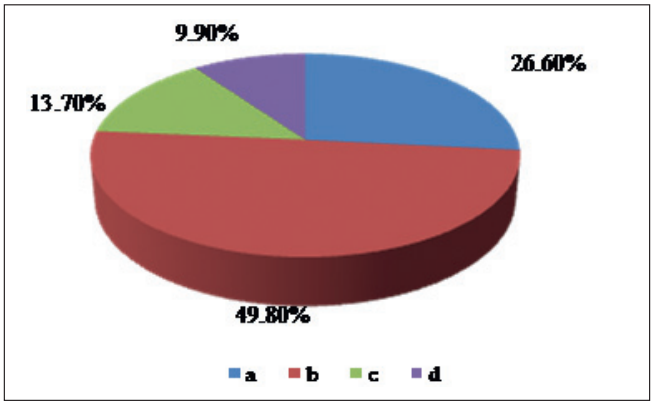

Chart 4. Answers to the statement "How much time do you spend in front of a computer or watching TV"?

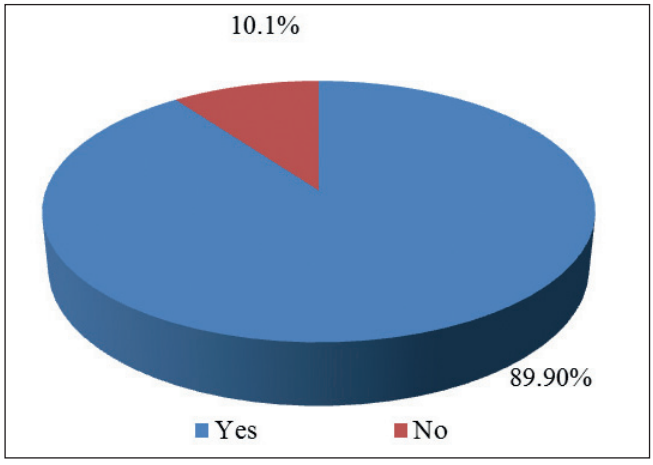

Chart 5. Answers to the question "Does fast food belong to a group of food that is defined as healthy?

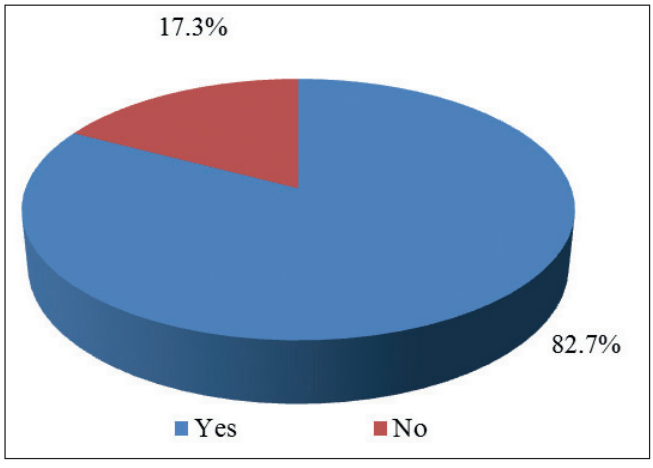

Chart 6. Do you think that fast food affects your health?

Test results of impact of eating habits on health

The people's diet is under strong social influence and impact of social movements (Higgs and Thomas, 2016). Individuals behave in one way when they eat with other people, but in a different way when they eat alone. Sometimes dietary behavior varies a lot (like synchronizing actions during meals, consumption of certain food, changes in preferences for certain types of food, etc.). There is evidence that dietary behavior of others in our environment strongly influences our behaviors and actions, such as doing physical activities. When a person eats in a group of other people, who consume a large amount of food, they tend to eat a larger amount of food too (Cruwys et al., 2015). Likewise, individuals will consume more food when they eat in a large group of people, than when they eat alone (Herman, 2015).

