Rocz Panstw Zakl Hig 2014;65(3):251-258

HOLISTIC MEASUREMENT OF WELL-BEING: PSYCHOMETRIC PROPERTIES OF THE PHYSICAL, MENTAL AND SOCIAL WELL-BEING SCALE (PMSW-21) FOR ADULTS

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ABSTRACT

Background. A holistic approach to health requires the development of tools that would allow to measure the inner world of individuals within its physical, mental and social dimensions.
Objectives. To create the Physical, Mental and Social Well-being scale (PMSW-21) that allows a holistic representation of various dimensions of well-being in such a way as they are perceived by the individuals and how affected their health.
Material and methods. The study was conducted on the sample of 406 inhabitants of Warsaw involving in the Social Participation in Health Reform project. The PMSW-21 scale included: headache, tiredness, abdominal pain, palpitation, joint pain, backache, sleep disturbance (physical domain), anxiety, guiltiness, helplessness, hopelessness, sadness, self-dissatisfaction, hostility (mental domain), security, communicability, protection, loneliness, rejection, sociability and appreciation (social domain). The five criterial variables of health and seven of life experiences were adopted to assess the discriminative power of the PMSW-21 scale.
Results. The total well-being scale as well as its physical, mental and social domains showed high reliability (Cronbach α 0.81, 0.77, 0.90, 0.72, respectively). The analysis confirmed the construct validity. All the items stronger correlated with their own domain than with the others (ranges for physical: 0.41 – 0.55, mental: 0.49 – 0.80 and social: 0.31 – 0.50). The total scale demonstrate high sensitivity; it significantly differentiated almost all criterial variables. Physical domain showed high sensitivity for health as well as for negative life events variables, while the mental and social domains were more sensitive for life events.
Conclusions. The analysis confirmed the usefulness of PMSW-21 scale for measure the holistic well-being. The reliability of the total scale and its domains, construct validity and sensitivity for health and life determinants were at acceptable level.

Key words: *holism, well-being, PMSW-21 scale, reliability, validity*

STRESZCZENIE

Wprowadzenie. Holistyczne podejście do zdrowia wymaga stworzenia narzędzia, które umożliwiłoby mierzenie wewnętrznego świata jednostki w jego fizycznym, psychicznym i społecznym wymiarze.
Cel. Opracowanie skali Fizycznego, Psychicznego i Społecznego Samopoczucie (PMSW-21), która umożliwi przedstawienie w sposób całościowy różnych wymiarów samopoczucia w taki sposób, jak są one postrzegane przez jednostki i jak wpływają na ich zdrowie.
Materiał i metody. Badania przeprowadzono na próbie 406 mieszkańców Warszawy biorących udział w projekcie Partycypacja Społeczna w Reformowaniu Zdrowia. Skala PMSW-21 obejmowała: ból głowy, przemęczenie, ból brzucha, kołatanie serca, ból stawów, ból pleców, trudności w zasypianiu (domena fizyczna), niepokój, poczucie winy, bezradność, beznadziejność, smutek, niezadowolenie z siebie, wrogość (domena psychiczna), bezpieczeństwo, komunikatywność, ochronę, samotność, wykluczenie, towarzyskość i szacunek (domena społeczna). Do oceny mocy dyskryminacyjnej skali PMSW-21 przyjęto pięć zmiennych kryterialnych dotyczące zdrowia i siedem dotyczących doświadczeń życiowych.
Wyniki. Zarówno całkowita skala, jak i jej domeny fizyczna psychiczna i społeczna wykazały wysoką rzetelność (Cronbach α odpowiednio 0.80, 0.77, 0.90, 0.72). Analiza potwierdziła trafność konstruktu. Wszystkie pozycje silniej korelowały z własną domeną niż z pozostałymi (zakresy dla fizycznej: 0.41 – 0.55, psychicznej: 0.49 – 0.80 i społecznej: 0.31 – 0.50). Całkowita skala wykazała wysoką czułość, znacząco różnicowała niemal wszystkie zmienne kryterialne. Domena fizyczna wykazała wysoką czułość zarówno w przypadku zmiennych kryterialnych dotyczących zdrowia jak i negatywnych zdarzeń życiowych, natomiast domeny psychiczna i społeczna były bardziej czułe w przypadku zdarzeń życiowych.

