Nursing and Technology Research Literatures

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Abstract: The world of health care will increasingly be a world of high technology. Nursing is a professional work within the health care system on the care of individuals, families, and communities so that they may attain, maintain, or recover optimal health and quality of life. Nurses provide care within the ordering scope of physicians. In the postwar period, nurse education has undergone a process of diversification towards advanced and specialized credentials, and many of the traditional regulations and provider roles are changing. In the fifth century BC, for example, the Hippocratic Collection in places describes skilled care and observation of patients by male attendants, who may have been early nurses. If nursing education can address the issue, nurses and their coworkers will have a solid basis to provide high touch with high-tech care. This article introduces recent research reports on nursing and war as references in the related studies.

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1. Introduction

The world of health care will increasingly be a world of high technology. Nursing is a professional work within the health care system on the care of individuals, families, and communities so that they may attain, maintain, or recover optimal health and quality of life. Nurses provide care within the ordering scope of physicians. In the postwar period, nurse education has undergone a process of diversification towards advanced and specialized credentials, and many of the traditional regulations and provider roles are changing. In the fifth century BC, for example, the Hippocratic Collection in places describes skilled care and observation of patients by male attendants, who may have been early nurses. If nursing education can address the issue, nurses and their coworkers will have a solid basis to provide high touch with high-tech care. The troubling distinctions between nursing and technology suggest yet another reason why the construction of difference continues to elude nursing.

The following introduces recent reports as references in the related studies.

Alexander, J. W. and M. Kroposki "Using a management perspective to define and measure changes in nursing technology." J Adv Nurs. 2001 Sep;35(5):776-83.

AIMS: The aims of this paper are to discuss the uses of the concept of technology from the medical science and the management perspectives; to propose a clear definition of nursing technology; and to present a study applying the use of the concept of nursing technology on nursing units. BACKGROUND: Nurse managers must use management terms correctly and the term technology may be misleading for some. A review of the nursing literature shows varied uses of the concept of technology. Thus a discussion of the dimensions, attributes, consequences, and definitions of nursing technology from the management perspective are given. DESIGN: A longitudinal study to measure the dimensions of nursing technology on nursing units 10 years apart. RESULTS: The findings suggest that the dimensions of nursing technology change over time and support the need for nurse managers to periodically assess nursing technology before making management changes at the level of the nursing unit. CONCLUSIONS: This study helps health care providers understand the unique role of nurses as healthcare professionals by identifying and measuring nursing technology on the nursing unit.

Antunes, J. C. and M. A. Nascimento "[The non-nutritive sucking of premature newborn as a nursing technology]." Rev Bras Enferm. 2013 Sep-Oct;66(5):663-7.

This is an experimental study with a quantitative approach, whose goal was to demonstrate that non-nutritive sucking is effective in pain management during installation, by the nursing staff, of nasal CPAP in preterm infants; and to demonstrate that the use of non-nutritive sucking, concomitantly with the installation of nasal CPAP can be considered a nursing technology. The target population consisted of 20 preterm infants undergoing installation or

reinstallation of this artifact, totaling 30 procedures. The newborns were divided randomly into two groups, control and experimental, in which non-nutritive sucking was offered, the same do not happening with the control group. The reactions of pain were measured by the scale of NIPS. In 100% of the procedures that occurred concomitant with non-nutritive sucking, newborns did not feel pain; and 100% of the newborns showed pain when such suction was not offered. We conclude that the procedure can be classified as a technology of nursing care.

Bennett, P. N. "Satellite dialysis nursing: technology, caring and power." J Adv Nurs. 2011 Jan;67(1):149-57. doi: 10.1111/j.1365-2648.2010.05474.x. Epub 2010 Oct 18.

AIM: This paper is a report of an exploration of nurses' perceptions of the quality of satellite dialysis care and how aspects of power that influenced quality nursing care. BACKGROUND: In Australia, the majority of people living with established kidney failure undertake haemodialysis in nurse-run satellite dialysis units. Haemodialysis nurses provide the majority of care, and their perceptions of what constitutes quality nursing care may influence their care of the person receiving haemodialysis. METHOD: A critical ethnographic study was conducted where data were collected from one metropolitan satellite dialysis unit in Australia over a 12-month period throughout 2005. The methods included non-participant observation, interviews, document analysis, reflective field notes and participant feedback. FINDINGS: Three theoretical constructs were identified: 'What is quality?', 'What is not quality?' and What influences quality?' Nurses considered technical knowledge, technical skills and personal respect as characteristics of quality. Long-term blood pressure management and arranging transport for people receiving dialysis treatment were not seen to be priorities for quality care. The person receiving dialysis treatment, management, nurse and environment were considered major factors determining quality dialysis nursing care. CONCLUSION: Aspects of power and oppression operated for nurses and people receiving dialysis treatment within the satellite dialysis context, and this environment was perceived by the nurses as very different from hospital dialysis units.

