

Is there anything nontrivial about caring in nursing that is rigorously measureable?

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Abstract. Is there anything about the well-developed body of theory around caring in nursing that leads towards improved measurement and management? Nursing is primarily practical in character; remarkably, the theory of caring in nursing remains to this day disconnected from practice in fundamental ways. Habermas' developmental theory of moral consciousness, rooted in the work of Kohlberg, supports a theory of caring in nursing as a form of communicative action. The genesis of this connection between caring in nursing and communicative action is deeply rooted in human vulnerability and the need for 'considerateness.' Vulnerability is always present in any human interaction and none more so than in nursing. The theory components were the personal selves of both nurse and patient, the professional self of the nurse, the illness self of the patient and interaction. It is within the latter that moral maturity emerges across pre-conventional, conventional and post-conventional developmental levels. Metrologically, concept analysis of the theory had to be focused by the demands of scale construction on writing testable items. Pilot studies were conducted in three countries; seven subscales were theorized and identified in the data. Cronbach's Alpha was over .85 for all scales, with acceptable model fit. The subscales measure the theoretical constructs in ways utilizable in nursing practice.

1. Introduction

Nursing care is predicated on understanding the lived or subjective experience of the patient and with this knowledge nurses apply appropriate knowledge and skills to alleviate suffering. It is this combination of compassion and practical know-how that is regarded as caring. Caring in nursing is the crux of clinical practice, with both nurse and patient as the key participants in a complicated and complex communicative relationship. Despite its central role in nursing, extensive efforts at measuring the processes and outcomes of caring in nursing [1-2] have to date not generally resulted in practical tools measuring in a well-defined unit, though there have been some successes in other areas of nursing measurement [3].

Recent work frames caring in nursing as a maturational process [4-7], providing a basis for improved measurement that implements advances in developmental psychology [8]. Available data from a survey study of 193 nurses in the US, UK, and New Zealand have the potential for providing initial and provisional cross-sectional insights into nurses' experiences in caring. With record shortfalls of available nurses looming, recruitment and retention of skilled RNs should be a high priority for public and private policymakers, health system and community leaders, and managers of healthcare organizations who want to improve the delivery of healthcare services by reducing unnecessary costs (waste) and increasing efficiency, while maintaining or improving healthcare quality. We manage what we measure, and what counts gets counted; in nursing, fulfilling the demands of caring management requires systematic measurement of the highest quality.



2. Caring in nursing

As a concept, caring in nursing remains ‘murky’ [9]. Paley [10] observed that descriptive studies continue, but also sensed that nothing really new has emerged to move the ontology and epistemology of caring in nursing forward. In recent literature, the foci of caring in nursing has ranged across theoretical constructs [11], ethics [12], caring in nursing education [13], and other areas. There are accordingly many instruments that test caring in nursing [2]. As Watson [2] herself indicates, there has been a tendency not to investigate philosophic issues and questions before developing an instrument but “this collection of caring instruments is a means to bridge opposing viewpoints, dualisms, and conflicting paradigms” (p. 5). The need for a firm philosophical, ontologic-epistemic basis is imperative for construct definition prior to instrument development and testing. Nevertheless each piece contributes to the tapestry of caring in nursing knowledge.

The ideal is not approached without maturation, however. Three stages or levels of development are especially relevant. At Kohlberg’s [14] Pre-Conventional level of moral maturity and Benner’s [15] Novice and Advanced Beginner stages, the nurse who has just begun practice has to synthesize the various forms and areas of knowledge he or she has acquired. Initially, these will be limited to theory and task skills; experiential knowledge can only come with time in practice. He or she has to think through the rules or processes of each step of the skills, as these have not yet become intuitive or instinctive. The practice is ‘by the book,’ with concrete thinking. This nurse tends to be inward thinking, wondering how he or she is going to cope with all the demands being made. Patients are somewhat faceless, they are ‘illness objects,’ depersonalized, and the pre-conventional nurse is not able to see beyond this. The nurse is protective of his or her human vulnerability, which may not be acknowledged, as there is no understanding that the need for considerateness [16] applies to him or herself as well as the patient.

