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Importance of most frequent needs of the disabled in shaping areas of support in public health. Part. II. Disability as a consequence of dysfunction in the state of health disrupting daily functioning based on selected health and socio-demographic characteristics – interdisciplinary problems in the domain of public health

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Abstract

Introduction. The disabled are a group with heterogeneous structure of causes and needs. Assessment of these causes and needs requires prospective studies in order to use the results within public health actions, indispensable for pursuing the challenges of sustained development. The aim of the study was determination of the problems and needs of the disabled in various areas of their functioning, according to such characteristics as: gender, age, causes of disability, place of residence, level of education, formal status of disability, and socio-economic standard.

Materials and method. The examined population were 676 disabled aged from 19–98, including 56.4% of females, and 43,6% of males; rural inhabitants constituted 38.0%. The study was conducted by the method of purposive sampling, using the following research tools: the Disability Questionnaire, and the Scientific-Research Protocol. Statistical analyses were performed by means of the statistical package IBM SPSS Statistics v. 27; the p values $p<0.05$ were considered statistically significant.

Results. The most frequently occurring problems were material difficulties, lack of rehabilitation in the place of residence, hindered access to a physician, difficulties with settling official matters, loneliness, too infrequent contacts with the family, negative attitudes of the local community towards disability, and family disagreements. Some of these problems were significantly more frequent among rural inhabitants.

Conclusion. The majority of the problems hindering daily life of the disabled fell within social rather than medical categories. Age, level of education, degree of disability, legal status, and material standard were most frequent determinants of the occurrence of health and social problems according to the place of residence.

Key words

disabled, demographic and social characteristics, types of difficulties in daily functioning, public health

INTRODUCTION

In each society, irrespective of the economic level, there is a percentage of persons who are disabled for various reasons. They do not constitute a homogenous group from the aspect of causes, legal status, rehabilitation needs, demand for support, and types of health and social needs. The state of disability is the consequence of body dysfunction, and depends mainly on the types of causes. The greatest problem are methods of qualification into the group of the disabled, for which definitions of disability are most often used. Multiplicity of definitions of disability evidences the complexity of the

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phenomenon and many sources contributing to the state of health, as well as consequences and widely understood health and social needs. The consequences of dysfunction in the state of health is an extremely individual process, even with the same cause of disability. Due to the complexity of the state of disability to-date there is no one arbitrarily adopted definition of a disabled person, despite many years of work over this problem by specialists in many branches of science. This problem, and discrepancies in the legal qualification result in the fact that many disabled struggle with problems of daily living, with which they not always cope independently, or even their family members are helpless. Despite many programmes and legal acts, activities of foundations or associations, there is a lack of unequivocal fully available forms of assistance for many disabled, on which they could count in their environment of life. The factors exerting an effect on the situation of the disabled include, among other things: law, physical and psychological barriers, attitudes of the environment, availability of the rehabilitation process, and possibilities to undertake employment. Multiplicity of problems in daily life of these persons falls within the main areas of activities, mainly environmental, which perfectly fit within the concept of public health. As early as in 1974 these areas were indicated in the report 'A New Perspective on the Health of Canadians' by Marc Lalonde, who identified four major determinants of health, and defined them as a health fields concept. These components included: health behaviours and life style (53.0%); environment of life (21.0%); factors from the domain of biology and genetics (16.0%), and organization of health care [1].

Considering all these areas of problems they fall within the concept of public health. This is a branch of science which was briefly and accurately characterized by E.D. Acheson: 'Public health is: the science and art of preventing disease, prolonging life and promoting health through organized efforts of society' [2]. Due to the varied character of particular issues and tasks the medical approach to disability failed. A person becomes disabled only when his/her participation in the life of community becomes limited or impossible. Two types of barriers lead to this situation: 1) physical barriers, e.g. architectural, and 2) barriers of a social character resulting from stereotypical behaviours towards people with disabilities. Therefore, there is a need for breaking with the purely medical model of disability to the advantage of the social model [3, 4]. According to the assumptions of the social model individual problems become social problems, and only then they may be solved in a planned and effective way. Many studies show that for the disabled barriers of the social character constitute a considerably greater obstacle in daily functioning than the experienced functional limitations [5, 6].

OBJECTIVES

The aim of the study was determination of the problems hindering daily functioning of the examined persons due to their disability. An attempt was also undertaken to analyze the needs of the disabled according to the selected health and socio-demographic characteristics. Additionally, the researchers focused on the presentation of the types of support and indicated problems falling within the tasks of public health.

Materials and Method

The study included 676 disabled aged 19–98; mean age 64. In the study sample males were younger than females. The disabled in the study group were selected by the method of purposeful sampling. Into the study were qualified exclusively the legally or biologically disabled, capable of completing the survey, who expressed their consent to participate in research. The survey was carried out using a standardized Disability Questionnaire.

Statistical analyses were performed using statistical software SPSS v.27 and Excel 2003 spreadsheet. Significance of the differences were analyzed using chi2 test. Probability of type 1 error $p = 0.05$ was adopted as a critical level of deciding about significance of the differences. It was corrected for multiple comparisons using the Benjamini-Hochberg procedure [7].

Detailed information concerning the study group, the criteria of selection for research, detailed information concerning the study group and research methods were included in the first part of this article [8].

RESULTS

Types of problems hindering daily life of the disabled

Analyses concerned 16 types of problems assessed according to the most important socio-demographic characteristics. The leading characteristic was the place of residence.

The disabled are facing various kinds of problems in the form of obstacles and barriers, the majority of which are closely related with the type of disability. In the examined population the most frequent problem experienced in both rural and urban environments were material difficulties reported by 80.7% of respondents. In addition, frequently occurring problems mentioned by more than a half of the disabled in the study were: lack of possibilities of rehabilitation at place of residence (61.0%), difficult access to physician (59.1%), difficulties with settling official matters (56.7%), loneliness (53.9%), and too infrequent contacts with the family (53.7%).

With respect to the majority of problems, significant differences were observed between frequency of their occurrence in the rural and urban environments. Only four problems occurred in both environments with the frequency which did not differ statistically: negative attitude of the surrounding towards disability (in the total population examined 41.3%), material dependence on others (39.4%), necessity to care for another disabled person (18.1%), and problems with provision of rehabilitation aids (9.6%).

The problems which were significantly more often reported in the rural environment included: lack of possibilities of rehabilitation at place of residence (77% and 51.3%, respectively; $p < 0.001$), difficult access to physician (70% and 52.5%, respectively; $p < 0.001$), difficulties with settling official matters (66.8% and 50.5%, respectively; $p < 0.001$), family disagreements (46.8% and 35.6%, respectively; $p=0.004$), difficult access to environmental nurse (42.5% and 31.7%, respectively; $p=0.004$), difficult access to services from social worker (40.2% and 26.4%, respectively; $p<0.001$), lack of employment adjusted to disability (29% and 20.9%, respectively; $p=0.02$), and alcohol abuse by a family member (20.2% and 12.6%, respectively; $p=0.008$).

