# **Quantitative Nursing Study Critique**

# **Abstract**

This study assessed nurses’ level of knowledge regarding inadvertent hypothermia, including its contributing factors, impacts, and prevention as well as treatment modalities in the perioperative setting. The study found variations in the definition of hypothermia and normothermia by nurses. Moreover, the nurses could identify the preventative or limiting factors of maintenance of normothermia, such as room temperature and overexposure. In general, the nurses demonstrated a good knowledge of the contributing factors to hypothermia and its prevention strategies. However, the study concluded that there is a need for further education and the development of evidence-based clinical guidelines to increase nurses’ knowledge about hypothermia and guide practice in perioperative settings.

**Introduction**

The study “Nurses’ Knowledge of Inadvertent Hypothermia” by Hegarty *et al*. (2009) examined the level of understanding of nurses to identify and manage accidental hypothermia in the perioperative environment. The authors acknowledged that inadvertent hypothermia is a common problem in perioperative setting affecting 60% - 90% of patients. Hypothermia has adverse impacts on patient outcomes and healthcare costs due to the prolonged hospital stay and further tests (Hegarty *et al*., 2009). These effects of hypothermia can be prevented if nurses have adequate knowledge of hypothermia that would enable them to prevent its occurrence and manage it effectively if it occurs. Therefore, it is important for perioperative nurses to have a good understanding of inadvertent hypothermia that occurs in perioperative environments. Due to limited knowledge on this area, Hegarty *et al.* (2009) investigated the level of perioperative nurses’ knowledge to assess, treat and prevent accidental hypothermia in the perioperative settings.

**Research Question (s)**

Even the authors did not state a clear research question for their study, it could be deduced from their statement that they wanted to answer the following research question (s): What is the level of nursing knowledge in regards to accidental hypothermia in perioperative setting? What are the factors that may limit perioperative nurses’ ability to maintain normothermia in their patients in perioperative setting?

**Purpose of the Study**

The study aim was to “gain an understanding of perioperative nurses’ knowledge in relation to accidental hypothermia in the perioperative settings” (Hegarty *et al*., 2009, p. 701). This, in turn, would help in designing the appropriate interventions for augmenting and improving the knowledge of nurses about the management of hypothermia. The study findings would also contribute to the limited research evidence on nurses’ knowledge of hypothermia in the perioperative environment and the nursing practice in general.

**Methods**

The study employed a quantitative, cross-sectional design of descriptive nature to investigate the nurses’ level of understanding of unintentional hypothermia in the perioperative setting. The participants were drawn from the 198 delegates who had attended the National Annual Conference of the Irish Anesthetic and Recovery Nurses Association that was held in Waterford City, Ireland on October 13, 2007. The investigators recruited the participants from this population using convenience sampling method. Thus, there was no sample size calculation, randomization, and power analysis. The questionnaire survey package adapted from different questionnaires by Macario and Dexter (2002) and Evans and Kenkre (2006) was used to collect the data. Included were two demographic questions, nine questions assessing nurses’ knowledge, and a 23-item Likert scale for risk factors intraoperative hypothermia development (Hegarty *et al*., 2009, p. 707). Two expert perioperative nurses evaluated the content validity of the survey tools before their application. The 23-item Likert scale for hypothermia risk factors a satisfactory content validity with Cronbach’s α of 0.876. Moreover, its item-total correlations for each item were all greater than 0.3.

The participants filled the surveys during the conference and dropped them in a sealed box for collection at the end of the conference. The relevant clinical research ethics committee approved the study and participation was voluntary. Agreeing to complete the questionnaire was considered as informed consent. The researchers also ensured the anonymity of the patients and kept the collected data confidential.

**Data Analysis**

Version 15, 2007 of the Statistical Package for the Social Sciences (SPSS) was used to analyze the data that was first coded. The individual responses to all close-ended items were reported by frequencies and percentages. On the other hand, full transcription was used for responses to all open-ended items. Finally, the emergent themes were identified from the responses review and ordinal recoded.

**Results**

Of the 198 sample, 130 completed the survey representing a 67.5% response rate. The majority of the participants had more than four years of working experience in the perioperative setting with most of them (36.9%, n=48) working in two or more of the areas including anesthetic nursing, intraoperative nursing, and recovery nursing most of the time. Moreover, a greater percentage of the participants (45.4%) were registered general nurses (RGNs) followed by perioperative nursing postgraduate registered nurses.

The study found that the nurses could not confidently define hypothermia and normothermia despite being experienced and having high educational qualifications. They showed a marked variation on the cut-off for hypothermia and definition of normothermia. However, the participants demonstrated an in-depth understanding of the contributing factors to hypothermia. Lastly, surgeon preference was identified as the major factor that hinders the nurses from maintaining normothermia in perioperative patients.

**Limitations**

The findings may not be generalizable because the participants were obtained from professionals who had attended a conference and could be assumed to be knowledgeable. The study also had a small sample size that may not be representative of all perioperative nurses. The study also does not establish a correlation between knowledge and practice due to its descriptive nature. Finally, the cross-sectional design limits monitoring of outcome (nurses’ knowledge) over time as it is assessed at one point in time.

**Discussion**

Despite the finding that perioperative nurses are knowledgeable about the contributing factors to hypothermia and its preventative interventions, the study identifies serious gaps in the management of hypothermia. The finding that the nurses cannot confidently define hypothermia and normothermia suggests they are not likely to identify inadvertent hypothermia in the perioperative setting. This could result in deleterious effects of hypothermia, such as increased risk of infections, coagulopathies, and mortalities in patients (Hegarty *et al*., 2009).

The lack of adequate knowledge about hypothermia could be attributed to several factors. Some of these factors highlighted by patients Hegarty *et al*. (2009) include lack of standard definition of hypothermia and preventative methods in the literature. On the other hand, hindering factors such as surgeon preference could also be an obstacle to knowledge application by the perioperative nurses. Interventions, such as standardized clinical guidelines and continuing education for nurses could help to address these problems and promote nurses’ knowledge and ability to prevent and manage hypothermia among perioperative patients.

**Implications for Practice**

This research reveals the need for clinical guidelines for the management of hypothermia in the perioperative environment to promote nursing practice based on high-quality evidence.

**References**

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