At the middle level of developmental moral maturity the patient is emerging as a total human being for the nurse, who is beginning to identify needs beyond those of the illness and the treatment requirements. Kohlberg [14] refers to this level as Conventional (Level B: Stages 3 & 4) and Benner [15] as Competent & Proficient. The nurse is beginning to have confidence in his or her task performance and is managing the routines of the unit more easily. No longer does the nurse need to think through each step of every procedure and consult a detailed time line for the routine of the day. He or she remains, however, conscious of the need for routine and the relative inflexibility of the organizational policies and regulations, which demands obedience from the nurse. The duties and obligations to the organization are paramount, apparently at the expense of the patient, i.e., medication administration is at set times and the nurse will be questioned if this is not followed. The nurse is unlikely to be unable to reflect on the logic of this or why physician rounds in acute-care hospitals are so early that the patient has to be awakened, when he or she needs the rest.

At the third level, Kohlberg’s Post-Conventional (Level C: Stages 5 & 6) and Benner’s Expert stage, the nurse is now experienced and has synthesized the three areas of knowledge: theory, practice and experience. The nurse has learned how to utilize his or her emotions optimally in the nurse-patient interactions. Rather than having to consciously think through every task and procedure, the nurse is able to think about how to use emotion, which is a different skill. The nurse identifies the patient as a complete human being with both illness self and personal self needs, and he or she knows how to meet both. He or she has developed a high level of competence with associated confidence and comfort in self. ‘Experiential intuition’ [15] has developed, so the nurse can anticipate illness problems and initiate preventive action. The nurse is capable of ‘standing outside’ the interaction and can reflect on what is happening within it, and can consciously steer it in directions where both he or she and the patient are comfortable with the course of treatment. This is not done in a coercive fashion, but rather occurs in ways considerate of the needs and obligations of both. He or she is capable of abstract objective thinking. At this stage the nurse has developed the ability to reflect on what is just and fair within the interaction.

3. Measurement models and methods

Measurement requires the calibration of instruments that are objective in the sense of representing units of comparison that remain invariantly sized and ordered across samples, to within a specified range of uncertainty. What this means in practical terms is that, so far as possible, inferences about autonomous constructs should be framed and expressed in terms that remain constant across the particulars of given data sets. When multiple tests demonstrate the strength of a variable, and its ability to stand alone on its own apart from the questions asked and persons responding, as has been demonstrated for many

psychological constructs, including developmental ones, over many years [8], then a theory becomes a persistently useful tool in predicting the future behavior of a class of phenomena. Commonly employed statistical presentations of summed or averaged ratings presume measurement has taken place when no experimental tests have substantiated the existence of a meaningful, additive unit mapped onto a number line.

Theories and models for each measured construct were developed in relation to a Rasch perspective on the three requirements of axiomatic conjoint measurement theory [17-18]. For the caring in nursing constructs, (1) data from each of the seven scales must approximate unique monotonic functions, (2) the mapped differences between nurses on each scale must be random, and (3) random perturbations must characterize the observations. The additive form of the dichotomous model is:

$$\ln[P_{ni} / (P_{ni}-1)] = B_n - D_i$$

which effectively says that the log-odds of observed success (lack of symptoms or clinical signs) for person n on item i is equal to the difference between the estimate B of person n 's ability and the difficulty estimate D of item i [Rasch, 1980].

A bank of 185 items was developed, 121 of which were related to either the nurse (72) or the patient (49). The remaining 64 items focused on the nurse-patient interaction. Ten demographic items were also included in order to capture not only personal data but also how long a nurse had been in practice, in what specialty and with what educational preparation.

