RESEARCHPOP: ID# 102373

Title: Testing Knowledge Assimilation, Accommodation, and Anticipation in Simulation With Debriefing for Meaningful Learning

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Session Title: Meet the Poster Authors Session
Slot: PST: Friday, March 27, 2020: 2:30 PM-3:15 PM

Abstract Describes: Ongoing Work/Project

Applicable Category: Academic, Students, Researchers

Keywords: Debriefing, Knowledge Testing and Simulation

Abstract Summary:
Assimilation, accommodation, and anticipation are components of judgment, reasoning, and metacognitive thinking. Two instruments were revised to measure assimilation, accommodation, and anticipation with nursing students in different simulation scenarios. This educational activity will present psychometric properties of each instrument and plans for continued testing.

References:
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Abstract Text:

Purpose:
In 2016, Adamson and Rodgers found that simulation results in superior student learning outcomes when compared to other teaching strategies, yet measuring learning remains challenging. Pretest-posttest evaluation of a change in knowledge about the nursing care for a specific patient is often tested with teacher-created instruments despite the recommendation testing knowledge be conducted with psychometrically evaluated instruments (O'Donnell et al., 2014). Content validity, a nonstatistical form of validity establishing the questions were in the same content domain is commonly reported (McDonald, 2014; Waltz, Strickland, & Lenz, 2017) yet, many studies of simulation learning fail to report the use of psychometrically tested questions (O'Donnell et al., 2014). Testing knowledge through the lens of assimilation, accommodation and anticipation may provide instruments which can assess learning in simulation across scenarios or diagnoses. Therefore, the purpose of this study was to investigate the stability of the psychometric properties of the Knowledge Assessment Scale (KAS) and Knowledge Application Scale (KAPS); objective instruments which measure student's ability to assimilate, accommodate and anticipate following simulation.
According to **Researcher** (2009), assimilation is a defining attribute of debriefing and assimilation, accommodation and anticipation not only represent the expert nurse (Benner, 1984) but also the reflective practitioner (Schön, 1983). Assimilation, accommodation and anticipation are components of judgment, reasoning, and metacognitive thinking; the distinguishing factors of expert nurses (Benner, Stannard, & Hooper, 1996; **Researcher**, 2009). Debriefing for Meaningful Learning (DML) is one theoretically-derived and evidence-based method that emphasizes assimilation, accommodation and anticipation.

Two instruments were revised to assess knowledge specific to assimilation, accommodation and anticipation with nursing students who participated in different simulation scenarios. The original Knowledge Assessment Scale (KAS) and the Knowledge Application Scale (KAPS) were developed to test a single specific patient diagnosis and associated nursing care. Criterion and norm referenced validity were established through the use of item difficulty, item discrimination, and measures for instrument sensitivity to the intervention. Reliability was established through test-retest reliability and the tests were found as moderately stable over time. For this study, those instruments were revised to become blueprinted questions that could be formulated to fit a variety of diagnoses and clinical situations. The KAS contains items based on the

main concept of the simulation, while the KAPS contains similar items that test anticipation. Psychometric properties of both were tested.

Methods:
Following IRB approval, 450 traditional prelicensure nursing students from five BSN programs in the USA taking an adult health course were invited to participate in this study. Participants, took the KAS pretest, experienced a simulation with DML debriefing as an existing part of their curriculum and then took the KAS/KAPS posttest immediately following. Four weeks later, they completed the KAS/KAPS again to examine knowledge retention.

Results:
The psychometric properties of the instruments and the statistically significant findings from the student responses are in progress and will be presented.

Conclusion:
Implications for use within nursing education and the importance of the contribution of these instruments to the discipline will be discussed along with future plans for continued testing of the instruments.