




Nursing based on professional values: selected psychometric properties of the Polish version of the Nurses Professional Values Scale-Three (NPVS-3-POL)

Pielęgniarstwo oparte na wartościach zawodowych: wybrane właściwości psychometryczne polskiej wersji Skali wartości zawodowych pielęgniarek – wersja trzecia

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Medical Studies/Studia Medyczne 2023; 19 (3): 230–237

DOI: <https://doi.org/10.5114/ms.2023.131690>

Key words: nurses, professional values, psychometrics, scale validation, NPVS-3.

Słowa kluczowe: pielęgniarki, wartości zawodowe, psychometria, walidacja skali, NPVS-3.

Abstract

Introduction: The Nurses Professional Values Scale – Third Version (NPVS-3) was originally based on the American Nurses Association's Code of Ethics, which was created in 1985. Measuring professional values among nurses is extremely important, as this is a key factor affecting nurses' work environment and the quality of patient care. Research on professional values will help improve nursing practice at every stage, both in the learning process and during professional work.

Aim of the research: To analyse the psychometric properties and adaptation of the cultural scale (NPVS-3-POL) that is used to assess nurses' professional values.

Material and methods: A cross-sectional survey was conducted among Polish nursing students ($n = 379$), between May 2021 and July 2021. The survey was conducted in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines.

Results: The 28-item model of the Polish version of the NPVS-3 showed an acceptable fit relative to the original version. One item which had a low factor load was removed from the study. Internal consistency of the scale was 0.95, which is a satisfactory result. The Polish version of the NPVS-3 showed good internal consistency, with Cronbach's α values reaching 0.92 for caring, 0.89 for activism, and 0.84 for professionalism.

Conclusions: The Polish version of the NPVS-3 is a reliable research tool, allowing this version to be used to assess professional values among Polish nurses, and to conduct national and international research regarding this important issue.

Streszczenie

Wprowadzenie: Skala wartości zawodowych pielęgniarek – wersja trzecia (NPVS-3) została pierwotnie oparta na Kodeksie Etycznym *American Nurses Association*, który powstał w 1985 roku. Pomiar wartości zawodowych wśród pielęgniarek jest niezwykle ważny, ponieważ stanowi kluczowy czynnik wpływający na środowisko pracy pielęgniarek i jakość opieki nad pacjentem. Badania nad wartościami zawodowymi pomogą udoskonalić praktykę pielęgniarską na każdym etapie, zarówno w procesie uczenia się, jak i podczas pracy zawodowej.

Cel pracy: Analiza właściwości psychometrycznych i adaptacji skali kulturowej (NPVS-3-POL), która służy do oceny wartości zawodowych pielęgniarek.

Materiał i metody: Przeprowadzono badanie przekrojowe wśród polskich studentów pielęgniarstwa ($n = 379$) od maja 2021 do lipca 2021 roku. Badanie przeprowadzono zgodnie z wytycznymi *Strengthening the Reporting of Observational Studies in Epidemiology* (STROBE).

Wyniki: 28-itemowy model polskiej wersji NPVS-3 wykazał akceptowalne dopasowanie w stosunku do wersji oryginalnej. Jedna pozycja, która miała niski ładunek czynnikowy, została usunięta z badania. Spójność wewnętrzna skali wyniosła 0,95, co jest wynikiem zadowalającym. Polska wersja NPVS-3 wykazała dobrą spójność wewnętrzną, przy czym α Cronbacha osiągnęły wartości 0,92 dla troski, 0,89 dla aktywizmu i 0,84 dla profesjonalizmu.

Wnioski: Polska wersja NPVS-3 jest rzetelnym narzędziem badawczym, co pozwala na wykorzystanie tej wersji do oceny wartości zawodowych wśród polskich pielęgniarek oraz do prowadzenia krajowych i międzynarodowych badań dotyczących tego ważnego zagadnienia.

