**Title:** Nurse Professionalism Scale: Development and Psychometric Evaluation

**Abstract**

Professionalism is a key trait connecting the nurse and patient, and Code of Professional Conduct, a professional legitimacy in considering nursing as a profession and an essential tool that facilitates nurse practice. This study aims to develop Nurse Professionalism Scale and test the psychometric properties. Data were collected through self-report from registered nurses working in various health care settings selected using stratified random sampling and as multi-source feedback from their supervisors and colleagues using the Nurse Professionalism Scale. Reliability estimate of the data collected using the 38 item scalewas .910 (self report), .951 (supervisor feedback) and .952 (colleague feedback). Exploratory factor analysis using self-reports extracted five factors with 22 items. CFA using supervisors and colleague feedbacks yielded acceptable model fit indices confirming the psychometric properties. The scale can be used to evaluate professionalism among nurses across different settings. Multisource feedback from stakeholders can be considered as an effective method of gathering data on this construct.

**Key Words:** Code of conduct; nurses; professionalism; psychometric properties; self report.

**Introduction**

The national estimates indicate shortage of nurses which is further compounded by the international migration of this valuable resource due to varied professional, social and economic reasons. This adds to the non-availability of skilled, standard and quality health services particularly to the under privileged sections in the country.1 Inadequate workforce and deficient quality care further escalates the morbidity and mortality rates in the country further resulting in overburdened workforce. Thus the vicious cycle continues and hampers the progress of nursing profession in the country.

Nurses are perceived as a compliment ‘package’ or ‘quick’ trained caregivers filling up the health provider shortage. However, they are seldom considered while contributing to ideas and views related to client needs or interventions or any form of health care modalities. Also, scenario does not synchronize with the fact that nurses are ‘round the clock’, well-educated health care providers and constitute the largest group of professionals in the health care delivery system. Hence, amidst tremendous development, professionalism among nurses is essential to promote a transition in the profession.2

**Need for the study**

Adams et al.,3 stated that nursing professionalism necessitates nurses to demonstrate definite behavior illustrating beliefs of the profession in terms of knowledge, attitudes and skills signifying professional identity and commitment to the profession. These features are consistent with the characteristics sketched in the “Registered Nurses Association of Ontario-Best Practice Guideline” (RNAO-BPG), ‘Professionalism in Nursing’4 and “Miller’s model” the ‘Wheel of Professionalism in Nursing’.5

Several researchers have developed instruments to explore and or evaluate professionalism among nurses. Miller’s Model or the ‘Wheel of Professionalism in Nursing’ was an extension of Hall and Friedson’s works. Miller also used “The Social Policy Statement, Code for Nurses with Interpretative Statements and recommendations and policies from the American Nurses Association” as a basis for the behaviors represented in the Wheel which served as a guide for every nurse in monitoring professional behavior. Subsequently, Miller et al.,5 developed an evaluative “Behavioral Inventory Form for Professionalism in Nursing” based on the Model which is widely used to evaluate professionalism among nurses.6-9

Several other researchers explored professionalism among nurses using RNAO-BPG6 questionnaire, an adaptation of Registered Nurses Association, Ontario-Best Practice Guidelines,10,11 and “Hall's Professionalism Inventory” scale.12 “The Professionalism and Environmental Factors in the Workplace Questionnaire, was developed based on literature, code of ethics and jurisdictional practice standards.13

Literature on the construct professionalism across various professions revealed that most researchers have described, adopted, adapted or developed instruments based on the professional code of conduct and ethics. Physician Charter on Medical Professionalism is a product of the collaboration between American Board of Internal Medicine Foundation, American College of Physicians Foundation, and European Federation of Internal Medicine. This document highlights the principles and responsibilities fundamental to professionalism in medicine.14,15 Some others have used standards from the “Accreditation Council on Graduate Medical Education”.16,17 The “Code of Ethics for Pharmacists and the American Association of Colleges of Pharmacy” and “The American Council on Pharmaceutical Education Accreditation Standards” describing the attitudinal and behavioural components have been considered in pharmaceutical care.18 “The College of Medical Laboratory Technologists of Ontario’s Code of Ethics and Standards of practice” serve as the foundation of MLT’s professionalism.19 American Bar association and the judicial statements on professionalism serve as the basis for evaluating professionalism among lawyers.20 Hence the researcher felt the need to develop the nurse professionalism scale on the basis of the national code of professional conduct which can be used in a developing country.

