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Definitions of health and disease among physicians and Społem PSS employees

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ABSTRACT

Aim. Definitions of health and disease play an important role in the organization and functioning of a health care system. The meanings attached to both phenomena also shape individual's health behaviours and may be more important for their understanding that one's social status. Thus, the aim of the study was to determine how the educational status and kind of work influence the concepts of health and disease. It also aimed to determine what criteria do physicians and Społem PSS employees use while talking about health and disease and whether lay concepts of health differ from their professional counterparts.

Material and Methods. The research was carried out between May and August 2013 among one hundred physicians and one hundred Społem PSS employees. Thus, the results refer to people who are professionally active. Respondents were questioned via a structured questionnaire which contained questions on their self-definitions of health and disease and the criteria of their evaluation.

Results. The research has revealed important differences in definitions of health and disease between physicians and clerks from Społem PSS. While physicians used a medical criterion to define health more often, Społem PSS employees defined it according to mixed and subjective criteria. As for disease, while respondents from both groups defined it mainly in medical criteria, all Społem PSS employees described it in pathological terms; physicians, however, defined it mainly as an abstract lack of well-being. On the other hand, many respondents understood both phenomena as multidimensional which proves that both terms contain many contradicting meanings and are difficult to articulate. Also among physicians, high tendency to overmedicalization of many phenomena was observed.

Conclusions. It has been proven that educational status and kind of work influence the way people understand health and disease. Thus, this research may be useful for health education and in planning health promotion and preventive actions.

Keywords: disease, definitions of health and disease, health, physicians, sociology of health and illness, Społem PSS employees.

Introduction

While the discussion on the nature of heath and disease seems to be purely academic, and some even claim that both terms are useless for both medical theory and practice [1, 2], the concepts of health and disease are crucial for the organization and functioning of medicine [3]. It stems from the fact that the models of heath and disease held by physicians influence the choice of study object, scientific theory and methodology used for its explanation, argumentation and formation of hypothesis and interpretation of the results' [4, 5]. They also determine who can obtain medical care and influence the type of care that is provided to patients. The accepted, even if only *implicite*, definitions of health and illness may be the reason why medical professionals do not take under consideration some factors in the etiology of disease and alternative

therapeutic measures [6]. The models of health and disease held by physicians may also determine whether the impact is being put on therapy or prevention and health promotion.

At the same time, when health awareness, personal health beliefs and lifestyle are regarded as the most important factors that shape health behaviours, modern health promotion attaches a special meaning not only to professional, scientific models of health and disease but also to their popular interpretations [7–11]. Thus, knowing the subjective meanings lay people attach to health and disease allows for understanding and explanation of one's health and medical behaviours. Moreover, they can be even more important than one's social status [12]. Lay definitions of health and disease present in public awareness decide whether and individual will be defined by others as sick and whether they define themselves as such and will look for a confirmation of such self-diagnosis in the doctor's office. What is more, while they may be a reason why patients ignore the first symptoms of disease, at the time they may also provoke too many claims from patients and lead to overmedicalization.

On the other hand, different definitions of health and disease held by physicians may be the reason why some doctors ignore some states claimed by their patients [13, 14], as it was in the case of the so called contested illness, such as fibromygalia, chronic fatigue syndrome, myofascial pain syndrome, multiple chemical sensitivity syndrome or posttraumatic stress disorder [15–17]. While such illnesses cause patients' suffering and discomfort, they are often not recognized by medicine and sometimes neglected. For that reason, the discrepancy between lay and medical concepts and definitions of health and disease is one of the main sources of patients' dissatisfaction with medical care and may become the reason why they look for alternative, nonmedical healing methods [18, 19]. It should be no surprise since health and disease criteria held in popular awareness often diverge from the medical criteria. For example, a research conducted by Boczkowski and Włodarczyk [10] showed that 80% adults have different ideas on what their good health means than their physicians.

A classical comparative study by Herzlich on middle class people in Paris and rural regions of Normandy demonstrated three main popular concepts of health: health as 'being', 'having' and 'doing'. The first category, referred to as 'health in a vacuum' implied the absence of disease, while 'having' health meant that it was regarded as a positive resource, capital and reserve, i.e. a type of biological capacity that enables an individual to cope with illness and which increases or decreases over time. Finally, health was also defined as a kind of physical fitness, equilibrium or function defined by each individual as normal health and which is rarely achieved (health as 'doing') [20]. In another study on elderly people in Aberdeen, Scotland, Williams identified three concepts of health: health as the absence of disease, health as a dimension of strength, weakness and exhaustion and health as functional fitness [21]. A study by D'Houtarda i Fielda [22] showed that manual workers expressed negative and instrumental definitions of health more often than non-manual workers who have positive and personalised concepts of health. Also, studies by Blaxter [23, 24] and Puchalski [7, 25] demonstrated that low educated employees and working class people have a more negative attitude toward their health and are more likely to hold functional conceptualisations of health.

