



Assessment of the Prevalence of the Disability Phenomenon in Poland as a Determinant of the Health Status of the Population

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Abstract

Introduction: Assessment of population health lies in the centre of attention of medical and social sciences. Medical advancement prolongs life span and contributes to an increasing number of the elderly.

Aim: The aim of this study was to assess the prevalence of the disability phenomenon as a determinant of the health status of the Polish population, including socioeconomic variables, causes of disability, its severity and territorial differences in this aspect.

Material and methods: The research material was a database containing information on population aged 18. and over with a disability certificate issued in 2010-2017 (data from the Ministry of Labor, Family and Social Policy). The analysis of empirical data enabled a detailed analysis of the prevalence of the phenomenon of legal disability in Poland in the context of new cases in the period covered by the study.

Results: In the analyzed period, the percentage of newly issued certificates increased until 2015, when it amounted to 1.81%, after which it began to decrease. In 2017 this percentage amounted to 1.44% (553 674 of issued certificates). The most common cause of disability in both men and women was the locomotor disorder – 27.0% and 33.0% respectively. In terms of issued certificates, a moderate degree of disability prevailed – 50.1%. Territorial differentiation in the scope of issuing decisions about disability was observed. In 2017 the highest percentage of new disability occurred in the świętokrzyskie province, where it accounted for 2.5% of the total population, while the lowest was in mazowieckie, where it accounted for 0.9% of these region population.

Conclusions: An in-depth, reliable evaluation of epidemiological situation, disease burden and burden-related disability is the reason for implementing activities which aim at improving health in societies, eliminating health differences and providing the disabled with equal opportunities.

Key words: disability, health status, Poland

Introduction

The phenomenon of ageing populations is a characteristic feature of demographic processes observed worldwide. Most countries in the European Union deal with problems affecting ageing societies, which calls for a need to cooperate and exchange experiences in this area. An increased percentage of the elderly in the whole population will undoubtedly affect the health condition and health needs of societies [1, 2]. According to prognoses of the United Nations, the elderly will make up a greater and greater part of the whole population and will contribute to increased prevalence of disability, which is a result of chronic diseases [3]. This situation brings many social, demographic and health challenges. One of the most crucial elements of strategies and solutions in the area of social and health policy is creating conditions which will allow the elderly to enjoy health and stay active and self-dependent as long as possible [4]. Healthy ageing, being the most supreme value of each individual person, has become the supreme value of each society [5]. Extending years of healthy life is one of the most important conditions for improving the quality of life of older people and their families. Therefore, in the face of the ongoing aging of the Polish population, there is a need to make appropriate reforms in the health and social policy system that meet new health and socio-economic challenges [6]. The aging of the population is inseparably connected with the problem of disability because its frequency increases rapidly after the age of 50. You can become a disabled person at any age, but throughout your life, as a result of injuries, birth defects, and chronic diseases, health often deteriorates, preventing normal daily functioning to varying degrees. The extent of disability determines the health condition of society, and the assessment of this phenomenon is an important element of health assessment [7,8]. The forecasts of the Central Statistical Office of Poland assume that by 2050 the percentage of people aged 65 and over in the general population will increase by 19 percentage points. This has serious consequences. With age, chronic diseases

accumulate, which are a factor significantly impeding the independent fulfillment of needs and increasing the demand for health services as well as those in the field of social assistance, especially in the form of care services [9]. According to numerous long-term studies, including Framingham Heart Study or EPESE (Established Populations for Epidemiologic Studies of the Elderly) diseases that particularly reduce the efficiency of older people are: depression, stroke, heart disease, degeneration of the joints (mainly knee) and fractures (especially the femoral neck). After 75 years of age, however, in addition to the listed diseases, common geriatric problems such as urination and stool disorders, dementia, urinary tract infections, falls, injuries, difficult to heal wounds, ulcerations based on venous and arterial insufficiency often appear, impaired vision and hearing. The result of the above situation is a clear increase in the demand for social assistance. Growing poly-pathology with increasing age and progressive physical disability often leads to prolonged immobilization and complete loss of independence. This creates the need to implement preventive measures in the health and social care system, including preventive actions directed against diseases and other adverse health phenomena before their development. This is important in preventing disability and limiting and mitigating its effects, and thus in improving quality life of the individual, and consequently the entire population [10,11].

