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Original research

Improving interprofessional collaboration: Evaluation of implicit attitudes in the surgeon–nurse relationship☆

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HIGHLIGHTS

- The relationship between surgeons and nurses is important for delivering high quality patient care.
- Factors such as gender and demeanor can influence interpersonal and interprofessional relationships.
- Implicit beliefs drive individual behavior.
- Nurses have an implicit preference for communal surgeons.
- Nurses do not have a significant preference for surgeon gender.

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ABSTRACT

Background: Optimizing the surgeon–nurse relationship to improve interprofessional communication is increasingly recognized as an essential component of patient care. The increasing number of women surgeons has altered the surgeon-nurse dynamic, which has traditionally been a male–female relationship. In particular, this shift has raised the issue of whether implicit perceptions regarding gender and demeanor influence the interactions between surgeons and nurses. Therefore, the purpose of this study was to understand nurses' implicit perceptions of surgeons, with a particular focus on gender and gender-normative demeanor. We defined two types of demeanor: communal, which is classically associated with women and includes being supportive and nurturing, and agentic, which is a male-associated trait that includes being direct and assertive. **Methods**: We administered surveys to 1701 nurses at the main campus of our institution. Each survey had one of eight possible scenarios; all began with a short description of a surgeon who was described as accomplished and well-trained, then varied by surgeon gender (male/female), surgeon demeanor (agentic/communal) and type of surgery (breast cancer/lung cancer). Using a 0 to 5 scale, respondents rated their perception of the surgeon through five questions. These five items were averaged to create a composite perception score scaled from 0 to 5. **Results**: We received 493 surveys. The overall average perception score was 3.8 ± 0.99. Respondents had a statistically significant preference for the communal surgeon (4.1 ± 0.91) versus the agentic surgeon (3.6 ± 1.0, $p < 0.001$). There were no significant main effects of surgeon gender or surgery type. **Conclusion**: Nurses demonstrated a significant preference for communal surgeons, regardless of surgeon gender.

1. Introduction

A growing body of evidence indicates that a large percentage of patient care errors are due to poor communication between healthcare professionals [1–4]. Communication failures in

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multidisciplinary health care teams have been attributed to silo teaching of individual professions [5]. Accordingly, recent advances in health care education increasingly incorporate interprofessional activities to improve collaboration between professions [6]. The success of these initiatives, however, is ultimately contingent upon the attitudes of individuals involved, as it is these attitudes that form the scaffold for interprofessional collaboration [7].

Individuals approach a subject or a situation with both "explicit" and "implicit" attitudes. Explicit attitudes operate on a conscious level and are largely controlled by the individual, while implicit attitudes are subconscious and are considered to be an automatic thought process [8,9]. It has been demonstrated that people can simultaneously hold opposing explicit and implicit views of the same object [10], and that much of our behavior is actually driven by implicit attitudes that are not under direct rational control [11]. Common subjects of implicit bias in the health care field include race, gender, social status, and age [11]. These biases manifest in healthcare professionals' interactions with patients as well as each other.

The surgeon-nurse interaction occurs in many hospital settings including the operating room, the intensive care unit, and the inpatient wards, and is influenced by factors including profession-specific training, gender, and demeanor. The traditional surgeon–nurse relationship was a patriarchal, male–female relationship. However, the increasing number of female surgeons has altered these dynamics. This shift is particularly pronounced when these women demonstrate behavioral characteristics that are typically associated with surgeons: as a group, surgeons have been characterized as more resolute and unempathetic than their non-surgical physician colleagues [12]. This surgeon-specific behavior conflicts with society's behavioral expectations for women, which include demonstrating behavior that is supportive, nurturing, and team-oriented. Research in similarly male-dominated fields such as business and engineering has suggested that women who display this stereotypical demeanor may experience sociocultural penalties due to discordance with gender-normative behavior [13–15]. These cultural stereotypes promote implicit assumptions about traits and behaviors of men and women, assumptions that are not captured in traditional surveys regarding explicit opinions of the doctor–nurse relationship [16–21]. However, these subtle biases have been shown to influence workplace dynamics and decision-making [22,23] and are therefore important to assess when evaluating the interprofessional relationship between surgeons and nurses. The purpose of this study was to examine nurses' implicit perceptions of surgeons. In particular, we aimed to investigate whether nurses held an implicit preference for surgeon gender, gender-normative demeanor, or type of surgery.