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Wnioski. Analiza potwierdziła użyteczność skali PMSW-21 do całościowego mierzenia samopoczucia. Rzetelność skali całkowitej i jej domen, trafność konstruktu oraz czułość w odniesieniu do uwarunkowań zdrowotnych i życiowych była na akceptowalnym poziomie.

Słowa kluczowe: *holizm, samopoczucie, skala PMSW-21, rzetelność, trafność*

INTRODUCTION

The roots of the holistic theory of health seen as wholeness of external and internal components of human being go back to the ancient time. The Bible proclaims: "A glad heart is excellent medicine, a depressed spirit wastes the bones away" (The Proverbs, 17, 22) [16]. A holistic approach to health (from Greek "*holos*", meaning "all, whole, entire, total") has been more or less represented in the Western medicine since the time of Hippocrates. In the contemporary holistic medicine the body, mind and environment contribute equally to health and illness [3], what is in line with the WHO definition of health as " a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" [28]. The interest in the holistic theory of health increased in the 70's of the twentieth century as an attempt to overcome the limitations of biophysical reductionism in medicine [11]. The *George Engel's* biopsychosocial model of health and its disorders was of great concern. *Engel* suggested that illness is commonly preceded by a period of psychological disturbances, during which the individual feels unable to copy. This has been designated the giving-up – given-up complex and has the following five psychological characteristics: a feeling of given-up, experienced as helplessness or hopelessness; a depreciated image of the self; a sense of loss gratification from relationships or roles in life; a feeling of disruption of the sense of continuity between past, present and future; and reactivation of memories of earlier period of giving-up [4]. Developing tools that would measure the inner world of the individual has become a challenge for researchers of holistic approach.

Until now a lot of the quality (or health-related quality) of life instruments were elaborated to explore subjective personal sphere, which may impinge on the health. The two of them, Short Form-Health Survey (SF-36) and World Health Organization Quality of Life (WHOQOL), were the most commonly used [2]. The SF-36 was the result of the research project of the Medical Outcome Study [25]. One hundred and forty nine items of the first version were subjected to exploratory factor analysis, which allowed to isolate 36 independent items that created the eight domains: physical functioning, role-physical, bodily pain, general health, vitality, social functioning, role-emotional, and mental health. The WHOQOL questionnaire was developed by experts from fifteen international centres. Of the 259 initially submitted items 100 were selected, which formed six dimensions: physical health, psychological health, level of independence, social relationship, environment, and spirituality [27]. Then, the construct validity was tested by confirmatory factor analysis. However, the both scales have serious disadvantages as holistic measures. Firstly, the domains consist of a different number of items, and therefore it does not allow to take into account all dimension of the well-being to the same extent. Secondly, the emphasis was placed on the objectification of measurement, what not always corresponds to the point of view of the individual.

Since 2001, the development of instruments for measuring well-being in its physical, metal and social dimensions, useful to determine the subjective circumstances of health, has been the object of research conducted in Department of Health Promotion and Postgraduate Education of the National Institute of Public Health – National Institute of Hygiene in Warsaw. The Physical, Mental and Social Well-being (PMSW18-Ad) scale for adolescents was elaborated and successfully applied in the international studies [8, 21-23]. The aim of presented paper is to examine psychometric properties of the Physical, Mental and Social Well-being scale (PMSW-21) for adults. Creating the scale, the following assumptions were made: 1) the scale allows a holistic representation of the various dimensions of well-being in such a way as they are perceived by the individual; 2) the scale creates the continuum, physical and social dimensions lie on its extremities, and mental dimension is the core; 3) the items co-creating the dimension correlate stronger with its own domain than with the others, nevertheless, they are also associated with the items of the other domains (acceptable skewness due to holistic nature of the scale).