Disability, as defined by the World Health Organization in 1980, is defined as „a limitation or lack of ability to perform activities in a manner or to the extent considered normal for humans, resulting from damage and impairment of bodily functions.” According to WHO, people with disabilities are those who are unable, alone or partly or completely, to ensure the possibility of normal individual and social life as a result of inborn or acquired physical or mental impairment [12]. The term disability is still not entirely unambiguous. So far, however, no better term has been found. This term replaces many hitherto existing in society such as: disability, infirmity, which have acquired pejorative meaning. The purpose of this study was to assess the prevalence of disability as

a determinant of the health status of the Polish population, taking into account socioeconomic variables, causes of disability, its severity and territorial differences in this aspect.

Material and methods

The research material was a database containing information on persons aged 16 and over, who have a disability certificate issued in 2010-2017 (data from the Ministry of Labor, Family and Social Policy). The empirical data obtained was coded and entered into Excel. The following measures were used in the statistical analysis of data: structure indicators, location measures for measurable features – arithmetic mean, median, modal, minimum, maximum. The analysis of empirical data enabled a detailed analysis of the prevalence of legal disability in Poland in the context of newly adjudicated cases in the period covered by the study in relation to variables such as: sex, age, marital status, education, cause and severity of disability, as well as territorial differentiation of this phenomenon.

Results

The results of the study showed that in 2010 in Poland in the population of people aged 16 and over, 591,519 new disability certificates were issued, which means that the problem of emerging disability concerned 1.54% of the country's population. During the studied period the percentage of newly issued certificates increased until 2015, when it amounted to 1.81%, after which it began to decrease (Figure 1).

In 2017, this percentage was 1.44% (553,674 rulings issued). The structure of the population of disabled people by sex did not show clear differences in this respect. 50.7% were women and 49.3% men. Married persons dominated among the respondents (52.1%). 23.2% of the respondents were unmarried. Every tenth respondent was divorced or separated. Men most often had vocational education (31.3%), while women

had secondary education (34.1%). The least respondents were people with higher education (10.2%). The largest number of new disability certificates in 2017 were issued for people in the age group 18-64 – 68.7%.

The characteristic of the studied sample according to socio-demographic characteristics is presented in Table 1.

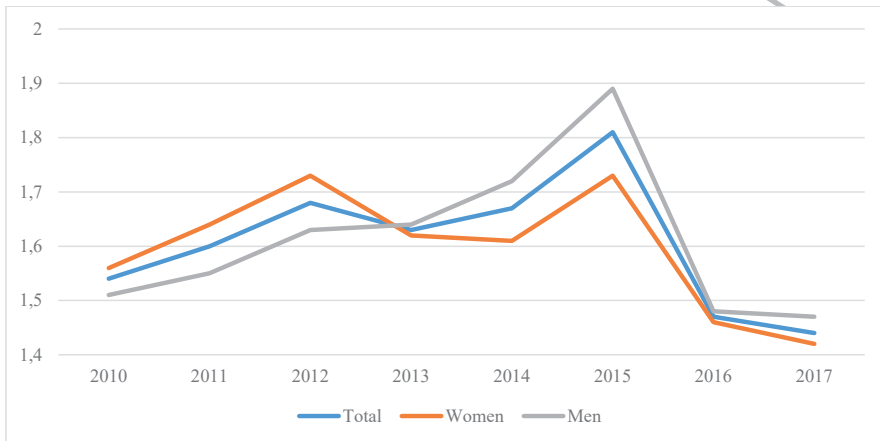


Figure 1. The percentage of newly issued certificates in Poland, 2010-2017

Table 1. Characteristic of the studied sample

	Women N=280 933 (50,7%)	Men N=272 757 (49,3%)	Total N=553 690 (100,0%)
Age			
<18	2,3%	3,1%	2,7%
[18-64]	66,3%	71,1%	68,7%
≥65	31,4%	25,8%	28,7%
Marital status			
unmarried	17,5%	29,2%	23,2%
divorced or separated	10,6%	10,7%	10,7%
widowed	22,6%	5,1%	14,0%
married	49,3%	55,0%	52,1%
Education level			
elementary	29,4%	28,8%	29,0%
vocational	23,8%	38,9%	31,4%
secondary	34,2%	24,6%	29,4%
high	12,6%	7,7%	10,2%

The most common cause of the stated disability in both men and women was impairment of the musculoskeletal system – 27.0% and 33.0% respectively. Data on the causes of disability for persons who had a legal decision issued in 2017 are presented in Table 2.

