

## RISK OF DEVELOPING THE BAKERY STREET FOOD NETWORK IN MUN. CHISINAU ON PUBLIC HEALTH

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**Summary.** *Street food is a global phenomenon. Worldwide, street food has become an important part of everyday life, and the Republic of Moldova is no exception. The aim of the report was to study and analyze the products offered by bakery street food enterprises in Chisinau. We analyzed pastry / confectionery items and the range of drinks offered to consumers, with the determination of their energy value combined as a snack and the influence of diseases in consumers. Their energy values were compared with the recommended daily allowance. Following the general analysis on the entire range of products offered by these companies, it was observed that sweet preparations predominate, the highest value was found at "Pretzel" of 74%. Over 75% of the soft drinks offered are sweet carbonated drinks. And consuming them frequently poses a danger to the health of the consumer. Following the analysis, risks of high caloric consumption were detected by combining sweet drinks with pastries and confectionery. Some confectionery has been a rich source of kcal and has exceeded 1/3 of the recommended daily rate by up to 20% more, no matter what sweet drink it will be combined with. We can conclude that the availability and active development of these types of businesses, and following the frequent consumption of the proposed products and beverages, leads to the emergence of chronic diseases such as obesity, diabetes, cardiovascular disease and other diseases.*

**Keywords:** *fast food, nutrition, proper diet, kilocalories, fats, sugar, salt.*

### Introduction

Street food is defined by the Food and Agriculture Organization (FAO) as ready-to-eat food and drink prepared and sold by street vendors and other similar public places [1]. In developing countries, drinks, meals and snacks sold by street vendors are widely consumed by millions of people [2]. The growth of the urban population has stimulated the growth of the number of street food sellers in many cities around the world [3]. Migration from rural areas to urban centers has created a daily need among many working people to eat outside the home. The demand for relatively inexpensive ready-to-eat foods has increased as people, especially women, have less time to prepare meals [4]. In RM street food, especially pretzels / pastry, can be defined as those street boutiques, which offer passers-by pastries, pretzels and others, with direct service on the street or offered in bulk.

Nutrition is an important factor in human health. In the Republic of Moldova, the diet is responsible for about 20% of the global burden of disease. Reducing the burden of disease caused by food and nutrition can be solved by changing the eating behavior of the population to a healthier one [5].

The Republic of Moldova, like other developing countries, is currently facing the double burden of disease, which includes new challenges, such as obesity and NBT. Few countries have specific regulations for street food, and sellers run their businesses according to informal rules dictated by their social environment in places polluted with ecological hygiene. Thus, sellers operate in a permanent state of uncertainty and their vulnerability inhibits investment and the long-term development of their business [6].

The context of the study The World Health Organization (WHO) (2013) described food consumption as the intake of nutrients for physical development and the continued existence of the body [7]. Cardiovascular disease is the cause of 55-57% of deaths annually, cancer is the cause of about 14% of deaths, gastrointestinal diseases are the cause of about 10% of deaths, and diabetes has

a share of 46-48% of the total endocrine diseases. In this context, elucidating the role of risk factors in the development of nutrition-related diseases is a relevant and useful topic for research and innovation [8, 9].

Consumption of foods high in salt, sugar and fat, sweetened soft drinks and low consumption of fruits and vegetables are the main causes of the development of diseases related to diet, malnutrition and nutritional deficiencies. Increased sugar intake contributes to the development of obesity, high blood pressure, diabetes, cirrhosis, dementia, etc. [10].

Widespread and demanded by the population, especially in the urban centers of the republic, are such foods, which are sold mainly in fast food establishments such as pizza, donuts, pies and cookies in the preparation of which are used hydrogenated or partially hydrogenated fats [11].

In the Republic of Moldova, under the auspices of the Ministry of Health, Labor and Social Protection, starting with 11.06.2020, within the Moldovan-Swiss Project "Healthy Living. Reducing the burden of noncommunicable diseases", a health promotion campaign called "Choose what you eat" has been launched [12]. Preventing excessive consumption of salt, sugar and trans fats requires some effort, but it is possible and largely dependent on each consumer.