MATERIAL AND METHODS

The sample consisted of 406 subjects living in Warsaw, who took part in the research project on social participation in health care reform in Poland. Characteristics of the sample and contents of questionnaire were presented in detail elsewhere [24].

The Physical, Mental and Social Well-being scale (PMSW-21) was developed in the Department of Health Promotion and Postgraduate Education of the National

Institute of Public Health – National Institute of Hygiene (NIPH-NIH) in Warsaw. The physical domain of the scale consisted of seven most commonly experienced ailments that are usually accompanied by various health disorders. The respondents were asked, how frequently, in general, they experience headache, tiredness, abdominal pain, palpitation, joint pain, backache and sleep disturbance. It was assumed that perceived severity of ailments will be measured in respect to the personal experience of subjects in general. Therefore, the relative frequency of ailments was registered on five-points scale from 'very often' (1 point) to 'very rarely or never' (five points). The overall physical domain ranged from 7 points to 35 points, and the higher scores indicated the better physical well-being. The similar procedures were used for constructing the mental domain of the scale. This domain contained seven items concerning feelings and emotions that, if had been frequently experienced or in a long period, they were identified as risk factors for stress-related diseases or mental disorders, namely: anxiety, guiltiness, helplessness, hopelessness, sadness, self-dissatisfaction and hostility. The social domain of the scale also consisted of seven items. The subjects were asked to what extent they agree with the statements included in the questionnaire. The statements concerned (statements in parentheses): security ('I feel safe in my everyday life'), communicability ('Contacts with other people are often difficult for me'), protection ('I can rely on the help from relatives'), loneliness ('I often feel lonely'), rejection ('People often criticise me'), sociability ('I like to be with people') and appreciation ('I feel appreciated by people'). The subjects could choose one of five responses from 'definitely not' (1 point) to 'definitely yes' (5 points). The variables based on negative formulated statements (communicability, loneliness and rejection) were recoded in such a way that all items of the social well-being domain were measured in the same direction. The social well-being domain also ranged from 7 points to 35 points, and the higher scores designated the better social well-being. The overall well-being scale were the sum of the three domains and ranged from 21 to 105 points.

The health indicators and negative life events were assumed as criteria for validity assessment of PMSW-21 scale. The health indicators measured: self-rated health (very good or good / not good), staying at home in the previous year due to illness (never / at least one time), consulting the physicians in the previous year (0-1 time / more than 1 time), occurrence of chronic disease (none / at least 1 chronic disease) and hospitalisation in the previous year (never / at least one time). Furthermore, the subjects were asked, weather they experienced negative life events in the previous year, and seven of the most commonly events were included: family problems, financial difficulties, lack of opportunities for relaxation, problems at workplace, difficult house conditions, encountering with violence and restriction in social contacts.

The Epi Info program was applied for creating the database and statistical analysis. The reliability was measured by Cronbach α coefficient for internal consistency, according to the formula [14]:

$$\alpha=k/k\text{-}1(1-\Sigma s_i^2/s_t^2),$$

where:
k – number of items in domain, Σs_i^2 – sum of item variances, s_t^2 – variance of total domain. The *Nunnaly* criterion of reliability $\alpha>0.7$ was accepted [17].

Due to initial assumption of belonging of individual items to hypothetical domains, the analysis of construct validity was of nature of confirmatory analysis. The fit of construct was analysed by examining the convergent, divergent and structural validity of the domains of the PMSW-21 scale. The convergent validity was shown by the mean correlation between the items of the same domain, while divergent validity was identified by the mean correlation between the items of different domains. The structural validity confirms the contribution of particular items to the hypothetical domain. *Pearson's* coefficient of correlation was used to measure the relationship between variables. Strength of correlation was interpreted in accordance with the general accepted convention [7]: $0.1\geq |r|$ – lack of correlation, $0.1< |r| \leq 0.3$ – weak correlation, $0.3 < |r| \leq 0.5$ – moderate correlation, $0.5 < |r| \leq 0.7$ – high correlation, $0.7< |r| \leq 0.9$ – very high correlation, $0.9< |r|$ – almost all identity. With regards to the correlation between the scale items, it was assumed that correlation $r>0.80$ indicates that the both items measure the same phenomenon (the level of redundancy) [18]. Moreover, the items are expected to correlate with their domains at least at the level $r=0.40$.