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Introduction

The performance of professional services by nurses is based on current clinical knowledge and a commitment to ethical values. Professional values are rooted in personal values that are shaped by an individual's culture, family environment, religion, and ethnicity [1]. As health care professionals, nurses are guided by important professional values, such as caring, professionalism and activism [2]. Applying these values to nursing practice affects the quality of patient care, increases nurses' job satisfaction, and contributes to retention in nursing and attachment to the organisation [3, 4]. For nursing professionals, values are not only about following moral principles but also about identifying with the profession, being guided by them when caring for patients, and serving as "help" when dealing with difficult situations [5]. Professional values form the basis of nurses' practice in their daily work as they are able to confront what they have learned in college/school with reality. The moral guidance of nursing staff in the workplace facilitates patient contact, delivery of holistic care, and collaboration with colleagues, management, and other health care professions [6]. These professional traits are essential for solving complex problems in healthcare organisations and for enhancing job satisfaction [7]. The first tool to measure nurses' professional values was the Nurses Professional Values Scale (NPVS), which originated from the American Nurses Association Code of Ethics for Nurses with Interpretive Statements, dating back to 1985, and was developed by Weis and Schank [5]. The Nursing Code of Ethics is a document developed by the American Nurses Association (ANA). The code provides guidelines for the ethics and professional conduct of nurses in the United States. It aims to define the core values and standards that should guide nurses in their professional practice. The ANA Code of Nursing Ethics stipulates that a nurse should act with the highest standards of care and work environment, maintaining the dignity, respect and confidentiality of patients, and act within the limits of his or her competence. In addition, the nurse should cooperate with other members of the care team, promote patient rights, develop professionally, act with integrity and fairness, and engage in health promotion and patient protection [8]. The code contains universal nursing values and norms, but their application in other settings may be influenced by cultural, systemic and professional differences.

The scale was transformed into the Nurses Professional Values Scale-Revised (NPVS-R) [9] and then updated to the Nurses Professional Values Scale-Three (NPVS-3) [2]. The NPVS-3 can be used to measure the formation and development of professional values from the study period of nurses through various aspects of nursing work [2]. The latest version of the sur-

vey instrument (NPVS-3) focuses on the three core nursing values – caring, activism, and professionalism.

Caring is the commitment of nurses to administer a holistic form of care and protection to all patient groups without discrimination. Activism emphasizes nurses taking action to advance the profession, and to improve public and global health. Finally, professionalism is an expression of nurses' professional development through continuous self-assessment and education [2].

It is worth emphasizing that this tool can be used not only to assess and develop professional values among nurses but also at any stage of shaping future nursing students [2].

This research tool has been validated and culturally adapted, for example, in Italy [10], Saudi Arabia [11, 12] and Indonesia [13].

Although many scientific publications have proven the importance of professional values among nurses, in their relationship to the overall care of patients, this issue has not been previously researched in Poland with a validated research tool. There is also no research tool available to determine the level of professional values of Polish nurses, as well as to enable further exploration of this topic.

Aim of the research

The aim of the study was to analyse the psychometric properties and adaptation of a cultural scale (NPVS-3) that is used to assess nurses' professional values.

Material and methods

Study design

A cross-sectional online survey was conducted among Polish nursing students ($n = 379$), in spring 2021. The survey was conducted in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines [14].

Study participants and settings

The convenience sampling method was used to select the study group. The following inclusion criteria were adopted: (1) being a nursing student (pursuing a Bachelor's or Master's degree programme) after completing a series of practical classes in a clinical setting, thus having clinical practice experience; (2) granting informed and voluntary consent to join the study; and (3) having access to the Internet.

Research instruments

The questionnaire used consisted of two parts:

1. The original NPVS-3 consisting of 28 items rated on a 5-point Likert scale and requiring the survey participants to indicate a response in five categories

for each item, ranging from A (unimportant) to E (the most important). This survey tool includes three subscales focused on caring (10 items), professionalism (10 items), and activism (8 items). Considering the Code of Ethics of Polish Nurses and Midwives (2003), in the Polish version of the scale, an additional (29th) item was included, which reads as follows: “refusal to participate in the provision of care if it conflicts ethically with one’s professional values”. Prior to the start of the study, approval was obtained from the authors of the tool (NPVS-3) for its use. The Cronbach’s coefficient of internal consistency and a reliability for the original NPVS-3 was 0.94. The possible score range was 28–140. The higher the score, the stronger is the nurse’s focus on professional values [2].