Table 2. Causes of disability in 2017 by sex

Cause	Sex				Total	
	Women		Men			
	n	%	n	%	n	%
holistic developmental disorders	363	0,1%	1707	0,6%	2070	0,4%
vision disorders	7854	2,8%	6828	2,5%	14682	2,7%
neurological diseases	36612	13,0%	40278	14,8%	76890	13,9%
mental disorders	32517	11,6%	32346	11,9%	64863	11,7%
genitourinary diseases	17622	6,3%	9607	3,5%	27229	4,9%
respiratory and cardiovascular diseases	37526	13,4%	56316	20,6%	93842	16,9%
digestive system diseases	8849	3,1%	12411	4,6%	21260	3,8%
epilepsy	3839	1,4%	4444	1,6%	8283	1,5%
other	27843	9,9%	18109	6,6%	45952	8,3%
musculoskeletal disorder	92600	33,0%	73711	27,0%	166311	30,0%
intellectual disability	3987	1,4%	5353	2,0%	9340	1,7%
voice, speech and hearing disorders	11311	4,0%	11641	4,3%	22952	4,1%
Total	280923	100,0%	272751	100,0%	553674	100,0%

A moderate degree of disability dominated in the scope of issued decisions – 50.1%. 27.5% of respondents had a significant degree of disability. Territorial differentiation in the issue of disability decisions was observed. In 2017, among all issued certificates, the most (11.6%) were decisions issued in the śląskie province and the least in the opolskie province (1.9%), as shown in Table 3.

Table 3. Disabled people by sex and province (2017)

Province	Sex				Total	
	Women		Men			
	n	%	n	%	N	%
Dolnośląskie	21439	7,6%	21989	8,1%	43428	7,8%
Kujawsko-Pomorskie	17096	6,1%	17073	6,3%	34169	6,2%
Łódzkie	20017	7,1%	19632	7,2%	39649	7,2%
Lubelskie	14291	5,1%	13744	5,0%	28035	5,1%
Lubuskie	10104	3,6%	9335	3,4%	19439	3,5%
Małopolskie	17251	6,1%	17022	6,2%	34273	6,2%
Mazowieckie	24629	8,8%	24731	9,1%	49360	8,9%
Opolskie	5195	1,8%	5529	2,0%	10724	1,9%
Podkarpackie	20804	7,4%	20065	7,4%	40869	7,4%
Podlaskie	8390	3,0%	8262	3,0%	16652	3,0%
Pomorskie	21121	7,5%	20407	7,5%	41528	7,5%
Śląskie	33625	12,0%	30769	11,3%	64394	11,6%
Świętokrzyskie	15939	5,7%	15351	5,6%	31290	5,7%
Warmińsko-Mazurskie	15182	5,4%	14375	5,3%	29557	5,3%
Wielkopolskie	25387	9,0%	23266	8,5%	48653	8,8%
Zachodniopomorskie	10453	3,7%	11201	4,1%	21654	3,9%
Razem	280923	100,0%	272751	100,0%	553674	100,0%

The highest percentage of occurring disability concerned the świętokrzyskie province, where it constituted 2.5% of the total population, and the lowest mazowieckie province, where it constituted 0.9% of the provinces population.

Discussion

Disability is a serious social and health problem, and therefore diagnosing the prevalence and conditions of this phenomenon is one of the important elements in assessing the health situation of societies [13].

