

THE STATE OF DIABETES IN THE POPULATION OF THE SKOPJE REGION DURING 2020

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Abstract

Introduction: Diabetes is a chronic disease that can lead to cardiovascular disease, blindness, kidney failure, limb loss and death. It causes suffering to about 60 million people in the European region who are currently living with the disease.

Goal: The main objective of this research is to present the diabetes situation in the Skopje region for the year 2020.

Material and methods: Individual applications received electronically through the National Electronic Records System 'My Term' were used as material. The method of work is statistical-informative, a descriptive analysis was made.

Results and discussion: From the analysis of the processed data, it follows that in terms of gender distribution, a slight predominance of the female gender (by 10%) can be seen in relation to the male. The highest percentage is in the age group of 65-69 years (men-7.57%, women-10.25%). In the age group of 0-6 years there are 5 cases of registered diabetes. A total of 145 patients with type 1 diabetes were registered, or slightly more than one percent (1.02%) of the total registered diabetes for 2020 in the Skopje region.

Conclusion: A total of 14.132 diabetics were registered in the Skopje region for 2020. The most common co morbidity of registered patients with type 2 diabetes in the Skopje region for 2020 is Essential (primary) hypertension (I10) - 84.98%. The most common complications of type 2 diabetes among registered patients for 2020 in the Skopje region are peripheral circulatory complications – E11.5 (40.2%).

Keywords: diabetes, Skopje region, complications, newly discovered cases

Introduction

Diabetes is a chronic disease that can lead to cardiovascular diseases, blindness, kidney failure, limb loss, and death. It causes suffering and distress to approximately 60 million people in the European region who currently live with this disease. At the same time, diabetes burdens the economies and healthcare systems of the region. The prevalence of diabetes is increasing in the European region, reaching rates of 10-12% among the population in some member countries. This increase is strongly associated with the rise in overweight and obesity trends, unhealthy diets, physical inactivity, and poor socioeconomic conditions. These risk factors also contribute to the development of other three non-communicable diseases that have become international public health priorities (cardiovascular diseases, chronic respiratory diseases, and cancer). Due to all these factors, diabetes has become an imperative in prevention efforts to integrate into population-based approaches and prevent the development of these chronic non-communicable diseases as a group. Diabetes type 1 is characterized by insufficient insulin production and requires daily insulin administration. Type 1 diabetes cannot be prevented with current knowledge and experience. Symptoms include excessive urination (polyuria), thirst (polydipsia), constant hunger, weight loss, changes in vision, and fatigue. These symptoms can appear suddenly, and the disease can present as an acute condition.

Diabetes type 2 is a result of ineffective use of insulin in the body (insulin resistance). Insulin resistance occurs when cells in the muscles, fatty tissue, and liver do not respond well to insulin and cannot use glucose from the blood for energy. To compensate for the required energy, the pancreas produces more insulin. Over time, the level of sugar in the blood increases. Insulin resistance syndrome includes a group of issues such as obesity, high blood pressure, high cholesterol, and type 2 diabetes. This condition affects 90% of people

with

diabetes worldwide and is largely preventable. Excess body weight, especially around the waist (central obesity), physical inactivity, and a high intake of saturated fats increase the risk of insulin resistance. This risk even increases with a modest increase in body weight within the normal range (Body Mass Index below 25).

The development of type 2 diabetes is also associated with other factors, such as ethnic group, early-life experiences and influences, and socioeconomic factors. The symptoms may be similar to those of type 1 diabetes but are often less noticeable. As a result, the disease may be diagnosed several years after onset, once complications have already appeared. Type 2 diabetes was traditionally considered a disease of middle-aged and older individuals, but its frequency is escalating across all age groups. The condition is now increasingly observed in adolescence and childhood. Impaired glucose tolerance (IGT) and impaired fasting glucose (IFG) are intermediate states between normality and diabetes. Individuals with IGT or IFG are at a high risk of progressing to type 2 diabetes, although it is not inevitable.