2. The authors’ self-designed questionnaire containing questions on socio-demographic data (e.g., gender, age, place of living or education) to identify the study group.

Translation and cultural adaptation process

The process of translating and adapting the NPVS-3 to Polish conditions was carried out using the International Test Commission Guidelines for Translating and Adapting Tests (International Test Commission, 2017). The NPVS-3 was translated individually by two bilingual Polish speakers from English to Polish. The two translations were then combined into one and assessed by independent expert judges. They reviewed the precision and comprehensibility of the individual questions and the clarity of the instructions accompanying the scale. The next step was the back-translation of the survey instrument from Polish to English by a fluent native speaker of English. The scale structure (item formats, rating scales, scoring categories) was not changed. A pre-validation pilot was conducted on a small group of nurses using the scale to verify the accuracy of translation and comprehensibility of the questions. Results from the pilot study are not included in the study. The pilot study did not provide any new comments on the scale.

Data collection process

The research was carried out in spring 2021. Considering the restrictions on face-to-face contact introduced during the COVID-19 pandemic, the questionnaire was prepared in an online version and was made available via the “Survio” platform. The invitation to this study was sent to the main centres providing nursing education in Poland. In addition, information about the study was shared on blogs, discussion forums and social networks that include content related to health sciences and nursing. The survey reached 865 students, with 379 questionnaires being correctly completed.

Statistical analysis

Statistical analysis was performed using IBM SPSS Statistics package software (version 25). The study used descriptive methods for statistical analysis. The assessment of the relevance of the NPVS-3 was examined using the factor and confirmatory analysis. Principal component analysis (PCA) was chosen to extract factors from the correlation matrix. Varimax rotation was used.

A correlation analysis between the scale factors was also performed using such statistical tests as Pearson’s *r* correlation coefficient, the Mann-Whitney *U* test, Spearman’s rho test and the Kruskal-Wallis test. The Bonferroni correction was applied to standardise the result, which was obtained from multiple tests.

Ethical issues

Participation in the survey was voluntary and completely anonymous. The respondents were provided with information about the purpose, conduction and essence of the study before taking part, as well as being given the opportunity to opt out at any time – that information was included in the introduction to the survey. The implementation of the study followed the approval of the Bioethics Committee at the Medical University of Lublin (ref. KE-0254/289/2020).

Results

General characteristics of the study participants

This survey included 379 people who were studying nursing and/or working in the profession. The vast majority of the respondents were women, who accounted for 95.3% of all the study participants, with a mean age close to 38.4 years (*SD* = 11.34). More than a third of the students came from rural areas (35.1%), and nearly half of the respondents described their marital status as single (41.4%). The vast majority of the respondents were nursing students, studying at a medical school (43.8%) and working in the profession (58.9%). Detailed characteristics of the respondents are shown in Table 1.

Principal component analysis (PCA) and confirmatory factor analysis (CFA)

In order to examine the factor structures of the Polish version of the NPVS-3 (also referred to as the NPVS-3-POL) using the CFA, the assumptions needed to perform a factor analysis were first analysed. The Kaiser-Meyer-Olkin (KMO) measure of the variable selection adequacy was 0.950, while Bartlett’s sphericity test was statistically significant ($p < 0.001$; $\chi^2 = 6519.932$), meaning that the results obtained indicate sample adequacy.

Table 1. Data on the participants ($n = 379$)

Socio-demographic variables	Value	
	M	SD
Age	38.4	11.34
Gender	<i>n</i>	%
	Female	361 95.3
	Male	18 4.7
Place of living	Urban area	246 64.9
	Rural area	133 35.1
Marital status	Single	157 41.4
	Married	131 34.6
	In cohabitation	72 19.0
	Divorced	14 3.7
	Widowed	5 1.3
Subjective assessment of the financial situation	Rather good	297 78.3
	Definitely good	70 18.5
	Rather bad/definitely bad	12 3.2
Year and form of studies	Student of the third year of Bachelor's studies	138 36.4
	Student of the first year of Master's studies	121 31.9
	Student of the second year of Master's studies	120 31.7
University status	Public university	281 74.1
	Private university	98 25.9
Kind of university	Medical university	166 43.8
	Other university	119 31.4
	Higher vocational school	94 24.8
Education mode	Full-time programme	223 58.8
	Part-time programme	156 41.2
Is the respondent employed?	Yes, as a nurse	224 58.9
	Yes, in a profession other than nursing	35 9.2
	No	121 31.9

M – mean, *SD* – standard deviation.

