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Objective assessment of self-care and non-professional care: a proposal

This study makes use of the care typology based on care providers:

a) professional care provided by people with professional training and sufficient professional experience to perform care of another person, for instance a nurse, a physician, a physiotherapist (hereafter the concept of professional care will refer only to the care provided by a nurse (14);

b) non-professional care provided by people without professional training but with sufficient practical knowledge and skills acquired as part of cultural norms, customs and religious beliefs, or developed intuitively (14);

c) self-care, defined as a special type of non-professional care which the individual initiates and performs in the interest of his/her life, integrated functioning, and well being according to his/her skills and abilities. Self-care as continuous deliberate inputs to oneself and one's environment aims at remaining alive, fostering functioning, development, and well-being (1, 7, 8, 11, 12, 13).

The goal of all three forms of providing care is the same, i.e. the optimal health condition and well being of the individual. They all involve the perception of the individual as a bio-psycho-social whole, and all have several phases differing in the range and type of the care provider's involvement. The biggest difference between professional care and non-professional care (including self-care) is the cost of their provision.

Reliable assessment of various care types is possible by means of tools for which psychometric properties have been assessed.

The nursing literature shows that the tools most frequently used for the objective assessment of self-care have been the Denyes Self-Care Agency Instrument (DSCAI), the Korney and Fleisner's Exercise of Self-Care Agency (ESCA), and the Hanson and Bickel's Perception of Self-Care Agency (SCDNT). Yet only the authors of ESCA tested their instrument psychometrically (11, 12). It seems that as yet no tool has been proposed

for the complex evaluation of the three types of care: self-care, non-professional care, and professional care.

The purpose of this study is a brief description of the scale and the presentation of the verification procedure for both of its components.

THEORETICAL PREMISES OF SPCPA

As the Polish nursing profession aims in general at the implementation of Orem's theory of nursing, this theory was also used as a conceptual framework for SPCPA, thus making the scale potentially useful in nursing practice. Ultimately, the scale is based on Orem's Self-Care Deficit Theory of Nursing and on Ciechaniewicz's Inventory of Nurse Caring Actions (1, 3, 5, 11).

The following elements of Orem's theory have been used in the construction of the scale: categories of patient's needs (universal, developmental, health deviation care); conceptualization of nursing systems (supportive-educative, partly compensatory, wholly compensatory), Ciechaniewicz's inventory allowed for a behavioural understanding of self-care (in agreement with the approach prevailing in Poland), which involves direct nursing actions: caring, preventive, rehabilitating, therapeutic, and educative.

Moreover, the scale makes use of two additional concepts, those of non-professional care and its main provider. Also theoretically significant in working out the scale was the equation stating that professional care = care - [self-care + non-professional care]. Hence, SPCPA can be used for the assessment of care deficit, lack of self-care deficit and of over-care. On the basis of the adopted theoretical assumptions for SPCPA a working definition of non-professional care indicators – the main care provider's agency and self-care agency – has been formulated. It states that the patient's self-care agency and the main care provider's agency are their capabilities of performing care according to the level of the assessed deficit.

The three levels of self-care defined above are presented in SPCPE by means of 20 needs, which constitute the indicators of the scale and are related to patient's and care provider's agency by definition (see Appendix I).

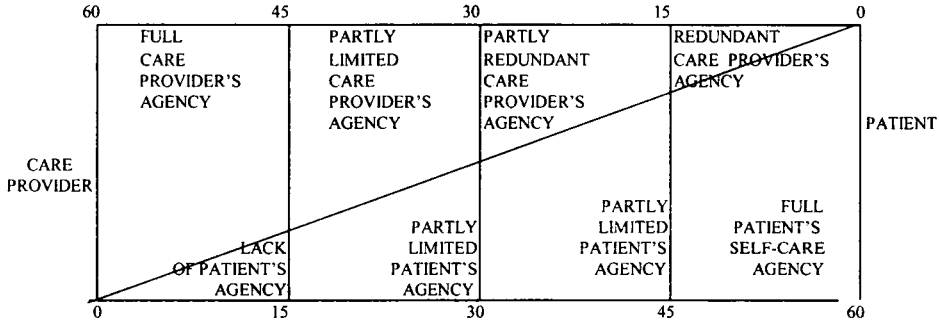
Appendix I. The Scale of Patient's and Care Provider's Agency (SPCPA) – tabular form