The discriminant validity of PMSW-21 scale in relation to health and life determinants was examined by *Mann-Whitney* test. The term 'discriminant validity' was usually used for defining the external criterion of validity of tested instruments to identify the expected differences between the distinct groups of subjects [6, 20]. It should be noted, however, that 'discriminant validity' was also used interchangeably with 'divergent validity' [10, 12].

The significance was accepted at the level $p<0.05$.

RESULTS AND DISCUSSION

Comparing the level of well-being the respondents perceived, the social domain was assessed the hi-

ghest, while physical domains was considerably lower (Table 1). The SF-36, WHOQOL and many other quality of life scales have a different number of items of each domain, therefore, it is difficult to compare the various dimensions of health among themselves. However, the large differences occurred between the countries in the scores of all domains, for example in the international study of psychometric properties of WHOQOL scale the ranges of domains for 23 countries were: 12.1 – 17.1 for physical, 10.6 – 15.4 for psychological, 10.8 – 15.8 for social and 10.7 – 15.9 for environmental domain [20].

Table 1. Descriptive statistics and reliability of the PMSW-21 scale and its domains

PMSW-21	Descriptive statistics			Reliability
	Mean	(SD)	Range	Cronbach α
Total	74.4	(12.7)	35 – 103	0.81
Domains:				
Physical	22.6	(5.6)	7 – 35	0.77
Mental	24.8	(6.6)	7 – 35	0.90
Social	27.1	(4.2)	11 – 35	0.72

The PMSW-21 scale and its domains demonstrated the reliability at the acceptable level (Table 1). The mental domain has substantially higher reliability. The quality of life scales commonly used, such as SF-36 or WHOQOL, mostly showed the high internal consistency, nevertheless, in many cases it was not confirmed for certain domains. In the *McPherson* and *Martin* review of literature on SF-36 psychometric properties only physical functioning and role physical domains were found of high reliability (α ranged 0.80 – 0.98 and 0.75 – 1.00, respectively), while differences in reliability of vitality, social functioning and mental health domains were large (α ranged 0.28 – 0.88, 0.30 – 0.98 and 0.39 – 0.90, respectively) [15]. The level of reliability of certain domains may considerably differ between the distinct population, for example healthy and disabled people [6, 9] or sufferers from various diseases [13].

The analysis of convergent, divergent and structural validity confirms the satisfactory construct organising of the PMSW-21 scale. Each item correlates stronger with the items of its own domain than with those of the other domains (Table 2 and 3). The differences are substantially higher in the mental domain items, while in three items of the social domain (security, loneliness and rejection) they are small. The four items (joint pain, backache, hopelessness and hostility) demonstrate orthogonality, the ranges of the remaining items overlap in part, and it is on line with our assumption of a partial skewness of the domains. None of the correlations exceeds the accepted limit (the highest correlation between helplessness and hopelessness is r=0.80), what indicates the lack of redundancy in any item (Table 2). Moreover, all items stronger correlate with their domain than with the others, however, the three items, tiredness from phy-