Table 1. Problems reported by the disabled in the study according to place of residence

Problems	Total		Rural		Urban		p
	n	%	n	%	n	%	
Material difficulties	542	80.7	215	84.3	327	78.4	0.06
Lack of possibilities of rehabilitation at place of residence	408	61.0	194	77.0	214	51.3	**p<0.001**
Difficult access to physician	396	59.1	177	70.0	219	52.5	**p<0.001**
Difficulties in settling official matters	379	56.7	169	66.8	210	50.5	**p<0.001**
Loneliness	361	53.9	118	46.3	243	58.6	**0.002**
Too infrequent contacts with the family	358	53.7	111	44.0	247	59.5	**p<0.001**
Negative attitude of surroundings towards disability	276	41.3	105	41.7	171	41.1	0.89
Family disagreements	266	39.8	118	46.8	148	35.6	**0.004**
Material dependence on others	263	39.4	95	37.7	168	40.4	0.49
Lack of care by relatives and friends	260	38.9	84	33.1	176	42.4	**0.02**
Difficult access to environmental nurse	240	35.8	108	42.5	132	31.7	**0.004**
Difficult access to services from social worker	212	31.6	102	40.2	110	26.4	**p<0.001**
Lack of employment adjusted to disability	160	24.0	73	29.0	87	20.9	**0.02**
Necessity of caring for another disabled person	121	18.1	53	21.0	68	16.4	0.13
Alcohol abuse by a family member	103	15.4	51	20.2	52	12.6	**0.008**
Problems with provision of rehabilitation equipment	44	9.6	20	12.5	24	8.0	0.12

In turn, urban inhabitants significantly more often than rural inhabitants indicated: too infrequent contacts with the family (59.5% and 44.0%, respectively; $p < 0.001$), loneliness (58.6% and 46.3%, respectively; $p=0.002$), and lack of care by relatives and friends (42.4% and 33.1%, respectively; $p=0.02$).

Due to dissimilarity of rural and urban environments from the aspect of intensity of the occurring problems further analyses were performed separately for both environments. The following variables were considered: gender, age, place of residence, level of education, economic standard, housing conditions, and variables related with disability: degrees of disability, legal disability status, and causes of disability.

In the subpopulation of rural inhabitants no statistically significant differences were found between males and females.

In turn, in urban areas males more often than females reported the lack of employment adjusted to disability (29.2% and 15.3%, respectively; $p < 0.001$). The remaining differences between males and females were insignificant, similar to the urban population.

Differences in the types of the reported problems were observed according to age. Among rural inhabitants the percentage of respondents complaining about loneliness increased with age ($p < 0.001$). In the youngest age group < 50 this problem was mentioned by 31.1% of the disabled, whereas

Table 2. Problem reported by the disabled living in rural and urban areas according to gender

Problems	Rural					Urban				
	Gender				p	Gender				p
	Males		Females			Males		Females		
	N	%	N	%		N	%	N	%	
Material difficulties	99	80.5	116	87.9	0.11	127	75.1	200	80.6	0.18
Lack of possibilities of rehabilitation at place of residence	93	76.9	101	77.1	0.96	86	50.9	128	51.6	0.88
Difficult access to physician	85	69.7	92	70.2	0.92	87	51.5	132	53.2	0.73
Difficulties in settling official matters	78	63.9	91	69.5	0.35	88	52.1	122	49.4	0.59
Loneliness	51	41.5	67	50.8	0.14	95	56.5	148	59.9	0.49
Too infrequent contacts with the family	54	44.6	57	43.5	0.86	95	56.5	152	61.5	0.31
Negative attitude of surroundings towards disability	51	42.1	54	41.2	0.88	75	44.4	96	38.9	0.26
Family disagreements	50	41.3	68	51.9	0.09	73	43.2	75	30.4	0.01
Material dependence on others	39	32.2	56	42.7	0.09	67	39.6	101	40.9	0.80
Lack of care by relatives and friends	40	32.5	44	33.6	0.86	70	41.7	106	42.9	0.80
Difficult access to environmental nurse	49	40.2	59	44.7	0.47	53	31.4	79	31.9	0.92
Difficult access to services from social worker	42	34.4	60	45.5	0.07	42	24.9	68	27.4	0.56
Lack of employment adjusted to disability	41	33.9	32	24.4	0.10	49	29.2	38	15.3	**p<0.001**
Necessity of caring for another disabled person	26	21.3	27	20.8	0.92	27	16.1	41	16.6	0.89
Alcohol abuse by a family member	17	14.0	34	25.8	0.02	23	13.7	29	11.8	0.57
Problems with provision of rehabilitation equipment	9	11.4	11	13.6	0.68	11	9.2	13	7.2	0.53

Table 3. Problems reported by the disabled living in rural and urban areas according to age

Problems	Rural									Urban								
	Age								p	Age								p
	< 50 yrs		50–64 yrs		65–79 yrs		≥ 80 yrs			< 50 yrs		50–64 yrs		65–79 yrs		≥ 80 yrs		
	N	%	N	%	N	%	N	%		N	%	N	%	N	%	N	%	
Material difficulties	40	88.9	83	86.5	76	80.9	16	80.0	0.54	48	82.8	111	76.0	111	80.4	57	76.0	0.63
Lack of possibilities of rehabilitation at place of residence	37	82.2	73	77.7	67	72.0	17	85.0	0.44	39	67.2	77	52.7	66	47.8	32	42.7	0.03
Difficult access to physician	31	68.9	67	70.5	65	69.9	14	70.0	1.00	34	58.6	76	52.1	73	52.9	36	48.0	0.68
Difficulties in settling official matters	30	66.7	62	65.3	59	63.4	18	90.0	0.14	34	58.6	80	55.2	61	44.2	35	46.7	0.14
Loneliness	14	31.1	40	41.7	46	48.9	18	90.0	**p < 0.001**	25	43.1	68	47.2	90	65.2	60	80.0	**p < 0.001**
Too infrequent contacts with the family	18	40.0	43	45.7	36	38.7	14	70.0	0.07	25	43.1	78	54.2	85	61.6	59	78.7	**p < 0.001**
Negative attitude of surroundings towards disability	27	60.0	39	41.5	29	31.2	10	50.0	**0.01**	30	51.7	63	43.4	50	36.2	28	37.3	0.19
Family disagreements	20	44.4	49	52.7	38	40.4	11	55.0	0.33	22	37.9	57	39.3	44	31.9	25	33.3	0.57
Material dependence on others	19	42.2	37	39.4	30	32.3	9	45.0	0.55	23	39.7	52	35.9	55	39.9	38	50.7	0.21
Lack of care by relatives and friends	16	35.6	35	36.5	24	25.8	9	45.0	0.25	22	37.9	53	36.8	60	43.5	41	54.7	0.07
Difficult access to environmental nurse	20	44.4	41	43.2	35	37.2	12	60.0	0.30	18	31.0	48	32.9	38	27.5	28	37.3	0.51
Difficult access to services from social worker	16	35.6	42	44.2	32	34.0	12	60.0	0.12	19	32.8	40	27.4	29	21.0	22	29.3	0.30
Lack of employment adjusted to disability	25	55.6	32	34.0	15	16.1	1	5.0	**p < 0.001**	24	41.4	47	32.4	13	9.4	3	4.0	**p < 0.001**
Necessity of caring for another disabled person	13	28.9	24	25.5	15	16.1	1	5.0	0.06	14	24.1	30	20.8	16	11.6	8	10.7	0.03
Alcohol abuse by a family member	12	26.7	13	13.8	20	21.3	6	30.0	0.19	6	10.3	16	11.1	19	13.9	11	14.7	0.79
Problems with provision of rehabilitation equipment	10	29.4	7	12.1	3	5.2	0	0.0	**0.004**	4	9.5	8	7.3	8	9.1	4	6.8	0.93