On the other hand, studies conducted among healthcare providers show that most physicians are inclined to think about health and disease according to the medical model and stress mainly laboratory values and examinations within a normal range and technological solutions, and are not concerned with psychic, emotional, spiritual, social and environmental factors [6, 26]. Conversely, many lay people and nonmedical healers prefer wellbeing, holistic or adaptational models of health which operate with a different set of values, include other than physical dimensions of health and are more open toward alternative therapies (19). A study by Julliard, Klimenko and Jacob conducted among 73 healthcare practitioners proved that depending on whether they belonged to mainstream healthcare (MH), complementary and alternative healthcare (CAH) or integrative healthcare (IH), they presented different definitions of heath and disease. MH practitioners defined health mainly as 'good functioning ', which included such conceptualizations as: 'being able to contribute and be productive', 'being able to pursue personal goals', an ability of 'the body to do the things that one wants it to do' and an 'ability to handle daily activities'. At the same time, they recognized physical health as its most important dimension and psychic, emotional and social spheres were defined as abstract and difficult to evaluate. In that group, health was also defined as wellbeing and freedom from physical and mental disease and/or absence of pain and lack of disability and normal measurable physical parameters. On the other hand, representatives of CAH pointed to health as 'well-being', 'resilience' and 'adaptability to the environment' more often. They also defined health as 'aware-

ness and appropriate action' and 'balance'. At the same CAH practitioners stressed nonphysical dimensions of health: spiritual, psychic, emotional, environmental and social and pointed to their mutual connections. the last group of practitioners – IH, like the respondents from the first group, also stressed the functional dimension of health and described it as 'having all body systems functioning at their optimal level' which enables 'life and happiness'. On the other hand, in contrast to MH practitioners, they tended to stress that health is a well-being of the body, the mind and the spirit. Less frequently, they also defined it in negative terms as 'absence of disease', and, like CAH practitioners, they were more inclined to point to the adaptational model of health and perceived it as a 'ability to adapt to the environment' and 'balance'. Like the respondents from CAH group, IH practitioners also stressed the interrelated nature of the components of health and defined it as 'wholeness and integrity'. Most importantly, all IH practitioners included spirituality as an important component of health [6].

Another study by Klimenko, Julliard, Lu and Song [26] showed that health providers define health mainly through its reference to 'physiologically normal organ functioning' (84%), 'absence of pain' (59%), 'each patient's unique understanding of well-being' (59%) and 'lack of disease' (50%). Nevertheless, when representatives of mainstream medicine (MM), complementary and alternative medicine (CAM) and integrative medicine (IM) were asked to choose only one answer, those from the first group (MM) pointed to 'Age-appropriate functioning to pursue goals and enjoy life' (90% and 74% CAM), and the second group to a 'balance between the aspects of life, of the body/mind/spirit, or of the inner and outer worlds' (87% CAM and 73% MM). Similar differences were present in their definitions of disease. While MM practitioners understood it mainly in pathological terms as an 'abnormal organ function' (91% and 79% CAM practitioners) and 'abnormal laboratory values' (68% and 49% CAM) complementary and alternative medicine providers defined disease as an 'imbalance of body or mind functions or aspects of life' (92% and 70% MM), an 'inability to adapt to the environment' (70% and 45% MM) and 'lack of spiritual connection' (54% and 22% MM).

Thus, the aim of the present study was to determine how the educational status and kind of work influence concepts of health and disease. It also aimed to determine what criteria physicians and Społem PSS employees use while talking about health and disease and whether lay concepts of health and disease differ from their professional counterparts.

Materials and Methods

The study was carried out between May and August 2015 among one hundred physicians working on their speciality and one hundred Społem PSS employees. Thus, the results refer to people who are professionally active. Respondents were questioned via a structured questionnaire which contained open-ended questions on their self-definitions of health and disease and the criteria of their evaluation.

The group of physicians consisted of 47 females and 53 males. 57% were married and 20% single. The majority were aged 26–35 (60%) and 36–45 (22%). Most of the physicians lived in big agglomerations with a population of over 500 thousand (80%). All of them graduated from a medical university and were professionally active. Most of them declared an income of over 2500 PLN (620 euros) per month. In contrast, the sample of Społem PSS were in their majority female (93%), out of which 64% were married and 20% single. 10% were divorced. Most of them were aged over 45 (51%) or between 36–45 years of age (32%) and lived either in big agglomerations with a population of over 500 thousand (68%) or in smaller towns with 100–500 thousand inhabitants (14%). Most had completed their education at the level of vocational school (60%) or high school (38%). Only two persons were university graduates. Over half of Społem PSS employees reported an income of up to 1500 PLN (370 euros) per month (54%) while only 7% earned more than 2500 PLN (620 euros).

The StatSoft's Statistica 10. PL form was used for a statistical analysis. For the evaluation of variables, correlation Chi^2 test was used and for intergroup comparisons examined for ordinal variables, U Mann-Whitney and Kruskal-Wallis tests were used. The distribution of the variable 'number of diseases indicated' was analysed with Shapiro-Wilk test. As it was not significantly different from a normal intergroup comparison, other parametric methods were used: the t test for independent variables and one-way analysis of variance. A statistical significance was assumed to be $\alpha = 0.05$. The results $p < 0.05$ were recognized as statistically significant.

Results

The different understanding of health and disease among the physicians and Społem PSS employees examined was revealed in just the first two open questions where the respondents were asked to define both phenomena ($p < 0.05$) (**Table 1** and **2**), and were more significant in the case of health. Among the physicians

Table 1. Definitions of health in the opinions of physicians and Społem PSS employees

		Profession		Total
		Physicians	Społem PSS employees	
Definitions of health	medical criteria	61.0%	22.0%	41.5%
	mixed criteria	19.0%	30.0%	24.5%
	subjective criteria	10.0%	23.0%	16.5%
	functional criteria	2.0%	5.0%	3.5%
	negative criteria	2.0%	6.0%	4.0%
	adaptational criteria	2.0%	1.0%	1.5%
	axiological criteria	4.0%	12.0%	8.0%
	vitalistic criteria	0%	1.0%	0.5%
Total		100.0%	100.0%	100.0%

Table 2. Definitions of disease in the opinions of physicians and Społem PSS employees