Gestational diabetes is hyperglycemia with onset or first recognition during pregnancy. The symptoms of gestational diabetes are similar to type 2 diabetes. Gestational diabetes is most commonly diagnosed through prenatal screening rather than reported symptoms. Often, gestational diabetes can be controlled through a healthy diet and regular exercise. Sometimes, a woman with gestational diabetes may need to take insulin. Each year, 2% to 10% of pregnancies in the United States are affected by gestational diabetes. In most women with gestational diabetes, the diabetes disappears immediately after childbirth. When it does not disappear, it is called type 2 diabetes. Even if the diabetes truly disappears after the baby is born, half of all women who had gestational diabetes develop type 2 diabetes later on. It is important for a woman who has had gestational diabetes to continue exercising and eating a healthy diet after pregnancy to prevent or delay the onset of the same. She should also remind her doctor to check her blood sugar levels every 1 to 3 years.

Objective

The main objective of this information is to present the state of diabetes in the Skopje Region for the year 2020, highlighting the seriousness of diabetes complications and the need to increase preventive measures. Since the number of reported cases is lower than the actual cases, this analysis is based on a representative sample.

Material and Methods

In the preparation of this study, the following were used: individual applications received electronically through the National Electronic Records System 'My Term.' A statistical-informative method of work was employed. A descriptive analysis of the data for the year 2020 was conducted, presented in percentages.

Results and Discussion

The analysis of the processed data reveals that in terms of gender distribution, there is a slight predominance of the female gender (by 10%) compared to males. The highest percentage is observed in the age group of 65-69 years (males - 7.57%, females - 10.25%). In the age group of 0-6 years, there are 5 cases of registered diabetes. A total of 145 patients with Type 1 diabetes were registered, accounting for slightly over one percent (1.02%) of the total registered diabetes cases in the Skopje region for 2020. Table 1 shows the morbidity of diabetes (insulin-dependent diabetes mellitus - E10, non-insulin-dependent diabetes mellitus - E11, and O24 - diabetes mellitus in pregnancy) by age and gender distribution for 2020 in the Skopje region. The percentage contribution of a specific age group and gender to the total morbidity is also presented.

Table 1. Morbidity of diabetes (insulin-dependent diabetes mellitus, non-insulin-dependent diabetes mellitus, and diabetes mellitus in pregnancy) by age and gender distribution for the year 2020.

Age range	Total	Index%	Male	Index%	Female	Index%
0 - 6	5	0.04	2	0.01	3	0.02
7 - 9	3	0.02	2	0.01	1	0.01
10 - 14	10	0.07	4	0.03	6	0.04
15 - 19	24	0.17	9	0.06	15	0.11
20 - 24	31	0.22	19	0.13	12	0.08
25 - 29	57	0.4	25	0.18	32	0.23
30 - 34	78	0.55	38	0.27	40	0.28
35 - 39	225	1.59	119	0.84	106	0.75
40 - 44	394	2.79	202	1.43	192	1.36
45 - 49	698	4.94	351	2.48	347	2.46
50 - 54	1138	8.05	586	4.15	552	3.91
55 - 59	1650	11.68	815	5.77	835	5.91
60 - 64	2070	14.65	942	6.67	1128	7.98
65 - 69	2519	17.82	1070	7.57	1449	10.25
70 - 74	2334	16.52	943	6.67	1391	9.84
75 - 79	1551	10.98	658	4.66	893	6.32
over 80	1345	9.52	504	3.57	841	5.95
Total	14132	100	6289	44.5	7843	55.5

Source of data: Public Health Center Skopje, Department of Social Medicine.

In terms of gender distribution, the table shows a predominance of the female gender in all age groups starting from 55 years old compared to the male population. The highest percentage among males is in the 65-69 age group with a rate of 7.57%. However, the entire age group starting from 55 years old is also significant.

In the age group of 0-6 years, there are 5 cases of registered diabetes. A total of 145 patients with Type 1 diabetes were registered, accounting for slightly over one percent (1.02%) of the total registered diabetes cases in the Skopje region for 2020. Among them, 13 patients had confirmed complications (8.96%), including 5 with ophthalmic complications, 2 with renal complications, 1 with neurological complications, 1 with acute worsening of the condition - acidosis, and 2 patients with multiple complications. The complications occur at different time intervals after the diagnosis is established.

Table 2. Distribution of Type 2 diabetes by municipalities in the Skopje region for the year 2020.

