

Differentiation of the Intensity of Repeated Disability Due to Diabetes Mellitus Among the Adult Population. Moscow for 2017-2021

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Abstract

The article presents the features of the formation of repeated disability due to diabetes mellitus of the adult population of Moscow for 2017-2021. As a result of the study, it was revealed that in the dynamics there was an increase in the number of persons re-recognized as disabled; preservation of the proportion of up to 80% in the structure of newly recognized as disabled in the class of diseases of the endocrine system, disorders of nutrition and metabolism; tendency to increase the level of repeated disability from 2.5 ± 0.08 to 3.8 ± 0.07 per 10 thousand adults; the predominance of middle-aged disabled people (37.4%), with a tendency to reduce their specific weight, the second rank place was occupied by disabled people older than working age (34.8%) with a tendency to increase their share in the structure of those re-recognized as disabled, at the same time in the Central Federal District the leading positions were occupied by disabled people older than working age (43.8%), the share of disabled people of group II is much lower than in Moscow; the proportion of young people with disabilities in Moscow was 27.8%; in terms of the severity of disability, the predominance of disabled persons of group III with a tendency to increase their specific weight, but the indicators are lower than in the Central Federal District; the proportion of disabled persons of group II (20.7%) and group I (6.2%) is lower than in the Central Federal District - 24.5% and 10.6%, respectively.

Keywords: Diabetes Mellitus; Repeated Disability; Disability Groups; Age Groups; Level

The World Health Organization (WHO) considers diabetes mellitus (DM) to be a significant public health problem, including this disease in the list of four priority noncommunicable diseases [1,2]. Over the past few decades, the prevalence of diabetes has been steadily increasing and poses a significant threat to the public health of the world population [3-5]. According to WHO, for the period from 2000 to 2019, an increase in mortality from diabetes by 70% is recorded in the world. Diabetes is one of the reasons for the maximum number of years of healthy life lost. In 2020, diabetes

for the first time entered the list of the 10 leading causes of death [6-11]. The incidence of diabetes mellitus (E10-E 14) in Moscow was characterized by an increase from 3338.2 Cases per 100 thousand population in 2016 to 3645.4 Cases per 100 thousand population in 2020 [12]. In most cases, the course of diabetes is accompanied by the manifestation of complications from various organs and systems, which are the main causes of disability and death of this group of patients [13-17].

Objective of the Study

To study the structure, indicators of repeated disability due to diabetes mellitus among the adult population in Moscow in comparison with the indicators for the Central Federal District, taking into account age groups and the severity of disability in 2017-2021.

Materials and Methods

The study is continuous. Research base: FKU «GB ITU in Moscow» of the Ministry of Labor of Russia. Sources of information: forms of federal state statistical observation F-7 (Sobes) (information on medical and social expertise of persons aged 18 years and older), information database OF EVIAS ITU FKU «GB ITU for Moscow» of the Ministry of Labor of Russia, statistical collections of the FGBI FB ITU - 5 units.

Research methods

Data copying, descriptive statistics (absolute, extensive, intensive indicators, reliability indicators), analytical, comparative analysis, reliability criterion (p). Calculation of indicators of primary disability taking into account the disability group and age groups. Age groups of the adult population are allocated in

accordance with the form of federal state statistical observation form F-7 (Sobes) - young (18-44 years), middle (female - 45-54 years, m. - 45-59 years), older able-bodied (w. 55 and >, m-60 years and >).

Research period: 2017-2021.

Results and Discussions

The absolute number of persons re-recognized as disabled (PPI) due to diabetes mellitus among the adult population of Moscow in 2017 was 2616 people, in 2018 their number decreased to 2286 people (rate of decline -12.6%), to 1924 people in 2019 (rate of decline -15.8%), in 2020 increased to 2776 people (growth rate + 44.3%), in 2021 to 3996 people (growth rate + 43.9%). «Temporary procedure for recognizing persons with disabilities», approved by the Decree of the Government of the Russian Federation No. 1697 of 16.10.2020 in connection with the pandemic of the new coronavirus infection COVID-19. Their total number for the period of the study was 13598 people, an average of 2720 people per year. Their share in the total structure of repeated disability of all classes of diseases according to icd - X, ranging from 2.8% to 2.5%, averaging 2.6 per cent (Table 1).