This study aims to develop and evaluate the psychometric properties of Nurse Professionalism Scale (NPS) which is based on the Code of Professional Conduct for Nurses in India, framed by the national regulatory body, Indian Nursing Council. The Code serves the interests and needs of the profession and illustrates individual nurse’s professional responsibility and accountability, nursing practice, communication and interpersonal relationships, valuing human being, management, professional advancement. It reminds the nurses about the attempts mandatory towards upholding the profession while providing direct care, teaching students, conducting research, supervision and management. Stakeholders and administrators also contribute to the sustenance and improvement of professionalism among nurses.2 Multi-source feedback is a method of data collection through supervisors, peers and other staff that helps develop a broad gauge of practice patterns. It aims to raise self-awareness regarding performance, seek encouragement and improvement through feedback.21 It can highlight concerns and fuel awareness regarding professionalism among nurses amidst the shortage and the overburdened schedule in developing countries.

**Materials and Methods**

**Development of the Nurse Professionalism Scale (NPS)**

The process followed in the development of the scaleis based on the steps enlisted by Boateng et al.,22 and Carpenter.23

**Phase 1**

**I.1. Item Generation**

Following review of literature, the national Code of Professional Conduct for Nurses in India” consisting of 38 items and six dimensions, was identified as a comprehensive measure to identify professionalism among nurses. The code was reviewed by four nurse educators, two clinical nurses and three management faculty for readability, comprehensiveness and appropriateness of items. It was decided to use the code as a Nurse Professionalism Scale on six point likert scale with 0 as Not Applicable (NA) and from 1=never to 5=always. Two versions of the instrument were created; self-assessment for clinical nurses and multi-source feedback for supervisors and colleagues to evaluate those nurses’ behaviour.

**I.2. Content Validation**

‘A measure has content validity when its items accurately represent the thing being measured’.13 The tool was validated by 16 nursing and 7 health care management experts for relevance and clarity on a 4-point rating scale. The calculated I-CVI and the S-CVI were above 0.9.

**Ethical considerations**

Approval was obtained from the ethical review committee in the government institutions. Written permission was obtained from the authorities of the private and autonomous settings. Informed consent was obtained from the respondents after explaining the purpose, benefits, risks and anonymity and confidentiality assurance.

**Phase II: Scale Development**

**II. 1. Pre-testing**

“Pre-testing helps to ensure that the items are meaningful to the target population before the survey is actually administered”.22 The tool was administered on conveniently selected 55 clinical nurses working in primary health centres. The participants did not indicate any difficulty in providing responses on the tool.

**II. 2. Survey Administration and Sample Size**

The various clinical settings which permitted and had more than five registered nurses were included in the study. Nurses were selected using stratified random sampling. The tool was administered to 1054 registered nurses and their respective supervisors and colleagues personally. To avoid researcher presence bias and considering their demanding work schedule, the participants were given one week period to complete their responses. The data collection period was from April 2018 to October 2018.

Data were collected through self report from nurses and as multi-source feedback from their supervisors and colleagues. A total of 830 self reported data sets, 687 supervisor and 747 colleague responses sheets were received. However, following data entry, the data were checked for missing and incomplete responses and outliers. Complete set of self-supervisor-colleague responses contained in 644 data sheets (Table 1) received from respondents working across different work areas, different levels and different sectors was used for overall analysis. Reliability estimate for internal consistency of the 38 item NPSusing Cronbach αwas .910 (self report), .951(supervisor feedback) and .952 (colleague feedback).

**Table 1. Sample demographics.**

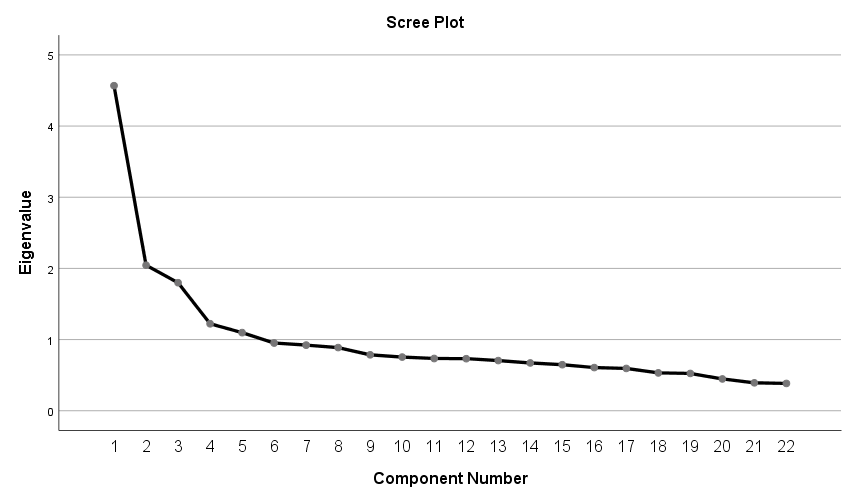
|  |  |  |  |
| --- | --- | --- | --- |
| I | Area of work | Frequency | Percentage |
| 1 | Medicine | 130 | 20.2 |
| 2 | Surgery | 136 | 21.1 |
| 3 | Obstetrics and Gynaecology | 42 | 6.5 |
| 4 | Paediatrics | 88 | 13.7 |
| 5 | Emergency and Intensive Care Unit | 144 | 22.4 |
| 6 | Psychiatry | 28 | 4.3 |
| 7 | Community | 76 | 11.8 |
| Total | | 644 | 100 |
| II | Levels of Health Care | | |
| 1 | Tertiary | 400 | 62.1 |
| 2 | Secondary | 195 | 30.3 |
| 3 | Primary | 49 | 7.6 |
| Total | | 644 | 100 |
| III | Sector of Health Care | | |
| 1 | Private | 151 | 23.4 |
| 2 | Government | 479 | 74.4 |
| 3 | Autonomous | 14 | 2.2 |
| Overall Total | | 644 | 100 |