Several criteria were used to determine the number of factors: (a) only those factors that had an eigenvalue of 1 or greater were retained; this method is the most commonly used, its basis being that each principal component should explain at least 1 primary variable; (b) a debris plot was used for visual interpretation, i.e., the identification on the graph of the “inflection point” where the angle of inflection of the curve (“debris”) occurs; this method is somewhat more “liberal” than the earlier method; it allows a slightly larger number of factors to be included in further analysis; (c) the last criterion was that the result should make theoretical sense [15]. A rotation of the factors was carried out, i.e., they were subjected to a linear trans-

formation. This is done to obtain a situation in which each variable has a high charge on only one factor, and each factor has at least some high charges. With this treatment, a set of factors can be obtained that are easier to interpret than the factors originally obtained without rotation. Varimax rotation was used.

Using these criteria, five factors were initially extracted. This solution was not satisfactory, as the fourth factor explained less than 4% of the variance. It is assumed that the total number of factors selected does not include those that do not explain more than 5% of the variance.

The analysis with a forced three-factor solution also included factors that explained more than 5%

Table 2. Load factors for the Polish version of the NPVS-3

Items	Activism	Caring	Professionalism
(27)* Engage in consultation/collaboration to provide optimal care	0.741		
(25)* Promote mutual peer support and collegial interactions to ensure quality care and professional satisfaction	0.721		
(26)* Take action to influence legislators and other policy makers to improve health care	0.717		
(24)* Participate in professional efforts and collegial interactions to ensure quality care and professional satisfaction	0.714		
(23)* Actively promote health of populations	0.626		
(12)* Establish collaborative partnerships to reduce healthcare disparities	0.601		
(8)* Initiate actions to improve environments of practice	0.596		
(11)* Recognise the role of professional nursing associations in shaping health policy	0.565		
(28)* Recognise professional boundaries	0.545		
(17)* Participate in nursing research and/or implement research findings appropriate to practice	0.540		
(10)* Advance the profession through active involvement in health-related activities	0.539		
(7)* Promote and maintain standards where planned learning activities for students take place	0.512		
(20)* Confront practitioners with questionable or inappropriate practice	0.460		
(19)* Safeguard patient's right to confidentiality and privacy		0.767	
(2)* Respect the inherent dignity, values, and human rights of all individuals		0.763	
(3)* Protect health and safety of the patient/public		0.703	
(22)* Practice guided by principles of fidelity and respect for person		0.701	
(15)* Protect moral and legal rights of patients		0.681	
(18)* Provide care without bias or prejudice to patients and populations		0.635	
(21)* Protect rights of participants in research		0.467	
(9)* Seek additional education to update knowledge and skills to maintain competency		0.450	
(5)* Participate in peer review			0.753
(1)* Engage in on-going self-evaluation			0.589
(4)* Assume responsibility for personal well-being			0.569
(6)* Establish standards as a guide for practice			0.542
(13)* Assume responsibility for meeting health needs of diverse populations			0.535
(16)* Act as a patient advocate			0.451
(14)* Accept responsibility and accountability for own practice			0.433

()* – item numbers are taken from the original version of the scale.

of the variance. It was assumed that significant factor loadings must have a value above 0.4. One item, i.e., “Refusal to participate in providing care if it ethically conflicts with one’s professional values”, did not reach the criterion value (0.383) (Table 2). The three-factor solution explained 55.94% of the variance. The original names of the individual factors have been retained.

Factor 1, *ACTIVISM*, had an eigenvalue of 12.82 and explained 44.22% of the variance. That factor consisted of 13 items. Factor 2, *CARE*, consisted of 8 items and explained 6.01% of the variance. Its eigenvalue was 1.74. Factor 3, *PROFESSIONALISM*, had an eigenvalue of 1.37 and explained 5.71% of the variance. It consisted of 7 items included in the questionnaire (Figure 1).

