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Medical-Surgical Nurses' Perceived Self-Confidence and Leadership Abilities as First Responders in Acute Patient Deterioration Events

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MEDICAL-SURGICAL NURSES' PERCEIVED SELF-CONFIDENCE AND LEADERSHIP ABILITIES AS FIRST RESPONDERS IN ACUTE PATIENT DETERIORATION EVENTS

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Running head: ACUTE PATIENT DETERIORATION

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ABSTRACT

Objective: To explore and understand medical-surgical nurses' perceived self-confidence and leadership abilities as first responders in recognizing and responding to clinical deterioration prior to the arrival of an emergency response team.

Background: Patients are admitted to hospitals with multiple, complex health issues who are more likely to experience clinical deterioration. The majority of clinical deterioration events occur on medical-surgical units and medical-surgical nurses are frequently the first healthcare professionals to identify signs and symptoms of clinical deterioration and initiate life-saving interventions.

Design: A prospective, cross sectional, descriptive quantitative design using a survey method was used.

Methods: Nurses were recruited from an integrated healthcare system located in the southeast United States. Nurses completed a demographic, a self-confidence, and a leadership ability questionnaire.

Results: One hundred and forty eight nurses participated in the study. Nurses felt moderately self-confident in recognizing, assessing, and intervening during clinical deterioration events. In addition, nurses felt moderately comfortable performing leadership skills prior to the arrival of an emergency response team. A significant, positive relationship was found between perceived self-confidence and leadership abilities. Age and certification status were significant predictors of nurses' leadership ability.

Conclusion: Although nurses felt moderately self-confident and comfortable with executing leadership abilities, improvement is needed to ensure nurses are competent in recognizing patients' deterioration cues and making sound decisions in taking appropriate, timely actions to

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rescue patients. Further strategies need to be developed to increase nurses' self-confidence and execution of leadership abilities in handling deterioration events for positive patient outcomes.

Relevance to clinical practice: Educational provisions should focus on various clinical deterioration events to build nurses' self-confidence and leadership abilities in handling clinical deterioration. Nurses should obtain national certification to increase their knowledge and clinical reasoning skills.

Keywords: acute patient deterioration, medical-surgical nurses, self-confidence, leadership abilities

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What does this paper contribute to the wider global clinical community?

- Patients are admitted to hospitals with multiple, complex health issues who are more likely to experience clinical deterioration.
- Nurses were only moderately self-confident in recognizing, assessing, and intervening during clinical deterioration events, and were only moderately comfortable in performing leadership skills prior to the arrival of an emergency response team.
- To ensure best outcomes for patients, healthcare organizations need to conduct baseline assessments of nurses to identify areas needing improvement in assessment skills, recognition, knowledge, leadership abilities, and self-confidence in clinical deterioration events on a routine basis.

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**MEDICAL-SURGICAL NURSES' PERCEIVED SELF-CONFIDENCE AND
LEADERSHIP ABILITIES AS FIRST RESPONDERS IN ACUTE PATIENT
DETERIORATION EVENTS**

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Patients enter healthcare organizations with the trust and assumption that nurses are trained and competent to detect early warning signs of acute clinical deterioration and have the self-confidence and leadership abilities to respond and intervene with appropriate actions. Nurses perform patient care within a very complex and ever changing practice environment that at times can be unpredictable requiring the effective use of critical thinking skills to make quick, appropriate clinical decisions in crisis situations. Patients are admitted to healthcare organizations with multiple, complex health issues who are more likely to experience an acute patient deterioration (APD) event during their hospitalization (Bright *et al.* 2004). Acute deterioration can happen at any time during patients' hospitalization. Patients are especially vulnerable following emergent admissions, after surgery, or during recovery from critical illness (Beaumont *et al.* 2008). The majority of APD events occur on medical-surgical nursing units (Cohn *et al.* 2004, Peters & Boyde 2007) and medical-surgical nurses are frequently the first healthcare professionals to identify signs and symptoms of clinical deterioration and initiate life-saving interventions (Gombotz *et al.* 2006). Therefore, medical-surgical nurses play a pivotal role in assessing, recognizing, and intervening in a timely manner to secure fast, efficient, and effective resources and treatment for patients experiencing acute deterioration. Although nurses recognize the presence of physiological abnormalities indicating acute deterioration, nurses are reluctant to initiate basic life support interventions or activate rapid response teams (Considine & Botti 2004). Nurses' non-actions may be linked to fear of making wrong-decisions, initiating

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3 false alarms, or the desire to handle the situation in the early phase (Cioffi 2000a, Cioffi *et al.*
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6 2006).