Age and sex are the basic determinants of human susceptibility to various diseases, and, as a consequence, affect the intensity of the consequences of past diseases and injuries, i.e. temporary or permanent disability. Research indicates that the main group of causes of disability are chronic diseases (in about 77% of cases), followed by accidents, injuries and poisoning (13%) and birth defects (7%). It is characteristic that chronic diseases are more often the main source of disability among women (a difference of approximately 12 percentage points), while accidents, poisonings and injuries are more common, more than twice, for men. Cardiovascular diseases (44%) and musculoskeletal dysfunction (43%) are the most frequently mentioned groups of disorders that cause disability. Disability due to neurological diseases accounts for over 25% of the total causes of disability. 13% of people are disabled due to damage to the vision and 6% due to damage to the hearing organ. About 8 out of 100 people with disabilities are people with mental illnesses or mental retardation. The structure according to the basic demographic features of the discussed subsets of the disabled is a derivative of age at the time of disability. Research shows that every twentieth person becomes disabled in childhood, i.e. before the age of 15, and every twentieth person becomes disabled as an adult. Most often, however, disability arises between the ages of 40 and 55 (in nearly every second person). The moment of occurrence of incomplete functional ability varies among men and women. Women more often than men become disabled in post-working age,

slightly less often in younger working-age ranges. This is related to the degree of exposure to factors causing disability, resulting from the living and working environment, as well as to the different biological structure of the organism for women and men. The majority of disabled persons aged 15 and over are dominated by persons with issued mild (41%) and moderate (36%) disability certificates. The vast majority (74%) of disabled people have been issued certificate in connection with the recognition by the relevant authority of disability as permanent [14].

According to the results of the National Census (NC) 2011, disabled people constituted 12.2% of the population of Poles (4,697,100). Disability assessed on the basis of the NC was divided into three categories: legal disability (supported by an appropriate certificate); biological disability (related to problems in everyday functioning but without formal certificate) and both legal and biological (coexistence of both variants). People with biological disabilities have been defined as people experiencing restrictions on normal (basic) life activities appropriate to their age. There are 3 degrees of limited ability to perform basic activities: complete, serious or moderate. In all these cases, the inability to perform the abovementioned the activities had to last or were expected to last for at least 6 months. The number of people with disabilities only legally amounted to 479 500, only biologically 1 565 600, while legally and biologically (simultaneously) was 2 652 000. It should be emphasized that the data from the last two Censuses (2002 and 2011) indicate reducing the total number of disabled people (by 759 700, i.e. by 13.9%), but it should be noted that this decrease applies primarily to people with legal disabilities, which is the result of tightening the regulations governing the rules for issuing disability certificates. Thus, it should be noted that the number of people with only biological disabilities increased in the same period by 559 000 thousand, i.e. by 55.5%. It was also shown that in older age groups the percentage of people showing biological disability also clearly increased (from 20.0% in urban areas and 22.1% in rural areas aged 65-69 to 42.9% and 46.2% respectively 80 years and older) [15].

Long-term studies conducted in the period 1960-2003 also showed that with age, disability clearly leads to a restriction of independent movement. The most common causes of these disorders were diseases of the circulatory system, musculoskeletal system (including most often degenerative changes, osteoporosis and its complications), neurological diseases (e.g. paresis after stroke) and the organs of vision and hearing. In studies conducted at the end of the nineties by the Central Statistical Office, it was found that in the group of people aged 60 and over, 2.1% still stay in bed, 5.8% are unable to leave the apartment alone, 17.1% remain limited only to the environment of the house, while a dozen or so percent are unable to independently perform basic tasks such as dressing, washing up, etc. Over 80 years old, 8.2% of people stay in bed constantly, 15.5% move, but are unable to independently leave flats, and 29.2% have mobility limited to the immediate surroundings of their home. As a result, 74.2% of all people above 65 years of age and only 45.4% at the age of 80 and above retain the ability to move freely, which with the constantly increasing average life expectancy (in Poland in 2017 at 81.8 years for women and 74.0 years for men respectively) is a very serious challenge. Deterioration of the physical ability of older people has serious social consequences, because these people must more often use various forms of health care, care services and permanent family assistance [16].

As a result of the increase in the percentage of older people in society, a large increase in the number of chronically ill and disabled people is expected in the coming years. It can therefore be assumed that undertaking actions in the field of health promotion, developing services that generally improve within the framework of various forms of rehabilitation, as well as improving access to medical services could create a chance to reduce the projected increase in the proportion of elderly people with disabilities in the future [17,18].

Due to its universality and consequences, disability is one of the most serious phenomena in the modern world. The extent of the phenomenon and its intensity imposes on the state, which is the subject of social policy, the obligation to take measures to prevent its occurrence and mitigate

the negative effects. This brings with it the need to conduct in-depth and innovative research in this area, the results of which could contribute to the implementation of measures aimed at preventing disability and bridging health gaps [19,20].

