Development and Validation of An Instrument to Measure Surgical Conscience in Operating Room Nurses

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Background

Operating room safety violations and adverse events remain a serious threat to surgical patients (Goldenberg & Elterman, 2020; Zahiri et al., 2011).

According to the Agency for Healthcare Research and Quality (2019), surgical site infections occur in 2-4% of surgical patients annually, and approximately 3% of patients who contract a surgical site infections will suffer death consequently. It is estimated that up to 60% of these infections are avertible by using evidence-based guidelines (Mengesha et al., 2020).

Surgical conscience is defined as the knowledge of the principles of aseptic technique, infection control, and safety and is supported with constant awareness of surroundings, self-awareness, and self-evaluation to maintain sterile integrity (Quintana, 2022). Upholding surgical conscience involves ethical and moral decision making and an obligation to speak and act with courage to benefit the patient (Quintana, 2022).

30-40% of operating room nurses felt mentally stressed during surgical procedures, possibly due to the high-risk environment, the high potential for adverse events, and concerns about teamwork performance (Sonoda et al., 2018). The stress that operating room nurses experience has the potential to hinder their performance, prevent them from exercising surgical conscience, and thereby negatively effect surgical outcomes (Sonoda et al., 2018).

Problem

There are gaps in the literature regarding surgical conscience and no tool to measure the concept could be found.

Studies designed to explore the impact of surgical conscience on surgical outcomes could not be found in the literature.

The ability to measure surgical conscience is a fundamental step in the process of formulating targeted interventions to improve surgical conscience and may help shed light on the disconnect between the standards of care and adverse outcomes.

The ability to formally measure surgical conscience can help formulate a better understanding of facilitators of safer operating room practice.

Purpose

The purpose of this quantitative methodological study is to create, administer, and psychometrically validate an original instrument called the Surgical Conscience Scale with the population of operating room nurses in the United States.

This research will also attempt to reveal if there are any relationships between the national certification status of operating room nurses and level of surgical conscience in a convenience sample of the population.

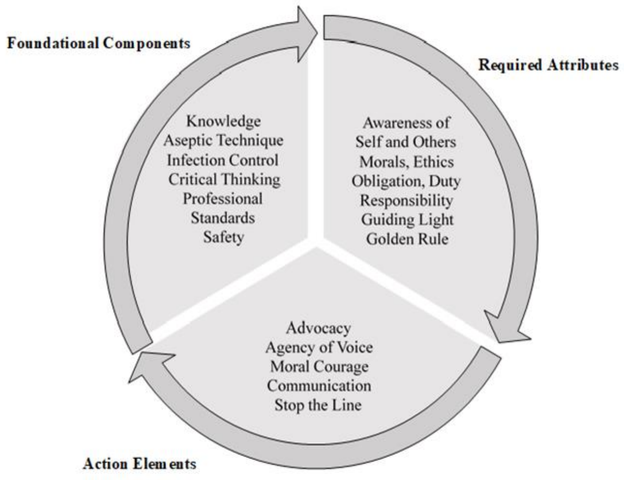
Conceptual Framework

According to the Quintana (2022) the three dimensions of surgical conscience are:

1. Foundational Components: a knowledge base of principles of aseptic technique, sterility, infection control, intellectual ability, and critical thinking skills.
2. Required Attributes: ethics, morals, self-awareness, and awareness of others, self-regulation, obligation, responsibility, accountability, and duty.
3. Surgical Conscience in Action: advocacy, agency of voice, communication, moral courage. The concept of surgical conscience is illustrated in an endless circular flow of components, with no true start or end.

The process of acquiring surgical conscience is regenerative in this design, rather than linear, and aims to demonstrate that the use of surgical conscience can improve and strengthen with practice and each new use of the cycle.

Quintana (2022) Model of Surgical Conscience



Research Questions

The Surgical Conscience Scale will be developed for the purpose of answering the following research questions:

1. What is the validity of the Surgical Conscience Scale?
2. What is the reliability of the Surgical Conscience Scale?
3. What are the differences in surgical conscience in operating room nurses based upon certification status?

Design

The population of this study is a cross-sectional sample of operating room nurses in the United States who are English-speaking and are 18 years of age or older. The survey will be sent directly from the AORN to a randomized list of potential participants. Participants will also be recruited from various individual chapters of the AORN as part of a convenience sample.

Essential steps required to develop the instrument will be followed according to Elliot et al. (2001) who suggested to begin with a review of literature followed by development of initial item pool. Next, there will be two rounds of content validity and a pilot study to test feasibility. The Perceived Perioperative Competence Scale-Revised (PPCS-R; Gillespie et al. 2012) will also be administered simultaneously with the Surgical Conscience Scale to serve as a source to assess convergent validity.

Methodology

Two rounds of testing will be needed to fully examine the validity of the instrument. An exploratory factor analysis (EFA) will be conducted with a sample size of at least 300 participants (Nunnaly and Bernstein [as cited in Polit & Beck], 2017; Clark, 2005).

Survey items will be adjusted, modified, or deleted as needed and the revised survey will be administered to a second group, a new sample of perioperative nurses using the methods described earlier. The goal will be to have at least 150 participants partake in the study for this round (Kyriazos, 2018).

The second wave of data collection will be necessary to perform a confirmatory factor analysis (CFA) to confirm if the items fit against the hypothesized theoretical structure in round two of data collection.

Data Analysis

The Kaiser- Meyer-Olkin (KMO) measure of sample adequacy and Barlett's test for sphericity will detect suitability for structural analysis. An exploratory factor analysis (EFA) with principal axis factoring (PAF) and rotation will be conducted. Confirmatory factor analysis (CFA) will be used in the second wave to confirm or disconfirm any structural patterns found. Reliability will be analyzed with Cronbach's alpha. Additional item statistics, inter-item mean correlation, and item total correlation will be analyzed and reported. Descriptive statistics will include frequencies, means, and standard deviations will be obtained for the items, subscales, and total scale.

A regression analysis will be performed to answer Research Question 3, which looks to see if there is a correlation between certification status and surgical conscience level. The Pearson (1948) product-moment correlation coefficient (r) will be used since this is suitable for when there is one continuous variable (Surgical Conscience Scale score) and one dichotomous variable (certified or non-certified nurse).

Conclusion

The phenomenon of surgical conscience is important to study since the consequences for not practicing it can be detrimental to patient safety and surgical outcomes.

This study was proposed to address the lack of a reliable instrument to assess perioperative nurse's perceived level of surgical conscience and the newly developed Surgical Conscience Scale, an original instrument, was created for this study.

The Surgical Conscience Scale can be used as a self-assessment tool, to help operating room nurses identify areas of strength or limitation regarding their surgical conscience.

References

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