Years	МКБ-X					
	Diseases of the endocrine system, eating disorders, metabolism			Diabetes mellitus		
	abs. Am.	Share	Level	abs. Am.	Share	Level
2017	2980	3,2	2,9 ± 0,08	2616	2,8	2,5 ± 0,08
2018	2604	3,0	2,5 ± 0,08	2286	2,6	2,2 ± 0,09
2019	2188	2,8	2,1 ± 0,09	1924	2,5	1,8 ± 0,09
2020	3140	3,0	3,0 ± 0,08	2776	2,7	2,6 ± 0,08
2021	4542	3,0	4,3 ± 0,07	3996	2,6	3,8 ± 0,07
Medium	3091	3,0	2,96 ± 0,08	2720	2,6	2,58 ± 0,08

Table 1: Resource requirements by component.

The structure of primary disability of the adult population due to diabetes mellitus in the class of diseases of the endocrine system in Moscow for 2017-2021. (abs. h., %, per 10 thousand), M ± m).

In the structure of repeated disability due to diseases of the endocrine system, eating disorders, metabolism, disabled people due to diabetes mellitus accounted for 88%.

The level of repeated disability for the 5-year period was recorded in 2017-2019. with a downward trend from 2.9 ± 0.08 to 1.8 ± 0.09, with a subsequent increase to 3.8 ± 0.07 in 2021, on average it was 2.58 ± 0.08 per 10 thousand adults.

The study of repeated disability due to diabetes mellitus of the adult population by age groups revealed that in Moscow the leading positions were occupied by middle-aged disabled people (45-54 l-women; 45-59 l-male.) Their number ranged from 1209 people to 722 people, in total it was 4954 people, an average of 991 people per year. Their share in the structure of the PPI in dynamics decreased from 46.2% to 29.5%, averaging 37.4%. The level of repeated disability was recorded in the range of $5.6 \pm 0.14 - 3.3 \pm 0.17$, on average it was 4.56 ± 0.16 per 10 thousand of the

corresponding population. In the Central Federal District, middle-aged disabled people occupied the second rank. Their share in the dynamics also tended to decrease from 32.8% to 25.4%, averaging 29.1%, which is significantly lower than the extensive figure for Moscow. Their absolute number is 13325 people, an average of 2,065 people per year with a recurrent disability rate of 4.0 ± 0.09 per 10,000. of the relevant population, which is lower than the intensive indicator for Moscow ($r < 0.01$) (Table 2).

Age groups	Indicators	Territory											
		Moscow						Central Federal District					
		2017	2018	2019	2020	2021	Medium	2017	2018	2019	2020	2021	Medium
Young (18-44 years)	abs. Am.	721	598	471	808	1269	773	2180	1979	1730	2996	4238	2625
	ud. weight	27,6	26,2	24,5	29,1	31,8	27,8	25,7	252	24,0	28,1	31,7	27,1
	level	$1,5 \pm 0,13$	$1,2 \pm 0,13$	$1,0 \pm 0,14$	$1,7 \pm 0,13$	$2,8 \pm 0,13$	$1,64 \pm 0,13$	$1,5 \pm 0,08$	$1,3 \pm 0,08$	$1,2 \pm 0,08$	$1,9 \pm 0,07$	$3,0 \pm 0,07$	$1,78 \pm 0,07$
Average (45-54 l-female; 45-59 l-male.)	abs. Am.	1209	948	722	898	1177	991	2780	2455	2107	2589	3394	2665
	ud. weight	46,2	41,5	37,5	32,3	29,5	37,4	32,8	31,3	29,2	27,0	25,4	29,1
	level	$5,6 \pm 0,14$	$4,4 \pm 0,16$	$3,3 \pm 0,17$	$4,1 \pm 0,16$	$5,4 \pm 0,15$	$4,56 \pm 0,16$	$4,1 \pm 0,09$	$3,7 \pm 0,10$	$3,2 \pm 0,10$	$3,9 \pm 0,10$	$5,2 \pm 0,09$	$4,0 \pm 0,09$
Older than able-bodied person (55 L and >wintern;; 60 l and >man)	abs. Am.	686	740	731	1070	1550	955	3514	3416	3377	4321	5734	4072
	ud. weight	262	52,4	38,0	38,5	38,8	34,8	41,5	43,5	46,8	45,0	42,9	43,8
	level	$2,1 \pm 0,16$	$2,2 \pm 0,15$	$2,1 \pm 0,15$	$3,0 \pm 0,14$	$4,2 \pm 0,13$	$2,72 \pm 0,14$	$3,3 \pm 0,08$	$3,1 \pm 0,08$	$3,1 \pm 0,08$	$3,9 \pm 0,07$	$5,1 \pm 0,07$	$3,7 \pm 0,08$

Table 2: Resource requirements by component.