Jacox, A., B. Pillar, et al. "A classification of nursing technology." Nurs Outlook. 1990 Mar-Apr;38(2):81-5.

In the previous issue, the authors described the process of technology assessment and its implications for nursing. In this article, the authors propose a classification system for nursing technology. They argue that, in the face of competition from other, rapidly proliferating health care professions, such a system is necessary to insure that nurses are acknowledged and adequately compensated for the functions they actually perform.

Leppa, C. J. "Measuring nursing work in long-term care. The reliability and validity of the Leatt Measure of Nursing Technology." J Gerontol Nurs. 1999 Oct;25(10):40-5.

A projected 400% increase in the number of people age 85 and older by the year 2010, with one fourth of them needing nursing home care, forces attention on long-term care. This study establishes the validity and reliability of the Leatt Measure of Nursing Technology (LMNT) as a measure of the nature of nursing work in long-term care settings. The LMNT subscales measure the amount of uncertainty, instability, and variability of work which includes, but is not limited to, the technical equipment used. The LMNT was administered to licensed nursing staff in nine long-term care facilities in the Seattle area to evaluate its use in this environment. The nursing homes represented both for-profit and not-for-profit, and large (more than 250 beds) and small (70 beds) facilities. A total of 113 usable questionnaires were returned (45% response rate). Cronbach's alpha for subscales were .71 for Uncertainty, .66 for Instability, and .56 for Variability, with .77 for the total scale. Construct validity was evaluated by factor analysis, which confirmed the original factor structure. Content validity was evaluated using focus group discussions with key informants at each facility. A comparative analysis was used to determine major and minor themes in each of the instrument subscale topic areas. Qualitative analysis, combined with reliability and item level analyses, resulted in suggested minor changes in the instrument to make it more usable in long-term care settings. While some revisions are suggested, a concerted effort must be made to preserve the ability to compare findings with those obtained using the LMNT in acute care settings by retaining the general structures and factors of the measure.

Lindeman, C. A. "Nursing & technology. Moving into the 21st century." Caring. 1992 Sep;11(9):5, 7-10.

The world of health care will increasingly be a world of high technology. Yet nurses and other home care providers often find themselves struggling to balance the high-tech aspect of their jobs with the caring aspect. If nursing education can address the issue, nurses and their coworkers will have a solid basis to provide high touch with high-tech care.

Sandelowski, M. "Troubling distinctions: a semiotics of the nursing/technology relationship." Nurs Inq. 1999 Sep;6(3):198-207.

I consider the discursive practices that have served conceptually and ontologically to trouble the boundaries between nursing and technology: between nurse/human/subject and machine/non-human/object. Nursing and technology have been semiotically related largely by two processes: (a) by the metaphor that depicts nursing as technology and (b) by opposition, or as not like and even in conflict with technology. Less frequently but no less significantly, nursing and technology have been semiotically linked (c) by the metaphor that depicts technology as nursing and (d) by metonymy, or by word or picture juxtapositions of nursing with technology. The troubling distinctions between nursing and technology suggest yet another reason why the construction of difference continues to elude nursing.

Verran, J. A. and P. J. Reid "Replicated testing of the Nursing Technology Model." Nurs Res. 1987 May-Jun;36(3):190-4.

The purpose of this study was to replicate the testing of a model to explain complexity of nursing care in the ambulatory care setting. The Nursing Technology Model (Verran & Shaw, 1986) has as its theoretical base a sociological perspective of organizational analysis in which technology is viewed as the antecedent to organizational structure. The model includes materials technology as the nature of the ambulatory care client and knowledge technology as the principal type of activities pertinent to nursing care delivery. The characteristics of these technology types were organized into causal paths to explain complexity of care. Two ambulatory care sites were sampled to obtain a client sample of 610 rating sets. Results were essentially similar to earlier research with R2s for complexity indexes at the same level of .34. Only one regression equation evidenced instability in regression coefficients and the R2. Analysis of findings indicated that other variables, such as some aspects of structure, may need to be further specified in the model in order to increase its explanatory power.

The above contents are the collected information from Internet and public resources to offer to the people for the convenient reading and information disseminating and sharing.

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