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## ASSESSING FOOD AND NUTRITION LIFESTYLE (ATTITUDES) IN NORTH MACEDONIA

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**Abstract:** Despite having a high prevalence of NCDs in their families, the population of North Macedonia has a relatively unhealthy lifestyle. High frequency of parents discussing healthy food/diet with their children, but only a few of them mention salty and fatty foods, indicating low awareness. Probably parents ignore childhood obesity, equating it with adult obesity, as the main cause. It is more convenient for people to seek nutrition information directly from health workers. People trust nutrition experts but are much less likely to approach them, possibly because of prices/unavailability. In addition, people use social media to look up information about food as the most accessible source but do not rely on it much. Children's eating habits often influence their behavior in adulthood, so adopting healthy eating habits and engaging in physical activity early is essential. This statement is supported by the findings of UNICEF's study (2020) that a higher level of physical activity is linked to a decreased risk of being overweight or obese. Objectives: To explore the current behaviour regarding food buying and ordering: touchpoints of eating/buying food, frequency of using them, and any other behaviour features. To assess the attitudes toward the already existing obesity/overweight prevention policies and more rigorous policies, as well as the perceptions of parents concerning overweight in children when compared to other EU countries. Material and methods: The TAPI research method (Table Assisted Personal Interviewing) was selected for conducting the quantitative research mainly because of the efficiency and preciseness that the personal approach or face-to-face interviewing ensures. Participants in the study were males and females and 18+ years old, representatives of all 8 statistical regions and settlement types in the country. Results and discussion: It was assumed that there is no dramatic difference in food behavior for children of different ages in one family but to confirm this during the interview respondents were asked only about one child (chosen randomly like the last day of birth) with an additional question to check if food behavior of other children differs was asked. Parents rarely talk to their children about salty and fatty food, which accounts for a great share of junk food, and consider the importance of talking about these kinds of food and junk food to be the same. Probably, parents are just not aware of the dangers these types of food pose. One of the main problems detected was the lack of awareness about the dangers of fatty and salty food among children and their parents. Only a small proportion (16%) of families are concerned with obesity among their family members. Households with children under 18 also have little concern about obesity - only 15%. Though it is well known that childhood obesity is as disturbing as adult obesity, it is obvious that parents do not give it the attention it deserves. Conclusions and recommendations: Almost a third of the population of North Macedonia (30%) live a healthy lifestyle. The study showed the same share of people are concerned about their health. Nevertheless, the share of people who indicated that they live a healthy lifestyle and are concerned about their health is much lower - only 12%, which may mean that a healthy lifestyle is not a primary concern for adults. According to the people who rated their lifestyle as 5 or higher, a healthy lifestyle includes the following features: following a healthy diet, controlling sugar and fat, controlling salt levels in food, and practicing sports. We recommend conducting an information campaign to raise awareness of the importance of healthy nutrition in terms of obesity/overweight and its influence on children's health. The information campaign can also focus on general eating habits but with a focus on eating out of the home as children's habits that concern parents very much. Involving health workers and nutritionists in such an educational campaign (as the most credible, with the potential to change people's habits) would increase its impact as these specialists are perceived as the most expected and credible distributors of such information.

**Keywords:** obesity, nutrition, food labelling, healthy lifestyles

## 1. INTRODUCTION

European regions proportionately suffer the greatest NCD burden. According to the World Health Organization, the four most common NCDs account for 77% of all diseases and 86% of all premature deaths in Europe. In addition to the considerable economic and social costs linked to NCDs and related conditions such as overweight and obesity (WHO 2014), traditional clinical methods are progressively proving to be ineffective in tackling these challenges (Mozaffarian et al., 2008). Mozaffarian et al. (2008) advocate for a paradigm shift from pharmacological treatments to primary prevention by addressing lifestyle risk factors, including dietary patterns, to mitigate cardiovascular risk and problems associated with non-communicable diseases (NCDs). As a result, diet surveys play an important role in assessing dietary patterns in general. Nutrition and health surveys provide the primary data for dietary risk factors and physical inactivity in a comprehensive analysis of disease risk across 21 global regions over two decades (Lim SS et al, 2013). In addition to tracking trends, identifying areas of concern and inequality, and evaluating policy impacts, these surveys can ultimately contribute to the promotion of best practice throughout the region (WHO 2014). 'Stronger national food and nutrition policies' and expanding nationally representative diet surveys are explicitly urged in the WHO's European Food and Nutrition Action Plan (WHO 2014). Street kiosks and fast-food restaurants are the most popular places to eat for children. The most typical meals ordered by/for children are pizza, French fries, burgers, chicken meat, and salads. Child menu is rare, so children typically consume regular-sized meals. Eating in out of home facilities is more common for families with school age children and adolescents, families with children of preschool age usually do not go out to eat or preschoolers' choices are heavily influenced by their parents most of the time. According to the WHO's European Food and Nutrition Action Plan (WHO 2014), the aim is to significantly reduce the burden of preventable diet-related noncommunicable diseases, obesity, and other forms of malnutrition still prevalent throughout the WHO European Region. In all WHO regions, unhealthy diet is a major behavioral risk factor for non-communicable diseases (NCDs), with the European region experiencing the greatest burden. The use of alcohol and tobacco, as well as a lack of physical activity are also risk factors (Alwan, 2011). As many as 77% of all diseases and almost 86% of all premature deaths occur in Europe due to the four most common NCDs (WHO 2014). A further decisive step towards promoting healthy diets and addressing the alarming rates of obesity and diet-related noncommunicable diseases seen throughout the WHO European Region was taken by Member States at the 64th meeting of the WHO Regional Committee for Europe by adopting the WHO European Food and Nutrition Action Plan 2015–2020. The Action Plan recommends several policies to help people achieve a healthy body weight.