		Profession		Total
		Physicians	Społem PSS employees	
Definitions of disease	medical criteria	49.0%	33.0%	41.0%
	negative criteria	18.0%	13.%	15.5%
	mixed criteria	14.0%	28.0%	21.0%
	adaptational criteria	7.0%	0%	3.5%
	subjective criteria	5.0%	12.0%	8.5%
	functional criteria	4.0%	10.0%	7.0%
	others	3.0%	4.0%	3.5%
Total		100.0%	100.0%	100.0%

it was mainly defined through medical criteria (61%), out of which over one half (54%) referred to the so called holistic definition of health by the World Health Organization which defines it as 'a state of complete physical, mental and social well-being'. On the other hand, such criteria also included such answers as: 'viability of organism' (4%), 'proper functioning of organism' (2%) and 'lack of genetic defects and necessity of medical treatment' (1%). Almost 1/5 of the physicians examined (19%) defined health as a multidimensional phenomenon and used mixed criteria to describe it. In such cases the most common was the combination of medical and functional criteria (4%): Health is physical and mental well-being that enables performance of social roles (P46); subjective and functional criteria (3%): Health means feeling good, psychic and physical comfort that allows free (without limitations) performance of everyday activities (P12); subjective and negative criteria: (3%): It [health] is good mood, physical and psychic comfort and lack of diseases (P4) and medical and subjective criteria (3%): A state when a person feels fine, and basic laboratory test do not show abnormalities (L60). Moreover, some physicians mixed medical and negative criteria (2%), medical and adaptational criteria (1%), adaptational and functional criteria (1%), negative, subjective and functional criteria (1%) or even negative, subjective, functional and medical criteria all at once (1%). The third most common definition of health among physicians was the one based on the subjective criterion which referred to feeling good and lack of feeling of discomfort (10%). Typical were such formulations as: A state of a very good mood without feeling of physical and psychic discomfort (P79) and Lack of ailments and good well-being (P94). Moreover, although less frequently, some physicians defined health according to the axiological criterion (4%) as a basic value that determines the sense of existence (P47) or plenitude/feeling of happiness (P59), the functional criterion (2%), where it meant [a]bility to perform ascribed social roles (P23) or An ability to act without any limitations (P83), the negative criterion (2%) as simply 'lack of disease' and the adaptational criterion when it was defined as 'homeostasis' or 'internal balance' (2%).

In contrast, Społem PSS employees defined health mainly through mixed criteria (30%), although most frequently they combined subjective and functional criteria (6%) and medical and subjective criteria (5%). Thus, it was understood as ' [p]hysical and psychic well-being and an ability to proper functioning and fulfilling professional duties (S50) or Health is fitness of the body and feeling good (S55). In this group, the respondents defined health in subjective terms twice as often as physicians did (23% to 10%). Commonly, they

referred to it simply as: A state of good physical and mental well-being (S4). A similar number of Społem PSS employees defined health in medical categories (22%). Nevertheless, in contrast to physicians, they did not speak about it in terms of WHO's well-being (only 6% in comparison to 54% of physicians) but 'proper functioning of the body' (12%), as: Good body condition (S96) or A state of body in which it does not show any signs or ailments which would be abnormal or atypical (S91). Moreover, 12% of Społem PSS employees defined health according to the axiological criterion as 'the most important value' (S2), 'a treasure' (S34), 'happiness' (S39), 'the highest good' (S44) and 'superior good' (S79) or even 'a gift from God' (S62): Health is the most important thing in the life of every person. No one and nothing can replace it, as it is the ESSENCE of our lives [the emphasis is original]. Quite surprisingly, only 6% of the employees examined described health as 'lack of disease', and still fewer (5%) according to the functional criterion, when they emphasized one's ability to work.

Also, disease was defined by physicians mostly in medical terms (49%), and especially as a 'lack of well-being' (33%). Surprisingly, much fewer respondents from that group described it according to a pathological criterion (13%). In such a case it was defined as: Disturbance of functioning of the body (P31), A set of symptoms that point to the abnormality in one of the bodily organs (P60), A state of disturbance of the structure/function of organs/systems (P85) or A dysfunction of an organ that results in clinical symptoms (P86). Moreover, it was also referred to as 'a deviation from medical norms' (2%), 'low quality of life' (1%) and 'described nosologic unit' (1%). The second most frequent concept of disease among physicians was its negative definition: disease as lack of health (18%). The third concept was defined by mixed criteria (14%), and especially a combination of medical and functional criteria (7%): A disturbance of functioning of the body that impairs functioning in everyday life (P69), Loss of physical and mental well-being, which impairs realization of one's role in society (P46); subjective and functional criteria (2%): It is a factor that potentially limits one's ability to act at the state of well-being (P83) and medical and subjective criteria (2%): A state of disturbance of feeling good which requires medical control/observation/treatment (P11), A dysfunction of a bodily organ or a group of organs that causes a feeling of discomfort (P28). 7% of the physicians examined described disease according to the adaptational criterion as: A disturbance in the state of psychosocial harmony (P88). Only 5% of respondents defined it in subjective categories, as a State that causes physical and mental discomfort (P40) or An unpleasant or painful feeling of one's own body (P82). Even fewer physicians (4%) understood it as a capacity to function normally: A state that makes one unable to be fully active in many dimensions of life (P21) or Any kind of limitation which prevents one from leading a normal life (P45).