LITERATURE REVIEW

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10 Early warning signs often precede acute deterioration events including cardiac arrest,
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12 unplanned admission to critical care, and unexpected death (Buist *et al.* 2004, Fuhrmann *et al.*
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14 2008, Hillman *et al.* 2001, Kause *et al.* 2004), but patients with early warning signs are not
15
16 always identified, and those who are identified are not always addressed in a timely manner
17
18 (Hillman *et al.* 2005, Thompson *et al.* 2008). Failure to recognize and manage deterioration of a
19
20 patient's condition in the early stages, such as changes in vital signs, is a common theme
21
22 throughout the literature that leads to cardiac and respiratory arrest in hospitalized patients
23
24 (Institute of Healthcare Improvement [IHI] 2012, Laurens & Dwyer 2011). Multiple, complex,
25
26 and overlapping factors have been identified as reasons that healthcare professionals fail to
27
28 recognize and respond appropriately to acute patient deterioration. These factors include but are
29
30 not limited to nurses' lack of knowledge and skills, inconsistent monitoring or detecting vital
31
32 signs changes, delays in notifying medical staff of the signs of deterioration, failure to seek
33
34 prompt assistance, failure to communicate with other staff, and lack of clarity about roles and
35
36 responsibilities (Cioffi *et al.* 2006, Endacott *et al.* 2007, Hillman *et al.* 2001, National Patient
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38 Safety Agency 2007).
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46 Organizational, cultural, and individual factors influence nurses' help-seeking behaviors
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48 during acute patient deterioration events. Several qualitative studies have explored nurses'
49
50 experiences of decision-making, cue recognition, assessment, and communication during acute
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52 deterioration events (Cioffi 2000a, Cioffi *et al.* 2006, Minick & Harvey 2003). Cioffi *et al.*
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54 (2006) and Cioffi (2000a) found that nurses felt uncertain about notifying the rapid response
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3 team (RRT) for fear of making a wrong decision and calling the RRT for a false alarm.
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5 Additionally, nurses have a desire to deal initially with patient problems in the early stages
6
7 resulting in delayed treatment. Furthermore, Cioffi *et al.* and Cioffi (2000a) found higher
8
9 workload and complexity of the work environment decreased time for nurses to think about and
10
11 analyze changes in vital signs resulting in delayed responses to deteriorating patients. Minick and
12
13 Harvey (2003) found three themes describing ways of knowing that enable the early recognition
14
15 of acute deterioration by medical-surgical nurses: knowing the patient directly, knowing the
16
17 patient through family, and knowing something is not as expected. Cioffi (2000a) and Cioffi
18
19 (2000b) identified four patient characteristics that nurses used when calling the RRT for
20
21 “concerned about patient” criteria: feeling ‘not right’, color, agitation, and small or no changes in
22
23 observations.
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29 Cox *et al.* (2006) explored factors that influenced the experiences of nurses on general
30
31 wards caring for critically ill patients. Five themes emerged from the data: clinical environment,
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33 professional relationships, patient assessment, nurses’ feelings, and education needs. Reliance on
34
35 machines and being distracted by other patients impacted nurses’ abilities to assess deteriorating
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37 patients. In addition, professional relationships emerged as an important factor in obtaining help
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39 to support acute deteriorating patients. Feelings of panic and anxiety in handling acute
40
41 deteriorating patients varied among nurses with varying levels of self-confidence that influenced
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43 their reactions or inactions. The importance of ongoing education was identified to assist with
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45 skill acquisition and knowledge of body system changes that would warrant nurses’ immediate
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47 attention.
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53 Endacott *et al.* (2007) found that nurses relied heavily on vital signs to identify patient
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55 deterioration, followed by changes in the patient’s activity level. In addition, the researchers
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found that assessment practices by nurses were influenced by patient location, time of day, symptoms/condition of patient, and expertise of the nurse.

Very few quantitative studies have been conducted examining nurses' recognition and response to acute patient deterioration (Cooper *et al.* 2011, Murphy & Fitzsimons 2004). Cooper *et al.* (2011) conducted a simulated study that examined rural nurses' abilities to assess and manage patient deterioration using measures of knowledge, situation awareness, and skill performance. The researchers found that knowledge levels varied in range from 27% to 91% with a mean score of 67%, situation awareness and skill scores were low with nurses missing important observations and actions, and nurses did not use a systematic approach to patient assessment.

Murphy and Fitzsimons (2004) conducted an intervention study to determine the effectiveness of an immediate life support course (ILS) on the skill performance of nurses in future cardiac arrest events. The performance skills evaluated were the use of a defibrillator and inserting a laryngeal mask airway (LMA) during resuscitation. The authors found that nurses' confidence levels waned over time and that ILS training alone was not sufficient in improving nurses' skill performance over time.