## 2. OBJECTIVES

The main objectives of the study conducted with full support of UNICEF in North Macedonia were: To explore the current international and national literature data and published experiences regarding children's obesity and food labeling policies and its public perception; to explore the current behaviour regarding food buying and ordering in North Macedonia: touchpoints of eating/buying food, frequency of using them, and any other behaviour features; to assess the attitudes toward the already existing obesity/overweight prevention policies and more rigorous policies, as well as the perceptions of parents concerning overweight in children when compared to other EU countries and to propose a set of policy recommendations for monitoring and improving children's and parent's behavior toward obesity and food labelling.

## 3. MATERIALS AND METHODS

Beside the desk review method for generating empirical data on the subject, the TAPI research method (Table Assisted Personal Interviewing) was selected for conducting the quantitative research mainly because of the efficiency and preciseness that the personal approach or face-to-face interviewing ensures. Participants in the study were males and females and 18+ years old, representatives of all 8 statistical regions and settlement types in the country. Tablet Assisted Personal Interviewing (TAPI) method of gathering data was used. 800 parents involved in decision-making regarding children's nutrition/healthcare/upbringing of children from 7 to 18 years old, who at least sometimes eat out of home (in fast-food restaurants or kiosks) with their children and can influence children's order choice participated in the experimental study. They were equally divided into a control group and three experimental groups where 3 different menu labelling schemes were evaluated. The qualitative research was conducted with in-depth semi-structured interviews that aimed to analyse the public perception and attitudes toward current food labelling and link with obesity, besides parents and policymakers including experts in the field.

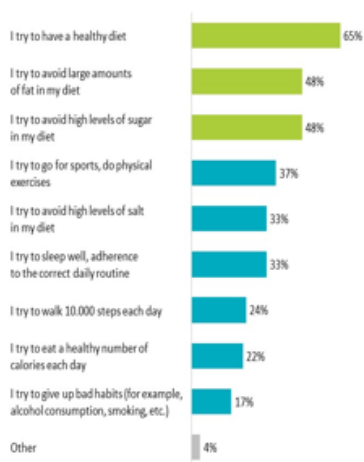
## 4. RESULTS AND DISCUSSIONS

UNICEF research indicates that childhood obesity is a significant public health issue of the 21st century. Current trends suggest a global increase to 70 million obese children by 2025. There is a lack of data on the prevalence of

childhood obesity in North Macedonia. According to the Childhood Obesity Surveillance Initiative study of 2,744 children aged 7 in 2009/2010, 34% of boys and 27% of girls were overweight. The results of a survey of 8,380 children aged 7 to 14 in 2014 revealed a 34% obesity rate, which was most prevalent among children aged 9 and 10. Furthermore, the survey found a higher likelihood of overweight among boys, children from wealthy backgrounds, and children living in cities. In addition, the UNICEF MICS survey conducted in 2019 found that 13% of boys and 9% of girls under the age of five were overweight.

