

# Marketing Approaches in Solving Medical and Social Problems on the Example of Diabetes Mellitus

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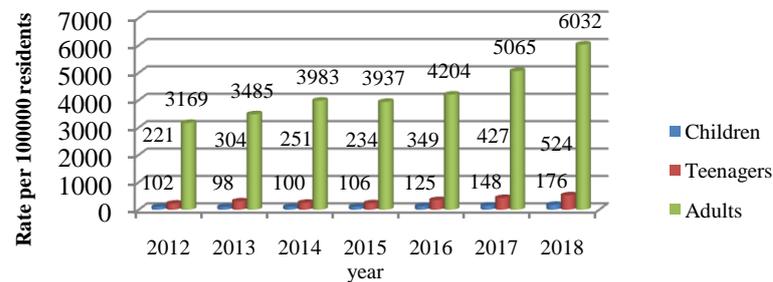
**Abstract.** The article provides data on the incidence of diabetes mellitus (DM) in the Oryol region. A marketing approach is proposed that includes several components followed by making decisions on the problem under study: 1. analysis of the development of diabetes morbidity in the world and in the Oryol region; 2. research of indicators of the range of specialized food products for diabetic purposes (SPDP); 3. marketing research of consumer preferences in relation to the SPDP using testing of the target audience of patients with type 2 diabetes; 4. economic and organizational measures in solving medical and social problems. The brand policy of SPDP was studied in large retail chains of the city of Oryol in the shopping center "Europe", the shopping center "Atoll" and the GM "Lineia". The article presents an analysis of the regulatory support of the organization of functional nutrition of the population of the Russian Federation. The results of marketing research. The proposed solution of the medical and social problems, including economic and organizational measures.

## 1. Introduction

All over the world medical and social problems are the most important and are solved differently in different countries. With the transition to a market economy in Russia, there was a partial commercialization of medical services, including patients with diabetes.

## 2. Relevance, scientific significance of the issue with a brief review of the literature

Taking into account the unstable economic situation, the fall in the standard of living of the majority of the population requires a systematic analysis in solving individual medical and social problems, for example, for the category of the population with diabetes [1,6,19]. According to the International Diabetes Federation, the number of patients with diabetes will increase to 552 million by 2030 year [16,17,18]. Analysis of the incidence of diabetes in the Oryol region according to the Department of Health in 2018 year was the highest in the last 7 years and amounted to 37325 people [5,14]. In the period from 2012 to 2018 years the increase in the incidence of diabetes in the city of Oryol and the region increased by 74,4%, with the urban population being higher compared to rural residents (Fig. 1).



Diabetes incidence of the population in the territory of the Orel region

Figure 1. Dynamics of diabetes in the Oryol region per 100 000 population (people).

### 3. Statement of tasks

We propose a marketing approach that includes four tasks and then makes decisions on the problem under study:

- 1) to analyze the development of the incidence of diabetes in the world and in a specific region (Oryol region);
- 2) to investigate the indices of the range of SPDP;
- 3) to conduct market research of consumer preferences regarding SPDP using sociological methods of questioning the target audience, testing of respondents with type 2 diabetes who are undergoing outpatient and inpatient treatment in hospitals in the city of Oryol and the region;
- 4) to take economic and organizational measures in solving medical and social problems.

### 4. Theoretical part

The complex rehabilitation system is almost completely absent, including diet food for patients with type 2 diabetes. The importing of SPDP does not satisfy the need of patients with diabetes, sugar substitutes and products based on them are produced in Russia in small quantities [2, 3, 7, 8]. The solution to the problem is based on the creation of a program that ensures a reduction in the incidence rate by identifying it at an early stage, registering patients and monitoring by the health authorities, as well as developing domestic nutritional produce of increased nutritional value, replenishing the domestic market.

When developing an range policy, enterprise-commodity producers need to conduct in-depth market research, which will make it possible to better study the structure of the competitors' products, their brand policies, forms and methods of promoting these products [12]. Marketing research includes: a study of the indices of the range of SPDP; brand policy in major retail chains of the city of Oryol in the shopping center “Europe”, the shopping center “Atoll” and the GM “Lineia”; case studies of consumer preferences regarding SPDP. Dietary products presented in the price lists were used as basic indicators of the range of SPDP.

Conducted marketing studies of consumer preferences regarding SPDP using sociological methods of questioning the target audience, using testing of 1046 respondents aged from 18 to 84 years with type 2 diabetes who are in outpatient and inpatient treatment in hospitals in Oryol and the region. The system of sociological research included: the frequency of use in the diets of the SPDP; study of patients with type 2 diabetes by sex, age, money income per person; the presented range of SPDP in the consumer market of the Oryol region; study of the influence of individual factors on the choice of SPDP. The obtained materials were processed using Statistica 6.0 software package for statistical analysis [4,11,13,15].

Despite the extensive and well-established base of regulatory support in the field of functional nutrition of the population, there are problems in the production of SPDP and their introduction into treatment-and-prophylactic institutions (MPI) and the consumer market [9,10,20]. It is necessary to take economic and organizational measures at Federation subjects' level.

## 5. Practical value, suggestions, results of implementations and experimental studies

The obtained values of the coefficient of latitude in the shopping center “Europe” – 77%, the shopping center “Atoll” – 72%, the hypermarket “Liniya” – 81% indicate that in this market the supply is close to the demand and commercial efforts are needed to create consumer preferences. The widest range of products is to be found in GM “Lineia” for dietary goods (confectionery, fiber, low-carb pancakes, sugar substitutes). Dietary confectionery and sugar substitutes are in steady demand in three retail chains. The range of the customer data networks is updated at a slow pace, this is due to minimizing the risks associated with the possible low demand for new products. The range of SPDP is determined by the sales volumes and prices for certain types of SPDP of the leading manufacturers of the trademarks “Shugaroff”, “Petrodient”, “Khlebnyi spas”, “Linfas”, “Zhiznelyub”, LLC “Archeda product” and KF “South Star”. The range of imported products is 5-7% of the base value.