Municipality	Total	Index%	Male	Index%	Female	Index%
Center	1083	7.66	469	3.32	614	4.34
Aerodrom	1848	13.08	849	6.01	999	7.07
Kisela Voda	1248	8.83	577	4.08	671	4.75
Gazi Baba	1927	13.64	867	6.14	1060	7.5
Chair	2031	14.37	898	6.35	1133	8.02
Butel	1420	10.05	668	4.73	752	5.32
Shuto Orizari	265	1.88	107	0.76	158	1.12
Karposh	1511	10.69	662	4.68	849	6.01
Gjorche Petrov	762	5.39	364	2.58	398	2.82
Saraj	880	6.23	326	2.31	554	3.92
Arachinovo	137	0.97	73	0.52	64	0.45
Studenichani	324	2.29	121	0.86	203	1.44
Sopishte	43	0.3	16	0.11	27	0.19
Zelenikovo	78	0.55	33	0.23	45	0.32
Ilinden	225	1.59	99	0.7	126	0.89
Petrovec	258	1.83	117	0.83	141	1
Chucher Sandevo	- 92	0.65	43	0.3	49	0.35
Total	14132	100	6289	44.51	7843	55.51

Source of data: Public Health Center Skopje, Department of Social Medicine.

The highest number of patients is registered in the municipality of Chair, with a percentage share of approximately 14.37% of the total morbidity. The following municipalities follow: Gazi Baba, Aerodrom, and Karposh, with a percentage share of 13.6, 13.1, and 10.7%, respectively.

Table 3. Distribution of Type 2 diabetes among the population of the Skopje region for the year 2020 by nationality.

Nationality	Total	Index%	Male	Index%	Female	Index%
Macedonian	9293	65.71	4282	30.28	5011	35.43
Albanian	3749	26.51	1540	10.89	2209	15.62
Turkish	260	1.84	102	0.72	158	1.12
Roma	316	2.23	138	0.98	178	1.26
Vllach	303	2.14	123	0.87	180	1.27
Serbian	115	0.81	60	0.42	55	0.39
Bosnian	9	0.06	5	0.04	4	0.03

The rest	57	0.41	28	0.2	29	0.21
Unknown	30	0.28	11	0.08	19	0.13
Total	14132	100	6289	44.44	7843	55.46

Source of data: Public Health Center Skopje, Department of Social Medicine.

The percentage share is highest among the Macedonian population, at 65.7%, followed by the Albanian population at 26.5%.

Table 4. Number of cases with the most common comorbidity in the Skopje region for the year 2020 among patients with Type 2 diabetes.

most common comorbidities	
I10	1958
E78	260
E03	86
Total	2304

Source of data: Public Health Center Skopje, Department of Social Medicine.

The most common comorbidity among registered patients with Type 2 diabetes in the Skopje region for the year 2020 (Table 4) is "Essential (primary) hypertension" (I10) with a percentage of 84.98%. This is followed by the group of "Disorders of lipoprotein metabolism and other lipidemias" (E78) with 11.28% and "Other hypothyroidism" (E03) with 3.73%.

Conclusions

In the Skopje region, in this analysis and sample of participants, a total of 14,132 diabetics were registered for the year 2020.

The most common comorbidity among registered patients with Type 2 diabetes in the Skopje region for the year 2020 is hypertension (I10) with a percentage of 84.98%, followed by disorders of lipoprotein metabolism and other lipidemias (E78) with 11.28%, and other hypothyroidism (E03) with 3.73%.

There is a higher prevalence of Type 2 diabetes in the female population. Regarding the age group, there are no significant differences. From the age of 55, there is a noticeable increase in both genders. The most common complications of Type 2 diabetes among registered patients in the Skopje region for the year 2020 are peripheral circulatory complications - E11.5 (40.2%).

Despite progress, there is a significant lack of coordination in reporting diabetes between primary healthcare on one hand and secondary and tertiary healthcare on the other hand. The quality of coding is still not at a high level.

References

- [1]. Diabetes mellitus, available at <https://www.euro.who.int/en/health-topics/noncommunicable-diseases/diabetes/diabetes>, accessed in May 2021
- [2]. Insulin Resistance, available at <https://www.webmd.com/diabetes/insulin-resistance-syndrome>, accessed in April 2023
- [3]. Diabetes and Pregnancy, available at <https://www.cdc.gov/pregnancy/diabetes.html>, accessed in May 2023
- [4]. V. Simonovska, A. Jankoska; Information on the state of diabetes in the population of the Skopje region during 2020; available at <https://www.cph.mk/ftp/Publikacii/2021>
- [5]. <https://mojtermin.mk/home>