

## ANNOTATION

**dissertation work of Tazhbenova Saule Tazhedinovna on the topic "Evaluation of the disease management program on the example of patients with diabetes mellitus", submitted for the degree of Doctor of Philosophy (PhD) in the specialty 6D110200 - "Public Health"**

### **Relevance of the research topic.**

Currently, in order to form joint responsibility for health with the involvement of the individual and the management of chronic non-communicable diseases aimed at reducing morbidity, complications and mortality of the population within the framework of the State Program, work is being carried out to strengthen primary health care (PHC) with the introduction of disease management programs (DMP) based on evidence-based medicine (Order of the Ministry of Health of the Republic of Kazakhstan No. 211 of April 5, 2013).

Diabetes mellitus, along with other socially significant non-communicable diseases, is one of the most serious public health problems (Benberin, 2016). According to the International Diabetes Federation (IDF), 425 million adults worldwide suffer from diabetes in 2017. Every year around the world, about 4-5 million people die from diabetes mellitus (Cho N. H., 2018) The relevance of the studied problem is associated with a rapid increase in the incidence of diabetes mellitus. In Kazakhstan over the past 10 years, from 129.2 per 100 thousand population in 2007 to 204.2 in 2017. (Statistical collections, 2008, 2018).

Since 2013, the Republic of Kazakhstan has introduced a DMP for three nosologies: hypertension, chronic heart failure, and diabetes. This program was implemented in two polyclinics in the pilot study mode - North Kazakhstan and Pavlodar regions. Since 2018, the activities under the DMP have been implemented in all regions of Kazakhstan.

The goal of the Disease Management Program is to change the mentality of medical professionals and the patient, create partnerships, involve patients in managing their personal health with the creation of a patient-oriented model to improve the level of health and quality of life of patients, reduce clinical complications, mortality and disability of the population in chronic non-communicable diseases (Aktaeva L. M. et al., 2013), (From the Passport of DMP., 2016).

Since 2013, the Republic of Kazakhstan has introduced DMP in three nosologies: arterial hypertension, chronic heart failure and diabetes. This program has been implemented in two polyclinics in a pilot study mode - North Kazakhstan and Pavlodar regions (Order of the Ministry of Health of the Republic of Kazakhstan dated 05.04.2013 No. 211). Further, the program was implemented in stages. Since May 2017, in accordance with a pilot project, the Disease Management Program has been implemented in three polyclinics of Aktobe region: city polyclinic No. 1 with arterial hypertension; city polyclinic No. 2 with chronic heart failure; in the city polyclinic No. 4 with type 2 diabetes mellitus. Since 2018, activities within the framework of the DMP have been implemented in all regions

of Kazakhstan (Order of the Ministry of Health of the Republic of Kazakhstan dated 06.18.2018 No. 348).

Over the past 20 years, several programs have been created around the world to combat type 2 diabetes and it has been proven that these programs are an effective tool in patient self-management (Chatterjee S., et.al, 2017). Analysis of international experience has shown that the program has a positive effect on the group of patients participating in the disease management program, compared to patients who do not participate in the disease management program. A randomized controlled trial conducted in the United States showed that participation in a self-management program improves the outcomes of patients who have already received education in diabetes mellitus (McGowan P., 2011). Results from a randomized controlled trial have shown that a self-management education program is an important component in diabetes management and has provided concrete evidence that it is an effective tool in controlling body weight, blood pressure, and glycated hemoglobin levels in type 2 diabetes (Khunti K. et al. 2012). The effectiveness of self-management programs in diabetes mellitus is also discussed in several systematic reviews (Steinsbekk A. et al., 2012), (Chrvala C.A. et al., 2016).

Given the widespread use of these programs and, in particular, the positive results, the disease management program has been implemented in Kazakhstan. Few data available in Kazakhstan indicate favorable outcomes of this program, but they have not yet been evaluated in prospective studies and compared with conventional treatment. And this served as the basis for conducting research to evaluate the disease management program in our environment.

**Purpose of the dissertation research:** To assess the work of the diabetes management program at the level of primary health care in Aktobe.