This UNICEF-supported research assumed that there is no dramatic difference in food behavior for children of different ages in one family but to confirm this during the interview respondents were asked only about one child (chosen randomly like the last day of birth) with an additional question to check if food behavior of other children differs was asked. Parents rarely talk to their children about salty and fatty food, which accounts for a great share of junk food, and consider the importance of talking about these kinds of food and junk food to be the same. Probably, parents are just not aware of the dangers these types of food pose. One of the main problems detected was the lack of awareness about the dangers of fatty and salty food among children and their parents. Only a small proportion (16%) of families are concerned with obesity among their family members. Households with children under 18 also have little concern about obesity - only 15%. Though it is well known that childhood obesity is as disturbing as adult obesity, it is obvious that parents do not give it the attention it deserves. Almost a third of the population of North Macedonia (30%) live a healthy lifestyle. The study showed the same share of people are concerned about their health. Nevertheless, the share of people who indicated that they live a healthy lifestyle and are concerned about their health is much lower - only 12%, which may mean that a healthy lifestyle is not a primary concern for adults. According to the people who rated their lifestyle as 5 or higher, a healthy lifestyle includes the following features: following a healthy diet, controlling sugar and fat, controlling salt levels in food, and practicing sports. (Fig.1) As expected, families with NCDs who believe that they live a healthy lifestyle are more likely to report following their diet, as they must keep to a special diet due to their health problems (70%). Mothers/stepmothers respond in the same way (73%), adding that they also monitor the amount of sugar (55%) and calories in their food (31%).

Figure 1: Healthy lifestyle list



Source: answers to the question: "What from the list do you do healthy lifestyle?"

More than half of the families indicated that they have cases of NCDs among their family members older than 18 (53%). The most common diseases are hypertension – 25%, obesity – 13%, cardiovascular diseases – 9%, and food-related allergies – 8%. 19% of all households with children under 18 years old reported that their children have some medical condition, two most common ones being food allergies (10%) and obesity (5%).

According to the survey, children aged 7 to 15 are the most obese group among children (according to family members' responses), which is in line with UNICEF's findings. In this period of life, the body is actively growing and developing, which intensifies the breakdown of fat. The fact is that as a child grows up, they begin to consume more and more calories and cannot control their appetite, which means that they cannot control the number of calories consumed. As a rule, children do not eat often, but the portions get bigger, resulting in overeating, which leads to weight gain. In most cases, these children are not aware that they are overweight and tend to overeat. According to in-depth interviews with parents and caregivers from North Macedonia, there is a strong desire to feed and overfeed children («As a custom, the rule "a healthy child is a fat child" still applies in Macedonia»). Thus, you can consider it to be a norm accepted by society. For a child to be healthy and strong, a culture of eating needs to be nurtured. Therefore, it is especially important to have preventive talks with them and educate them about healthy eating and lifestyle. The results of the survey seem to show that 71% of the parents do talk to their children about healthy food/diet with different

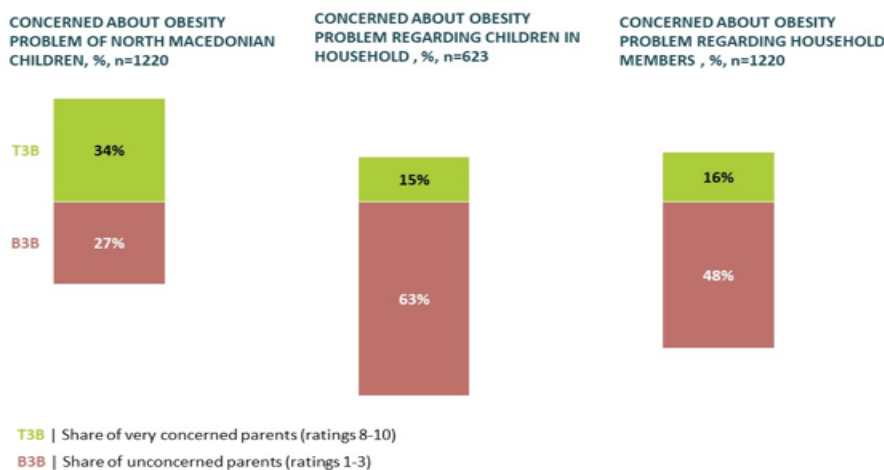
frequency. In these conversations, they usually mention fresh fruit and vegetables, reducing the consumption of soft drinks, snacks, sugar, and sweets. The parents also think that these topics are the most important but most difficult to talk about. The frequency of breakfast consumption and other foods in most European countries can be compared with recently published data about children's dietary habits. MKD children consume breakfast daily approximately at the same rate as children in Turkey, Czech Republic, Bulgaria, and Croatia. Because fruits and vegetables are readily available and reasonably priced, fruit consumption should increase daily. In some countries, such as Italy (73%) and Portugal (63%), fruit consumption is about the European average (42%). In comparison to many other countries, the frequency of daily vegetable consumption is higher than the European average (22.6%). Spiroski, et

al., 2021 report that savory and sweet snacks are consumed more frequently than the average for the European Union.