in the group aged ≥ 80 by as many as 90.0%. Complaints concerning a negative attitude of the surrounding towards disability were most often expressed by the respondents in the youngest age group < 50 (60.0%), and the oldest group (50.0%), while the disabled in the 'middle group' complained of this problem relatively more rarely (p=0.01). According to the expectations the lack of possibilities of employment was significantly more often reported by respondents from the youngest age group (55.6%, p < 0.001). Also, the disabled from the youngest age group most frequently indicated problems with provision of rehabilitation aids (29.4%; p=0.004).

Among urban inhabitants, similar to rural inhabitants, the complaints concerning the problem of loneliness increased with age (p < 0.001). In the youngest age group < 50 this problem was indicated by 43.1% of the disabled, whereas in the group aged ≥ 80 – by 80.0%. Also the problem of too infrequent contacts with the family increased with age (p < 0.001). In the group aged < 50 it was reported by 43.1%, while in the group aged ≥ 80 – by 78.7%. Respondents from younger age groups significantly more often than those from older groups mentioned the problem of the lack of employment adjusted to disability (p < 0.001).

In the examined population a number of significant differences were found in the frequency of problems occurring in daily functioning according to the level of education. Among rural inhabitants the percentage of the disabled struggling with material difficulties increased with a lower level of education (p = 0.001). The percentage of respondents with higher education was 60,0%, while of those with primary school education – 88.9%. Difficulties with settling official matters were particularly demanding for respondents from low categories of education, i.e. primary vocational (74.2%), and primary (73.0%) (p = 0.001). The level of education was also a significant determinant of the feeling of loneliness (p = 0.006). Loneliness was experienced by 54.8% of respondents with primary school education, and 47.1% of those with primary vocational education, whereas in the group with higher education this was 20%. The problem of the lack of employment adjusted to the type of disability most often concerned the disabled with primary vocational level of education (46.3%) and secondary school education (34.8%), whereas only 6.7% of those with higher education (p < 0.001).

Among urban inhabitants significant differences according of the level of education concerned mainly the problems other than among rural population. Here, loneliness occurred to be an important problem (p < 0.001). The lower the level of education, the greater difficulty was loneliness in daily functioning. Respondents with primary education who experienced loneliness constituted 74.0%, whereas those with higher education – 32.8%. The disabled with primary education with the same frequency as loneliness reported the problem of too infrequent contacts with the family

Table 4. Problems reported by the disabled living in rural and urban areas according to level of education

Problems	Rural									Urban								
	Education								p	Education								p
	Primary		Primary vocational		Secondary		Higher			Primary		Primary vocational		Secondary		Higher		
	N	%	N	%	N	%	N	%		N	%	N	%	N	%	N	%	
Material difficulties	112	88.9	61	89.7	33	71.7	9	60.0	**0.001**	103	81.1	67	74.4	114	82.6	43	69.4	0.12
Lack of possibilities of rehabilitation at place of residence	95	76.6	54	80.6	34	73.9	11	73.3	0.84	61	48.0	49	54.4	69	50.0	35	56.5	0.65
Difficult access to physician	89	70.6	54	81.8	26	56.5	8	53.3	0.02	57	44.9	49	54.4	74	53.6	39	62.9	0.12
Difficulties in settling official matters	92	73.0	49	74.2	22	47.8	6	40.0	**0.001**	59	46.5	49	54.4	71	51.4	31	50.8	0.70
Loneliness	69	54.8	32	47.1	14	30.4	3	20.0	**0.006**	94	74.0	56	62.2	73	53.3	20	32.8	**p < 0.001**
Too infrequent contacts with the family	62	49.2	29	43.9	16	35.6	4	26.7	0.21	94	74.0	51	56.7	74	54.0	28	45.9	**p < 0.001**
Negative attitude of surroundings towards disability	53	42.7	30	44.8	14	30.4	8	53.3	0.31	49	38.6	35	38.9	62	44.9	25	41.0	0.72
Family disagreements	64	51.2	34	50.7	15	33.3	5	33.3	0.12	41	32.3	35	38.9	49	35.5	23	37.7	0.76
Material dependence on others	49	38.9	29	43.9	12	26.7	5	33.3	0.31	59	46.5	40	44.4	56	40.6	13	21.3	**0.008**
Lack of care by relatives and friends	43	34.1	24	35.8	15	32.6	2	13.3	0.40	69	54.3	44	48.9	48	35.0	15	24.6	**p < 0.001**
Difficult access to environmental nurse	57	45.2	32	47.8	16	34.8	3	20.0	0.15	35	27.6	27	30.0	44	31.9	26	41.9	0.25
Difficult access to services from social worker	52	41.3	31	46.3	16	34.8	3	20.0	0.24	26	20.5	24	26.7	38	27.5	22	35.5	0.17
Lack of employment adjusted to disability	25	20.2	31	46.3	16	34.8	1	6.7	**p < 0.001**	15	11.8	25	27.8	32	23.4	15	24.2	0.02
Necessity of caring for another disabled person	19	15.2	20	29.9	12	26.7	2	13.3	0.07	11	8.7	17	18.9	21	15.3	19	31.1	**0.001**
Alcohol abuse by a family member	30	23.8	9	13.4	9	20.0	3	20.0	0.40	14	11.0	13	14.6	18	13.1	7	11.5	0.87
Problems with provision of rehabilitation equipment	7	8.0	8	25.8	5	15.6	0	0.0	0.04	8	7.7	2	4.3	10	9.8	4	8.7	0.71

(74.0%), (with higher education – 45.9%) ($p < 0.001$). The subsequent problems indicated more often by respondents in lower categories of education were: material dependence on others ($p=0.008$), and lack of care by relatives and friends ($p < 0.001$). An opposite situation was observed with respect to the problem of the necessity to care for another disabled person ($p=0.001$). The higher the level of education, the more frequently urban inhabitants reported the above-mentioned problems.