Discriminatory power coefficients for the questionnaire items were high, above 0.4. Item discriminatory power coefficients were 0.601–0.758 for activism, 0.449–0.665 for professionalism, and 0.586–0.762 for caring (Table 3).

Cronbach’s α values for the subscales were 0.923 for activism, 0.892 for caring, and 0.842 for professionalism. The correlations between the subscales were statistically significant ($p < 0.001$), and the strongest correlation was noted between professionalism and activism (0.774). The Cronbach’s α coefficient for the scale was 0.952 (Table 4).

The confirmatory analysis showed the following goodness-of-fit indices of the model to the data: RMSEA 0.061 (below 0.08 means an acceptable fit), CFI 0.91 (above 0.90 is desirable), and GFI 0.89 (above 0.90 is desirable). The indices are, therefore, satisfactory although the GFI score is marginally below satisfactory.

Discussion

Based on a review of the literature and our own knowledge, no validated research tool is available in Poland to assess the level of professional values among nurses. The above study was designed to examine selected psychometric properties of the Polish version of the NPVS-3. The process of cultural adaptation, validation and testing of the psychometric properties of that scale provides an opportunity to eliminate the existing knowledge gaps in this subject area. Of course, this study can be seen as barely preparing the ground for undertaking further, more thorough research on a nationwide scale. This will create a bridge between researchers from all over the world to share experiences and good practices in relation to nurses’ professional values.

Among the essential aspects of the evaluation process of a measuring instrument are two basic elements: reliability and validity [16]. The results obtained in the present study confirm that the Polish 28-item version of the NPVS-3 is a reliable research tool with acceptable psychometric properties. For example, in a validation study of the original version of the NPVS-3, conducted by Weis and Schrank, the factor loadings for individual components of nurses’ professional values ranged from 0.31 to 0.95 [2].

The first factor in the Polish version of the NPVS-3 is activism, which explained 44.22% of the variance. Cronbach’s α for this factor in our study was 0.92, while the corresponding values in the literature ranged from 0.89 to 0.96 [2, 11–13]. First of all, activism is based on the duties of nursing tasks and a sense of responsibility, which is an expression of the activist position of representatives of the nursing community. It is this factor that accentuates the nursing responsibility to society, which contributes to the development of health policies, expanding opportunities to participate in the implementation of global health

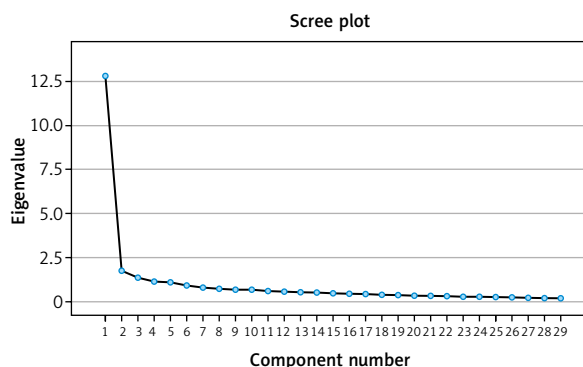


Figure 1. A scree plot for the Polish version of the NPVS-3

Table 3. Discriminatory power coefficients for the questionnaire items of the Polish version of the NPVS-3

Item	Item correlation – overall	Cronbach’s α after removing the item
Item1	0.404	0.954
Item2	0.568	0.953
Item3	0.634	0.952
Item4	0.581	0.952
Item5	0.550	0.953
Item6	0.667	0.952
Item7	0.708	0.951
Item8	0.676	0.952
Item9	0.670	0.952
Item10	0.658	0.952
Item11	0.564	0.953
Item12	0.640	0.952
Item13	0.628	0.952
Item14	0.698	0.951
Item15	0.677	0.952
Item16	0.677	0.952
Item17	0.610	0.952
Item18	0.606	0.952
Item19	0.660	0.952
Item20	0.646	0.952
Item21	0.644	0.952
Item22	0.640	0.952
Item23	0.649	0.952
Item24	0.680	0.952
Item25	0.654	0.952
Item26	0.732	0.951
Item27	0.749	0.951
Item28	0.604	0.952