Table 2. The correlation between items of PMSW-21 scale

Items[1]	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.
1. headache	-																				
2. tiredness	**0.39**	-																			
3. abdominal pain	**0.40**	**0.30**	-																		
4. palpitation	**0.23**	**0.35**	**0.31**	-																	
5. join pain	**0.21**	**0.23**	**0.21**	**0.34**	-																
6. backache	**0.23**	**0.36**	**0.22**	**0.32**	**0.53**	-															
7. sleeping trouble	**0.24**	**0.35**	**0.29**	**0.41**	**0.33**	**0.37**	-														
8. anxiety	0.29	0.39	0.19	0.38	0.14	0.17	0.35	-													
9. guiltiness	0.18	0.32	0.10	0.21	0.05	0.09	0.21	**0.64**	-												
10. helplessness	0.26	0.43	0.24	0.34	0.14	0.19	0.29	**0.66**	**0.58**	-											
11. hopelessness	0.27	0.39	0.20	0.28	0.14	0.20	0.28	**0.63**	**0.52**	**0.80**	-										
12. depression	0.24	0.45	0.19	0.30	0.15	0.22	0.35	**0.66**	**0.60**	**0.70**	**0.78**	-									
13. self-dissatisfaction	0.13	0.30	0.07	0.22	0.07	0.13	0.22	**0.54**	**0.63**	**0.59**	**0.59**	**0.64**	-								
14. hostility	0.06	0.20	0.11	0.16	0.05	0.09	0.15	**0.35**	**0.36**	**0.40**	**0.44**	**0.42**	**0.48**	-							
15. security	0.24	0.27	0.10	0.18	0.06	0.11	0.18	0.41	0.29	0.39	0.39	0.38	0.30	0.15	-						
16. communicability	0.20	0.09	0.08	0.12	0.03	0.05	0.05	0.31	0.28	0.30	0.34	0.30	0.33	0.22	**0.22**	-					
17. protection	0.09	0.09	0.09	0.14	0.00	0.08	0.13	0.17	0.09	0.27	0.26	0.22	0.20	0.09	**0.38**	**0.15**	-				
18. loneliness	0.24	0.27	0.13	0.19	0.14	0.16	0.23	0.40	0.38	0.41	0.44	0.51	0.41	0.19	**0.37**	**0.36**	**0.36**	-			
19. rejection	0.14	0.23	0.10	0.19	0.06	0.09	0.09	0.11	0.19	0.17	0.17	0.15	0.23	0.19	**0.12**	**0.23**	**0.11**	**0.25**	-		
20.. sociability	0.03	0.02	-0.03	0.00	-0.04	-0.02	0.00	0.18	0.15	0.17	0.25	0.17	0.24	0.21	**0.25**	**0.33**	**0.22**	**0.22**	**0.25**	-	
21. appreciation	0.01	0.07	-0.01	-0.01	-0.12	-0.04	0.01	0.17	0.13	0.27	0.27	0.18	0.26	0.15	**032**	**0.25**	**0.41**	**0.29**	**0.22**	**0.40**	-

[1] *Pearson's* coefficient of correlation, $p<0.05$ if $|r|>0.10$; the bold print indicates the correlation with the scale that an item co-creates.

Table 3. Convergent and divergent validity of PMSW-21 scale

Items[1]	Convergent validity		Divergent validity	
	r (mean)	range	r (mean)	range
Physical domain:				
Headache	0.29	0.21 – 0,40	0.17	0.01 – 0.29
Tiredness	0.33	0.23 – 0.40	0.25	0.02 – 0.45
Abdominal pain	0.29	0.21 – 0.35	0.11	-0.03 – 0.24
Palpitation	0.33	0.21 – 0.41	0.19	-0.01 – 0.38
Join pain	0.31	0.27 – 0.53	0.06	-0.12 – 0.15
Backache	0.35	0.24 – 0.53	0.11	-0.04 – 0.22
Sleep disturbance	0.33	0.24 – 0.41	0.18	0.00 – 0.35
Mental domain:				
Anxiety	0.58	0.35 – 0.66	0.26	0.11 – 0.40
Guiltiness	0.56	0.36 – 0.64	0.19	0.05 – 0.38
Helplessness	0.62	0.40 – 0.80	0.27	0.14 – 0.43
Hopelessness	0.63	0.44 – 0.80	0.28	0.14 – 0.44
Depression	0.63	0.42 – 0.78	0.27	0.15 – 0.51
Self-dissatisfaction	0.57	0.48 – 0.64	0.22	0.07 – 0.41
Hostility	0.41	0.35 – 0.48	0.14	0.05 – 0.21
Social domain:				
Security	0.28	0.12 – 0.38	0.24	0.06 – 0.41
Communicability	0.26	0.15 – 0.38	0.19	0.03 – 0.34
Protection	0.27	0.11 – 0.41	0.14	0.00 – 0.27
Loneliness	0.31	0.20 – 0.37	0.29	0.13 – 0.51
Rejection	0.18	0.11 – 0.25	0.15	0.06 – 0.23
Sociability	0.28	0.20 – 0.40	0.10	-0.04 – 0.25
Appreciation	0.32	0.22 – 0.41	0.10	-0.12 – 0.27