Economic standard is an important factor deciding about the level of functioning in the environment. In the subpopulation of rural inhabitants all the disabled (100%) who assessed their economic standard as poor or very poor mentioned the problem of material difficulties ($p < 0.001$). Nevertheless, even from among of those who had good or very good economic standard 65.3% mentioned material difficulties as their problem. Also, the frequency of complaints about loneliness depended on the level of economic standard ($p=0.02$). Loneliness was experienced by 35.8% of respondents with good and very good material standard, while in the group with poor or very poor material standard this percentage was 59.3%. A similar situation was observed with respect to the occurrence of family disagreements ($p=0.005$), lack of care by relatives and friends ($p < 0.001$), and alcohol abuse by a family member ($p=0.005$).

Among the disabled urban inhabitants some of the mentioned problems corresponded to those concerning rural inhabitants from the aspect of significance of the relationships. Such problems as material difficulties ($p < 0.001$), lack of possibilities of rehabilitation at place of residence ($p < 0.005$), loneliness ($p = 0.008$), too infrequent contacts with the family ($p = 0.001$), difficult access to services from social worker ($p = 0.005$) and lack of employment adjusted to disability ($p=0.001$) were to the disadvantage of persons with poor/very poor and mediocre material standard. This was opposite with respect to material dependence on others, where the percentage of respondents with poor/very poor material standard was the highest (65.0%), while those with good/very good standard occupied the second position (37.1%) ($p < 0.001$).

Also, housing conditions, especially in the rural environment, generated problems hindering the daily functioning. In the subpopulation of rural inhabitants the lower the level of housing conditions, the higher the percentage of the disabled who had material difficulties ($p < 0.001$). Material difficulties were most often reported by respondents who had mediocre (97.5%), poor or very poor housing conditions (100%). The disabled who lived in worse conditions more often complained about loneliness ($p < 0.001$) and too infrequent contacts with the family ($p=0.006$). Among those who had poor/very poor housing

Table 5. Problems reported by the disabled living in rural and urban areas according to economic standard

Problems	Rural							Urban						
	Material standard						p	Material standard						p
	Very good/ Good		Mediocre		Poor/Very poor			Very good/ Good		Mediocre		Poor/Very poor		
	N	%	N	%	N	%		N	%	N	%	N	%	
Material difficulties	62	65.3	94	93.1	59	100.0	**p<0.001**	114	67.1	135	81.3	78	96.3	**p<0.001**
Lack of possibilities of rehabilitation at place of residence	70	73.7	77	77.8	47	81.0	0.56	72	42.4	91	54.8	51	63.0	**0.005**
Difficult access to physician	60	63.2	78	78.0	39	67.2	0.07	77	45.3	94	56.6	48	59.3	0.05
Difficulties in settling official matters	54	56.8	71	71.0	44	75.9	0.03	75	44.1	91	54.8	44	55.0	0.10
Loneliness	34	35.8	49	48.5	35	59.3	**0.02**	91	53.5	93	56.4	59	73.8	**0.008**
Too infrequent contacts with the family	39	41.1	46	46.5	26	44.8	0.74	91	53.5	95	57.2	61	77.2	**0.001**
Negative attitude of surroundings towards disability	34	35.8	39	39.4	32	55.2	0.05	63	37.1	66	39.8	42	52.5	0.06
Family disagreements	32	33.7	53	54.1	33	55.9	**0.005**	58	34.1	60	36.1	30	37.5	0.86
Material dependence on others	31	32.6	38	38.4	26	44.8	0.32	63	37.1	53	31.9	52	65.0	**p<0.001**
Lack of care by relatives and friends	16	16.8	38	37.6	30	51.7	**p<0.001**	68	40.0	65	39.2	43	54.4	0.06
Difficult access to environmental nurse	36	37.9	42	42.0	30	50.8	0.28	50	29.4	53	31.9	29	35.8	0.59
Difficult access to services from social worker	34	35.8	44	44.0	24	40.7	0.50	38	22.4	39	23.5	33	40.7	**0.005**
Lack of employment adjusted to disability	22	23.2	31	31.3	20	34.5	0.26	23	13.5	37	22.3	27	33.8	**0.001**
Necessity of caring for another disabled person	20	21.1	21	21.2	12	20.7	1.00	26	15.3	29	17.5	13	16.5	0.87
Alcohol abuse by a family member	9	9.5	26	26.3	16	27.1	**0.005**	20	11.8	26	15.7	6	7.6	0.19
Problems with provision of rehabilitation equipment	6	11.8	9	14.8	5	10.4	0.78	11	9.3	10	8.8	3	4.5	0.47

Table 6. Problems reported by the disabled living in rural and urban areas according to housing conditions

Problems	Rural									Urban								
	Housing conditions								p	Housing conditions								p
	Very good		Good		Mediocre		Poor/ Very poor			Very good		Good		Mediocre		Poor/ Very poor		
	N	%	N	%	N	%	N	%		N	%	N	%	N	%	N	%	
Material difficulties	11	50.0	107	79.9	78	97.5	19	100.0	**p<0.001**	39	67.2	158	76.7	106	83.5	24	92.3	0.02
Lack of possibilities of rehabilitation at place of residence	19	86.4	100	75.2	59	75.6	16	84.2	0.58	21	36.2	104	50.5	75	59.1	14	53.8	0.04
Difficult access to physician	17	77.3	87	64.9	57	73.1	16	84.2	0.22	29	50.0	101	49.0	72	56.7	17	65.4	0.29
Difficulties in settling official matters	17	77.3	78	58.2	56	71.8	18	94.7	**0.004**	26	44.8	102	49.5	67	53.2	15	57.7	0.63
Loneliness	6	27.3	50	37.3	46	57.5	16	84.2	**p<0.001**	30	51.7	117	56.8	76	60.3	20	80.0	0.10
Too infrequent contacts with the family	7	31.8	50	37.3	40	51.9	14	73.7	**0.006**	29	50.0	127	61.7	76	60.8	15	57.7	0.44
Negative attitude of surroundings towards disability	10	45.5	41	30.8	42	53.8	12	63.2	**0.002**	16	27.6	85	41.3	61	48.4	9	34.6	0.06
Family disagreements	9	40.9	54	40.3	44	57.1	11	57.9	0.08	19	32.8	71	34.5	48	38.1	10	38.5	0.86
Material dependence on others	6	27.3	50	37.3	30	39.0	9	47.4	0.61	20	34.5	81	39.3	51	40.5	16	61.5	0.12
Lack of care by relatives and friends	2	9.1	34	25.4	36	45.6	12	63.2	**p<0.001**	15	25.9	94	45.6	56	44.8	11	42.3	0.05
Difficult access to environmental nurse	12	54.5	43	32.1	41	51.9	12	63.2	**0.004**	12	20.7	65	31.6	45	35.4	10	38.5	0.20
Difficult access to services from social worker	10	45.5	42	31.3	40	50.6	10	52.6	**0.02**	10	17.2	44	21.4	44	34.6	12	46.2	**0.002**
Lack of employment adjusted to disability	6	27.3	35	26.3	26	33.3	6	31.6	0.74	11	19.0	34	16.5	32	25.4	10	38.5	0.03
Necessity of caring for another disabled person	5	22.7	24	17.9	21	27.3	3	15.8	0.40	12	20.7	25	12.1	27	21.6	4	15.4	0.11
Alcohol abuse by a family member	3	13.6	21	15.7	23	29.5	4	21.1	0.09	4	6.9	31	15.1	14	11.2	3	11.5	0.37
Problems with provision of rehabilitation equipment	1	7.7	11	13.9	7	13.2	1	6.7	0.82	3	7.1	11	7.5	8	8.9	2	10.0	0.96