Characteristics of those re-recognized as disabled due to diabetes mellitus in Moscow in comparison with the indicators of the Central Federal District, taking into account age groups for 2017-2021.

(abs. h., %, on 10 thousand, $M \pm m$)

The second ranking place in the structure of the PPI from these reasons in Moscow was occupied by disabled people older than working age (55 liters and > women; 60 l and >man) Their share in the dynamics tended to increase from 26.2% to 38.8%, an average of 34.8%. Their absolute number for the study period increased from 686 people in 2017 to 1550 people in 2021 (growth rate + 125.9%). The level of repeated disability among persons older than working age also tended to increase from 2.1 ± 0.16 to 4.2 ± 0.13 , an average of 2.72 ± 0.14 per 10 thousand. of the population concerned.

In the Central Federal District, disabled people older than working age occupied leading positions. Their share in the structure of the PIP from these reasons was 43.8%, which is significantly higher than the extensive indicator for The city of Moscow ($r < 0.05$). The absolute number of PIPs of this age group was 20,362 people, an average of 4,072 people per year. The level of repeated disability of this contingent of disabled people ranged from 3.1 ± 0.08 to 5.1 ± 0.07 , on average it was 3.7 ± 0.08 per 10 thousand of the corresponding population, which is 1.4 times higher than the intensive indicator for Moscow ($r < 0.05$).

The proportion of young people with disabilities (18-44 years) in the structure of the PPI due to diabetes mellitus in Moscow was 27.8%. Their absolute number was 3867 people, an average of 773 people per year. The level of repeated disability of young people was registered in the range of 1.0 ± 0.14 - 2.8 ± 0.13 , on average it was 1.64 ± 0.13 per 10 thousand of the corresponding population.

In the Central Federal District, the share of young people with disabilities averaged 27.1%, their number was 13123 people, an average of 2625 people per year. The level of repeated disability of this contingent of disabled people was 1.78 ± 0.07 per 10 thousand of the corresponding population.

Disability group	Indicators	Territory											
		Moscow						Central Federal District					
		2017	2018	2019	2020	2021	Medium	2017	2018	2019	2020	2021	Medium
And	abs. Am.	142	180	155	138	184	160	938	971	1014	840	905	934
	ud. weight	5,4	7,9	8,1	5,0	4,6	6,2	11,1	12,4	14,1	8,7	6,8	10,6
	level	$0,1 \pm 0,02$	$0,2 \pm 0,03$	$0,1 \pm 0,02$	$0,1 \pm 0,02$	$0,2 \pm 0,003$	$0,18 \pm 0,03$	$0,3 \pm 0,01$	$0,3 \pm 0,01$	$0,3 \pm 0,01$	$0,3 \pm 0,01$	$0,3 \pm 0,01$	$0,3 \pm 0,01$
II	abs. Am.	685	500	382	489	713	554	2228	1961	1738	2295	3133	2271
	ud. weight	26,2	21,9	19,9	17,6	17,8	20,7	26,3	25,0	24,1	23,9	23,4	24,5
	level	$0,7 \pm 0,02$	$0,5 \pm 0,02$	$0,4 \pm 0,03$	$0,5 \pm 0,02$	$0,7 \pm 0,02$	$0,56 \pm 0,02$	$0,7 \pm 0,01$	$0,6 \pm 0,01$	$0,5 \pm 0,01$	$0,7 \pm 0,01$	$1,0 \pm 0,05$	$0,7 \pm 0,01$
III	abs. Am.	1789	1606	1387	2149	3099	2006	5308	4918	4462	6471	9328	6097
	ud. weight	68,4	70,3	72,1	77,4	77,6	73,1	62,6	62,6	61,9	67,4	69,8	64,9
	level	$1,7 \pm 0,09$	$1,5 \pm 0,09$	$1,3 \pm 0,09$	$2,0 \pm 0,09$	$3,0 \pm 0,08$	$1,9 \pm 0,09$	$1,6 \pm 0,05$	$1,5 \pm 0,05$	$1,4 \pm 0,05$	$2,0 \pm 0,05$	$2,9 \pm 0,05$	$1,88 \pm 0,05$

Table 3: Resource requirements by component.

