Nursing Grand Rounds as a Medium for the Continuing Education of Nurses

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The grand rounds forum has been used for decades by the medical profession, yet only sporadically used in nursing. When grand rounds are employed, knowledge can be disseminated on a consistent basis. No literature was found detailing the effectiveness and value of such programs. This article describes a small pilot study that assessed the effect on knowledge and the perceived value of a nursing grand rounds (NGR) format. To measure these two concepts, those who attended the inaugural NGR presentation were given a posttest and an assessment survey 1 year after the presentation. The posttest focused on key concepts presented, and the survey rated perceived value and knowledge on a scale from 1 (strongly disagree) to 5 (strongly agree). Results demonstrated positive knowledge acquisition and a high perceived value. This assessment review lends support to the use of institutional NGR as a means of continuing education and professional advancement.

Abstract

Grand rounds are an educational technique used by the medical profession, yet only sporadically used in nursing. When grand rounds are employed, knowledge can be disseminated on a consistent basis. No literature was found detailing the effectiveness and value of such programs. This article describes a small pilot study that assessed the effect on knowledge and the perceived value of a nursing grand rounds (NGR) format. To measure these two concepts, those who attended the inaugural NGR presentation were given a posttest and an assessment survey 1 year after the presentation. The posttest focused on key concepts presented, and the survey rated perceived value and knowledge on a scale from 1 (strongly disagree) to 5 (strongly agree). Results demonstrated positive knowledge acquisition and a high perceived value. This assessment review lends support to the use of institutional NGR as a means of continuing education and professional advancement.

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SIDEBAR 1

METHEMOGLOBINEMIA POST-NURSING GRAND ROUNDS MULTIPLE-CHOICE TEST

1. What is the principal pathology of methemoglobinemia?
   a. Hemoglobin will have a higher affinity for carboxyhemoglobin than oxygen.
   b. Hemoglobin has been oxidized to a ferric state, preventing hemoglobin from carrying oxygen.
   c. There is no change in the atomic structure of hemoglobin during methemoglobinemia.
   d. Hemoglobin has been oxidized to a ferrous state, creating a higher affinity for oxygen.

2. What are the definitive characteristics of someone who has methemoglobinemia?
   a. Bright red arterial blood, abnormally low PaO₂, cyanosis, and resistance to oxygen therapy.
   b. Chocolate-colored arterial blood, abnormally low PaO₂, cyanosis, and a good response to oxygen therapy.
   c. Chocolate-colored arterial blood, abnormally high PaO₂, cyanosis, and resistance to oxygen therapy.
   d. Bright red arterial blood, no cyanosis, lethargy, and low SpO₂.

3. What is the most appropriate therapy for someone who has methemoglobinemia?
   a. Removal of the offending agent and administration of methylene blue.
   b. Removal of the offending agent and administration of lidocaine.
   c. Administration of nitroglycerin.
   d. Removal of the offending agent and administration of sulfonamides.

life-threatening pathology that results from the use of commonly used oxidizing agents. Thus, there is an increased need for nurses to increase their knowledge and understanding of the signs, symptoms, and treatment of methemoglobinemia (Wolak et al., 2005). It was for this reason that the inaugural NGR presentation for this institution was the case presentation of this unique, but clinically relevant pathology.

Despite the challenges presented by the current nursing shortage, the exponentially growing body of knowledge within health care mandates some form of continuing education for practicing nurses (Jeffries, 2005). A growing body of literature suggests that consistent educational opportunities, such as NGR presentations, are associated with increased professional conduct and overall improved patient outcomes (Bibb, Malebranche, Crowell, & Altman, 2003; Tang, 2003; Vaughn, 2003). Thus, this format was started through the institution’s nursing education department infrastructure on a monthly basis. However, despite the intuitive advantages of this technique, there remains a lack of understanding regarding the effectiveness and value of grand rounds.