As for Społem PSS employees, their perception of disease was mostly built around medical criteria (33%). In contrast to physicians, for all of them it meant some pathological state within the body. Typically, they referred to it as: [a]n impairment of the body by viruses and microbes (S1), A state in which there can be observed an undesirable reaction of bodily organs to external or internal factors (S33) or [d]eterioration of laboratory values diagnosed by a physician (S38). Much more often than physicians, Społem PSS employees defined disease using mixed criteria (S28% vs 14% physicians). In such a case, more frequently they combined medical and subjective criteria (10%) and defined it as: An ailment, when a person is in pain, some genetic disease (S51), Disease is a state when we are feeling bad. It is an ailment that results from pathological changes in the body and the disturbances of proper function of organs (S58). On the other hand, medical and functional and subjective and functional combinations used by physicians were less frequent among Społem PSS employees (4%): Disease is a dysfunction of the body that impairs normal functioning (S72) or Disease is a state in which a person feels bad and is unable to work at home and in the office (S66). Moreover, in this group the respondents also used combinations of other criteria, including: subjective and negative (3%), subjective and vitalistic (2%), vitalistic and functional (2%), negative and vitalistic (1%), subjective, negative and functional (1%) and functional, subjective and medical (1%). Surprisingly, this group defined disease in negative criteria less frequently than physicians (13% vs 18%). On the other hand, they used the subjective criterion more often than physicians (12% vs 5% of physicians). In such instances, while referring to a 'feeling of discomfort' and 'pain and/or suffering', they described it as a state in which [a] person feels bad (S69) or [w]e experience physical or psychic pain (S29). Quite unexpectedly, Społem PSS employees rarely defined health as a functional limitation (10%), especially in work: Disease is a temporary inability to work (S45).

The differences in the perception of health and disease between both groups was further confirmed by questions regarding the criteria of health and disease.

Figure 1 shows that for a vast majority of physicians (72%), health is a state of physical, mental and social well-being, whereas only 15% of Społem PSS employees found the WHO'S definition of health as appropriate. In contrast, in the latter group, the respondents chose the medical criterion much more often and defined health as a normal functioning of the body (33% vs 12% of physicians). Surprisingly, only 19% of Społem PSS employees described health using the negative criterion and defined it as absence of disease. Moreover, they also identified health as a unique resource and a capital (14%). Such results confirm our conclusion that educational status and kind of occupation determine the definitions of health (contingency coefficient C = 0.534, Cramér's V = 0.632, $p < 0.05$).

There was also a difference, although not so significant, in the way both groups described the essence of disease (contingency coefficient C = 0.349, Cramér's V = 0.372, $p < 0.05$) (**Figure 2**). Significantly many more physicians (73%) than Społem PSS employees (54%) perceived disease in medical categories either as a state of disability and discomfort or pathology and/or dysfunction of the body. On the other hand, Społem PSS employees frequently chose the negative criterion and defined it as absence of health (43% vs 23% of physicians).

The kind of work also determined the criteria that shape perception of health among physicians and Społem PSS employees. As shown in **Figure 3**, the differences between both groups are statistically significant (contingency coefficient C = 0.428, Cramér's V = 0.474, $p < 0.05$). While nearly one half of the physicians questioned (49%) indicated 'well-being' as the most important criterion of health, Społem PSS employees chose 'normal test results' (32%). It was surprising as it was presumed that it is physicians who are more likely to choose the objective, medical criterion that is strictly linked to medical knowledge, while employees often prefer the subjective criterion.

The Authors also asked about the criteria that determine perception of one's health (**Figure 4**). In both groups, they were similar ($p > 0.05$) as both physicians and Społem PSS employees emphasized the subjective and the vitalistic criteria. What can be observed is that there is a similarity between the personal and the general criteria of health among physicians. On the other hand, only 7% of Społem PSS employees identified normal test results as an important health indicator. The majority replied that they define themselves as healthy when they are feeling well and have energy to do things (89%).

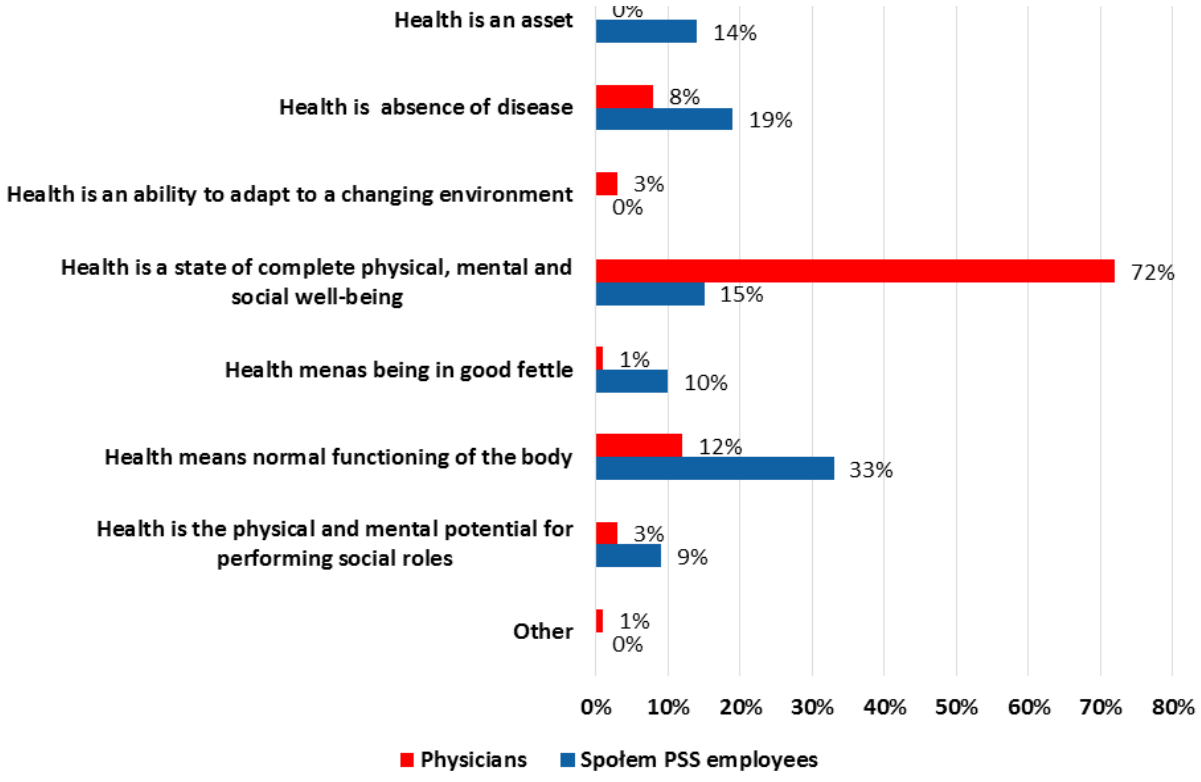

Figure. 1. Statements on the essence of health in the opinions of physicians and Społem PSS employees