Table 4. Reliability of the Polish version of the NPVS-3

	Activism	Caring	Professionalism	Overall
Activism	–			
Caring	0.743***	–		
Professionalism	0.774***	0.697***	–	
Overall	0.952***	0.879***	0.885***	–
Cronbach's α NPVS-3-POL	0.923	0.892	0.842	0.952
Cronbach's α NPVS-3	0.912	0.885	0.799	0.944

*** < 0.001 .

strategies. This aspect also includes conducting scientific activity and bridging disparities in access to health care [2]. The Code of Ethics for Nursing and Midwifery in Poland (2023) [17] and the Code of Ethics of the International Council of Nurses (2021) [18] point to the activist attitude of nurses, which is essential to upholding the ideals of the profession and the nurse's role in the health care system. This role is not just about caring for patients but also about nurturing the prestige of the profession, cooperating with other organisations, and developing scientific research in nursing that will contribute to broadening horizons in future practice.

The second most important factor is caring, which explains 6.01% of the variance. Cronbach's α for this component in our study was 0.89, while the corresponding values in the literature ranged from 0.89 to 0.96 [2, 11–13]. This is an element intrinsic to nursing, referred to as the core [19], as it illustrates the nursing staff's commitment to a caring relationship, without bias, with the individual patient, their family or the community at large [2]. The care provided by nurses does not exclude any person on the basis of gender, sexual orientation, age, nationality, political views, religious beliefs, social and economic status, skin colour, different culture, etc. [17, 18].

The third and final factor is professionalism, which explains 5.71% of the variance. Cronbach's α for this component in our study was 0.84, while the corresponding values in the literature ranged from 0.80 to 0.90 [2, 11–13]. This factor refers to the actions of nurses who focus on self-development, inter alia, by expanding their knowledge to guarantee quality care for each patient. In addition, nursing personnel are obliged to represent their profession of public trust in society with dignity [2]. Similar results were obtained by researchers in Arabia [12], where activism led the way, followed by caregiving, while professionalism was in the third place. Identical to that among Arab nursing students [11], a strong correlation (0.77) was found between activism and professionalism, which means that the issue of nurses' active attitude is inextricably linked to their responsibility for providing care to patients, while delivering it at the highest possible level. Being a professional nurse also means work-

ing together as part of the therapeutic team and having a respectful and kind relationship with colleagues, not undermining their trust, being guided by impartiality, with the patient's welfare coming first [17, 18].

The overall internal consistency of the Polish version of the NPVS-3, in terms of Cronbach's α , was high (0.95) and reflected good properties of the scale. In other studies, Cronbach's α for the NPVS-3 ranged from 0.94 to 0.97 [2, 11–13].

This study had several limitations. First, it was conducted during the COVID-19 pandemic, when nurses' perceptions of their professional values may have changed. Another important aspect is that the survey was conducted via an online platform, so access to the survey was available only to those who had access to the Internet and had reached and/or received recruitment information regarding the study. A test-retest of the reliability of the Polish version of the NPVS-3 was not conducted, which was due to the overlap of chronological and logistical challenges during the COVID-19 pandemic.

Conclusions

The results of this study showed that the 28-item Polish version of the NPVS-3 (or NPVS-3-POL) is a reliable tool that is well adapted to cultural conditions and has acceptable psychometric properties. The NPVS-3-POL can contribute to increasing the level of awareness of professional values and ethical attitudes among Polish nurses, and thus can foster the development of such values.

This study may contribute to the dissemination of the NPVS-3-POL to Polish researchers and encourage further exploration of this subject area. This research tool will allow them not only to assess the level of professional values represented by nurses but also to analyse a number of correlating variables, e.g., job satisfaction, ethical climate of the hospital, professional burnout or socio-demographic data. This will allow hospital executives to take action, inter alia, by creating strategies to enable the discovery and development of professional values, which will translate into higher quality of care, satisfaction and motivation to perform professional duties.

Scale-based monitoring of professional values of students, for example, at the end of their education, can indicate those aspects and values that need to be developed or better shaped during education.

Conflict of interest

The authors declare no conflict of interest.

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