Due to the uniqueness, yet applicability of the aforementioned pathology, the authors were curious as to whether the case presentation resulted in knowledge acquisition by the audience. An extensive literature search in the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and PubMed revealed a large volume of grand rounds topics, but no literature relating to the effectiveness of this type of forum. Thus, a pilot study was performed with the purpose of assessing the effect of NGR on the audience’s knowledge base. Also, the study assessed the perceived value of NGR by the audience. Ultimately, the primary goal of this pilot project was to quantify the effectiveness, if any, grand rounds has on knowledge dissemination and education. The data and information obtained add to the growing body of evidence-based practice as it pertains to nursing education and teaching.

METHOD FOR ASSESSING NURSING GRAND ROUNDS AS A FORUM FOR EFFECTIVE LEARNING

The Institutional Review Board of the academic center approved this study. Inclusion criteria included registered nurses at this institution who had attended the inaugural NGR presentation, entitled “Methemoglobinemia in a Burn Patient: A Case Presentation.” The pilot study was designed to assess knowledge acquisition and perceived value of NGR by the audience members. Because this pathology is so rare and unique, the assumption was made that audience baseline knowledge was nonexistent.

To assess the amount of knowledge acquisition, a three-question multiple-choice test was developed (Sidebar 1). This multiple-choice test was designed to focus on the core concepts of methemoglobinemia. Topics specifically included were principal pathology, definitive diagnostic characteristics, and appropriate therapy and management. It was determined by the researchers that a score greater than 67% would signify knowledge acquisition (Table). This score was determined to be significant because it would require study participants to answer two of the three questions correctly.

To measure and assess the perceived value of this forum, a 5-point assessment survey was developed. This tool consisted of seven items that targeted participant perceived value and perceived knowledge gained from attending the presentation. Perceived value was defined as perception of quality that renders something desirable, and perceived knowledge acquisition was defined as the increase in a body of information (Jeffries, 2005). This measurement tool was developed based on expert
face validity and was reviewed by staff and administrative leaders to increase content validity. To quantify these concepts, each item in the assessment survey was rated according to a scale that ranged from 1, representing strong disagreement, to 5, representing strong agreement. Questions targeting perceived value and perceived knowledge were designed by interviewing nurses and through clinical observation. The seven items were divided into two groups concerning perceived value (items 1, 5, 6, and 7) and perceived knowledge (items 2, 3, and 4), allowing objective measurement of these concepts (Sidebar 2).

Once these concepts were quantified for the assessment survey, operational definitions were identified based on assigned values. A mean score greater than 3 on each question, in conjunction with a summative mean score greater than 21, was determined by the researchers to represent positive perceived value and knowledge of the NGR forum.

This project was conducted 1 year after the first institutional NGR presentation. This time frame was designed to filter out short-term retention of information and the immediate bias of perceived value that can occur after the introduction of a new product, a new idea, or, as in this case, a new format for the dissemination of information. Furthermore, the pathology of this presented case report is so rare and specific that prior knowledge of methemoglobinemia by the study participants would be highly unlikely. This provided a good assessment of what study participants had learned. The roster of participants in this particular NGR presentation was obtained from the Department of Nursing Practice, Education, and Research within the institution. Registered nurses from the roster were sent letters of intent as study participants through interdepartmental mail along with the three-question multiple-choice test and the assessment survey with return instructions.

### LEARNING OUTCOMES AND EVALUATION

Of the 55 participants listed on the sign-in roster from the inaugural NGR presentation, entitled “Methemoglobinemia in a Burn Patient: A Case Presentation,” 49 had identifiable signatures. Of the 49 packets mailed, 14 responses were received with completed information, for a response rate of 28.5%. The educational background of study participants ranged from diploma-prepared to master’s-prepared registered nurses. Of the respondents, six were staff nurses, five were nurse educators, and three were nurse administrators. The mean nursing experience of the study respondents was 17.6 years ($SD = 10.6$).

To measure knowledge acquisition with this format, the returned three-question multiple-choice test was scored. The mean score of the multiple-choice test was 81% ($SD = 30.1$). Of the 14 respondents, 9 received a score of 100%. Three of the 14 received a score of 67%. Thus, 12 study participants (86% of the study population) met or exceeded the established operational definitions (Figure and Table). Furthermore, the mean score of the multiple-choice test was above the established
operational definition of greater than 67%, signifying knowledge acquisition.