However, parents rarely talk to their children about salty and fatty food, which accounts for a great share of junk food, and consider the importance of talking about these kinds of food and junk food to be the same. Probably, parents are just not aware of the dangers these types of food pose.

Only in the households with children who have NCDs talking about the dangers of excessive consumption of fatty food happens significantly more often (34%) and the parents think it is important (33%). Moreover, parents from the households where family members have NCDs (both adults and children) talk to their children about the ways to control weight much more often and consider it to be an important topic. According to the information received, one of the main problems is the lack of awareness about the dangers of fatty and salty food among children and their parents. Furthermore, only a small fraction (16%) of families is concerned about obesity in their members. (Fig.2)

Figure 2. Concerned with obesity problem.



*Source: answers to the questions: "How much are you concerned about obesity problem if we are talking about North Macedonian children?", "How much are you concerned about obesity problem regarding children in your household?", "How much are you concerned about obesity problem regarding your household members?"*

There is little concern about obesity among households with children under 18 - only 15%. As a result, it is important to note that childhood obesity is equally concerning as adult obesity. If parents fail to pay attention to it, it may mean that they do not consider it important. Importantly, people are far more concerned with obesity nationwide (34%) than they are with the same problem in an individual household. In this case, people living in the Central region and Povardarie are significantly more likely to say they are concerned with obesity nationwide (49% and 52%). Presumably, the reason for it could be that people tend to overlook their problems but are willing to highlight the mistakes of others. They might believe they are following the right diet and eat healthy food while others eat without paying attention to the composition of products and meals.

According to the review of current European school feeding policies (Storcksdieck gennant Bonsmann, 2014), half of the EU countries have mandatory standards, while the other half have voluntary guidelines. School policies are developed using a variety of methods, ranging from straightforward lists of nutrients that can be vented within schools (or not) to comprehensive guides for managing different nutrition policy aspects, including purchasing, catering services, and kitchens and dining facilities (in France and Spain). At a rate of 97 percent, the policy achieved the following objectives: improving child nutrition, encouraging kids to adopt healthy eating habits and lifestyles (at a rate of 94 percent), and reducing or preventing childhood obesity (at a rate of 88 percent). Almost 90% of all interventions discussed lunch and snacks. Sixty-eight percent of nations surveyed included nutrition education in national curricula, with the remainder either acknowledging the importance of the subject or strongly recommending its inclusion. As a final point, 65 percent of School Feeding Programs (SFPs) stipulated requirements regarding food service staff training.

According to evidence, most nations in the EU are implementing policies to increase the consumption of healthy school lunches and decrease the consumption of junk food and sugary drinks. The top five countries are Finland,

Iceland, Denmark, Hungary, and Portugal (Lloyd-Williams et al., 2014). Several encouraging instances of good practices and policy opportunities in Europe aimed at enhancing the nutritional environment in kindergartens and schools were highlighted, including Bulgaria's National Program for the Prevention of Non-Communicable Diseases 2013–2020; Greece's School Canteen Policy; Hungary's Public Catering Decree and Legislation on Daily Physical Education classes; Latvia's coordinated policies to limit unhealthy foods in kindergartens and schools; and Slovakia's National Health Promotion Program (NPPZ) and National Action Plan for the Prevention of Obesity. All these policies satisfied the nine core criteria for successful practice, except the last two. The monitoring and evaluation criteria for the two Slovenian policy initiatives were missing, yet they were included to diversify the portfolio. Bulgaria's National Program and Slovakia's two policies were aimed at the general population, whereas the other four policies focused on children in daycare or educational institutions (Kovacs et al., 2020). Recent data from the European Observatory on Health Systems and Policies 2022 (Scott et al., 2022), the WHO Europe Countries Nutrition Profile 2022 Report (WHO, 2022), and the WHO Global Database on the Implementation of Nutrition Action (GINA) indicate that child obesity rates are climbing in Europe. Nonetheless, all EU countries are on course to achieve maternal, infant, and young child nutrition (MIYCN) goals, despite minimal progress towards targets for exclusive breastfeeding, stunting, and wasting. Furthermore, all nations are on track to halt the rise in overweight children under five years old and demonstrate modest progress towards meeting diet-related non-communicable disease (NCD) targets (Bellew et al., 2019).