The respondents were also asked to enumerate the determinants of health from the most important (1) to the least important (5). As shown in **Table 3**, the differences between the groups are statistically significant. Both groups emphasized lifestyle and genetic factors as the most important determinants of health. The biggest difference can be observed in their opinions on the role of the healthcare system. While for Społem PSS employees it was the third most important health determinant, for physicians this factor is one of the least importance.

The respondents did not differ in their opinions on the importance of the dimensions of health (**Table 4**). Both groups declared physical and mental health as its most important dimensions and neglected the importance of environmental health.

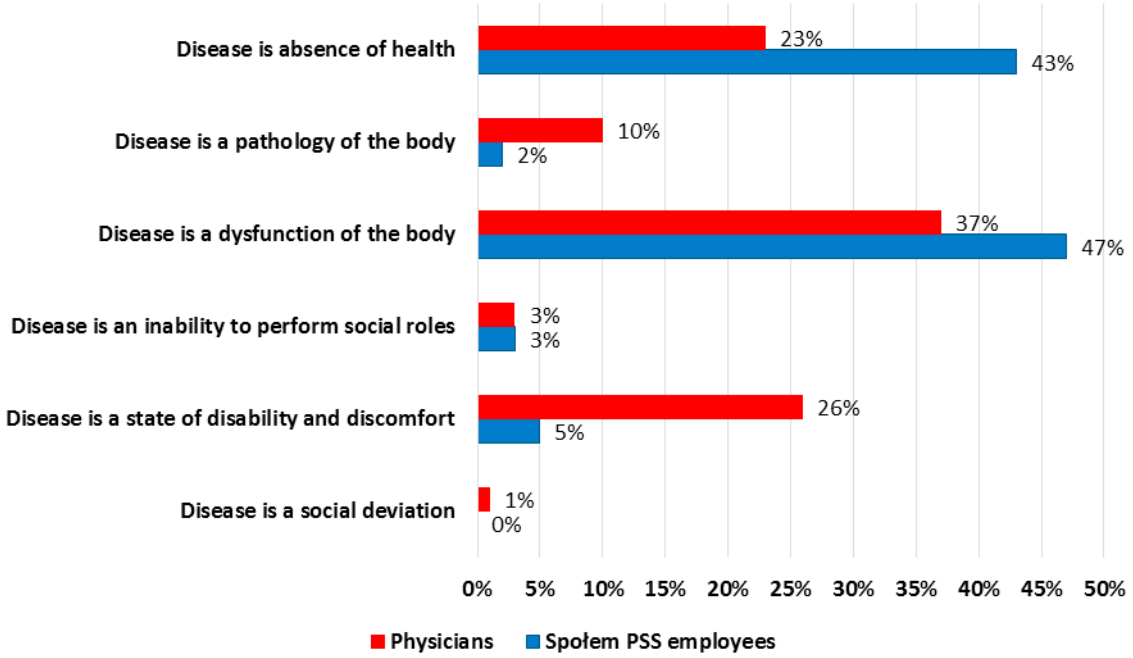

Figure 2. Statements on the essence of disease in the opinions of physicians and Społem PSS employees

