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**PHARMACOECONOMICAL EXPENDITURES IN PATIENTS WITH DIABETES MELLITUS; THE
 ROLE OF THE PHARMACIST IN CONSULTATION PROCESS**

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**ფარმაკოეკონომიკური ხარჯები შაქრიანი დიაბეტის მქონე პაციენტებში; ფარმაცევტის როლი
 შაქრიანი დიაბეტის მქონე პაციენტების კონსულტაციაში**
 სოციალური და კლინიკური ფარმაციის დეპარტამენტი, თბილისის სახელმწიფო სამედიცინო
 უნივერსიტეტი

რეზიუმე

დიაბეტი და მისი გართულებები მნიშვნელოვან სოციალურ-ეკონომიკურ პრობლემას წარმოადგენს. კვლევის მიზანს წარმოადგენს ფარმაცევტის როლის განსაზღვრა დიაბეტით დაავადებულ პირთა მკურნალობაში, სათანადო კონსულტაციის განევა, ამ დაავადების ფარმაკოეკონომიკური ანალიზი და ხარჯთაღრიცხვის გაანგარიშება.

გამოკითხვის შედეგების შეჯერებისას გამოიკვეთა შემდეგი მნიშვნელოვანი საკითხები: - ფარმაცევტების დიდ ნაწილს აქვს მზაობა აქტიურად ჩაერთონ დიაბეტით დაავადებული პაციენტების მკურნალობის პროცესში და უკეთესად დაეხმარონ მათ შესაძლო გართულებების თავიდან აცილებაში; - ფარმაცევტების დიდი ნაწილი აღიარებს, რომ მათი კომპეტენცია და დაავადების შესახებ მწირი ინფორმაცია ლიმიტირებულს ხდის სრულფასოვანი კონსულტაცია გაუწიონ პაციენტებს; - დიაბეტით დაავადებულებისთვის ფინანსური ხელმისაწვდომობის პრობლემა მნიშვნელოვან ზიანს აყენებს პაციენტს და აფერხებს დაავადების სწორად მართვას.

Overview: According to the World Health Organization, diabetes is a chronic disease that occurs when a sufficient amount of insulin is not excreted by the pancreas or when the body does not use the secretion of insulin properly. Insulin is a hormone that regulates blood sugar levels.

In addition to medication and a healthy lifestyle, establishing a healthy diet and eating habits is very important in the treatment of people with diabetes, as it is extremely important in the management of both type 1 and type 2 diabetes. Approximately 50% of patients who have type 2 diabetes and who are able to reduce their calorie intake increase their physical activity and weight correction. Normalization of glucose levels in them is much easier and in most cases do not require additional medical treatment.

There is a very high rate of diabetes in Georgia. According to the statistics of the Georgian National Center for Disease Control and Public Health, the number of diabetics in 2018 was 86,709 people, an increase of about 10% compared to 2010 data (79,525 cases were registered in 2010).

The highest prevalence of diabetes per 100 000 population in 2017 was revealed in the territory of Imereti, Adjara, Kakheti and Shida Kartli.

According to the 2019 Diabetes Atlas, the increase in the number of people with type 2 is linked to rapid social and economic change: increasing urbanization. According to the World Health Organization and the International Diabetes Federation, by 2019, more than 463 million people worldwide had diabetes, with approximately 79.4% living in poor and low-income countries. Without proper interventions, that number is expected to rise to 700 million by 2045.

The costs to diabetics are enormous, both in Europe and around the world. In Europe, for example, about 137 billion euros are spent, which is 9% of total spending on health, the total cost of diabetes in the world is 591.7 billion euros, which varies from 5 to 20% of total expenditures depending on the economic situation of the country.

Diabetes mellitus and its complications are a significant socio-economic problem in Georgia, as well as in the world.

Aim: The aim of the study is: determine the involvement of a pharmacist in the management of diabetes mellitus; calculate the economical expenditures during the management of the disease.

Methods: During the study modern opportunities were used and through a special questionnaire from google, contacted the respondents and collected the proper information.

In addition to patients with diabetes, 68 pharmacists who had at least 1 year of pharmacy experience were interviewed using a special anonymous questionnaire. We used different professional groups and associations to distribute the questionnaire.

We asked for answering the group "Diabetes and its management", where the number of members is 1900, as well as in the group "Diabetes - stop!", Where the number of members is about 1200. From these groups, 72 people with diabetes answered the questions. An in-depth study of the questionnaire revealed that 5 of them were minors, although their data were not used in the analysis of our study due to their age and ethical principles.