conditions 86.2% mentioned loneliness as their problem, while the problem of too infrequent contacts with the family was indicated by 73.7%, whereas among those who had very good conditions these percentages were 27.3% and 31.8%, respectively. In turn, considering the negative attitude of the surrounding towards disability, respondents who had the worst housing conditions were followed by those who evaluated these conditions as very good (p=0.002). The lower the category of assessment of housing conditions, the higher the frequency of reporting the problem of the lack of care by relatives and friends (p < 0.001). Difficult access to environmental nurse was most often indicated by the disabled with the best (63.2%) and the worst (54.5%) housing conditions, while most rarely by those with good conditions (32.1%) (p=0.004). A similar situation was noted regarding difficult access to services from social worker (p=0.02). Among the disabled living in poor and very poor housing conditions as many as 94% reported difficulties with settling official matters, by 17%-36% more frequently than those living in better conditions (p=0.004).

Table 7. Problems reported by the disabled living in rural and urban areas according to the degree of disability

Problems	Rural							Urban						
	Degree of disability						p	Degree of disability						p
	Light		Moderate		Considerable			Light		Moderate		Considerable		
	N	%	N	%	N	%		N	%	N	%	N	%	
Material difficulties	15	71.4	54	87.1	57	87.7	0.16	26	81.3	89	82.4	120	78.4	0.72
Lack of possibilities of rehabilitation at place of residence	15	75.0	47	77.0	50	76.9	0.98	10	31.3	62	57.4	71	46.4	0.02
Difficult access to physician	12	57.1	44	71.0	50	76.9	0.22	13	40.6	61	56.5	69	45.1	0.12
Difficulties in settling official matters	8	38.1	39	62.9	49	75.4	0.007	16	50.0	51	47.2	73	48.0	0.96
Loneliness	7	33.3	31	50.0	28	43.1	0.39	11	34.4	61	57.0	104	68.4	**0.001**
Too infrequent contacts with the family	6	28.6	26	41.9	26	40.0	0.55	14	43.8	59	54.6	104	68.9	**0.008**
Negative attitude of surroundings towards disability	5	25.0	30	49.2	27	41.5	0.16	9	28.1	41	38.0	76	50.0	0.03
Family disagreements	6	28.6	27	44.3	34	52.3	0.16	6	18.8	44	40.7	46	30.3	0.04
Material dependence on others	7	33.3	26	41.9	28	43.1	0.72	10	31.3	45	41.7	77	50.7	0.09
Lack of care by relatives and friends	5	23.8	20	32.3	23	35.4	0.62	6	18.8	44	40.7	74	49.0	0.006
Difficult access to environmental nurse	6	28.6	26	41.9	31	47.7	0.30	7	21.9	37	34.3	47	30.7	0.41
Difficult access to services from social worker	6	28.6	26	41.9	28	43.1	0.48	8	25.0	33	30.6	39	25.5	0.63
Lack of employment adjusted to disability	6	30.0	19	31.1	17	26.2	0.82	8	25.0	29	26.9	31	20.4	0.47
Necessity of caring for another disabled person	3	14.3	14	23.0	12	18.5	0.65	5	15.6	24	22.2	15	9.9	0.03
Alcohol abuse by a family member	5	23.8	17	27.4	11	16.9	0.36	4	12.5	15	14.0	20	13.2	0.97
Problems with provision of rehabilitation equipment	1	10.0	5	13.2	5	11.1	0.94	1	4.2	5	6.9	14	12.2	0.32

Table 8. Problems reported by the disabled living in rural and urban areas according to legal disability status

Problems	Rural					Urban				
	Legal disability status				p	Legal disability status				p
	No		Yes			No		Yes		
	N	%	N	%		N	%	N	%	
Material difficulties	89	83.2	126	85.1	0.67	92	74.2	235	80.2	0.17
Lack of possibilities of rehabilitation at place of residence	82	77.4	112	76.7	0.90	71	57.3	143	48.8	0.11
Difficult access to physician	71	67.6	106	71.6	0.49	76	61.3	143	48.8	0.02
Difficulties in settling official matters	73	69.5	96	64.9	0.44	70	56.5	140	47.9	0.11
Loneliness	52	48.6	66	44.6	0.53	67	54.0	176	60.5	0.22
Too infrequent contacts with the family	53	51.0	58	39.2	0.06	70	56.5	177	60.8	0.41
Negative attitude of surroundings towards disability	43	40.6	62	42.5	0.76	45	36.3	126	43.2	0.19
Family disagreements	51	48.6	67	45.6	0.64	52	41.9	96	32.9	0.08
Material dependence on others	34	32.7	61	41.2	0.17	36	29.0	132	45.2	**0.002**
Lack of care by relatives and friends	36	34.0	48	32.4	0.80	52	41.9	124	42.6	0.90
Difficult access to environmental nurse	45	42.5	63	42.6	0.99	41	33.1	91	31.1	0.69
Difficult access to services from social worker	42	39.6	60	40.5	0.88	30	24.2	80	27.3	0.51
Lack of employment adjusted to disability	31	29.2	42	28.8	0.93	19	15.3	68	23.3	0.07
Necessity of caring for another disabled person	24	22.9	29	19.7	0.55	24	19.4	44	15.1	0.29
Alcohol abuse by a family member	18	17.1	33	22.3	0.31	13	10.5	39	13.4	0.40
Problems with provision of rehabilitation equipment	9	13.4	11	11.8	0.76	4	4.5	20	9.5	0.15

In the subpopulation of urban inhabitants, the worse the housing conditions, the higher the frequency of reporting difficult access to services from social worker. Here, the percentage of the disabled increased with each subsequent lower category of assessment (very good conditions – 17.2%, poor and very poor – 46.2%; p=0.002).