The survey designed to assess perceived value had an overall mean score of 26.7 (SD = 4.3), with scores per survey ranging from 17 to 28, indicating that overall value was perceived as strong. The mean score for each response was 3.8 (SD = 0.9), with average responses ranging from 3.1 to 5.0, on a scale of 1 (strongly disagree) to 5 (strongly agree) [Table and Sidebar 2]. Items that focused on the conceptual framework of value (items 1, 5, 6, and 7) had a mean score of 4.2 (SD = 0.7). This is between the value placement of “strong” and “very strong” per the assessment tool (Sidebar 2), indicating that the study participants believed that the NGR presentation was important and worthwhile. Items that focused on the conceptual framework of perceived knowledge acquisition (items 2, 3, and 4) had a mean score of 3.3 (SD = 0.98). This was between the value placement of “neutral” and “strong” (Sidebar 2), indicating that there was a perceived increase in knowledge acquisition using this teaching style format.

DISCUSSION

With the exponentially growing knowledge base required in today’s health care environment, new strategies are needed to ensure continuing education among nursing staff (Jeffries, 2005). Within the medical profession, a grand rounds forum has become a cultural ritual. This format of presentation enhances the dissemination of specific pathologies and topics of discussion within the developing literature and provides an environment in which peers can collaborate and share ideas (Munroe & Lash, 2005). Despite all of these positive components, this format has not become a hallmark within the nursing profession. Possible reasons for this lack of a formalized program include scarce resources, the progressing nursing shortage, and increasing patient acuity and demands (Kramer & Schmalenberg, 2005). However, various modalities to ensure the dissemination of the developing knowledge base are paramount in today’s dynamic health care environment (Rutherford, Leigh, Monk, & Murray, 2005). NGR presentations are a valuable way in which this can be accomplished.

The results of this pilot study demonstrate that the NGR forum potentially enhances the continuing education of nurses. This is shown by the results of the three-question multiple-choice test. Methemoglobinemia is an infrequent complication, with an occurrence rate of 0.115% (Novaro et al., 2003). Due to the rarity of this pathology, it was assumed that participants had no previous knowledge of methemoglobinemia. This assumption was supported on the demographic section of the assessment survey in which participants were asked if they had heard of or seen this pathology before. All study participants indicated that they had never heard of or seen methemoglobinemia before the inaugural NGR presentation. Despite having no previous knowledge of methemoglobinemia before this presentation, study participants did well on the three-question multiple-choice test taken 1 year after the presentation (Table and Figure). Sixty-five percent of the study participants (9 of 14 respondents) scored 100% on the multiple-choice test. Twenty-one percent of the study participants (3 of 14) scored 67%, missing only one question. Only 7% (1 of 14) missed two questions, for a score of 33%, and only 7% (1 of 14) missed all questions (Figure). The finding that an overwhelming majority of study participants achieved a high score on this test demonstrates a high level of knowledge retention. Also, the average score on this test was 81% (SD = 30.1), which exceeded the established operational definition of an average score of greater than 67% (Table).

The results of the assessment survey support the framework of perceived value and perceived knowledge attainment through NGR. This is evident by the survey assessment tool results. There was a strong perceived value in this grand rounds format, with an overall score of 26.5 (SD = 4.3), which exceeded the established operational definition of a score of 21 (Sidebar 1). Also, nurses’ perceptions of value (items 1, 5, 6, and 7) regarding this NGR presentation were positive, as shown by an average score of 4.2 (SD = 0.7).

Item 7 of this survey (Sidebar 2) had a moderately low score of 2.8. This statement focused on the effect the topic had on clinical practice. Despite this statement’s low rating, although the participants had not encountered the presented pathology, understanding of this information, as with other NGR topics, is likely to enhance clinical practice if and when encountered. Although the perceived knowledge gained (items 2, 3, and 4) was moderate, with an average of 3.3 (SD = 0.98), it is important...
to note that the majority of study participants performed well above expectations on the multiple-choice test (Table and Figure). Item 4 on the assessment survey had a low score of 2.2. This statement targeted the relevance of the presented information. This low relevance rating could be attributed to the uniqueness of the presented pathology. However, although the condition is rare, the implication of this NGR topic is relevant to all clinical areas of nursing. This condition’s rarity and its clinical applicability throughout nursing are the main reasons why it was chosen as the inaugural NGR presentation at our institution. Furthermore, all operational definitions for perceived value and knowledge were met and exceeded.