PATIENT'S BEHAVIOUR ACCORDING TO D. OREM	RANGE OF PATIENT'S SELF – CARE ACTIONS (SPCPA – 1)			
	FULL	LIMITED	PARTIAL DEFICIT	TOTAL DEFICIT
	3	2	1	0
1. BREATHE NORMALLY	1.3	1.2	1.1	1.0
2. DRINK ADEQUATELY	2.3	2.2	2.1	2.0
3. EAT ADEQUATELY	3.3	3.2	3.1	3.0
4. ELIMINATE BODY WASTES	4.3	4.2	4.1	4.0
5. BALANCE ACTIVITY AND REST	5.3	5.2	5.1	5.0
6. PREVENT THREAT OF LIFE	6.3	6.2	6.1	6.0
7. DEVELOP ONE'S POTENTIAL FULLY	7.3	7.2	7.1	7.0
8. OBTAIN MEDICAL HELP WHEN LIFE IS THREATENED	8.3	8.2	8.1	8.0
9. KNOW EFFECTS OF DISEASE ON ONE'S DEVELOPMENT	9.3	9.2	9.1	9.0
10. FOLLOW ORDERS OF HEALTH CARE PROFESSIONALS	10.3	10.2	10.1	10.0
11. ACCEPT ONE'S BODY IMAGE	11.3	11.2	11.1	11.0
12. LEARN LIVING WITH DISEASE	12.3	12.2	12.1	12.0
13. CHANGE OF LIFESTYLE	13.3	13.2	13.1	13.0
14. ACCEPT DEPENDENCE ON OTHERS	14.3	14.2	14.1	14.0
15. MAINTAIN PERSONAL HYGIENE	15.3	15.2	15.1	15.0
16. MAINTAIN CLEAN AND AGREEABLE ENVIRONMENT	16.3	16.2	16.1	16.0
17. PARENTING ACTIVITY	17.3	17.2	17.1	17.0
18. WORK ACTIVITY	18.3	18.2	18.1	18.0
19. SEXUAL ACTIVITY	19.3	19.2	19.1	19.0
20. WORSHIP ACCORDING TO ONE'S FAITH	20.3	20.2	20.1	20.0
	TOTAL DEFICIT	PARTIAL DEFICIT	LIMITED	FULL
	0	1	2	3
	RANGE OF CARE PROVIDER'S ACTIONS (SPCPA-2)			

CHARACTERISTICS OF THE SCALE OF PATIENT'S AND CARE PROVIDER'S AGENCY (SPCPA)

The SPCPA was worked out and initially verified in practice in 1997. The scale allows for the quantitative measurement of the patient's self-care agency and of the care provider's caring agency, as defined by Orem (1, 2, 4).

Appendix II. The Scale of Patient's and Care Provider's Agency – rectangular form



The scale consists of 20 select indicators of the patient's self-care capabilities and resources, and the capabilities of the main care provider to render non-professional care with respect of the specified needs. It is a four-point scale, i.e. each item is rated from 0 to 3 points, which gives the minimum score of 0 points and the maximum of 60 points for all the items. The actions of both the patient and the care provider are rated 3 points when they are performed without assistance, and from 0-2 points when assistance is needed. In accordance with its main theoretical source, the scale involves three types of caring systems: supportive-educative, partly compensatory, and wholly compensatory, thus allowing for the assessment of the lack of self-care deficit, of the patient's self-care deficit and provider's caring deficit, and of the provider's excessive caring.

The scale has two forms: tabular and graphic. The tabular form allows for numerical measurement of patient's self-care agency and of the provider's caring agency. The graphic form (a rectangle) enables us to provide a verbal description of the patient's and care provider's agency and of the relationship observed between the assessed items.

ASSESSING SPCPA RELIABILITY AND VALIDITY

There were several stages of assessing the reliability and validity of the SPCPA. They involved its theoretical correctness, usefulness in caring practice, use in research, and its psychometric properties.

The assessment of the author's version of SPCPA was performed by means of statistical methods which allowed to evaluate its select basic psychometric properties. Due to the dichotomous nature of the scale, the select indicators were assessed separately for each of the two components. The statistical procedure used was the statistical package for social sciences (SPSS) 8.01 PL. The reliability was calculated by means of the Cronbach's alpha coefficient.