### **Research objects**

Five largest bakery street food companies in Chisinau were selected for analysis: "Granier", "La Mămuca", "Pan Pan", "Covrigo", "Pretzel". These are known among consumers but are also located in very crowded places, where there is a more stable flow of consumers. The assortment of proposed foods and beverages, the information that is presented, the services offered as well as their locations were analyzed at these companies. At the time of the analysis, these companies have branches in Chisinau of the following number: "Granier" - 7 branches, "La Mămuca" - 10 branches, "Pan Pan" - 3 branches, "Covrigo" - 5 branches, "Pretzel" - 6 branches. All trading points are located in crowded public places and in various sectors of Chisinau. Analyzing the location of these companies, it was observed that they are open in central areas, next to markets, schools, universities, in places where there is a potential consumer.

In most outlets one can find the menu for pastries and drinks proposed in the form of a panel. An example of a menu panel is shown in Figure 1.



**Figure 1. Presentation of the menu at the "La Mămuca" point of sale**

Some were without a menu, so the consumer could only be informed about the products in the shop window. A great advantage is presented by the company "La Mămuca", which in addition to all the services offered by the others, presents to the consumer all the detailed information about the ingredients, weight and nutritional value of the products for consumption. Granier also provides some information on products such as ingredients and weight. But it is also the shortcoming, the font is so small that practically nothing is understood.

We also analyzed social networks that can be a source of information for consumers about the nutritional and energy value of the products offered. Virtually all have the page on networks like facebook and instagram, but they do not contain the necessary information. They only describe the assortment, current offers and other announcements. They also have personalized websites that are not active in four out of five companies analyzed.

### Results and discussions

During the research, a percentage distribution of the assortment of sweet and salted dishes from the analyzed enterprises was made.

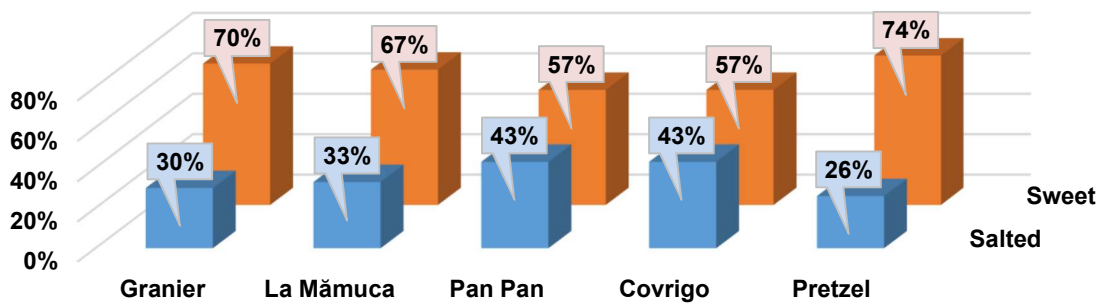


Figure 2. Percentage distribution of sweet and salted items in the business menu

In figure 2, notice that from the whole assortment, sweet products with a value from 57 to 74% predominate, and the salty ones indicating a maximum of up to 43%. We conclude that a large part, more than 50% of the items offered are sweet dishes.

The percentage distribution (fig.3.) Of the assortment of cold drinks included in the menu of the analyzed enterprises was also made. Only "Pretzel" does not have other types of drinks on the menu, apart from the hot drinks prepared by them, which gives a possibility to the consumers themselves to choose the amount of added sugar. The largest percentage of sweet drinks on the market has the company "La Mămuca" with the value of 83% of the entire range of cold drinks.

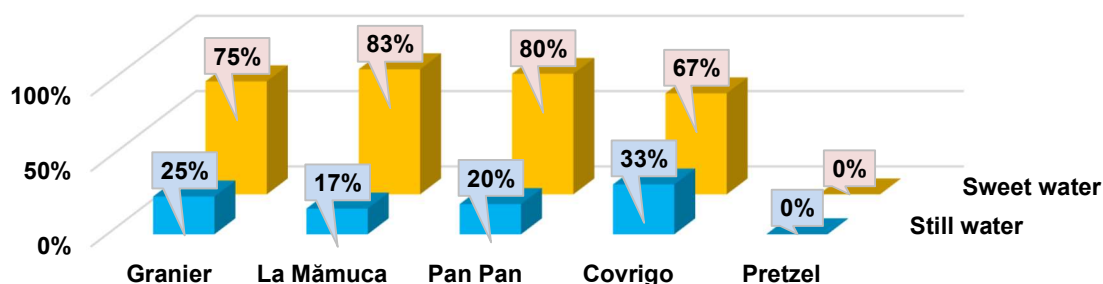


Figure 3. Percentage distribution of cold drinks from the menu of the analyzed enterprises

At the same time, for each company, several combinations of different pastries / confectionery were analyzed with the most common drinks on the market: Fanta, Coca-Cola, Cappy, Fuzetea, Sprite, Rich multifruit. Following this analysis, it was established what is the energy value consumed in relation to 1/3 of the daily consumption norm for an adult - 600 kcal (with an average activity). This meal taken on the street will be considered a replacement for a main meal from that day.