Conclusions

A detailed, credible assessment of the epidemiological situation and the burden of disease on society, as well as the resulting disability, forms the basis for implementing actions to improve the health of societies and leveling differences in health, and to equalize the opportunities for people with disabilities. In the research aspect, epidemiological assessment of the disability problem is a very important link in the process of its prevention and leveling its effects.

References

1. European Commission. 2009 Ageing Report: Economic and Budgetary Projections for the EU-27 Member States (2008-2060). European Communities; Brussels [Internet]. Available from: http://www.da.dk/bilag/publication14992_ageing_report.pdf.
2. Parker MG, Thorslund M. Health trends in the elderly population: getting better and getting worse. *Gerontologist* 2007; 47: 150-58.
3. Heikkinen E. What are the main risk factors for disability in old age and how can disability be prevented? WHO; Finlandia.
4. Christensen K, Doblhammer G, Rau R, Vaupel JW. Ageing populations: The challenges ahead. *The Lancet* 2009; 374(9696): 1196-1208.
5. Cattan M, White M, Bond J and Learmouth A. Preventing social isolation and loneliness among older people: a systematic review of health promotion interventions. *Ageing Soc* 2015; 25(1): 41-67.
6. Leszko M, Zając-Lamparska L, Trempala J. Aging in Poland. *The Gerontologist* 2015; 55(5): 707-715. doi: 10.1093/geront/gnu171.
7. Freedman VA, Martin LG, Schoeni RF, Cornman JC. Declines in late-life disability: the role of early – and mild life factors. *Soc Sci Med* 2008; 66: 1588-602.
8. Maia ER, Junior JG, Candido Pimentel JV, Neto MLR, Freitag Pagliuca LM. Functional disability in the elderly people: systematic review. *HealthMED* 2017; 11(2): 89-101.
9. Sytuacja demograficzna osób starszych i konsekwencje starzenia się ludności Polski w świetle prognozy na lata 2014-2050. GUS; 2014; Warszawa. p. 18-22.

10. Chan N, Anstey KJ, Windsor TD, Luszcz MA. Disability and depressive symptoms in later life: the stress-buffering role of informal and formal support. *Gerontology* 2011; 57: 180-9.
11. Wong ND, Levy D. Legacy of the Framingham Heart Study: Rationale, Design, Initial Findings, and Implications. *Global Heart* 2013; 8(1): 3-9. doi: 10.1016/j.ghheart.2012.12.001.
12. World Report on Disability. WHO; 2011; Malta.
13. Jette AM, Keysor JJ. Uses of Evidence in Disability Outcomes and Effectiveness Research 2002; 80(2):325-345; doi:10.1111/1468-0009.t01-1-00006.
14. Wyniki Narodowego Spisu Powszechnego Ludności i Mieszkań 2011. Podstawowe informacje o sytuacji demograficzno-społecznej ludności Polski oraz zasobach mieszkaniowych. GUS; 2012; Warszawa.
15. Zdrowie i zachowanie zdrowotne mieszkańców Polski w świetle Europejskiego Ankietowego Badania Zdrowia (EHIS) 2014 r. GUS; 2015; Warszawa.
16. Stan zdrowia ludności Polski w przekroju terytorialnym w 2004 r. GUS; 2007; Warszawa.
17. Nord C. A day to be lived. Elderly peoples' possessions for everyday life in assisted living. *J Aging Stud* 2013; 27(2): 135-42.
18. Steger MF, Fitch-Martin AR, Donnelly J and Rickard KM. Meaning in Life and Health: Proactive Health Orientation Links Meaning in Life to Health Variables Among American Undergraduates. *J Happiness Stud* 2015; 16(3): 583-97.

19. Antczak R, Grabowska I, Polańska Z. Podstawy i źródła danych statystyki osób niepełnosprawnych. *Wiadomości Statystyczne* 2018; 2(681): 21-43.

20. Burzyńska M, Maniecka-Bryła I. Niepełnosprawność osób starszych jako czynnik determinujący korzystanie z usług pomocy społecznej. *Acta UL Fol Oecon* 2015; 4(315): 29-41. doi: 10.18778/0208-6018.315.03.