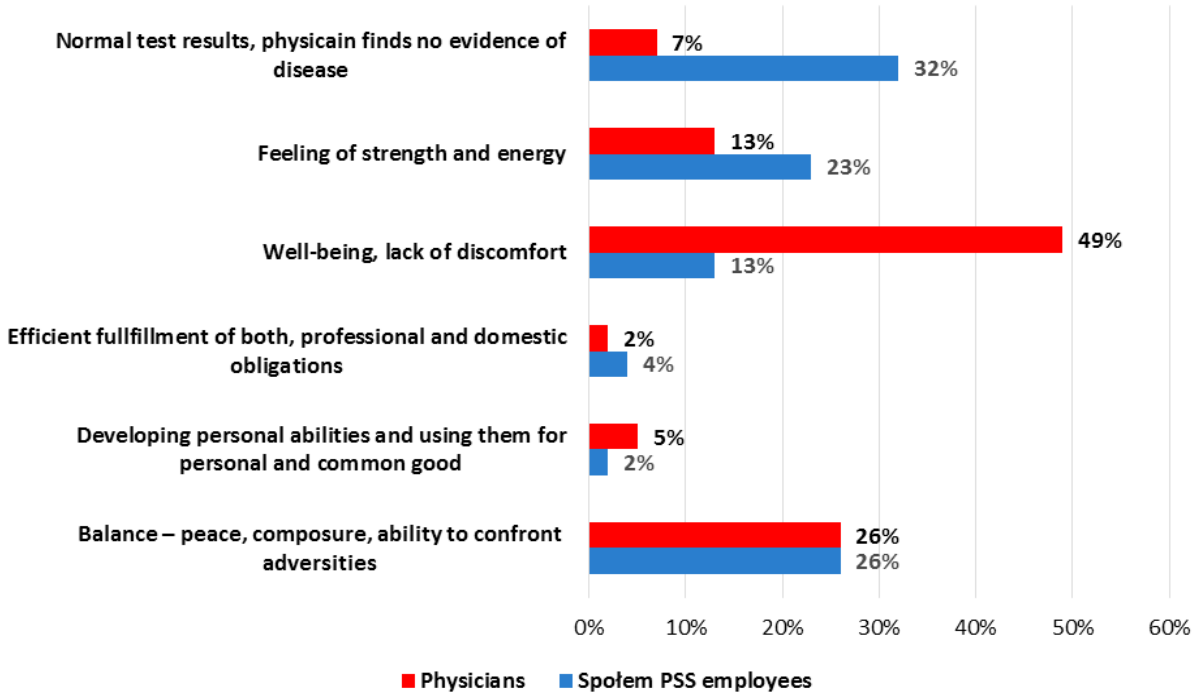

Figure 3. Criteria that shape perception of health among physicians and Społem PSS employee

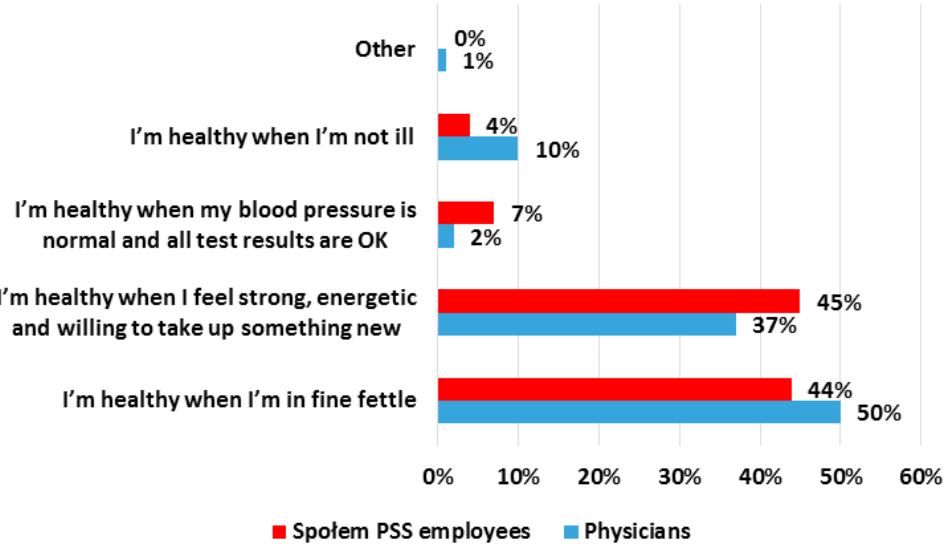

Figure 4. Criteria that determine perception of one's health among physicians and Społem PSS employees

Table 3. Determinants of health in the opinions of physicians and Społem PSS employees

Factors	Average		Standard deviation		p
	Physicians	Społem PSS employees	Physicians	Społem PSS employees	
Genetic factors	2.49	1.96	1.45	1.21	0.0146
Physical environment	3.02	3.8	1.04	0.92	0.0000
Social environment	3.58	4.3	1.21	0.92	0.0000
Lifestyle	1.65	1.94	0.81	0.97	0.0437
Healthcare	4.22	2.98	0.94	1.20	0.0000

Table 4. Opinions of physicians and Społem PSS employees on the importance of the dimensions of health

Dimensions of health	Average		Standard deviation		P
	Physicians	Społem PSS employees	Physicians	Społem PSS employees	
Physical health	2.15	1.55	1.72	1.08	0.0536
Social health	5.10	5.40	1.47	1.39	0.1582
Mental health	2.15	1.93	1.33	0.88	0.5413
Emotional health	3.38	3.69	1.14	1.11	0.0616
Intellectual health	4.34	4.76	1.24	1.34	0.0455
Environmental health	5.97	5.82	1.20	1.10	0.1522
Spiritual health	4.88	4.82	2.00	1.79	0.6208

The respondents were also asked to declare which of the conditions shown to them they consider as a disease/illness that deserves medical treatment (**Table 5**). Out of 55 positions listed, in 33 cases significant differences between both groups were observed. The biggest differences were noted in the cases of: suicide, cellulitis, small penis syndrome, premenstrual syndrome, sudden infant death syndrome and the conditions resulting in learning problems, which physicians defined as deserving medical treatment far more often than Społem PSS employees. In general, physicians chose, on average, 31.31 conditions, whereas Społem PSS employees only 24.4 (**Table 6**). This confirms the hypothesis that among physicians there exists a tendency to overmedicalize many dimensions of life. It is also worth mentioning that there was a group of physicians that might be called 'virtuosos of medicalization' (6%), who marked almost every condition as needing medical treatment. There were even two physicians who marked all of them. On the other hand, some Społem PSS employees denied medical status of such medical conditions as depression, AIDS or cancer.

Table 5. Opinions of physicians and Społem PSS employees on medical status of some chosen phenomena