According to the opinion of the students, even 89.90% of them think that fast food does not belong to the group of food that is defined as healthy food (Chart 5), and 82.7% think that fast food has negative effect on their health (Chart 6).

Analyzing the question related to the body weight of the students, more than half of them (52.20%) believe that they have the desired weight, and about the same number of them believe that they are overweight or underweight (23.90% that is 23.20%). (Chart 7).

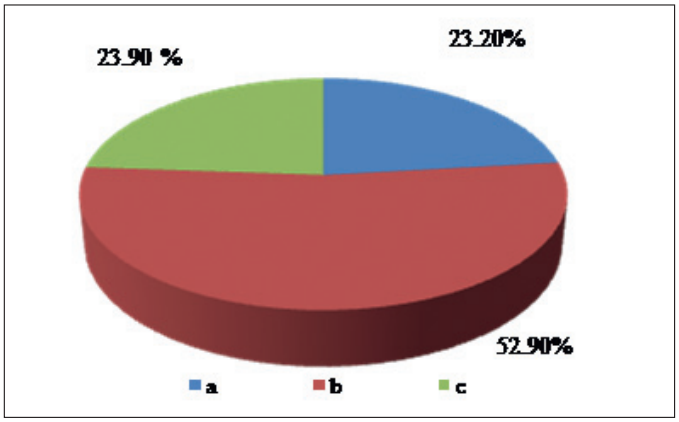

Chart 7. Do you think you have the ideal weight?

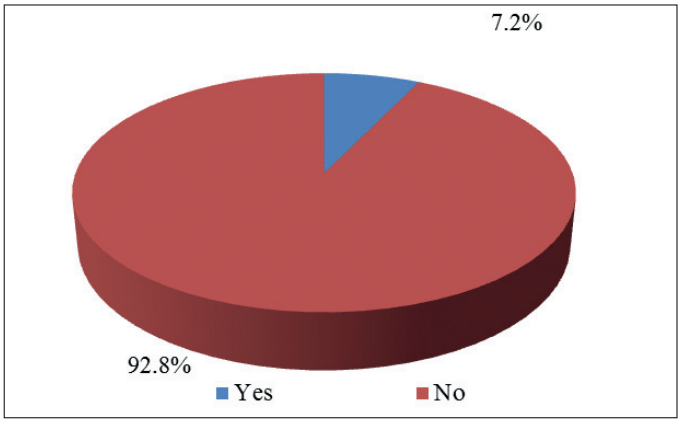

Chart 8. The answer to the question ‘’Did you have health problems caused by eating fast food’’?

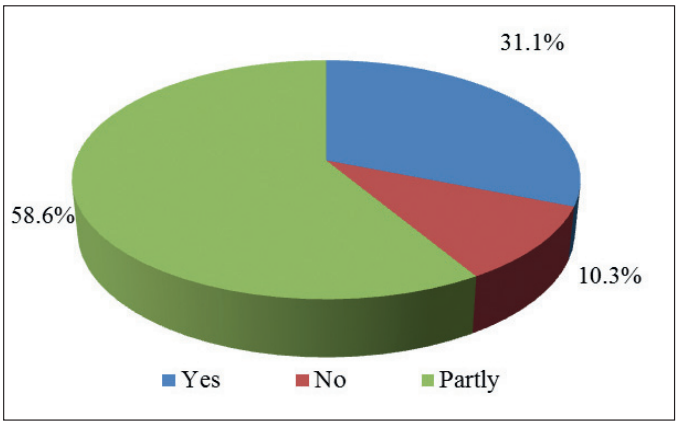

Chart 9. Answers to the question “Are you satisfied with your diet?”