In North Macedonia, most respondents prefer health professionals to give them information about food. There are several reasons for this, including the fact that many doctors are familiar with the characteristics of the human body and can give advice regarding baby feeding, as well as the fact that they are generally family physicians with extensive experience in caring for individuals. Furthermore, more than half of the respondents indicated that this was their most trusted source of information. In addition to social networks and online media, online media is a popular source of information. Individuals who lack the time to visit a doctor in person or who live in remote areas far from health facilities can consult with medical professionals through various channels. Conversely, a mere 5% of respondents place their trust in the internet, even though nearly half depend on it for information. Moreover, this means of information gathering is deemed sufficiently reliable concerning health care. Nonetheless, there remains a strong preference for in-person consultations with specialists or doctors. Approximately one-third of respondents have confidence in nutrition experts, yet only a small fraction (15%) relies on them for dietary guidance.

## 5. CONCLUSIONS

The study results show that the awareness of food labeling in out-of-home facilities is quite low and limited to evaluating calorie content, fat, or sugar. It is even more so for menu labeling. Despite the increased availability of information, people are still lacking in knowledge and understanding of specific values that indicate if certain foods are useful or harmful.

At the same time research showed that the problem of being overweight among children was not very significant for caregivers as far as their own children were concerned, and labeling, although perceived as important information that helped to choose food products, was not the key factor compared to taste preferences or dish cost. The habit of visiting out-of-home facilities is quite widespread among children in North Macedonia: every third caregiver claimed that their child ate food from street kiosks or fast-food restaurants during the week.

Caregivers understand the threat of out-of-home facilities and their negative impact on children's consumption of unhealthy food (as claimed by 42% of parents), so labeling to change children's behavior outside of home, especially when parents are absent, is of great interest. Most respondents expect labeling to be visual, allowing them to quickly determine how healthy a product/food is.

Despite having a high prevalence of NCDs in their families, the population of North Macedonia has a relatively unhealthy lifestyle. High frequency of parents discussing healthy food/diet with their children, but only a few of them mention salty and fatty foods, indicating low awareness. Probably parents ignore childhood obesity, equating it with adult obesity, as the main cause. Healthy eating habits and regular physical activity should be embraced as early as possible because they often have a lasting effect on later life. Barriers to healthy eating and physical activity are categorized into capability barriers, such as a lack of knowledge about healthy eating and challenges in recognizing overweight and obese children; opportunity barriers, including the presence of unhealthy foods in primary schools and their vicinity, the economic means for children or families to buy unhealthy foods outside the home, the availability of unhealthy food choices at home, parental consent to consume them, and a scarcity of physical activity options; and motivational barriers, which encompass perceived social and cultural norms that discourage healthy eating, a lack of incentives for schools to promote healthy food consumption, and the fact that the healthiness of foods and the benefits of physical activity are not the main drivers of choice. As a result of academic research on childhood obesity, a long list of potential solutions was developed and grouped into five broad

approaches to address the barriers: Taxes and incentives, Regulations and guidelines, Changes to the food environment, Service provision, Communication, Promotions.

Many parents in North Macedonia do talk with their children about healthy food/diet with different frequency, but only some of them mention salty and fatty food, which indicates low awareness. The main reason for this is probably that parents do not pay much attention to childhood obesity, equating it with adult obesity. Moreover, many do not see the problem of being overweight among their family members but see it as a national problem. People prefer to seek information on nutrition from health workers in person. Also, people trust nutrition experts but are much less likely to approach them, possibly because of prices/unavailability. Macedonians' food choices are guided by basic characteristics such as price, taste, and habit. At the same time, few adults mentioned labeling as a key criterion and rarely noticed menu labels in out-of-home eating facilities. However, it is most likely that people are aware of labels, just do not keep them in mind while deciding. The majority claim that labeling has influenced their opinion when choosing products. Most people believe that labeling helps them find healthy food and opt out of unhealthy food. The most important nutrition characteristics on the packaging/menu for Macedonians are sugar, fat, and calories. However, people with higher education stand out here. They seem to be pickier about product characteristics and pay more attention to product composition. Potentially, the problem with childhood obesity/overweight in North Macedonia lies in out-of-home food consumption. Because of the absence of child menus, children may overeat, and quite often it is unhealthy food. Labeling in out-of-home eating facilities may help with possible overeating of unhealthy food.

## 6. RECOMMENDATIONS

This UNICEF-supported study recommends the stars labeling scheme to be used in street kiosks and restaurants as the most effective for increasing the influence of healthy meals on food ordering and attitudes. To support this some interventions should be introduced in the country like; conducting the information campaign involving health experts and nutritionists to raise awareness of the importance of healthy nutrition but also conducting national communication campaign with additional focus on schools and pre-school aged children and adolescents to raise literacy about advantages of the proper food labeling.

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