No significant differences in the frequency of problems among rural inhabitants were observed by the degree of disability (according to the extent of limitation of the functionality of the body – mild, moderate, severe). However, it is worth pointing out that difficulties with settling official matters were especially troublesome for persons with severe (75.4%) and moderate degree of disability (62.9%), while those with a mild degree constituted 38.1% (p=0.007, insignificant after Benjamini-Hochberg correction).

Among urban inhabitants two problems were observed which depended on the degree of disability. These were: loneliness (p = 0.001), and too infrequent contacts with the family (p = 0.008), more frequent among persons with the severe degree of disability – 68.4% and 68.9%, respectively.

Legal disability status. Among rural inhabitants no differences in the reported problems were observed according to the legal disability status. These problems were equally frequently mentioned irrespective of the disability status.

Among urban inhabitants material dependence on others was significantly more often indicated by persons who had a legal decision concerning the degree of disability than those who did not have such a decision (45.2% and 29.0%, respectively; p=0.002).

Among rural inhabitants no differences in the frequency of reporting problems were found according to the causes of disability. Among urban inhabitants, apart from one difficulty, no significant differences in the frequency of reporting needs were observed according to the causes of disability. This difficulty were problems with provision of rehabilitation aids (p < 0.001), which more often concerned the disabled after injuries (22.2%), compared to the disabled due to disease (4.7%) and genetic/congenital defects (8.3%).

Among both rural and urban inhabitants no significant differences between the groups with single and combined causes of disability were observed according to the frequency of the reported problems.

DISCUSSION

Disability is a state, which can even be referred to as a phenomenon, with a multifaceted structure of problems. These problems may be generally divided into medical (including psychological), social (including occupational), legal, and environmental. Almost all of these areas are integrally related to the problems the majority of which fall within the definitions of a disabled person. Considering the fact that health, disease, and disability are closely related concepts, there is still non-compliance in defining the concepts of 'disability' and 'a disabled person'. Therefore, defining disability has been and remains the subject of dispute of many scientific bodies, not only in medicine, but also in sociology, psychology, and economy. To-date there is no single, universally applicable definition, neither in the relevant literature, not in legal acts. From among many existing definitions, the majority of which are ascribed to the specified research purposes, the definition by the experts of the World Health Organization is most frequently quoted in scientific studies. According to this definition the term "disabled person" means 'any person unable to ensure by himself or herself, wholly or partly, the necessities of a normal individual and/or social life, as a result of deficiency, either congenital or not, in his or her physical or mental capabilities' [9].

Table 9. Problems reported by the disabled living in rural and urban areas according to causes of disability

Problems	Rural							Urban						
	Cause of disability						p	Cause of disability						p
	Disease		Injury		Congenital defect			Disease		Injury		Congenital defect		
	N	%	N	%	N	%		N	%	N	%	N	%	
Material difficulties	175	83.7	31	88.6	9	81.8	0.75	264	79.0	49	74.2	14	82.4	0.63
Lack of possibilities of rehabilitation at place of residence	157	76.2	29	82.9	8	72.7	0.65	165	49.4	39	59.1	10	58.8	0.29
Difficult access to physician	145	70.0	24	68.6	8	72.7	0.96	177	53.0	32	48.5	10	58.8	0.69
Difficulties in settling official matters	136	65.7	24	68.6	9	81.8	0.53	162	48.6	35	53.0	13	76.5	0.07
Loneliness	97	46.4	17	48.6	4	36.4	0.78	193	58.1	38	57.6	12	70.6	0.59
Too infrequent contacts with the family	87	42.2	19	54.3	5	45.5	0.41	199	59.9	38	57.6	10	58.8	0.94
Negative attitude of surroundings towards disability	82	39.8	17	48.6	6	54.5	0.42	135	40.5	26	39.4	10	58.8	0.31
Family disagreements	99	48.1	15	42.9	4	36.4	0.66	119	35.7	25	37.9	4	23.5	0.54
Material dependence on others	76	36.9	13	37.1	6	54.5	0.50	134	40.2	24	36.4	10	58.8	0.24
Lack of care by relatives and friends	63	30.3	17	48.6	4	36.4	0.10	143	43.1	24	36.4	9	52.9	0.40
Difficult access to environmental nurse	88	42.3	16	45.7	4	36.4	0.85	103	30.8	22	33.3	7	41.2	0.64
Difficult access to services from social worker	82	39.4	16	45.7	4	36.4	0.76	83	24.9	19	28.8	8	47.1	0.11
Lack of employment adjusted to disability	55	26.7	13	37.1	5	45.5	0.21	67	20.1	13	19.7	7	41.2	0.11
Necessity of caring for another disabled person	46	22.3	6	17.1	1	9.1	0.48	54	16.3	12	18.2	2	11.8	0.81
Alcohol abuse by a family member	43	20.8	7	20.0	1	9.1	0.64	42	12.7	10	15.2	0	0.0	0.24
Problems with provision of rehabilitation equipment	16	12.8	4	13.8	0	0.0	0.63	11	4.7	12	22.2	1	8.3	**p < 0.001**

Table 10. Problems reported by the disabled living in rural and urban areas according to single or combined causes of disability

Problems	Rural					Urban				
	Cause of disability				p	Cause of disability				p
	Single cause		Combined causes			Single cause		Combined causes		
	N	%	N	%		N	%	N	%	
Material difficulties	198	83.5	17	94.4	0.22	295	78.0	32	82.1	0.56
Lack of possibilities of rehabilitation at place of residence	178	76.1	16	88.9	0.21	193	51.1	21	53.8	0.74
Difficult access to physician	162	68.9	15	83.3	0.20	198	52.4	21	53.8	0.86
Difficulties in settling official matters	153	65.1	16	88.9	0.04	188	49.9	22	56.4	0.44
Loneliness	110	46.4	8	44.4	0.87	215	57.2	28	71.8	0.08
Too infrequent contacts with the family	102	43.6	9	50.0	0.60	219	58.2	28	71.8	0.10
Negative attitude of surroundings towards disability	94	40.2	11	61.1	0.08	155	41.1	16	41.0	0.99
Family disagreements	110	47.0	8	44.4	0.83	133	35.3	15	38.5	0.69
Material dependence on others	87	37.2	8	44.4	0.54	150	39.8	18	46.2	0.44
Lack of care by relatives and friends	76	32.2	8	44.4	0.29	157	41.8	19	48.7	0.40
Difficult access to environmental nurse	100	42.4	8	44.4	0.86	119	31.5	13	33.3	0.81
Difficult access to services from social worker	94	39.8	8	44.4	0.70	97	25.7	13	33.3	0.30
Lack of employment adjusted to disability	66	28.2	7	38.9	0.34	81	21.5	6	15.4	0.37
Necessity of caring for another disabled person	49	20.9	4	22.2	0.90	60	16.0	8	20.5	0.46
Alcohol abuse by a family member	46	19.6	5	27.8	0.40	46	12.3	6	15.4	0.58
Problems with provision of rehabilitation equipment	20	13.4	0	0.0	0.19	19	7.0	5	17.9	0.04

Based on this definition it assumed that disability is grounded on three dimensions: biological, i.e. loss, limitation or disturbance of body function, according to the degree and scope of impairment of its organs or systems; individual, i.e. limitation of activity; and social, which is limitation or impossibility to participate in social life [6, 10, 11].