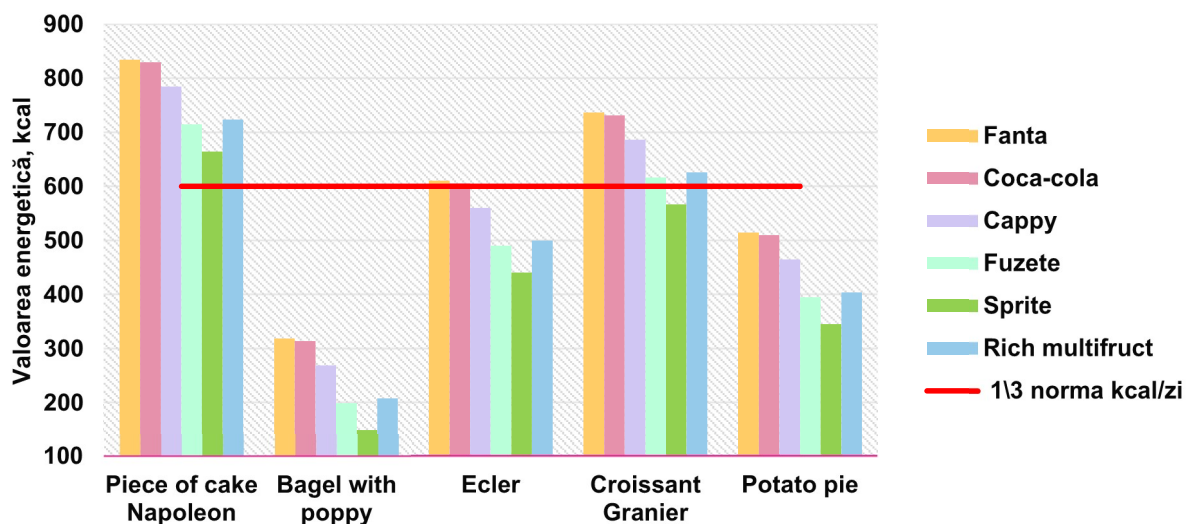


Figure 4. Combination of products with sweet drinks from the menu of the company "Granier"

Figure 4 shows these results for the company "Granier". The calculations for the energy value were performed using the site [www.catalizator.ru](http://www.catalizator.ru) with respect to the weight. Caloric products were selected, but also from those requested by consumers.

Following these associations, it is observed that consuming a slice of Napoleon cake exceeded your recommended value by about 40%. Also, a Granier croissant is a rich source of kcal and has exceeded 1/3 of this daily norm by up to 20% more, no matter what drink it will be combined with. And products like Ecler or potato pie indicate close values, it already depends on which drink will be selected.

## Conclusions

The five largest street food bakery enterprises in Chisinau, which are well known among consumers but are also located in very crowded places, where there is a more stable flow of consumers, were analyzed in the research. The assortment of proposed dishes and drinks, the information that is presented, the services offered as well as their locations were analyzed. It is worth mentioning that the analyzed company "La Mămuca" is the only one that offers consumers a wide range of information on the products offered.

Following the general analysis of the entire range of products offered by these companies, it was observed that sweet foods with a value of 65% predominate. Regarding drinks, we can mention that we have 25% cold drinks, but of these over 75% are sweet carbonated drinks. All this data tells us that they pose a danger to public health, especially increased sugar consumption. The energy value was analyzed following the consumption of beverage preparations offered by each company. From the combinations made we can conclude that there are risks of high caloric intake. Which later in a frequent consumption, will lead to the most common food diseases: obesity, diabetes, cardiovascular diseases, etc. And the main causes are the lack of time, the rush of consumers and the lack of financial resources, which do not offer the possibility of eating in a place with a warm and healthier food.

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