[1]*Pearson's* coefficient of correlation, $p<0.05$ if $|r|>0.10$

Table 4. Structural validity of PMSW-21 scale

Items[1]	Domains:		
	Physical	Mental	Social
Physical:			
headache	**0.41**	0.22	0.25
tiredness	**0.48**	0.45	0.27
abdominal pain	**0.42**	0.18	0.11
palpitation	**0.50**	0.34	0.22
joint pain	**0.48**	0.10	0.03
backache	**0.55**	0.18	0.10
sleeping disturbance	**0.51**	0.31	0.18
Mental:			
anxiety	0.42	**0.72**	0.43
guiltiness	0.23	**0.69**	0.36
helplessness	0.42	**0.79**	0.47
hopelessness	0.40	**0.79**	0.50
sadness	0.43	**0.80**	0.45
self-dissatisfaction	0.25	**0.72**	0.47
hostility	0.19	**0.49**	0.27
Social:			
security	0.30	0.43	**0.45**
communicability	0.17	0.36	**0.43**
protection	0.16	0.24	**0.45**
loneliness	0.33	0.47	**0.50**
rejection	0.21	0.21	**0.31**
sociability	0.01	0.25	**0.43**
appreciation	0.02	0.25	**0.51**

[1]*Pearson's* coefficient of correlation, $p<0.05$ if $|r|>0.10$
The bold print indicates the correlation with the domain that an item co-creates (an item was excluded from the domain to protect overlap).

Table 5. Correlation between the domains of PMSW-21 scale

Domains[1]	Physical		Mental	
	r	r^2	r	r^r
Physical	-	-		
Mental	0.40	0.16	-	-
Social	0.29	0.08	0.53	0.28

[1] r – *Pearson's* coefficient of correlation, $p<0.05$ if $|r|>0.10$
r^2 – coefficient of determination.

sical domain, and security and loneliness from social domain, correlate with mental domain only slightly weaker (Table 4). Almost all items (except rejection) correlate at the level $r>0.40$. The strength of correlations of the mental items with their domain are very high, whereas those of the remaining domains were high or moderate. As regards the relation between the domains, the metal health correlates moderately or high with both the other domains, while correlation between physical and social domains is weak (Table 5), what confirms that mental domain is a core of the PMSW-21 scale. The study verifying the content validity of the life quality scales yielded inconsistent results. Analysing the convergent and divergent validity of the Lithuanian WHOQOL, *Baceviciene* et al. found the correlations between items inside the designated domain were considerably stronger then those with the items of the other domains [1]. In contrast, in the Brazilian version of SF-36 the ranges

Table 6. Discriminant validity of PMSW-21 scale in relation to health and life determinants