The study searched for answers to the following question: What is the value of the Cronbach's alpha coefficient for SPCPA-1 and SPCPA-2 in the studied sample? The assessment hypotheses were formulated accordingly. Hypothesis 1 "0" - the Cronbach's alpha coefficient for SPCPA-1 and SPCPA-2 ranges from $0 \geq 0.8$. Hypothesis 1 "A" - the Cronbach's alpha coefficient for SPCPA-1 and SPCPA-2 ranges from $0.8 \geq 1$.

CHARACTERISTICS OF THE SAMPLE

The sample for this study consisted of 100 patients hospitalized at three clinics of the Public Hospital No. 4 (Orthopaedics and Traumatology, Rehabilitation, and Haematology) and at the hospitals in the town and district of Biała Podlaska. The research was conducted from 15 April to 10 September 1997 and from 15 June to 30 July 1999. 60 patients were assessed by the authoress of the scale herself, and the remaining 40 were assessed by other nurses, all of whom had to attend a 2-hour instruction about the nature of the SPCPA and its use in the nursing practice.

Table 1. Study sample by age, sex and stage of hospitalization

Stage of hospitalization	Sex		Age					Median age		
	F	M	21-30	31-40	41-50	51-60	61-70	F	M	Total
Diagnosis (group "D")	13		1	2	6	1	3	46.5		49.5
		7	1	1	2		3		52.5	
Surgery (group "S")	13		4	1	3	5		51.8		50.3
		7		2	2	1	2		47.7	
Conservative treatment (group "C")	23		1	1	4	3	14	61.7		57.7
		17	2		7	3	5		52.3	
Rehabilitation (group "R")	12		2		55	3	2	49.6		49.6
		8		2	2	4			49.7	

The sample patients were selected according to: age (adults aged 21-70 years); stage of hospitalization (diagnosis or treatment); agreement to participate in the study.

As the table illustrates, groups D, S, and R consisted of 20 patients each, while group C consisted of 40 patients. About 75% of the sample were women. The median age was

52.4 for the women and 50.5 for the men. The youngest patients belonged to group C, and the median age difference was 8 years. The biggest part of the sample were patients aged 41-50 years. On the whole, the groups were similar in terms of gender composition, but differed in the age and stage of hospitalization of their members.

RESULTS AND DISCUSSION

The reliability of the scale can be assessed indirectly by calculating the standard deviation with regard to the arithmetic mean. The arithmetic means for the patient's self-care agency assessed by means of the SPCPA-1 represent a different range of values than those obtained for the provider's caring agency assessed by the SPCPA-2, which affects the values of the variance.

Table 2. Basic descriptive characteristics for the indicators in SPCPA-1 and SPCPA-2

SPCPA	Mean	Minimum	Maximum	Range	Max/Min	Std. Dev.
SPCPA-1	1.89	1.41	2.30	0.89	1.63	12.27
SPCPA-2	0.49	0.19	1.29	1.10	6.79	8.74

The items of the SPCPA assume fairly different values. The arithmetic mean for the SPCPA-1 indicators is about four times higher than that for SPCPA-2. A significant element in the statistical analysis of the tested sub-scales is the value of the max./min. range. Its numerical value for the SPCPA-1 is several times lower than that for the SPCPA-2.

The inter-item correlation among the indicators of the SPCPA sub-scales point to their comparable, yet moderate, internal consistency, on average from 0.33 to 0.20 with mean dispersion. The values of their max./min. range and of variance were slightly higher for SPCPA-1 than for SPCPA-2.

The highest arithmetic mean for the sample patients was obtained in five areas: adequate nutrition (36.01), sexual activity (36.03), medical help when life is at risk (36.08),

Table 3. Correlation among the items of SPCPA-1 and SPCPA-2

SPCPA	Interitem correlation	Minimum	Maximum	Range	Min./Max.	Variance
SPCPA-1	0.33	-0.19	0.86	1.05	-4.39	0.36
SPCPA-2	0.29	-0.18	0.78	0.97	-4.25	0.32

Table 4. Significant statistical results for the SPCPA-1 items: arithmetic mean, variance, corrected item-total correlation, and squared multiple correlation