Discussion: In 2019, the global amount spent on diabetes treatment and complication prevention was \$ 760 billion. In 2045, these figures could reach \$ 845 billion. It is estimated that by 2045 the number of people with diabetes will increase 1.5 times, while the cost of health care will increase 1.2 times. This is due to the fact that countries (Madagascar, Guinea and Nigeria), where a sharp increase in population is expected, spend the least amount of money per capita in terms of diabetes. According to the International Diabetes Federation, 12% of global health spending comes from diabetes.

In 2019, 75% of the amount spent on diabetes came from people between the ages of 50 and 79, indicating that the prevalence of diabetes in this age group and its complications are higher compared to other age groups. The amounts spent on diabetes vary considerably between countries and regions.

The study reveals, that 57% of pharmacists often change prescriptions based on the patient's financial interests and patient desire. The practice of prescribing irrational medicines creates an increase in financial costs and the problem of access to the necessary medicines, which is why the study included questions about polypragmasy. Approximately 62% of pharmacists reported that cases of polypragmasy often or very often occur during the treatment of a patient with diabetes.

The results of the survey showed, that pharmacists are not able to make decisions independently on many important and problematic issues, which in our opinion may be related to the interests of employers on the one hand and the lack of information on the other. These and other factors ultimately negatively affect the rational treatment of patients and also affect the degree of collaboration between pharmacists and physicians, which would be one of the important preconditions for reducing the incidence of polypragmasy.

The next part of the study covered the availability of medicines and the definition of costs during consultation with various specialists. According to the survey results, 22% of respondents spent between 500 and 800 GEL, 15% from 800 to 1500 GEL, 11% spent 1500 GEL and more for the treatment of diabetes in the last 1 year.

Patients' expenses for consulting specialists in the last 1 year look like this: 25% of respondents spent from 200 to 500 GEL, 13% from 500 to 800 GEL. For the purchase of diabetes treatment, 22% of patients spent in the last 1 year from 200 to 500 GEL, 15% from 500 to 800 GEL, and 13% from 800 GEL and more.

The results of the survey made it clear that a certain proportion of patients refuse to receive medical or diabetes-related medical services due to financial problems. About 74% say they have refused to buy a medicine in the last 1 year because of a financial factor, as well as the question: Has your health or life been endangered in the last 1 year because of a financial factor (e.g., refusing treatment, counselling, other), 31% say yes, while 33% find it difficult to answer.

The survey made it clear that a certain proportion of patients refuse to receive medication or diabetes-related medical services due to financial factors. 74% say that in the last 1 year, they refused to buy medicine due to financial reasons, in addition, 31% say that they could not get medical advice due to financial factors.

World practice shows that the quality, safety, efficacy and economic availability of medicines in modern conditions can be achieved only through the combined efforts of a physician and a clinical pharmacist.

The role of the pharmacist in the management of diabetes management may also include strengthening the patient's knowledge and skills in nutrition, physical activity, self-monitoring, medication use (including injection techniques), expected side effects, their management, and more.

The role of the pharmacy pharmacist is also very important in the management of diabetes. In addition to delivering medication, they can provide counselling, which is very helpful for patients who are still in the process of getting to know and studying the disease. A person enters a pharmacy not only to buy the desired product, but also to receive qualified pharmaceutical care. In addition to the basic information that a pharmacy employee provides to the customer (receipt / use of products, storage conditions, additional advice, etc.), his / her information activities include population-sanitary-educational counselling, which can be done in both medical and pharmaceutical directions. As well as in terms of promoting a healthy lifestyle. From the pharmacy, in addition to medical items and pharmaceuticals, consumers should take hope and positivity, which plays a very big role in disease management.

Conclusion:

- Due to the fact that the out-of-pocket payment for medical care by the patient is very high, proper treatment of diabetics remains a significant challenge in the country.
- Most pharmacists are willing to be actively involved in the treatment of patients with diabetes and to better help them avoid possible complications.
- A large number of pharmacists recognize that their competence and scant information about the disease make it limited to provide full-fledged consultation to patients;
- The problem of financial accessibility for people with diabetes causes significant harm to the patient and hinders the proper management of the disease.

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SUMMARY

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Conclusion: Due to the fact that the out-of-pocket payment for medical care by the patient is very high, proper treatment of diabetics remains a significant challenge in the country. Most pharmacists are willing to be actively involved in the treatment of patients with diabetes and to better help them avoid possible complications. A large number of pharmacists recognize that their competence and scant information about the disease make it limited to provide full-fledged consultation to patients; The problem of financial accessibility for people with diabetes causes significant harm to the patient and hinders the proper management of the disease.

Keywords: Diabetes mellitus, pharmacist, consultation