**Results**

**II.3. Extraction of Factors**

Factor analysis is used to demonstrate the basic goal of obtaining groups of highly inter-correlated variables into distinct factors.24 Exploratory Factor Analysis (EFA) evaluates the construct validity in the initial phase of an instrument development and after an initial set of items have been identified, it is used to inspect the item set underlying dimensionality and the extracted factors explain the maximum variance in the scale. Thus, a large set of items can be grouped into meaningful subsets which measure different factors.25

EFA was performed with the aim to reduce and group items together so that each factor would represent a consistent content area. Factors extracted with Eigen values greater than 1 and items with communalities above .4; which confirms the common variance shared by each measured item with other items of the construct on which it loads were retained. The Scree test which identifies the optimal number of factors which can be extracted in a graphical presentation indicated five factors above one (Fig. 1).



**Fig. 1. Scree test plot indicating extraction of Factors**

Factor loadings of ± .5 and greater are measured as practically significant.24 The factor loadings obtained are between .84 and .5 (Table 2). Four factors are explained by 4-6 items. A two item factor can also be retained and considered acceptable if the items are strongly correlated (r > .70; or >.60) and reasonably uncorrelated with other variable.25,26 Hence the factor with two items (r=.62) was also retained in this study. In social sciences a factor solution accounting for the total variance extracted up to 60 percent,24 or at least 50 percent is acceptable.27 Five factors measured by 22 items explained the total cumulative variance extracted at 51 percent. Kaiser-Meyer-Oklin measure of sample adequacy (MSA) value of .893 indicated sample adequacy. Bartlett Test of Sphericity (BTS) was significant (χ2 = 3318, df= 231, p<.000) and indicated sufficiently large correlations among items.

**Table 2. Item loadings in Exploratory Factor Analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| Factors | Items | | Loadings |
| I | Man9 | Works with patients to identify their needs and sensitizes policy makers and funding agencies for resource allocation. | .771 |
| PA2 | Contributes to the development of nursing practice (by conducting research or trying out new methods of care). | .740 |
| PA5 | Contributes to core of professional knowledge by conducting and participating in research. | .734 |
| MAN8 | Participates in policy decisions related to patient care services. | .687 |
| II | MAN 4 | Facilitates conducive work culture in order to achieve patient care objectives. | .853 |
| VHB 2 | Considers relevant facts while taking decisions in the best interest of patients. | .671 |
| PA1 | Takes responsibility for updating my/her/his own knowledge and competencies. | .585 |
| PRA 8 | Provides adequate information to patients and significant others that allows them to make informed choices. | .570 |
| PA 4 | Ensures the protection of the human rights while pursuing the advancement of knowledge (while conducting research or trying out new methods of care). | .560 |
| MAN 3 | Uses judgment in relation to individual competence while delegating responsibility to colleagues, patients, relatives. | .524 |
| III | NP 6 | Ensures safe practice of care for self and patients. | .708 |
| PRA 2 | Maintains standards of conduct/practice which adds to the respect/status of the profession. | .641 |
| CIR 1 | Establishes and maintain/maintains effective interpersonal relationships with patients and their significant others. | .613 |
| PRA 7 | Takes responsibility for continuous improvement of current nursing care practices. | .580 |
| NP 2 | Treats patients and their significant others with human dignity while providing holistic nursing care. | .561 |
| PA 3 | Participates in determining and implementing quality care. | .517 |
| IV | PRA 5 | Accepts accountability for her/his own decisions and actions. | .709 |
| MAN 1 | Ensures appropriate allocation and utilization of available resources. | .595 |
| PRA3 | Carries out nursing responsibilities within the framework of professional boundaries. | .543 |
| PRA1 | Has a sense of self-worth as a nurse professional and nurtures it. | .516 |
| V | VHB 3 | Encourages and supports patients in their right to speak for themselves on issues affecting their health and welfare. | .781 |
| VHB 1 | Takes appropriate action to protect patients from harmful and unethical practice. | .742 |

