

Cite as: Archiv EuroMedica. 2022. 12; 4: e1. DOI [10.35630/2199-885X/2022/12/4.2](https://doi.org/10.35630/2199-885X/2022/12/4.2)

Received 25 May 2022;
Received in revised form 24 June 2022;
Published 3 July 2022

EPIDEMIOLOGY OF DISABILITY AMONG ABLE-BODIED POPULATION OF TVER (RUSSIA)

Tatiana Sorokovikova , **Artem Morozov**  ,
Lydia Pototskaya , **Polina Pozdnyakova** ,
Sergey Zhukov , **Anastasia Morozova** ,
Marta Yeronakova 

Tver State Medical University, Tver, Russia



[download article \(pdf\)](#)

 ammorozovv@gmail.com

ABSTRACT

RELEVANCE: The problem of disability among the able-bodied population is very relevant, because the number of people with a newly established disability group is increasing. Every tenth person in the world has a disability according to the United Nation.

The disability is considered to be one of the medical and demographic indicators. Its monitoring underlies ensuring the protection of the health of citizens. Research on the epidemiology of disability plays an important role in preventing an increase in the number of disabled citizens.

PURPOSE: To study the dynamics and structure of disability among patients of a surgical department and assessing the degree of disability among residents of the city of Tver (Russia).

MATERIALS: The analysis was carried out using the data on the official reports of polyclinic No. 1 of City Clinical Hospital No. 7 in Tver for the period from 2010 to 2020. The dynamics of the frequency of registration of persons with disabilities was studied, the structure of disability by groups was analyzed. The degree of reliability of the obtained data was assessed.

RESULTS: The rates of citizens with disabilities increased 3.3 times from 2010 to 2020. The dynamics was wave-like. There was a sharp rise in the number of people who received a disability group for the first time from the beginning of 2010 to the end of 2013. The indicators did not change much from 2014 to 2020. However, the dynamics of the percentage of the working population among persons with disabilities developed in inverse proportion. Those who received a disability group for the first time mainly had pathologies of the musculoskeletal system and vascular diseases. The largest number of patients received disability group III (moderate disability) each year.

CONCLUSION: The tendency was illustrated through an example of the city of Tver (Russia). The data shows a decrease in the able-bodied population and an increase in social inequality. It is an urgent problem in the region.

Keywords: disability, epidemiology, monitoring, health care, public health and healthcare

RELEVANCE

The care of the nation's health is the main task of social politics in each state. Mortality and sickness rate are the main indicators of public health. They describe the demographic situation and the level of social and economic development in the country.

The problem of disability of the able-bodied population is very relevant, because the number of people with a newly established disability group is increasing. Every tenth person in the world has a disability according to the United Nation.

The World Health Organization has developed the Model Disability Survey to collect information on this issue. The main principles are the analysis of a person's ability to perform everyday tasks, an assessment of his real productivity, health status, the presence of obstacles and intermediaries in the environment. The Model Disability Survey provides data for monitoring the epidemiology of disability in countries, which is key to the implementation of the United Nations Convention on the Rights of Persons with Disabilities [1].

The disability is considered to be one of the medical and demographic indicators. Its monitoring underlies ensuring the protection of the health of citizens [2]. Research on the epidemiology of disability plays an important role in preventing an increase in the number of disabled citizens. Controlling the number of persons with disabilities at the regional level allows to correctly allocate the state budget. It is needed to improve the quality of people's lives with an assigned disability group and also for prevention in order to reduce the impact of disability's risk factors.

Purpose. Studying the dynamics and structure of disability among patients of the surgical department and assessing the degree of disability among residents of Tver.

MATERIALS

An analysis was carried out regarding the data on the official reports of polyclinic No. 1 of the state budgetary healthcare institution "City Clinical Hospital No. 7" in Tver (Russia) for the period from 2010 to 2020. The dynamics of the frequency of registration of persons with disabilities was studied, the structure of disability by groups was analyzed. The degree of reliability of the obtained data was assessed.

RESULTS AND DISCUSSION

Polyclinic No. 1 of the City Clinical Hospital No. 7 serves 108,586 adults in Tver. There were 82 people with disabilities at the beginning of 2010. The disability was established for 19 patients for the first time due to pathology of the musculoskeletal system in 57.89% of cases ($p < 0.001$), of vascular system - 36.84% of cases ($p < 0.001$) and 1 patient due to oncological disease (5.26% $p = 0.293$). At the end of 2010, there were 101 people with an officially established disability group in this medical institution. Among them, the I disability group (very severe disability) was established for 1 person (0.99% $p = 0.536$), the II disability group (severe disability) - for 14 people (13.86 % $p = 0.026$), and the III disability group (moderate disability) - for 86 people (85.15% $p < 0.001$). The number of employed citizens from all registered disability groups was 47 people (46.53% $p = 0.008$).