Which of the following conditions do you consider as a disease/illness that deserves medical treatment?	Physicians		Społem PSS employees		p
	n	%	N	%	
labour	3	3.0%	2	2.0%	p = 0.65061
ageing	3	3.0%	3	3.0%	p = 1.0000
menopause	23	23.0%	27	27.0%	p = 0.51363
andropause	18	18.0%	16	16.0%	p = 0.70655
hair loss	23	23.0%	16	16.0%	p = 0.21155
osteoporosis	85	85.0%	74	74.0%	p = 0.05402
dying	6	6.0%	5	5.0%	p = 0.75644
kleptomania	59	59.0%	41	41.0%	p = 0.01091
rape	45	45.0%	25	25.0%	p = 0.00303
murder	30	30.0%	20	20.0%	p = 0.10247
aggression and violence	51	51.0%	50	50.0%	p = 0.88753
homosexuality	15	15.0%	27	27.0%	p = 0.03723
masturbation	6	6.0%	12	12.0%	p = 0.13821
pedophilia	70	70.0%	59	59.0%	p = 0.10406
sexoholism	60	60.0%	45	45.0%	p = 0.03367
asexuality	38	38.0%	28	28.0%	p = 0.13263
schizophrenia	96	96.0%	80	80.0%	p = 0.00050
depression	98	98.0%	92	92.0%	p = 0.05158
alcoholism	95	95.0%	83	83.0%	p = 0.00669
drug addiction	95	95.0%	83	83.0%	p = 0.00669
anorexia nervosa	94	94.0%	82	82.0%	p = 0.00902
bulimia nervosa	94	94.0%	80	80.0%	p = 0.00324
obesity	89	89.0%	66	66.0%	p = 0.00010
hyperactivity	58	58.0%	58	58.0%	p = 1.0000
impotence	79	79.0%	52	52.0%	p = 0.00006
suicide	55	55.0%	20	20.0%	p = 0.00000
sickle cell anaemia	76	76.0%	55	55.0%	p = 0.00179
down syndrome	57	57.0%	65	65.0%	p = 0.24614
dwarfism	59	59.0%	44	44.0%	p = 0.03381
deafness	89	89.0%	70	70.0%	p = 0.00087
blindness	81	81.0%	70	70.0%	p = 0.07053
hypertension	96	96.0%	89	89.0%	p = 0.06021
allergy	94	94.0%	85	85.0%	p = 0.03790
workaholism	53	53.0%	24	24.0%	p = 0.00003
increased sweating	72	72.0%	44	44.0%	p = 0.00006
turning grey	4	4.0%	4	4.0%	p = 1.0000
hangover	24	24.0%	5	5.0%	p = 0.00014
cellulitis	38	38.0%	7	7.0%	p = 0.00000
small penis syndrome	27	27.0%	5	5.0%	p = 0.00002
jet leg	15	15.0%	2	2.0%	p = 0.00098
freckles	3	3.0%	0	0.0%	p = 0.08095
high cholesterol	86	86.0%	88	88.0%	p = 0.67411
autism	79	79.0%	65	65.0%	p = 0.02747
premenstrual syndrome	46	46.0%	9	9.0%	p = 0.00000
Internet addiction disorder	66	66.0%	39	39.0%	p = 0.00013
shoplifting	59	59.0%	38	38.0%	p = 0.00297
AIDS	96	96.0%	87	87.0%	p = 0.02249
cancer	98	98.0%	97	97.0%	p = 0.65061
sudden infant death syndrome	50	50.0%	27	27.0%	p = 0.00083
hypochondriasis	52	52.0%	35	35.0%	p = 0.01532
infertility	93	93.0%	79	79.0%	p = 0.00433
dyslexia	58	58.0%	46	46.0%	p = 0.08943
dysgraphia	57	57.0%	40	40.0%	p = 0.01616
dysorthogtaphia	58	58.0%	40	40.0%	p = 0.01089
dyscalculia	57	57.0%	35	35.0%	p = 0.00180
Total	100	100.0%	100	100.0%	

Table 6. Average number of phenomena defined as disease/illness that deserve medical treatment

Average		T	p	Standard deviation	
Physicians	Społem PSS employees			Physicians	Społem PSS employees
31.31	24.4	5.12	0.0000	8.86	10.17

Discussion and Conclusions

This research has helped to answer the question: How do physicians and Społem PSS employees define health and disease and what criteria do they use to assess their health status? The results show that there are significant differences between both groups, which confirms the findings from other studies [6–12, 20–26]. And while in some cases the differences were not big, they were statistically significant and clearly oriented, which confirms the fact that education and kind of work influence the concepts of health and disease held by respondents. While physicians generally defined health using medical criteria (61%), Społem PSS employees used mixed criteria (30% vs 19% of physicians). Moreover, they described it in subjective categories as a feeling of discomfort more often (23% vs. 10% of physicians). Although in both groups medical definitions of health were the most frequent, Społem PSS employees defined it as normal functioning of the body far more often (33%), and physicians saw it rather as a state of physical, mental and social well-being (72%). On the other hand, while physicians from our study defined health according to the holistic model, they used biomedical criteria to describe it. Surprisingly, most physicians (49%) chose good mood as its most important criterion, while for Społem PSS employees normal test results (32%) were the most important. Quite unexpectedly, physical workers preferred medical and pathological criteria over functional, subjective and negative ones.

In both groups, disease was mainly defined according to medical criteria: 49% of physicians and 33% of Społem PSS employees. However, while for the former it meant 'absence of well-being', for the latter it was a pathology of the body (33%).

It is significant that for many respondents (19% of physicians and 30% of Społem PSS employees in the case of health and, respectively, 14% and 28% in the case of disease) understood both phenomena as multidimensional, consisting of many different states and described them using mixed criteria. What is also important is that the medical model of health and disease does not contradict their popular models and acceptance for the holistic, functional or subjective model can go along with biomedical criteria. Thus, the results of our study confirm the assumption that the concepts of health and disease of most of the respondents, both medical professionals and laymen, in their majority are composed of many, sometimes contradictory, health belief models. Although many respondents used categories typical of the biomedical model, and defined health as 'normal functioning of the body' and disease as 'a pathology of the body', some elements of the other models, i. e. negative, holistic, functional, subjective, environmental or axiological, were also present. Such nonmedical understanding was exemplified by concepts like: 'well-being', 'normal functioning', 'the highest good' or 'a resource', 'balance', 'homeostasis' or 'adaptation to the environment'. Thus, apart from some differences, it can be observed that popular definitions of health and disease held by Społem PSS employees consist of elements of both scientific (biomedical) model and holistic one. On the other hand, many physicians defined both phenomena in accordance with the popular model held by lay people. Therefore, it can be concluded that for the respondents the terms of health and disease are complex and difficult to verbalize.

