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OVERWEIGHT AND OBESITY AMONG PRESCHOOL AND SCHOOL CHILDREN IN THE REPUBLIC OF MACEDONIA

Context and importance of the problem

Overweight and obesity in children and adolescents are serious public health problems in European Region of WHO. Special attention to those problems was given at the WHO European Ministerial Conference on Counteracting Obesity organized by WHO in 2006. Around 20% of children and adolescents in WHO Europe Region were assessed to be overweight (including obese). It was then clear that in order to create some actions towards nutrition-related issue it is crucial to have data obtained from nutrition research. However, systematic review of available literature has shown that only few of the countries have representative monitoring of nutritional status of children aged 0 to 6 (15 countries), and only 13 had national database for the age group 6 to 10. During the initial consultations among member states, in the frames of the process that lead to the 2006 Conference, the need for pan-European standardized initiative which will introduce system for monitoring of childhood obesity in the WHO European region

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has been recognized. That system will then be used as foundation for nutrition policy actions. The goal was to create comparable system that will present the situation about obesity among school-aged children. School age was chosen because of the fact that comparable data for children aged 0-5 in Europe is available, obtained through health and demographic research or multiple indicator cluster surveys. Regular researches are also present for adolescents. Those were the reasons for initiation of the Childhood Obesity Surveillance Initiative in Europe (COSI). COSI is one of the crucial WHO activities for monitoring childhood overweight and obesity in Europa and it aims to include for participation all of the WHO Europe member states. The first round of data gathering using harmonized methodology occurred during school year 2007/2008 with participation of 13 countries. Second round, which took part during 2009/2010 school year included 4 new countries: Greece, Republic of Macedonia, Hungary and Spain. Macedonia's participation was logical step following tradition of routinely gathered data about the nutritional status of children that exists in the country for many years. The approximation to COSI protocols was prerequisite for initiation of the initiate in the country. Macedonia took also part in the third round data gathering in 2013 (the fourth will take part in 2016) and the number of countries participating is constantly increasing. Since the first Macedonian participation in 2010, the COSI methodology is also implemented during the routine data gathering about the nutritional status of school-aged children in MKD in the "non-COSI" years. COSI activities are funded by the Ministry of Health (MoH) through the National annual program for public health, and are performed by the Centers of Public Health (CPH) and the Institute of Public Health (IPH).

Table 1 presents the percentage of school children with overweight and obesity according to the WHO Child Growth References.

Table 1. Overweight and obesity in children age 6 to 8 in Macedonia in the period 2010-2015

	2010**	2011	2012	2013**	2014	2015
% overweight*	34.7	29.3	29.2	31.3	37.9	34.7
% obesity	16.4	13.1	13	13.7	18.5	16.6

*percentage of overweight include percentage of obesity

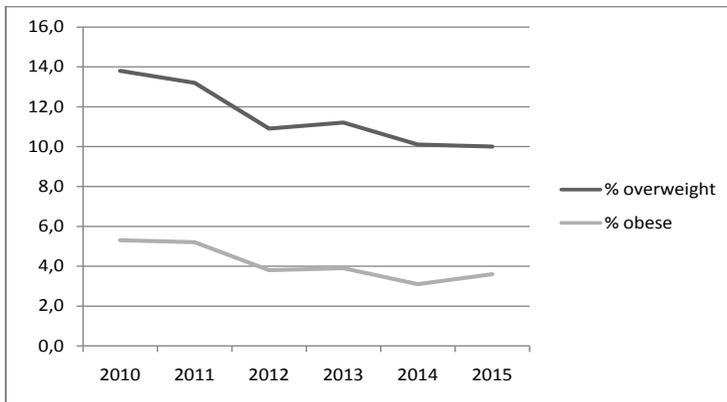
**COSI data gathering

Over one third of children of this age are either overweight or obese. Obesity is more prevalent among boys and among children living in urban settlements. Comparing to other countries participating in COSI, there are lower rates of obesity among children in Macedonia, comparing to coun-

tries of Southern Europe (Greece, Italy, Spain) and higher rates comparing to countries of Central and Southern Europe (Belgium, Lithuania, Latvia, Czech Republic, Hungary, Ireland). Macedonia's figures are mostly comparable to those present in Portugal.

Graph 1 presents the trends of overweight and obesity in preschool children in Macedonia according to WHO Child Growth Standards.

Graph 1. Overweight and obesity in preschool children (age 4 to 5) in Macedonia in the period 2010-2015



Overweight and obesity in this population has a trend of slow but continuous decreasing. In 2015, 10% of children were overweight and 3,6% obese. (13,2% and 5,2% in 2011, 10,1% and 3,1% in 2014).