Items of SPCPA-1*	Mean	Variance	Corrected item–total correlation	Squared multiple correlation
V-1.1	35.59	137.52	0.56	0.63
V-2.1	35.97	135.58	0.66	0.80
V-3.1	36.01	136.99	0.63	0.76
V-4.1	35.55	133.54	0.67	0.82
V-5.1	35.99	134.29	0.70	0.65
V-6.1	35.69	138.86	0.51	0.60
V-7.1	35.77	136.95	0.57	0.63
V-8.1	36.08	132.66	0.66	0.60
V-9.1	35.68	142.08	0.33	0.46
V-10.1	35.51	143.20	0.39	0.40
V-11.1	35.80	136.46	0.49	0.36
V-12.1	35.77	138.42	0.60	0.74
V-13.1	35.83	139.15	0.57	0.72
V-14.1	35.41	141.90	0.37	0.31
V-15.1	35.75	129.13	0.70	0.81
V-16.1	35.96	128.42	0.67	0.81
V-17.1	36.30	128.17	0.70	0.64
V-18.1	36.08	147.35	0.06	0.36
V-19.1	36.03	136.64	0.42	0.49
V-20.1	35.72	136.28	0.58	0.64

• Full description of the items in Appendix I.

professional activity (36.08), and parenting (36.30). A lower mean for self-care actions was connected with accepting dependence on others (35.41).

The variance for the SPCPA-1 indicators shows the highest dispersion of results above 140,00 for professional activity, obeying the recommendations of health care professionals, knowing the consequences of illness, and accepting dependence on others. The lowest dispersion of results characterized the following self-care indicators: personal hygiene, maintaining clean and agreeable environment, and parenting.

The corrected item-total correlation for the SPCPA-1 shows the highest positive linear connection for maintaining personal hygiene and for parenting at the correlation value of about 0.5, which is good evidence of the scale's internal consistency.

The squared multiple correlation shows the variable total value of the test caused by the variability of an indicator's value. It proves that the variability of the total values depends to a different degree (82% - 31%) upon the values of the SPCPA-1 indicators, which is an indirect evidence of the fairly good content validity of the scale.

Table 5. Significant statistical results for the items of SPCPA-2: arithmetic mean, variance, corrected item-total correlation, and squared multiple correlation

Items of SPCPA-2*	Mean	Variance	Corrected item-total correlation	Squared multiple correlation
V-1.2	9.52	70.05	0.59	0.53
V-2.2	8.47	70.78	0.30	0.58
V-3.2	8.57	69.98	0.37	0.55
V-4.2	9.51	69.62	0.63	0.54
V-5.2	9.36	69.83	0.54	0.64
V-6.2	9.45	70.19	0.55	0.54
V-7.2	9.11	69.21	0.41	0.27
V-8.2	9.49	68.23	0.71	0.70
V-9.2	9.25	67.82	0.49	0.40
V-10.2	9.42	67.56	0.70	0.76
V-11.2	9.41	69.88	0.44	0.35
V-12.2	9.39	68.70	0.67	0.76
V-13.2	9.34	68.91	0.58	0.71
V-14.2	9.45	67.08	0.75	0.77
V-15.2	8.66	68.47	0.38	0.58
V-16.2	9.20	65.98	0.61	0.52
V-17.2	9.57	71.88	0.39	0.52
V-18.2	9.25	71.42	0.23	0.41
V-19.2	9.49	72.45	0.27	0.33
V-20.2	9.53	70.61	0.48	0.53

• Full description of the items in Appendix II.

The highest caring activity level was observed among care providers assisting the patients in parenting (9.57), breathing (9.52), eliminating body wastes (9.51), while the lowest level of activity was found in the provision of adequate drink (8.47), food (8.57) and in maintaining personal hygiene (8.66).

The highest dispersion of results was found for the indicators of the care providers' actions connected with the patients' sexual activity (72.45), parenting (71.88), and professional work (71.42). Most similar were the results concerning the maintenance of clean and agreeable environment (65.97).

The highest corrected total-item correlation for the SPCPA-2 characterized two indicators: accepting dependence on others (0.75) and providing medical help when life is at risk (0.70); the lowest correlation was found for professional activity (0.25).

The variability of the care provider's agency values depended in 26%-76% upon the values of the SPCPA-2 indicators, which demonstrates their variable yet fairly good validity.