Although this study demonstrates positive findings, it has significant limitations. Primarily, this study is limited due to the relatively small sample size ($N = 14$). Also, although the intent of this study was to assess NGR as a whole, the assessment survey spoke to only the first of the monthly NGR presentations. Finally, some of those who completed the survey may have had a vested interest in this particular case presentation, potentiating increased knowledge retention on this topic, thus potentially skewing the study results.

Despite these limitations, this study shows an important aspect of nursing and the need for consistent, well-designed educational programs. Important features of a profession are the ability to collaborate, discuss ideas, and intellectually challenge peers (Munroe & Lash, 2005). The use of the NGR format achieves these goals and truly encourages peer discussion and review. Furthermore, given the complexity of health care and nursing science, holding monthly NGR presentations facilitates the continuing education of nursing within a practice setting. Ultimately, and perhaps most importantly, this can translate to improved patient care and outcomes.

The Department of Nursing Practice, Education, and Research is an approved continuing education provider by the state’s Nursing Association. Consequently, all NGR presentations are approved for 1 contact hour of continuing nursing education.

**IMPLICATIONS**

There is an increasing body of literature focusing on evidence-based practice of nursing education. This pilot study adds to this growing body of evidence. Although this assessment focused on one specific presentation, the information provided in this article offers insight for institutions and those involved with staff development. The presented topic offered an ideal means with which to assess NGR presentations globally. Although rare, with an incidence of 0.115%, methemoglobinemia is an iatrogenic consequence of commonly used medications in both inpatient and outpatient settings. This combination of rarity and applicability throughout health care offered a unique opportunity to assess knowledge acquisition and rate perceptions. Furthermore, this project offers other institutions a means by which to assess similar programs. This assessment focused on one presentation; however, the same process can be used with multiple presentations so that collected data can reflect the effectiveness of NGR presentations more accurately.

The NGR program developed within the study institution provides an opportunity for staff nurses to learn interesting topics relevant to their practice. Although all nurses are invited and encouraged to attend these sessions, only bedside staff nurses are permitted to present topics. This aspect is crucial to the professional growth and development of bedside nurses. Furthermore, by limiting presenters to bedside clinicians, two fundamental objectives are achieved: (1) topics presented will be more applicable to other bedside clinicians; and (2) those presenting increase their own professional contributions to the nursing knowledge base and to the profession as a whole.

The latter objective is imperative in terms of bedside nurse staff development and Magnet designation. This distinction is awarded by the American Nurse Credentialing Center to hospitals that demonstrate the highest level of professional nursing standards and provide the best patient care. As part of Magnet status, not only must continuing education be a primary focus, but also the development of staff into nursing professionals is a priority. This NGR format enhances the achievement of both goals. Since the inception of this program, two of the NGR presentations have been developed into ar-

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**key points**

**Nursing Grand Rounds**


1. The use of grand rounds for the dissemination of recent clinical and research-based information is a universal practice that is assumed to be effective.

2. A nursing grand rounds program that focuses on staff nurse presentations provides an opportunity for bedside clinicians to grow and develop professionally.

3. This pilot study provides a means to assess the use of nursing grand rounds as a forum for effective teaching and learning.
Articles and published in professional journals and many others have been presented at professional conferences as either oral presentations or poster presentations. Quantitative results of this study and anecdotal information provide support for the establishment and maintenance of an NGR forum throughout all health care institutions.

As mentioned previously, this study is limited by the small sample size. However, no research-based evidence of the effectiveness of NGR presentations was found in the literature. Thus, this article provides a way to assess the use of NGR as a forum for effective teaching and learning. Despite the data provided, more research is needed in this area.

REFERENCES