**Object of the study:** Patients with type 2 diabetes mellitus under dynamic observation in the city polyclinic No. 4 of Aktobe and participating in the disease management program.

**Subject of the study:** Disease management program for diabetes mellitus in the city polyclinic No. 4 of Aktobe.

**Research objectives:**

1. To study the dynamics of the incidence of diabetes mellitus in the population of Aktobe city for 2015-2019.
2. To assess the diabetes disease management program in the Aktobe region and in the city polyclinic No. 4 of Aktobe according to the main indicators.
3. Conduct a questionnaire survey of patients participating in the diabetes disease management program to determine their satisfaction with the program.
4. Provide an expert assessment of the organizational aspects of the diabetes disease management program and develop a system for monitoring the volume and quality of the program implementation.

**Scientific novelty. For the first time:**

- An assessment of the work of the disease management program for diabetes mellitus in Kazakhstan is given on the example of Aktobe city.

- An expert assessment of the organizational aspects of the disease management program for diabetes mellitus in Kazakhstan is given on the example of Aktobe city.

#### **Provisions for Defense:**

1. The assessment of the disease management program for diabetes mellitus in the city polyclinic No. 4 of Aktobe was carried out according to the main indicators. The improvement in the level of glycated hemoglobin ( $8.6 \pm 1.8\%$  and  $7.8 \pm 1.5\%$ ;  $p < 0.05$ ) and blood pressure ( $134.6 \pm 12.5\%$  and  $125.7 \pm 10.4\%$ ;  $p < 0.05$ ) in patients participating in the program was detected, compared with the results of patients not participating in the disease management program for diabetes mellitus.
2. The map of the examination of the volume and quality of the measures of the disease management program and the indicators of the disease management program for diabetes mellitus have been improved.

#### **Personal contribution of a doctoral student**

The doctoral student independently analyzed domestic and foreign sources of literature on the topic of the dissertation, as well as statistical data of the city polyclinic No. 4 in Aktobe. In the course of the research work, she evaluated the work of the disease management program for diabetes, conducted a questionnaire to determine the satisfaction of patients participating in the program with the program, as well as an expert assessment of the organizational aspects of the disease management program for diabetes, developed a system for monitoring the volume and quality of program implementation. All sections of the dissertation goals, objectives and research programs, collection and processing of material, the main provisions of the dissertation, generalizations and practical recommendations are formulated and presented by the author independently.

#### **Approbation of the work**

The main provisions of the dissertation are reported on:

1. V International Scientific Conference of Young scientists and Students "Prospects for the development of biology, medicine and pharmacy" (Shymkent, 2017);
2. VIII International Scientific and Practical Conference "Topical Issues of Medicine" and "Second Satellite Forum on Public Health and Health Policy" (Baku, 2019);
3. The Republican Scientific and Practical Conference with International Participation "Prospects for the development of primary health care in rural medicine" (Semey, 2019).

#### **Publications of research results**

On the topic of the dissertation, 8 scientific papers were published, including:

- In the publication indicated in the information base Scopus -1 (Scopus, Electronic Journal of General Medicine, ISSN 2516-3507, SJR 0.271, 2019);
- In the publications recommended by the Committee for Control in the Field of Education and Science of the Ministry of Education and Science of the Republic of Kazakhstan - 3;
- In collections and materials of international scientific and practical conferences - 3;

- Certificate of entering information into the state register of rights to objects protected by copyright - 1.

#### **Implementation of research results**

The certificates of implementation of research work results in the city polyclinics of Aktobe on the topic "Map of the expertise of the volume and quality activities of the disease management program for diabetes mellitus and indicators of the quality of the diabetes management program" were received.

#### **The structure and scope of the thesis**

The dissertation consists of content, a list of designations and abbreviations, an introduction, a literature review, materials and research methods, research results and discussion of the results obtained, lists of used literature. The total volume of the thesis is 113 sheets of computer text. The literature index contains 134 sources, including 33 domestic and 101 foreign. The thesis is illustrated with 31 figures and 25 tables. At the end of the thesis there are 6 appendices.