Nutrition in childhood as risk factor to health

Obesity (along with smoking, high blood pressure, physical inactivity and high blood levels of certain lipids) is one of the NCDs risk factors classified as modifiable, i.e. risk factors which may be influenced through changes in one's lifestyle and acceptance of healthy habits. Central role in epidemiology and prevention of NCDs has "the tracking phenomenon". It means that the monitoring of physical condition and possible overweight in childhood, particularly in vulnerable and populations of low social status, may predict, and because of that prevent, future occurrence of CVD and other NCDs. The fact that most of the risk factors are related to improper nutrition and lifestyle changes, habits that start in childhood and are transferred in adolescence, makes them preventable through acceptance of healthy habits in early years of life.

Current nutrition policy

In the last few years, few important documents and legal provisions related to nutrition have been adopted in MKD. MoH and IPH have prepared and adopted first ever **Food based dietary guidelines**. Ministry of Labor and Social Policy (MLSP) in cooperation with MoH have put in place **The standards for nutrition in kindergartens**, in the form of a bylaw. That document obliges both caterers and kitchen staff in kindergartens to be committed to respecting of the nutritional quality standards for this population. Ministry of education and science (MES) in cooperation with MoH have adopted in 2014 the **Standards for nutrition of primary school children**, in the form of bylaw. That document provides guidance for caterers and staff in school kitchens about preparation of healthy meals for primary school children. Comprehensive media campaign has been launched in the country that aimed to raise awareness about acceptance of healthy nutrition and to stress the importance of healthy lifestyles in prevention of early occurrence of NCDs.

The room for policy improvement

Adoption of important documents and legal provisions related to children's nutrition, as well as raising awareness of the population about the healthy lifestyles are certainly important steps in the process of reducing the nutrition-related health risks. However, those are only initial steps. There are many additional activities and policies that may be implemented in order to improve the nutritional status of children. We should not be satisfied by small signs of positive trends about overweight and obesity in some populations of children. Those trends should sustain and improve. In this very sensitive population that comprises many specific particularities, the high intensity of policies should sustain. Otherwise, the once positive trends may turn around in very short period of time.

Additional institutional coordination is needed for implementation of already adopted documents and legal provisions. MLSP, MES and MoH should closely collaborate on that. Managers and employed in kindergartens and schools should not ease the efforts of presenting recommended foods to children in order children to eat nutrition dense foods, not "empty" calories, usually received in schools as snacks. The kindergartens and schools should have human potential and funds that will provide proper attention to children's nutrition in order for them to acquire habits needed to reduce the nutrition-related health risks in later life. Monitoring

over children's meals preparation should be strengthened. The personnel in kindergartens in schools need to be trained and educated on nutrition. MES should think about employing of personnel with nutritional education background in schools that will improve the school menus and control their adherence to the legal provisions of the adopted bylaws. School managers should take measures towards marketing of foods high in salt, sugar and fat in schools. Raising awareness should be also directed towards parents, since families are the environments where children learn and adopt habits about nutrition through the parent's habits about it.

Recommendations about new policies

According to the trends in nutrition policies worldwide, there is a need of concrete policies and actions in this area, particularly referring to policies focused on children. Some of the policies that should be initiated as soon as possible are:

- Establishing of continuous process of revision of the population based nutrition recommendations (based on foods or nutrients);
- Implementation of programs and creation of skills about healthy nutrition in schools and kindergartens;
- Regulation of marketing of foods high in fats, sugar and salt to children through adoption of Nutrient profiling model of WHO Europe;
- Fiscal and price policies that will promote healthy foods consumption;
- Creating living and working environment that will promote physical activity;
- Promotion of health benefits of healthy nutrition via media;
- Promotion of breastfeeding and long enough breastfeeding;
- Strengthening of capacities of the health providers, particularly of the general practitioners and pediatricians, for early detection and management of child obesity;
- Creation of separate unit in local self-governances that will work on organization and implementation of continuous promotion of healthy habits among children.

Executive summary

Monitoring of growth and body weight in early childhood may predict and thus prevent future occurrence of some non-communicable diseases (NCDs). Inadequate nutrition, which usually results in overweight and obesity, is one of the most important risk factors for NCD occurrence in earlier ages of life.

Healthy lifestyles are usually accepted in childhood and are transferred into adolescence and adult life. Thus, prevention of NCDs risk factors should also start at early childhood.

Trends of childhood overweight and obesity in the Republic of Macedonia (MKD) follow the trends present in developed countries.

Childhood obesity is growing problem in MKD and the country needs to implement continuous policy measures in order to prevent the existence of one of the principal risks for early development of NCDs.

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