Determinants[1]	Total		Domains: Physical		Mental		Social	
	X	p	X	p	X	p	X	p
Health								
Self-rated health		<0.001		<0.001		0.079		0.001
very good or good	78.4		25.5		25.4		27.9	
not good	70.6		20.0		24.2		26.4	
Staying at home due to illness		0.038		0.002		0.007		0.506
never	76.0		23.7		25.8		27.2	
at least 1 time	73.1		21.7		23.9		27.0	
Physician consultation		0.030		0.243		0.029		0.859
0-1 time	76.2		23.0		25.7		27.1	
more than 1 time	73.2		22.3		24.1		27.0	
Chronic disease		<0.001		<0.001		0.809		0.092
none	79.0		25.5		25.1		27.6	
at least 1 disease	73.2		21.8		24.7		26.9	
Hospitalisation		0.646		0.025		0.568		0.019
never	74.2		22.9		24.7		26.8	
at least 1 time	75.1		21.5		25.2		27.9	
Negative life events								
Family problems		0.006		0.011		0.001		0.049
no	76.1		23.4		25.8		27.5	
yes	72.6		21.7		23.7		26.6	
Financial difficulty		<0.001		0.004		<0.001		0.003
no	76.6		23.3		25.8		27.5	
yes	70.9		21.4		23.1		26.2	
Lack of opportunity for relaxation		<0.001		0.001		<0.001		<0.001
no	77.5		23.4		26.3		27.8	
yes	70.2		21.4		22.6		25.9	
Problems at workplace		0.006		0.412		<0.001		0.028
no	75.6		22.8		25.5		27.3	
yes	71.7		22.1		23.0		26.4	
Difficult house conditions		0.443		0.737		0.054		0.623
no	74.4		22.6		25.0		27.1	
yes	73.8		22.2		23.1		26.8	
Encountering with violence		0.003		0.002		0.031		0.007
no	75.1		22.9		25.0		27.3	
yes	67.0		19.2		22.4		24.8	
Restriction in social contacts		<0.001		<0.001		<0.001		<0.001
no	77.3		23.4		26.1		27.9	
yes	67.5		20.7		21.8		25.2	

[1]*Mann-Whitney* test

of correlation inside the domain and with the items of other domains overlapped in three out of eight domains [12]. Also confirmation of structural validity of the life quality scales varied between the studies. The Lithuanian version of WHOQOL presented the remarkably higher correlations between the items and their own domain than with other domains, although in many cases the letter correlations were significant too [1]. On the other hand, in the Chinese WHOQOL version 20% of items correlated stronger with the domains other than hypothesized [13]. This inconsistency in construct assumptions was observed also in some country versions of the SF-36 [5, 19].

The total PMSW-21 scale demonstrated high sensitivity in relation to both the health and life event factors (Table 6). Significant differences were observed in almost all criterial indicators (except hospitalisation and difficult house conditions). Physical domain showed high sensitivity for health as well as life event indicators, while the mental and social domains were more sensitive for negative life events. It is interesting that hospitalised patients felt worse physically, while they simultaneously perceived better the social support. This would suggest that hospitalisation may provide a sense of security, and also demonstrates the complexity of the components of well-being. The previous studies on quality of life examined the discriminant validity using healthy and sick or disabled samples. The international comparative analysis of sensitivity of WHOQOL found differences between the countries. Out of 14 countries,

the sensitivity for physical domain did not confirmed in 3 countries, for psychological domain – in 4 countries, and for social domain – in 6 countries [20]. The comparison of WHOQOL of mentally and physically ill revealed the significant differences in psychological and social, but not physical domains [6]. The sensitivity analysis of the SF-36 showed a weak correlation between domains and criterial variable, which was the changes in health over the last year [26].

CONCLUSIONS

Our findings confirmed the usefulness of PMSW-21 scale for holistic measure of well-being. In particular:

1. The reliability of the total scale as well as its domains was at acceptable level.
2. The construct validity met initial assumptions; the particular items showed the great fit for the intended domains, and the correlations within and with the mental domain (core) was the highest.
3. The total scale and its domains presented the high sensitivity in relation to different determinants of well-being (health and life experiences).

Acknowledgements

The study was performed under the scientific projects of the National Institute of Public Health-National Institute of Hygiene, Warsaw, Poland ('Developing the physical, mental and social well-being scale for identifying the health determinants by survey method').

Conflict of interest

The authors declare no conflict of interest.

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Received: 05.03.2014
Accepted: 04.07.2014