**Labelling the factors or the dimensions**

Variables with higher loadings on a particular factor are considered as more significant and more representative of the factor. Hence the factor is labelled with reference to the variable with higher factor loading.24 In this study, factors are labelled considering higher factor loadings. In Factor I, the variable PA2 with highest loading and PA5 are originally from the dimension “Professional advancement”. Items MAN9 and MAN8 reflect development of the profession through working with other stake holders and participating in policy decisions. Hence, the factor is labelled as “ProfessionalAdvancement /Development**”.** InFactor II,two variables with higher factor loadings (MAN4 and MAN3)are originally from the dimension **“**Management”,the variableVHB2reflects decision making which can be considered as a management function. Hence the second factor is labelled as **“**Management”, also includes PA1, PA4 and PRA8**.** Factor III,is majorly a reflection of nursing practice besides having the variable NP6 with the highest loading on that factor, which originally is from the dimension “Nursing Practice”. Factor IV is explained by three variables; PRA5, PRA3 and PRA1, hence the label “Professional Responsibility and Accountability”,is retained as from the original code. Factor V is explained by two variables from the original dimension “Valuing Human Being”.

**Phase III. Scale Evaluation**

**III. 1. Tests of Dimensionality through Confirmatory Factor Analysis**

“Tests of dimensionality determine whether the measurement of items, their factors, and functions are the same across two independent samples or within the same sample at diﬀerent time points. Such tests can be conducted using independent conﬁrmatory factor analysis”.22 Obtaining a good model fit to the data in a different sample supports the factor structure reliability and validity of the scale.25 Confirmatory factor analysis using AMOS version 22 was conducted using the supervisor and colleague feedback data separately. Confirmation of factors is based on the fit indices which range from 0 to 1, and values closer to 1 suggest good model fit.26 SEM researchers advocate .95 as a more desirable level. “Root mean square error of approximation (RMSEA) at or less than .05” indicates secure model fit.25 In this study the model fit indices obtained (CMIN/DF=2.938; RMR=.044; GFI=.926, IFI=.939; TLI=.927; CFI=.939 and RMSEA=.055) for supervisor data and (CMIN/DF=3.165; RMR=.034; GFI=.921, IFI=.923; TLI=.908; CFI=.923 and RMSEA=.058) using colleague data confirmed the factors in the Nurse Professionalism Scale.

**Discussion**

This study aimed the development of “Nurse Professionalism Scale” using the Code of Professional Conduct for Nurses in India, Indian Nursing Council. Exploratory factor analysis using self reported data resulted in five factors. Supervisors’ and colleagues’ feedback regarding the professional behaviours of registered nurses confirmed the items and dimensions. In a similas study, Solomon et al.,11 adapted behaviours from RNAO guideline on a 5 point likert scale which consisted of 34-item and 8 dimensions; Knowledge, Ethics, Accountability, Advocacy, Spirit of Inquiry, Collaboration and collegiality, Autonomy and Innovation & visionary. Exploratory factor analysis, with Principal component analysis resulted in the extraction of a single 6-item latent factor reflecting professionalism. Nursing professionalism mirrors the approach in which nurses analyze their work and serves as a lead in their practice towards ensuring patient safety and quality care.9,28

**Implications**

The code guides and assists nurses at every phase of nursing practice from carrying out responsibilities of prevention of illness, promotion and restoration of health, and alleviation of suffering among individuals, families and communities.It is a vehicle for self and peer-evaluation of the care quality delivered to consumers. It provides ethical framework and standards for practice. Nurses need to be aware of the important professionalism accents, attitude and behaviours that will aid in the formulation of their identity as indispensible health care providers. Multi-source feedback can be considered as an important method in exploring these behaviours.

**Limitations and recommendations**

Self reported data from the respondentscouldinvolve social desirability bias although multisource feedback was obtained. The busy schedule amidst the shortage of nurses and the complexity in the wording of the items could have led to some amount of response error. The study was limited to one geographical region, a similar study in settings outside the state can be conducted. Similar study can be conducted among other professionals. Longitudinal study can be conducted to evaluate the professionalism among nurses overtime.

**Conclusion**

Every practicing nurse is expected to share the responsibility of self-regulation and practice in accordance with the professional standards and code of ethics as these define values and beliefs in nursing profession. The code is viewed as a professional legitimacy for considering nursing as a profession and an essential tool that facilitates nurse practice. The instrument can be used to explore professionalism through individual nurses’ self-reﬂection or as multi-source feedback of professional behaviour within varied practice settings in a developing country like India.

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