Given the complexity of the theory, it was important to ensure that the items incorporated specific features and that these features were coded appropriately before any data were gathered. For instance, for the nurse's personal self, theoretical features of interest in the items included both positive and negative (a) outwardly expressed emotional characteristics (such as altruism), and (b) inwardly acknowledged emotional characteristics (such as a need to help others), combined with (c) a sense of sharing oneself, to be acknowledged as a human being as well as being a nurse. Each of these features is included, for example, in an item like: "I am passionate about nursing as a profession."

Cognitive processes were included in items involving knowing how to make a patient comfortable, knowing pathophysiology and treatment, and knowing how to practice skills. Some items were coded to reflect both emotion and cognition: "All of who I am wants to get involved in helping the patients." Items involving the nurse's professional self are intended to address the knowledge of the health/illness problems that brought patients to the care of nurses, e.g. the illness or disease diagnosis and its treatment: "When tending to patients I get satisfaction in using my medical diagnosis and treatment knowledge." Practice skills required from the highest technical procedures to the simplest comfort measures are recognized: for example "I know how to make a patient comfortable."

For the nurse items, it is hypothesized that the presentation of the professional self and cognitive factors will come before the presentation of the personal self and emotional factors (i.e., the professional self and cognitive items will garner more agreeable ratings and so calibrate lower on the scale than the personal self and emotion items), and that the integration of professional and personal selves will follow (with these items calibrating highest of all).

For the patient, items had to include the personal self, e.g. "a patient's sense of self is important to him or her," and the illness self, e.g. "the patient knows he or she has illness needs which are not human needs." The illness self items included physical, emotional, social and spiritual needs, e.g. "having emotional needs met is important to the patient" or "having spiritual needs met is important to the patient." From the emotional perspective, items must reflect the patients' needs for control, dignity, trust, and ordinary things notable simply as symbols of an everyday reality formerly taken for granted.

Table
Caring in Nursing Subscale Summary Statistics

Construct	# Items Total/Avg ⁴	Measurement Reliability Alpha/Rasch ⁵ /Separation ⁶	Avg MnSq InFit ⁷ (SD)/Outfit ⁸ (SD)
Caring Identity	44/35	.97/.91-.95/3.2-4.5	1.05(.5)/1.02(.5)
Patient Focus	38/29	.95/.89-.92/2.9-3.4	1.01(.5)/1.01(.5)
Professionalism	11/8	.87/.56-.67/1.1-1.4	1.03(.6)/1.01(.7)
Partnership	29/23	.92/.73-.90/1.7-3.1	1.01(.4)/1.04(.4)
Communicative Mutuality	10/7	.93/.60-.68/1.2-1.5	1.01(.6)/1.00(.6)
Responsibilities of Care	15/12	.86/.55-.61/1.1-1.3	0.98(.4)/0.97(.5)
Nursing Practice	28/21	.93/.84-.88/2.3-2.7	0.99(.5)/1.01(.5)

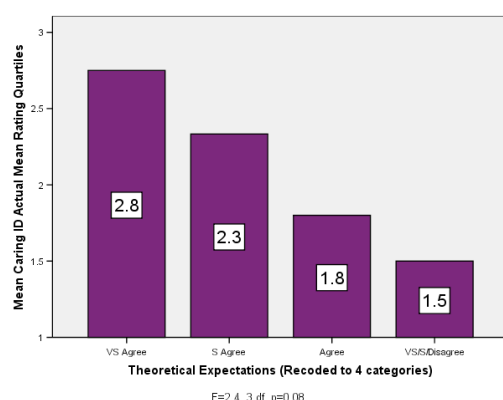


Figure 1. Theoretical vs Empirical Mean Rating Quartiles: Caring Identity Scale

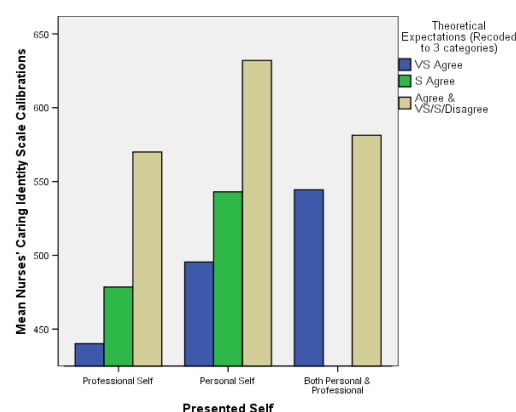


Figure 2. Theoretical vs. Empirical Nurses' Caring Identity Calibrations by Self Categories

⁴ The average number of items responded to differs from the number of items available because two of the three survey forms used included only about two-thirds of the total number of items.