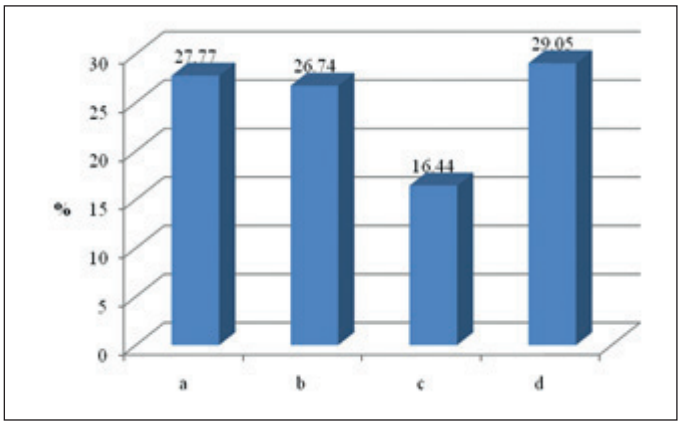

Chart 10. Answers to the question “What are you dissatisfied with about your diet?”

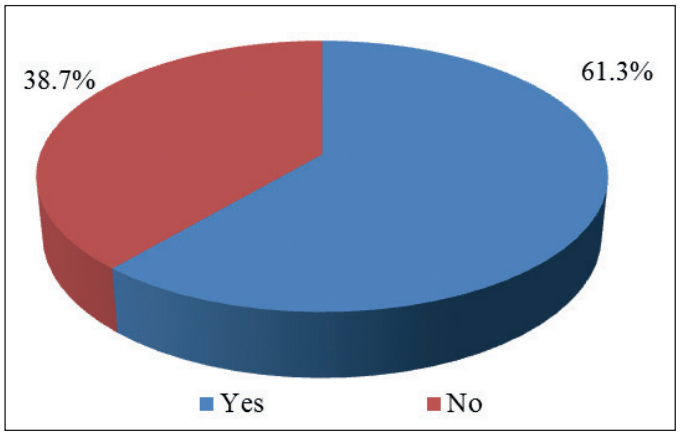

Chart 11. Answers to the questions ‘’Would you change anything your diet’’?

The largest number of the students (92.80% response) did not have health problems caused by eating fast food (Chart 8).

To the question: “Are you satisfied with your diet”, the majority of the students (58.60% of the responses) answered that they are partially satisfied, 31.10% of them said that they are satisfied, while 10.30% of them were not satisfied with their diet (Chart 9).

The test results are shown in the chart 10. The results show that 29.05% of the students are not satisfied with order of their daily meals, 27.77% are not satisfied with the type of food they eat, 26.74% are not satisfied with the amount of food they eat, and the least number of the students are not satisfied with the number of meals they have a day (16.44%).

To the question: “Would you like to change your diet?”, 61.30% of the respondents answered positively (Chart 11).

Gomez et al (2015) confirmed that men in the period of adolescence do more exercise than girls.

They show less interest in acquiring bad eating habits. Authors believe that regular physical activity has positive effect on mental health and prevents developing bad eating habits in adolescence.

Many studies have shown that food advertising influences the eating habits of children and adolescents (Folkvord et al., 2016).

Conclusion

1. More than half of the students (56.0%) do sports and the majority of them (40.18%) do sports 30 minutes a day, 29.76% do sports more than 60 minutes a day. 25.15% of them do sport actively and 17.23% never do any sports. 49.80% of the students spend two to four hours watching TV or using a computer, and 9.90% of them spend more than seven hours.
2. A great number of the students (89.90%) think that fast food does not belong to the group of "healthy" food, and believe (82.70%) that it has negative effect on their health. More than half of the students (52.90%) are satisfied with their body weight, and there is about the same number of those who think they are overweight (23.90%) or underweight (23.20%). The vast majority (92.80%) did not have any acute health problems due to consumption of fast food, 58.60% of the students are partially satisfied with their diet, 31.10% of them are satisfied with their diet, and 61.3% of them would like change their diet. The students are not usually satisfied with the amount, type and order of their meals (from 26.74% to 29.05%) and 16.11% of them are not satisfied with the number of daily meals.

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