Table 6. Reliability of the SPCPA indicators (SPCPA-1 and SPCPA-2)

Reliability of the SPCPA indicators											Cron-bach's alpha in total	Cron-bach's alpha stand-ardized
SPCPA-1	0.90	0.89	0.90	0.89	0.89	0.90	0.90	0.89	0.90	0.90		
Items	V-1	V-2	V-3	V-4	V-5	V-6	V-7	V-8	V-9	V-10	SPCPA-1	SPCPA-1
SPCPA-2	0.87	0.88	0.88	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.90	0.91
SPCPA-1	0.90	0.90	0.90	0.90	0.89	0.89	0.89	0.91	0.90	0.90	SPCPA-2	SPCPA-2
Items	V-11	V-12	V-13	V-14	V-15	V-16	V-17	V-18	V-19	V-20	0.88	0.89
SPCPA-2	0.87	0.86	0.88	0.87	0.87	0.87	0.87	0.88	0.88	0.87		

The reliability of the SPCPA-1 items measured by the Cronbach's method ranges from 0.89 to 0.91 of the alpha coefficient, while for the whole scale the Cronbach's alpha is 0.90 (0.91 after standardization).

The reliability of the SPCPA-2 items measured by the same method is slightly lower, with a Cronbach's alpha coefficient of 0.86 – 0.88. Thus, the reliability of the whole sub-scale is also slightly lower than that of the SPCPA-1 and equals 0.88 (0.89 after stand-ardization).

As the values of the Cronbach's alpha coefficient for SPCPA-1 and SPCPA-2 are relatively satisfactory, the reliability assessment is not required for the whole studied populations. Their psychometric properties are sufficiently tested on samples.

CONCLUSIONS

The Cronbach's alpha coefficient for the reliability of the SPCPA-1 and SPCPA-2 ranges from 0.8 – 1.0, which indicates good psychometric properties of both sub-scales.

IMPLICATIONS FOR NURSING RESEARCH

1. Determining select types of validity: diagnostic, factored, and theoretical.

2. Devising an instruction book for the application of the SPCPA which would include the already available results of its assessment.

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SUMMARY

Nursing care today, both in theory and practice, consists not only of professional care rendered by nurse but, to a significant degree, involves also self-care and non-professional care. This tendency is also reflected in the philosophical premises of Polish Nursing. The interest in self-care and non-professional care in Poland, and, consequently, in the D. Orem's self-care deficit theory of nursing, as well as attempts at their implementation in nursing practice inspired the present attempt to develop a tool for objective assessment of these two types of care.

The proposed Scale of Patient's and Care Provider's Agency (SPCPA) allows for the objective assessment of self-care as patient's self-care agency, and of non-professional care as the main care provider's agency measured in points. The aim of this study is to describe the tool and to assess its two psychometric properties: reliability and validity. The results of the statistical testing of the SPCPA show that the tool is capable of assessing precisely both the patient's self care agency and of the main provider's caring agency.

Propozycja zobiektywizowanego oceniania samoopieki i opieki nieprofesjonalnej

We współczesnym pielęgniarstwie, jak i jego rozumieniu na poziomie teoretycznym i praktycznym, obok profesjonalnej opieki pielęgniarskiej znaczące miejsce zajmuje samoopieka i opieka nieprofesjonalna, co ma swoje odzwierciedlenie również w założeniach filozoficznych pielęgniarstwa polskiego. Zainteresowanie rodzimego pielęgniarstwa samoopieką i opieką nieprofesjonalną, a w konsekwencji teorią D. Orem oraz próby ich wdrożenia do praktyki pielęgniarskiej, jak również wynikające stąd trudności, stały się inspiracją do opracowania narzędzia służącego obiektywizacji ocen w tych obszarach.

Autorska wersja Skali Wydolności Pacjenta i Opiekuna (SWPiO) stwarza możliwość zobiektywizowanej oceny wskaźnika samoopieki w postaci wydolności samoopiekuńczej pacjenta oraz wskaźnika opieki nieprofesjonalnej – wydolności opiekuńczej głównego opiekuna, wyrażonych w wartościach punktowych. Celem pracy jest zaprezentowanie Skali Wydolności Pacjenta i Opiekuna oraz ocena jej wybranych właściwości psychometrycznych, tj. rzetelności i trafności kryterialnej. Wyniki badań, zmierzające do weryfikacji SWPiO głównie w wymiarze statystycznym, pozwalają sądzić, iż jest to narzędzie precyzyjnie badające zagadnienie wydolności samoopiekuńczej pacjenta i wydolności opiekuńczej opiekuna.