Analysis of the consumer market SPDP showed that among the respondents of the Oryol region, diet bakery (40,3%) and confectionery products (30,1%) are the most popular; 21,5% of respondents consume canned fruits and vegetables, and only 8,1% of respondents consume food concentrates. The most important criterion when choosing dietary products is the taste of the product, the second place is the price, and the third place is taken by the manufacturer, while 74% of respondents prefer the domestic manufacturer. Sources of basic information are different, which is connected with the respondents' trust in the indicated sources – 68,0% adhere to the recommendations of the doctors; 17,0% prefer popular literature; 13,0% of respondents rely on the experience of friends and relatives suffering from diabetes. On the basis of the data obtained, the portrait of a potential consumer of SPDP is as follows: patients with type 2 diabetes, mostly women aged from 27 to 50 years, who are deficient in the SPDP and trust the domestic manufacturers of these products. The results of a sociological survey of respondents with type 2 diabetes are taken as the basis for developing a mechanism for introducing innovative nutritional products in the consumer market and in health care facilities.

A mechanism has been developed for introducing SPDP into health facilities and into the consumer market consisting of two blocks. The first block, the economic one, should include: provision of state subsidies for the production of SPDP; tax exemption on value added in the production of SPDP; reduction of trade allowances and customs tariffs for SPDP. The second block, the organizational one, should provide for: licensing of establishments producing SPDP and conducting medico-biological studies of the recipient add-ons; improvement of the certification and declaration scheme of the SPDP, tightening control over the production and circulation of the special recipients; in the constituent entities of the Federation to identify enterprises engaged in the release of the SPDP.

According to the results of a sociological survey of respondents with diabetes, consumer preferences were given, which became the basis for justifying and developing formulations and technologies for the production of a sugar-lowering fortifier and SPDP using it. The conducted research set was the basis for the development of a mechanism for introducing innovative SPDP to the consumer market and in health care facilities.

## 6. Conclusion

According to the Department of Health of the Oryol region, over the past 7 years, the increase in the incidence of diabetes has increased by 74,4% mainly among adults. The indicators of the width of the SPDP in commercial networks are quite high, but the limiting factors for their production are a narrow range of products produced by domestic producers, poor marketing and interaction with foreign manufacturers. Using the sociological methods of research of the target audience, a portrait of the potential consumer of the SPDP has been determined. Proposed solutions to the medical and social problems to promote the SPDP on the consumer market, including two blocks: economic and organizational.

## References

- [1] Ametov A S 2007 Modern approaches to the management of type 2 diabetes *Therapeutic*

- archive* 81 **10** 20-27
- [2] Baranovsky A Yu, Semenov N V 2010 Modern dietetics: organizational and legal framework Teaching manual. 2nd ed. Corr. and add. *SPb.: ID SPb MAPO* 380
  - [3] Grozdova T Yu 2012 Catering in the social security system *Pract. dietology* 3 16-29
  - [4] Devyatko I F 2002 Methods of sociological research. 2nd ed. *M.: University* 295
  - [5] Dmitrieva N E, Akimova L I, Andreyuk M V, Balakhnev M Yu 2017 Oryol region in numbers 2011-2016: a brief stat. Sat - Orel: Territorial body of the Federal State Statistics Service in the *Oryol region* 249
  - [6] Zhestovskikh S S 2007 The current state of the problems of prevention and treatment of diabetes *Therapeutic Archive* 79 **10** 46-50
  - [7] Tutellan V A, Gapparov M M G, Kaganova B S, Sharafetdinova Kh H 2010 Medical nutrition: modern approaches to the standardization of diet therapy 2nd ed. Pererab. and add. *M.: Dynasty* 304
  - [8] Mendelssohn G I 2012 Innovation in the organization of therapeutic nutrition *Pract. dietology* **1** 20-25
  - [9] Gapparov M M, Kaganova B S, Sharafetdinova Kh H 2012 Organization of clinical nutrition in health care facilities 2nd ed. Pererab. and add *M.: Dynasty* 208
  - [10] 2004 Nutrition and health in Europe: a new framework for action WHO regional publications *European series* **96** 525
  - [11] Sikevich Z V 2005 Case Study: A Practical Guide *SPb: Peter* 320
  - [12] Nikolaev M A 2007 Theoretical foundations of merchandising: studies. for universities *M.: Norma* 448
  - [13] Uvarova V I 2012 Sociological research methods in food commodity research: study guide *M.: ID FORUM, SIC INFRA-M* 256
  - [14] Federal State Statistics Service <http://www.gks.ru/free.doc/>
  - [15] Poisons V A 2007 Strategy of sociological research Description, explanation, understanding of social reality 3-ed. Corr. *M.: Omega-L* 567
  - [16] 2011 American Diabetes Association Diagnosis and classification of diabetes mellitus *Diabetes Care* **33(1)** 62-69
  - [17] 2011 American Diabetes Association Standards of medical care in diabetes *Diabetes Care* **34(1)** 11-61
  - [18] 2012 International Diabetes Federation. Global Guideline for Type 2 diabetes *Clinical Guidelines Task Force* 117
  - [19] Nathan D M 2009 Medical management of hyperglycaemia in type 2 diabetes mellitus *Diabetes Care* **32** 193-203
  - [20] Roberfroid M B 2002 Global view on functional foods: European perspectives *Brit. J. Nutr.* vol 88 **2** 133-138