The research, however, did not confirm the presumed differences in the perceived determinants and dimensions of health. Both groups identified lifestyle and genetic factors as the most important determinants of human health. Nevertheless, while Społem PSS employees also emphasized the role of the healthcare system, physicians did not see its importance for preserving health. On the other hand, the respondents from both groups defined physical and mental health as its most important dimensions.

What turned out to be statistically significant was the tendency of physicians to overmedicalize social life as they tended to perceive more conditions than Społem PSS employees as a disease/illness that requires treatment.

All in all, by showing professional and lay conceptualizations of health and disease, this research may be useful for health education purposes and in planning of health promotion and health prevention programs [25]. On the other hand, the common usage of medical criteria of health and disease by Społem PSS employees seems to show a growing health awareness in this study group. However, the negative and fatalistic concepts of health held by many of them can hinder the implementation of health programs basing on personal responsibility for one's health.

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Conflict of interest statement
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References

1. Hesslow G. Do we need a concept of disease? Theor Med. 1993;14(1):1–14.
2. Hofmann B. On the triad disease, illness and sickness. J Med Phil. 2002;27(6):651–673. doi:10.1076/jmep.27.6.651.13793.
3. Rosenberg CE. The tyranny of diagnosis: specific entities and individual experience. Milbank Q. 2002;80(2):237–260.
4. Domaradzki J. O definicjach zdrowia i choroby. Folia Med Lodz. 2013;40(1):5–29.
5. Domaradzki J. O skrytości zdrowia. O problemach z konceptualizacją pojęcia zdrowie. Hygeia Pub Health. 2013;48(4):408–419.
6. Julliard K, Klimenko E, Jacob MS. Definitions of health among healthcare providers. Nurs Sci Q. 2006;19(3):265–271. doi: 10.1177/0894318406289575.
7. Puchalski K. Kryteria zdrowia w świadomości potoczne. Prom Zdr. 1994;1(1–2):53–69.
8. Puchalski K. Zdrowie w świadomości społecznej. Krajowe Centrum Promocji Zdrowia w Miejscu Pracy, Łódź. 1997.
9. Sęk K, Scigała I, Pasilkowski T, Beisert M, Bleja A. Subiektywne koncepcje zdrowia. Wybrane uwarunkowania. Prz Psychol. 1992;35(3):351–363.
10. Włodarczyk C, Boczkowski A. Z badań nad świadomością zdrowotną społeczeństwa polskiego. Pr Zabezp Społ. 1989;31(6):43–49.
11. Czarnecka M, Cierpiałkowska L. Naukowe a subiektywne koncepcje zdrowia i choroby wśród studentów i ich determinanty. Now Lek. 2007;76(2):161–165.
12. Boruchovitch E, Mednick BR. The meaning of health and illness: some considerations for health psychology. Psico-USF. 2002;7(2):175–183. [cited 2013 December 10]. Available from: http://www.scielo.br/pdf/pusf/v7n2/v7n2a06.pdf.
13. Twaddle A, Disease, illness and sickness revisited. In: Twaddle A, Nordenfelt L (eds.). Disease, illness and sickness: three central concepts in the theory of health. Studies on Health and Society 18. Linköping 1994; p. 1–18.
14. Hofmann B. On the triad disease, illness and sickness. J Med Philos. 2002;27(6):651–673.
15. Barker K. Electronic support groups, patient-consumers, and medicalization: the case of contested illness. J Health Soc Behav. 2008;49(1):20–36. doi: 10.1177/002214650804900103.
16. Dumit J. Illnesses you have to fight to get: facts as forces in uncertain,emergentillnesses.SociSciMed.2006;62(3):577–590. doi: 10.1016/j.socscimed.2005.06.018.
17. Hadler NM. If you have to prove you are ill, you can't get well. The object lesson of fibromyalgia. Spine. 1996;21(20):2397–2400. doi: 10.1097/00007632-199610150-00021.
18. Jeszke J. Historyczne źródła współczesnych nurtów lecznictwa niemedycznego i ich społecznej akceptacji. In: Libiszowska-Żółtkowska M, Ogryzko-Wiewiórowska M, Piątkowski W (eds.). Szkice z socjologii medycyny. Wydawnictwo UMCS, Lublin 1998; p. 63–84.
19. Piątkowski W. Beyond medicine. Non-medical methods of treatment in Poland. Frankfurt am Main/Berlin/Bern/Bruxelles/New York/Oxford/Warszawa/Wien: Peter Lang, 2012.
20. Herzlich C. Health and illness. Academic Press, London 1973.
21. Williams R. Concepts of health: an analysis of lay logic. Sociology. 1983;17(2):185–204.
22. D'Houtard A, Field M. The image of health: variations in perceptions by social class in a French population. Sociol Health Ill. 1984;6(1):30–60.
23. Blaxter M. The causes of disease: women talking. Soc Sci Med. 1983;17(2): 59–69.
24. Blaxter M. Health. Polity Press, Cambridge 2010.
25. Puchalski K Świadomość i zachowania zdrowotne pracowników. In: Korzeniowska E, Puchalski K (eds.). Nisko wykształceni pracownicy a zdrowie – wyzwania dla edukacji zdrowotnej. Riga Stradins University, Ryga 2010; p. 51–67.
26. Klimenko E, Julliard K, Lu SH, Song H. Models of health: a survey of practitioners. Complement Ther Clin Pract. 2006;12(4):258–267. doi:10.1016/j.ctcp.2006.05.003.

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