2. Materials and methods

This study was based on a previous investigation conducted at our institution between June and August 2012 [24]. Institutional Review Board approval was obtained prior to the initiation of the present study.

2.1. Participants and setting

Our survey was administered to registered nurses employed by inpatient nursing units, the operating room, and the Emergency Department at the main campus of our institution. There are 2242 nurses employed at our main campus and 1876 (83.7%) are female. Nurse managers were instructed to administer the survey to their staff at staff meetings or in the staff lounges across a two-week period. Eligible respondents were registered nurses who could read English and who voluntarily agreed to complete the survey.

2.2. Questionnaire

Our questionnaire was based on scenarios used in a series of studies conducted by Rudman et al. in which participants answered eight questions using a 1 (not at all) to 6 (very much) scale regarding the competence, likeability, and hireability of female and male job applicants [25]. All reliability indices (competence, likeability, hireability) generated were >0.81. Dusch et al. adapted this metric into a five-question survey to generate a preference index ($\alpha = 0.86$) to assess patients' implicit perceptions of surgeons [24]; our survey similarly assessed implicit perceptions of surgeons using this questionnaire. Respondents read one of eight possible scenarios that began with a short description of a surgeon who was described as accomplished and well-trained. The scenarios varied by surgeon gender (male/female), surgeon demeanor (agentic/communal) and type of surgery (breast cancer/lung cancer) (Appendix). Male and female surgeon gender was varied to assess implicit gender bias. Agentic demeanor, which includes being assertive and independent, is stereotypically associated with men and traditionally male-dominated occupations such as surgery; conversely, communal demeanor, which includes being supportive and nurturing, is classically associated with women [26–29]. These types of demeanor were described using phrases derived or adapted from Rudman's original studies [25]. These demeanor traits were varied to evaluate for an implicit demeanor bias or an interaction between surgeon gender and surgeon demeanor. Breast cancer and lung cancer surgeries were chosen because they are both relatively common surgeries, but likely have different associations with technical difficulty and severity. The patient was designated as the respondent's mother. We wanted the assessment of the surgeon to be slightly removed from the individual respondent to encourage objectivity and minimize explicit biases that nurses might bring to an evaluation of surgeons based on previous workplace interactions. After reading the scenario, respondents were then asked to complete a short survey.

2.3. Measures

Respondents answered five questions using a rating from 0, "not at all" to 5, "very much". The five items asked the respondent to rate how competent the surgeon was, how much the surgeon possessed necessary skills, how likeable the surgeon was, how likely they would be to choose this surgeon, and how likely the surgeon would be to report a possible error during surgery [30]. The respondents also completed demographic items related to gender, age, prior surgical history, primary work setting, primary attending, highest nursing degree received, years of nursing experience, and whether they had relatives who are surgeons.

2.4. Statistical analysis

Our five-item surgeon perception scale had a reliability (α) of 0.85, indicating that responses to each individual item were related and that the items made a consistent set. As a result, we summed the five items and divided by five to create a composite perception score scaled from 0 to 5 per Dusch et al. [30]. We obtained descriptive statistics of percentages and means to describe our respondents and their perceptions. We used analysis of variance and correlation coefficients to determine association of perception with various demographic.

We conducted a univariate analysis of variance using the general linear model procedure. We studied three main effects: type of surgery, gender of surgeon, and demeanor of surgeon and we had a single dependent variable, nurses' perceptions. This generated 7 F statistics when considering all main effects and interactions.