In 2011, the disability group was established for the first time for 43 people. By the beginning of 2012, the number of persons with disabilities amounted to 144 people. 1 person had the I group of disability (0.69% $p = 0.53$), 26 people had the II one (18.06% $p < 0.001$), and 117 people had the III one (81.25% $p < 0.001$). The number of employed citizens from all registered disability groups was 61 people (42.36% $p = 0.017$). Among persons with a newly established disability group, 19 people had pathology of the musculoskeletal system (44.19% $p < 0.001$), 14 people (32.56% $p < 0.001$) had vascular diseases.

In 2012, the increase in disabled people was 67 people due to diseases of the musculoskeletal system in 58.21% of cases ($p < 0.001$), vascular damage in 38.8% of cases ($p < 0.001$) and oncology in 2.99% of cases ($p = 0.223$). In total, at the end of 2012, there were 211 people with disabilities. Among them the I disability group was established for 2 patients (0.05% $p = 0.404$), the II one - for 32 (15.17% $p < 0.001$), and the III group - for 177 (83.87% $p < 0.001$). The number of employed citizens from all registered disability groups was 94 people (44.55% $p = 0.025$).

During 2013, the number of disabled people increased by 61 people. The total number of this category of citizens was 272 patients. The I disability group was established for 4 people (1.47% $p = 0.191$), the II one - for 38 people (13.97% $p < 0.001$), and the III group - for 230 (84.56% $p < 0.001$). The number of employed citizens from all registered disability groups was 112 people (41.18% $p = 0.048$). The causes of disability remained the same as in previous years.

In 2014, 61 patients were registered and 92 people were deregistered. The total number of disabled people at the beginning of 2015 was 241 people. During 2015, the disability group was established for the first time for 61 people. 26 patients were deregistered. Accordingly, at the end of the year, the number of persons with disabilities was 276 people. 2 people had the I disability group (0.72% $p=0.444$), 38 people - the II one (13.77% $p<0.001$), and 236 people - the III one (85.5% $p<0.001$). The number of employed citizens was 131 people (47.46% $p<0.001$).

In 2016, the increase in disabled people was 33 patients, but 46 people were deregistered. At the end of the year the disability group was established for 263 people. For the first time, there was a decrease in the total number of disabled people. The I disability group was established for 2 people (0.76% $p=0.366$), the II one - for 40 people (15.2% $p<0.001$), and the III disability group - for 221 people (84.03% $p<0.001$). The number of employed citizens was 110 people (41.83% $p<0.001$). The reasons for establishing disability were also pathologies of the musculoskeletal system, vascular diseases and oncopathology.

In 2017, 27 people were registered as disabled, 32 people were removed. The total number of disabled people at the end of the year was 258 people. Among them, 2 people had the I disability group (0.78% $p=0.356$), 36 people - the II one (13.95% $p<0.001$) and 220 people had the III disability group (85.27% $p<0.001$). The number of employed citizens was 106 people (36.8% $p<0.001$).

In 2018 and 2019, there were slight changes in the dynamics of the number of persons with an assigned disability group. No detailed review of the documentation for this time period has been provided.

In total, at the end of 2020, there were 271 people with an established disability group. 2 people had the I group (0.74% $p=0.295$), 31 people had the II one (11.44% $p<0.001$), and 238 people - the III group (87.82% $p<0.001$). During the year, 25 people received a disability group for the first time and 23 people were deregistered. The number of employed citizens was 99 people (36.53% $p<0.001$).

From 2010 to 2020, the total number of disabled people increased from 82 to 271 people. The growth of citizens with disabilities increased 3.3 times. The dynamics was wave-like. There was a sharp rise in the number of people who received a disability group for the first time from the beginning of 2010 to the end of 2013. The fall in the rate was since 2016. The dynamics of the percentage of the working population among persons with disabilities developed in inverse proportion. In 2010, the percentage of working people from the total number of people with disabilities was 46.53%, and at the end of 2013 - 41,18%. This makes it reasonable to assume that most of the people who received a disability group in these years were pensioners. The percentage of persons with disabilities in employment remains high. It shows the risk of reducing the working capacity of the population of the region with the consequent development of an economically unprofitable situation.