According to the cause of disability, i.e. disease, injury, or genetic/congenital defect, and its effects specified by the degrees of disability, the level of physical and mental capacity of a person with dysfunctions is assessed to determine the types of difficulties occurring in daily functioning. In order to specify the ways and methods of satisfying actual needs it is necessary to conduct long-term studies aimed at diagnosing and determining the goals in the area of public health. It is necessary considering an increase in the number of the disabled. During 1990–2017 the total burden of disability increased by 52%. An increase in global disability indicators results mainly from a growing number of non-communicable diseases and the ageing of society, which is confirmed by epidemiological data [12, 13].

From among many issues disturbing the respondents' daily functioning due to the consequences of disability 16 types were distinguished which formed not sharply delineated three groups of problems, i.e. health, family, and environmental. Based on own experiences and many studies published by specialists in the areas of medicine, as well as public health, sociology, or psychology it may be presumed that the actual range of needs is considerably higher than that spontaneously declared by the disabled in the study [14, 15, 16].

The largest group of respondents indicated great discomfort in daily living caused by material (80.7%). Here, another coexisting problem was mentioned, i.e. material dependence on others, which concerned 39.4% of the examined disabled. Nearly in each population in the study the disabled material and living conditions were considered as the most important problems [15, 16].

J. Rzempowska reported that as many as 90% of the examined disabled lived very frugally, and the income was insufficient to satisfy basic needs. Difficult material and living situation exert an inhibitory effect on the shaping of life prospects [17]. The disabled, irrespective of the country, maintain themselves mainly on non-earned sources of income. This negatively affects the quality of life not only of the disabled person, but also the closest family members. The disabled are strongly threatened by poverty in its all dimensions [18, 19]. A. Żyta emphasized that families of the disabled often mention that the available system of support is insufficient, and the quality of assistance provided is on the low level and does not satisfy their needs [20].

An important problem in the examined population was lack of rehabilitation at the place of residence (61.0%), especially among rural inhabitants (77.0%). This problem is closely related with another, which are difficulties with access to rehabilitation and orthopaedic aids (9.6%), also more frequent among rural population. Rehabilitation is always of an individual character, which ensures its effectiveness from the medical, social, and psychological aspects. It may generally be presumed that rehabilitation of the disabled is a set of actions, especially, therapeutic, organizational, psychological, technical, educational, and social, aimed at achievement, with an active participation of these persons, of the highest possible level of their functioning, quality of life, and social integration [21]. Deprivation of a disabled person of the above-mentioned sets of actions leads to retrogration and deterioration of the quality of life [22]. Own study showed that for persons who would like to and could undertake employment occupational rehabilitation is especially important, which concerned one-fourth of the examined population. The Act of May 1991 in the matter of employment and occupational rehabilitation of the disabled contributed to the improvement of situation in this area [23].

To occupational rehabilitation contribute: professional activation of persons with disabilities, career counselling, job placement, employment in vocational activation units, occupational therapy workshops, sheltered employment, and supported employment (with an assistant). The selection of the stages of professional activation should be subordinated to the needs and types of limitations which are the consequence of disability and age [10, 24]. According to A. Kowalczyk a low percentage of occupationally active disabled confirm that the barrier protecting disabled persons against unemployment is insufficient [25]. O'Young et al. attract attention to tremendous demand for rehabilitation services, especially in the developing countries. In the well-defined concept of epidemiology of disability the researchers indicated that the provision of rehabilitation actions is a critical need [12].

The subsequent problem are issues related with accessibility of health care, which are especially important for the disabled. Hindered access to primary health care physicians and specialists was reported by 59.1% of the disabled in the study, to the environmental nurse – by 35.8%, and to a social worker – by 31.6%. The results of a study concerning types of expectations associated with primary and specialist health care are provided in an interesting report by A. Mikołajczyk entitled: 'Availability of health care services for the disabled'. These expectations concerned primarily the infrastructure of the outpatient department, organization of the process of treatment, accessibility of medical specialists and methods of dealing with patients [26]. A study by M. Sochańska-Kawiecka demonstrated that not only in opinions of the disabled, mainly intellectually, but also their caregivers, the necessity of waiting in the queue for medical advice is a great problem. This is often the cause of various anti-social behaviours [15]. Another study demonstrated that the patients from rural areas have greater expectations from their family physician in the area of individual counselling than urban inhabitants, concerning eating habits, physical activity, body weight and discontinuation of smoking [27].

Difficulties with access to health care were also perceived by the UN Committee on the Rights of Persons with Disabilities which in 2018 issued recommendations for Poland after analysis of the first report on the implementation of the Convention on the Rights of Persons with Disabilities [28]. Also in the report pertaining to availability of health services it was noted that complaints were addressed by citizens to the Ombudsman in the matter of provision of better access to health care facilities and doctor's offices [26]. In recent years, new legal solutions have been introduced concerning availability of health care to the disabled in the form of two Acts – the Act of 9 May 2018 about special solutions supporting persons with a considerable degree of disability, and the Act of 19 July 2019 in the matter of provision of access for persons with special needs [29, 30]. A study by I. Strzelecka and A. Zieliński demonstrated that patients with disabilities perceive insufficiency of care on the part of environmental-family nurses due to low accessibility of visits and their short duration. Patients evaluated the professional level of nurses in more positive terms than availability of the staff from this professional group. The respondents opinions concerning the availability of a social worker were also unsatisfactory [31]. The problem of difficulties with access to a physician and nurse is the cause of limitations in health education, especially in the area of cardiovascular diseases (arterial hypertension), cancer (breast cancer), obesity and injuries [32, 33]. S. Rogers et al. demonstrated that discrimination in health care was associated with new or enhanced disability within four years [34]. Based on great longitudinal observational population study SE. Jackson et al. found that age-related discrimination may lead to adverse health outcomes: the deterioration of self-rated health and the incidence of coronary heart disease, stroke, diabetes, chronic lung disease, limiting long-standing illness, and depressive symptoms over 6 years [35].

Also Dixon et al., based on the population in the United States and Brazil, observed that age-related discrimination by medical staff perceived by seniors was associated with negative self-assessment of the state of health, diagnosis of depression and depressive symptoms [36].