Dynamics of repeated disability of the adult population due to diabetes mellitus, taking into account the severity of disability in Moscow and the Central Federal District for 2017-2021.

(abs. h., %, per 10 thousand corresponding population, $M \pm m$).

In the structure of repeated disability, taking into account the severity of disability, the largest proportion was made up of disabled people of the III group both in Moscow and in the Central Federal District. So, in Moscow, their absolute number decreased from 1789 people in 2017 to 1387 people in 2019 (the rate of decline is -22.5%), followed by an increase to 3099 people in 2021. The average long-term growth rate was + 73.2%.

Their share in the dynamics tended to increase from 68.4% to 77.6%, an average of 73.1% peryear of the study. The level of repeated disability of group III ranged from 1.3 ± 0.09 to 3.0 ± 0.08 , on average it was 1.9 ± 0.09 per 10 thousand adult population (Table 3).

In the Central Federal District, the absolute number of disabled persons of group III had a similar trend, their total number was 30,487 people, an average of 6097 people per year. The average long-term growth rate was + 75.7%. Their share in the structure of the PPI from these reasons in dynamics increased from 62.6% to 69.8%, on average for the period it was 64.9%, which is significantly lower than the extensive indicator for Moscow ($p < 0.05$).

The level of repeated disability of the III group of this contingent also increased from 1.6 ± 0.05 to 2.9 ± 0.05 , on average it was 1.88 ± 0.05 per 10 thousand adults. The proportion of disabled persons of group II is much less than that of disabled persons of group III. So in Moscow, their share tended to decrease from 26.2% in 2017

to 17.8% in 20221, an average of 20.7%. Their absolute number was 2769 people, an average of 557 people per year. The level of repeated disability of the II group varied from 0.4 ± 0.03 to 0.7 ± 0.02 , on average it was 0.56 ± 0.02 per 10 thousand adults. In the Central Federal District, the share of disabled people of the II group varied within the boundaries of 26.3% - 23.4%, on average amounting to 24.5%, which is higher than the extensive figure for Moscow ($r < 0.01$). Their absolute number was 11355 people, an average of 2271 people per year. The level of repeated disability of the II group of this group of the region was measured in the range of 0.5 ± 0.01 - 1.0 ± 0.05 , on average it was 0.7 ± 0.01 per 10 thousand of the adult population, which is higher than the intensive indicator for Moscow ($r < 0.01$).

The proportion of disabled people of group I is the smallest, in Moscow it ranged from 8.1% to 4.6%, on average amounting to 6.2%. The absolute number of them was 799 people, an average of 160 people per year. The level of repeated disability of group I was stable, averaging 0.18 ± 0.03 per 10 thousand adults. In the Central Federal District, the proportion of disabled persons of the first group is higher, registered within the boundaries of 14.1% -6.8%, on average it was 10.6%, which is higher than the extensive indicator for Moscow ($r < 0.05$). Their absolute number was 4668 people, an average of 934 people per year. The level of repeated disability of the first group in the district was stable and equal to 0.3 ± 0.01 per 10 thousand adult population, which is higher than in Moscow ($r < 0.05$).

Conclusion

Repeated disability of the adult population due to diabetes mellitus in Moscow in 2017-2021 in comparison with the indicators for the Central Federal District, the following were characterized by:

- Increase in the number of persons newly recognized as disabled
- Preservation of the specific gravity of up to 80% in the structure of newly recognized disabled in the class of diseases of the endocrine system, eating disorders and metabolism
- The trend of increasing the level of repeated disability from 2.5 ± 0.08 to 3.8 ± 0.07 per 10 thousand adult population.

- The predominance of middle-aged disabled people (37.4%), with a tendency to reduce their specific weight, the second rank place was occupied by disabled people older than of working age (34.8%) with a tendency to increase their share in the structure of those re-recognized as disabled, at the same time in the Central Federal District the leading positions were occupied by disabled people older than working age (43.8%), the share of disabled people of group II is much lower than in Moscow.
- The proportion of disabled young people in Moscow was 27.8%
- In terms of the severity of disability, the predominance of disabled persons of group III with a tendency to increase their specific weight, but the indicators are lower than in the Central Federal District
- The proportion of disabled persons of group II (20.7%) and group I (6.2%) is lower than in the Central Federal District - 24.5% and 10.6%, respectively.

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