Since 2014, there has been not only a decrease in the growth of disabled people, but also an increase in the number of people who were deregistered by disability groups. Between the middle and the end of the decade, a minimum (3 people) difference in the total number of people with disabilities was established. At the same time, at the end of 2014, the maximum percentage of the working population among the total number of disabled people was noted - 47.46. Then the values decreased, and in 2020 the indicators reached their lowest values (36.53%). We can conclude that the working class is not currently suffering such losses as before.

It is also important to consider the structure of diseases that cause the disability of the population. It can be noted that most patients had diseases of the musculoskeletal or vascular system. It is necessary to increase the attention of first-line doctors to these nosologic groups for their early detection and prevention of disability in patients. This is also confirmed by the fact that the largest number of patients received the III disability group each year. It indicates the late detection of pathology and the patient's treatment. Monitoring the epidemiology of disability, creating the necessary conditions for the prevention and elimination of disability risk factors play an important role in it. The introduction of modern diagnostic methods will help to detect disease in its early stages. For example: thermography is becoming a more accurate alternative medical diagnostic tool for measuring abnormal body tissue temperature, which is especially relevant in the study of cancer, cardiovascular, endocrine and several other diseases. With the help of medical thermography it is possible to monitor the course of a disease in dynamics: from screening and diagnosis to control of treatment and rehabilitation. The method is widely used in many fields of medicine and is suitable for multiple applications [3,4]

Brian O'Young's study highlights the role of disability epidemiology in addressing the urgent need for rehabilitation services. He concludes that national and global disability epidemiological statistics provide all the necessary information for the development of rehabilitation programs [5].

The German author Tina Denninger views disability from an interdisciplinary perspective. She draws attention to the fact that the growth of disability leads to specific social inequality and forms of discrimination. This is a big problem in the modern world. The social model of her study focused on the attitude of society towards disability and measures of medical and social protection of people with disabilities [6].

The article by Cieza et al emphasizes that disability presents a universal human experience in the sense that everyone is vulnerable to disability throughout their life. This understanding of disability is the basis for its inclusion in the public discourse for the development and implementation of the rights of persons with disabilities, and also state support measures. The main task remains the prevention of the development of this condition in humans, namely, the implementation of a number of preventive measures in relation to risk factors leading to disability of the able-bodied population [1].

CONCLUSION

The disability is a big medical and social issue. It requires constant monitoring. The number of persons with disabilities tends to increase. It was illustrated through an example of a study in Tver (Russia). All that leads to a decrease in the able-bodied population and an increase in social inequality. It is an urgent problem in the region.

It is important to pay attention to the prevention of disability risk factors among the population, methods of rehabilitation of persons with disabilities and their social status. It can be made through the introduction of non-standard types of employment and the provision of opportunities for own earnings in addition to income from social benefits.

REFERENCES

1. Cieza A, Sabariego C, Bickenbach J, Chatterji S. Rethinking Disability. BMC Med. 2018 Jan 26;16(1):14. doi: [10.1186/s12916-017-1002-6](https://doi.org/10.1186/s12916-017-1002-6). PMID: 29370847; PMCID: PMC5785824.
2. Dungs S, Pichler C, Reiche R. Disability & Diversity studies as a professional basis for diversity-aware education and training in medicine. GMS J Med Educ. 2020 Mar 16;37(2):Doc23. doi: [10.3205/zma001316](https://doi.org/10.3205/zma001316). PMID: 32328525; PMCID: PMC7171354.
3. Sergeev A.N., Morozov A.M., Charyev Yu.O., Belyak M.A. On the possibility of medical thermography application in clinical practice // Preventive Medicine. 2022. - T.25 – No 4:82-88 DOI: 10.17116/profmed20222504182.
4. Morozov A.M., Zhukov S.V., Sorokovikova T.V., Ilkaeva V.N., Belyak M.A., Pototskaya L.A. et al. Medical thermal imaging: possibilities and prospects for the method. 2022. - T.16 – No.6:256-253 DOI: [10.21518/2079-701X-2022-16-6-256-263](https://doi.org/10.21518/2079-701X-2022-16-6-256-263).
5. O'Young B, Gosney J, Ahn C. The Concept and Epidemiology of Disability. Phys Med Rehabil Clin N Am. 2019 Nov;30(4):697-707. doi: [10.1016/j.pmr.2019.07.012](https://doi.org/10.1016/j.pmr.2019.07.012). PMID: 31563163.
6. Denninger T. Behinderung und Alter – Betrachtungen aus einer intersektionalen Perspektive [Disability and age-observations from an intersectional perspective]. Z Gerontol Geriatr. 2020 May;53(3):211-215. German. doi: [10.1007/s00391-020-01693-7](https://doi.org/10.1007/s00391-020-01693-7). Epub 2020 Feb 4. PMID: 32020286.

[back](#)