For a large group of respondents difficulties with settling official matters were a great problem hindering daily functioning (56.7%), and were more often reported by rural inhabitants. There are many causes of this problem. The final report entitled: 'Study on the needs of the disabled' prepared on order by the State Fund for the Rehabilitation of the Disabled (PFRON) showed that these problems are the consequence of neglect in the area of integration. Here, considerable limitations in mobility resulting from the consequences of disability, difficulties with transport, or large distances to public buildings are not without significance. The quantitative study from this report demonstrated that the respondents' spontaneous answers concerning the area of integration confirmed that this area did not belong to the crucial needs which should be satisfied [15]. Similar results were obtained by other researchers [14, 37].

A specially great difficulty for the disabled is the feeling of loneliness (53.9%), which more frequently concerns females, urban inhabitants, older persons, and those with certified disability. Loneliness is, among other things, the cause of the lack of social integration. SJ. Macdonald et al. reported that the causes of loneliness should be sought in the types of occurring barriers [38]. M. Żuk emphasized that persons with a high sense of loneliness are characterized by high neuroticism, restraint towards new experiences, tendency to submit, low self-confidence, and low assertiveness [39]. According to P. Winczewski frequently sole disability entails the prospect of loneliness. Apart from this, these may also be economic failure, lack of understanding the mechanisms of development of disability, lack of employment, feeling by the disabled person and family members the pressure on the part of local community [40]. A. Świtoń and A. Wnuk indicated that loneliness and isolation are important risk factors of the occurrence of disability, or even premature mortality among the elderly [41].

The subsequent group of problems are complicated family relationships, which have been specified as too rare contacts with the family (53.7%), insufficient care on the part of close persons (38.9%), family disagreements (42.4%), and alcohol abuse by family members (15.4%). Unfortunately, the majority of respondents mentioned more than one difficulty which cause discomfort in relations with the closest persons. Social support is an important issue. A study by M. Sochańska-Kawiecka showed that as many as 45% of respondents considered that a disabled person and the family cannot count on support of organizations and institutions functioning in Poland, which indicates that the system does not function in an optimum way [15]. A similar number

of respondents mentioned the lack of reliable information concerning the assistance available on the part of the support institutions [11, 37]. The respondents often deny that the family is covered with care when a disabled person occurs in it. They are aware that not only them, but also members of their family need support in association with disability. Own study showed that the necessity for taking care of another disabled person from among family members despite own body dysfunctions is an especially unpleasant and difficult problem (18.1%). There are reports which demonstrate that the disabled experience neglect, or even violence, on the part of family members. The risk may be created by difficult material situation, poor emotional control, behavioural disorders, or the eye-catching appearance of a disabled person. The consequences of such behaviours have both social and personal background; therefore, intervention and preventive actions should be undertaken on the community, as well as personal levels addressed to the victims of neglect and their caregivers [42, 43]. It is necessary to constantly improve social awareness, change stereotypical thinking about the disabled and negative attitudes towards them, resisting discriminatory situations and behaviours towards them [44, 45, 46].

For 41.3% of respondents a very unpleasant problem occurring in daily living were negative attitudes of the local community towards their disability. Available studies show that behaviours and attitudes of the members of society towards the disabled are diametrically differentiated. They may be specified as being from kindness, compassion, pity, through indifference, to the lack of acceptance, rejection of contacts and aversion. This especially concerns persons with locomotor organs dysfunctions and with mental diseases [10, 42].

The data concerning the opportunities for an active participation of the disabled in politics and social organizations are scarce. Per approximately 15% of the disabled in the European Union only 1% have the possibility to become engaged in this type of activity [16].

The results of own study and the above-presented studies by other researchers demonstrate that the types of consequences of disability and the types of needs related with them strictly correspond to the areas of public health. An outstanding specialist in public health D. Cianciara, rightly indicated that there is no health without research in public health [47]. According to GL. Krahn et al. the disabled are a group not recognized from the aspect of health inequalities. Insufficient scientific evidence is a basis for including the problem of disability into public health programmes [48]. A similar opinion was expressed by MJ. Berghs et al. who correctly stated that the engagement of public health in theories and models of disability is limited [49].

In scientific literature more than a dozen of various descriptions and definition of public health may be found. The most frequently quoted is, considered as classical, definition of public health by Charles-Edward Amory Winslow published in 1920 [50]. However, due to its textual abundance the WHO experts, as well as the European Union countries apply the definition of 1988 according to Donald Acheson [2]. According to the Sectoral Qualifications Framework for Public Health published in 2020 the primary goal of which is to stimulate and develop executive capacity of public health in Poland, creates possibilities for the improvement of the quality of its services [51].

An accurate diagnosis of the needs of a disabled person and their effective satisfaction give great chances for normal functioning in the society at each stage of life. A unique example of a disabled person fulfilled on every level of life is the brilliant astrophysicist Professor Stephen W. Hawking, who died on 14 March 2017, disabled due to amyotrophic lateral sclerosis. Throughout all life he pursued his scientific interests, mainly thanks to being equipped with many basic and specialist aids, including adjusted wheelchair, orthopaedic bed, speech synthesizer, and an interface attached to the glasses. This researcher said: 'Governments throughout the world can no longer overlook the hundreds of millions of people with disabilities who are denied access to health, rehabilitation, support, education and employment, and never get the chance to shine' [52, 53].

COCLUSIONS

Analysis of health and socio-demographic situation of 676 disabled persons allows the drawing the following conclusions:

1. The majority of problems hindering daily functioning of the examined persons due to disability were typical of social rather than medical characteristics.
2. The primary problem of the disabled living in both rural and urban environments were material difficulties.
3. Environments of residence rural or urban generate different sets of problems with which the disabled inhabitants struggle. To the disadvantage of rural areas are a greater frequency of problems associated with access to public services on the part of health care and administration, as well as employment adjusted to the needs of the disabled. In turn, in urban areas a higher intensification is observed of problems related with perceived social deprivation, insufficient level of relationships and assistance from the social surrounding: family, friends, neighbours, compared to rural areas.
4. Analyses of the relationships between reported problems and demographic stratifications carried out independently for the environments of rural and urban disabled inhabitants included: gender, age education, material standard, and housing conditions. Only according to gender no substantial differences were observed in the number of problems reported in rural and urban areas. The results of the study suggest equality in the situation of the disabled of both genders with respect to the problems with which they struggle both in rural and urban areas.
5. In urban areas the greatest differences in the frequency of occurrence of problems were observed according to the material standard and level of education, to the disadvantage of the groups with a low status. In the rural environment these were housing conditions, followed by material standard. In both environments the problem of the feeling of loneliness increased with age, whereas in younger groups the lack of employment adjusted to disability was more strongly perceived.
6. In the rural environment, stratifications associated with disability: its type, degree, legal status and causes did not show any differences in the situation of the examined disabled. In urban areas more severe degrees of disability were associated with a growing sense of social deprivation, legal disability – with a more frequent feeling of material

dependence on others. Only in urban areas the group where an injury was the cause of disability more often reported problems with provision of rehabilitation aids, compared to those in whom the cause of disability was disease or congenital defect.

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