

Title:

Exploring the Invisible Work of Nurses and How Cognitive Load Influences Hospital-Based Nursing Practice

Laura Anne Vasel, MSN

College of Nursing, Georgia Baptist College of Nursing of Mercer University, Atlanta, GA, USA

Session Title:

Rising Stars of Research and Scholarship Invited Student Posters

Keywords:

Invisible work of nursing, clinical decision making and cognitive load

References:

Ayres, P., & Paas, F. (2012). Cognitive load theory: New directions and challenges. *Applied Cognitive Psychology, 26*, 827-832.

Clancy, T. R., & Reed, L. (2016). Big data, big challenges: Implications for chief nurse executives. *Journal of Nursing Administration, 46*, 113-115.

Dal Sasso, G. M., & Barra, D. C. (2015). Cognitive workload of computerized nursing process in intensive care units. *CIN: Computers, Informatics, Nursing, 33*, 339-345.

Ebright, P. R. (2010). The complex work of RNs: Implications for health work environments. *OJIN: The Online Journal of Issues in Nursing, 15*(1). <http://dx.doi.org/10.3912/OJIN.Vol15No01man04>

Ebright, P. R., Patterson, E. S., Chalko, B. A., & Render, M. L. (2003). Understanding the complexity of registered nurses work in acute care settings. *Journal of Nursing Administration, 33*, 531-538.

Endacott, R., Scholes, J., Cooper, S., McConnell-Henry, T., Porter, J., Missen, K., ... Champion, R. (2012). Identifying patient deterioration: Using simulation and reflective interviewing to examine decision making skills in a rural hospital. *International Journal of Nursing Studies, 49*, 710-717.

Guarironi, M., Petrucci, C., Lancia, L., & Motta, P. C. (2015). The concept of care complexity: A qualitative study. *Journal of Public Health Research, 4*, 588.

Josephsen, J. (2015). Cognitive load theory and nursing simulation: An integrative review. *Clinical Simulation in Nursing, 11*, 259-267.

Kalisch, B., Landstrom, G., & Williams, R. (2009). Missed nursing care: Errors of omission. *Nursing Outlook, 57*(1), 3-9.

Neill, D. (2011). Nursing workload and the changing health care environment: A review of the literature. *Administrative Issues Journal: Education, Practice, and Research, 1*, 132-143.

Potter, P., Wolf, L., Boxerman, S., Grayson, D., Sledge, J., Dunagan, C., & Evanoff, B. (2005). An analysis of nurses' cognitive work: A new perspective for understanding medical errors. *Advances in Patient Safety: From Research to Implementation, 1*(1), 39-51. Retrieved from <http://www.ahrq.gov/sites/default/files/wysiwyg/professionals/quality-patient-safety/patient-safety-resources/resources/advances-in-patient-safety/vol1/Potter.pdf>

Sitterding, M. C., & Broome, M. E. (2015). *Information overload: Framework, tips and tools to manage in complex healthcare environments*. Silver Spring, MD: American Nurses Association.

Abstract Summary:

This poster presentation will explore the invisible work of nurses in hospital based settings. Factors such as work complexity contributions, and increased cognitive load will be presented to illustrate how it influences nurses' clinical decision making.

Learning Activity:

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
The learner will be able to describe potential factors influencing the cognitive load of nurses in nursing practice.	Provide a framework illustrating the factors identified in the literature as contributing to increased cognitive load and the increased complexity of nursing practice.
The learner will be able to recognize the importance of the invisible work of nursing and how it may influence quality and safety outcomes.	Describe the formation of modern day nursing practice as it relates to the increase use of technology, information, and increased complexity of care resulting in complex clinical decision making and episodes of missed nursing care.

Abstract Text:

Over the past two decades, many changes have occurred in health care delivery services, and as a result, nursing practice has evolved. Changes such as the increase in the number of pharmaceuticals on the market that nurses must safely administer, how diagnostic testing is more prevalent and complex, the shortened patient length of stay, and the exponential growth of technology at the bedside in the patient care settings result in a complex practice environment. Nurses now rely on technology to inform clinical decision making on patient care units with increased patient acuity and complex clinical scenarios. Nursing workload in acute care is affected by many different factors, some of which are easily measured such as the number of admissions, patient census, procedure, turnover, or age of clients. There are also factors that are not as easy to quantify with a direct impact on nursing workload in acute care including the cognitive work of nursing (Neill, 2011). Literature suggests an increased cognitive load may adversely affect decision making in educational or simulated practice settings. Cognitive load refers to the total amount of mental effort being used in the working memory, and is comprised of germane load, extraneous load, and intrinsic load. Whereas the cognitive work of nursing refers to the organizing, prioritizing, and making decisions in nursing practice which comprises a nurse's cognitive load. This cognitive work, or invisible work, of nursing has many implications for the development of healthy work environments. The volume and rate of information at any given time during an average shift for a direct care nurse varies greatly, with a nurse processing 1,800 data points per patient per day in the average intensive care unit. The impact of increased cognitive load on nurse fatigue, attention, and information interpretation is remarkable and may produce inattentive blindness resulting in patient care errors (Sitterding and Broome, 2015). Patient safety research has focused on staffing ratios, education levels of RNs, and the health care environment. We do not have an understanding of the factors that impact nurses' cognitive workload and how it impacts clinical decision making and patient safety. Possible factors identified in the literature include information overload, interruptions, intentional omissions of care, communication inconsistencies, lack of time, cognitive shifts, cognitive stacking. Through this process of cognitive stacking, the nurse continuously adapts to and copes with challenges in care delivery related to prioritization, ordering of care needed, as well as managing competing organizational and personal goals in the context of a complex work environment. Nurses have also reported that personal, environmental, administrative, system and technology factors, as well as autonomy and control factors, all contribute to

how cognitive load is managed (Kirchbaum et al., 2007). Nursing clinical judgment can drive care in a perfect linear world, however we do not know what transpires to influence clinical judgments about care in a complex health care environment, also referred to as the invisible work of nursing. Understanding the cognitive work of nursing and how increased cognitive load affects nurses will elucidate factors on how the cognitive load can be reduced or managed effectively. While quality and the safety continue to be on the forefront of health care initiatives, no attention has been paid to the effect of increased cognitive load of nurses. Understanding the cognitive work of nursing is essential to achieve the intended patient care outcomes including quality care, and safe patient outcomes in a healthy work environment (Ebright et al., 2003). The nursing profession needs to understand why intended patient outcomes are often not achieved, even with excellent education programs and redesigned healthcare systems. This poster presentation will include a review of the literature related to the cognitive work of nursing in addition to proposing a model based on Sitterding and Broome's (2015) Cognitive Work of Nursing framework.