⁵ Rasch reliabilities vary in a range depending on whether or not extreme measures are included, and depending on whether the root mean square error is inflated by outfit, or not. Rasch reliability coefficients are estimated from individual error terms, and so are often more conservative than Cronbach's alpha, which typically underestimates error at the extremes. Alpha is furthermore adversely affected by missing data; about 20-30% of the data in the present study are missing, as not all respondents were administered all items.

⁶ The separation statistic, G, indicates how many ranges in the scale with centers four errors apart (a 99% confidence interval) are defined.

⁷ Information-weighted model fit. A mean square statistic is a chi-square divided by its degrees of freedom. Both InFit and OutFit have expected values of 1.00. The standard deviations are typically more informative than the averages as to overall data quality.

⁸ Outlier-sensitive model fit.

4. Results

The Table shows summary statistics for the seven Caring in Nursing constructs: Caring Identity, Patient Focus, Professionalism, Partnership, Communicative Mutuality, Responsibilities of Care, and Nursing Practice. For each subscale, the Disagree-Agree rating scale was optimized from the original six categories to four. All of the Disagree categories combine to form a single category capturing about 7% of the responses.

Reliability, separation, and model fit, as indicated by the information-weighted and outlier-sensitive mean square statistics, were satisfactory on all scales (see Table). Cronbach's alpha was over .85 for all scales. Results obtained for the Nurses' Caring Identity subscale will serve to illustrate the general quality of progress with the data so far. A lack of resources has prevented development of a complete picture of the functioning of all seven scales, and of the shared multidimensional framework.

Figure 1 shows that the mean rating quartiles correspond with the theoretically expected ratings, with the latter recoded from the original six to four categories in the same way the data were. The observed pattern (observed mean ratings of 2.8, 2.3, 1.8, and 1.5 for Very Strongly Agree, Strongly Agree, Agree, and any Disagree response, respectively) conforms with the theory ($F=2.4$, 3 d.f., $p=.08$).

Figure 2 shows that items theoretically expected to elicit responses in specific categories calibrate on average in the expected order.

5. Conclusions

Cultivating institutional resources in support of the primary mission in nursing, caring, requires methods for identifying, gauging, reporting, and managing the effects of caring on the nurses who provide it. These effects stem in large part from systematic tendencies in the health care system, and among nurses themselves, to foreground cognitive and professional aspects of their identities as nurses, while minimizing and neglecting emotional and personal aspects. Though the nurse-patient relationship is inherently bi-directional, too often nurses do not receive the emotional and personal supports they need to function effectively. Providing nurses and nurse managers with practical information on how moral conceptions of caring in nursing differ across years in service and specialty areas could be an important means of reducing nurse burnout and turnover rates, retaining experienced nurses, and improving the overall quality of care.

Preliminary results from the survey suggest consistent associations between levels of development in moral conceptions of caring practice. The data invite analysis using multidimensional item response models, and deployment via a caring in nursing management system administered in an online environment enabling real time decision supports relevant to (a) more efficiently and meaningfully managing caring in nursing, and (b) to maximizing nurses' capacities for long, satisfying careers. Conclusions as to the developmental nature of caring will, of course, require new research tracking nurses' caring experiences over time, as is the case for any developmental or growth phenomenon [19]. In addition, it will be important in future research to frame maturation in caring in nursing in terms of theory providing more rigorous and decisive explanatory power (such as hierarchical complexity [8]) than can be obtained from the perspective employed in the development of the present caring in nursing survey.

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