Based on current research findings, further research is needed to explore medical-surgical nurses' perceived self-confidence and leadership abilities as first responders during acute patient deterioration events prior to the arrival of a RRT or a cardiac resuscitation team (CRT). In addition, further research is needed to understand medical-surgical nurses' experiences of handling patients in acute deterioration events. Knowledge gained from this study will provide strategies to assist nurses to be more knowledgeable, self-confident, and skilled in leadership abilities in caring for deteriorating patients.

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PURPOSE

The study purpose was to explore and understand medical-surgical nurses' perceived self-confidence and leadership abilities as first responders in recognizing and responding to patients experiencing acute deterioration prior to the arrival of a RRT or cardiac resuscitation team. The research questions were:

- 1) What are the perceived levels of self-confidence and leadership abilities of medical-surgical nurses as first responders in acute patient deterioration events prior to the arrival of a RRT or CRT?
- 2) What is the relationship between medical-surgical nurses' demographic variables (age, years licensed, certification status, and highest nursing degree) and their perceived self-confidence and leadership abilities as first responders in acute patient deterioration events?

THEORETICAL FRAMEWORK

The theoretical framework for this study was Tanner's Clinical Judgment model (2006). The model offers a functional way in understanding the clinical reasoning and judgment of experienced nurses in a clinical setting, and is appropriate in describing their decision-making and actions in recognizing and responding to acute patient deterioration events. The model consists of four steps: noticing, interpreting, responding, and reflection. In the first stage of the clinical judgment process termed "noticing," nurses grasp the situation at hand. **Noticing involves nurses making focused observations and obtaining information from the situation. This step requires nurses to use previous knowledge learned from other sources such as textbooks, assessment protocols, clinical practice guidelines, and previous clinical experiences in order to recognize change in patterns that exist within varying patient situations.** During the

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“interpreting” step, nurses develop an understanding of the situation based on data collected, prioritize nursing actions to be taken, and develop an intervention plan to address the situation. The “responding” step involves nurses taking action and implementing their intervention plan. **In order to respond appropriate, nurse must feel confident in using their clinical skills and leadership abilities to execute appropriate actions.** The final step, “reflection,” is the step where nurses reflect on actions taken and patients’ responses to those actions and evaluate their choices and decisions. Through this evaluation process, nurses gain an understanding of varying situations and determine what works and does not work for application in future situations. **By reflecting on the outcomes of various situations from actions taken, nurses develop a broader knowledge base and increased self-confidence in their leadership abilities to respond to future clinical situations.**

METHODS**Design**

A prospective, cross sectional, descriptive quantitative design using a survey method was used.

Setting and Sample

A convenience sample of nurses working in a five hospital, integrated healthcare system located in the southeast United States was recruited. Inclusion criteria included: a) a medical surgical nurse who provided direct patient care, b) willingness to complete the study questionnaires, and c) 18 years of age and older. With a power of .80, an alpha value of .05, and a small effect of .25, a sample size of 126 participants was needed for the study.

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Instruments

A demographic questionnaire, self-confidence scale, and a leadership ability questionnaire comprised the study instruments. Permissions to use the instruments were obtained.

Self-confidence scale. The 12-item self-confidence scale (Hicks, 2006) measures self-confidence in caring for patients in acute deterioration. Four dimensions are measured: a) accurately recognizing a change in patient's condition, b) performing basic physical assessments, c) identifying basic nursing interventions, and d) evaluating the effectiveness of interventions during acute deterioration. The items are rated on a Likert response scale ranging from 1 (not at all confident) to 5 (very confident), with higher scores indicating greater self-confidence. Internal consistency reliability has been demonstrated by the instrument's author with Cronbach's alphas of 0.93 and 0.96. The responses to all items on the questionnaire were summed for a total score for each participant.

Leadership ability questionnaire. The 8-item leadership ability questionnaire was derived from Gordon and Buckley's (2009) 14-item questionnaire that measures technical and non-technical skills of nurses responding to a crisis situation. For this study, only the non-technical subscale items were used to measure nurses' leadership abilities during acute patient deterioration events. The items are rated on a Likert response scale ranging from 1 (not at all) to 4 (a great deal), with higher scores indicating greater perceived leadership abilities. Internal consistency reliability has been demonstrated by the instrument's author with Cronbach's alphas of 0.94 and 0.91 for the instrument. The responses to all items on the questionnaire were summed for a total score for each participant.

Protection of Human Subjects

Prior to beginning data collection, approval for the study was obtained from the healthcare system's Nursing Research Committee and an Institutional Review Board (IRB). An informed consent was provided to each participant. Completion of the research questionnaires by participants was acknowledged as their consent to participate in the study.

DATA COLLECTION PROCEDURE

The research team recruited medical-surgical nurses by making rounds on nursing units and attending staff and shared governance meetings. Questionnaires were distributed to nurses face to face. The researchers reviewed in detail information about the study provided on the informed consent and answered questions to clarify any information. Participants were informed that they would be asked to complete three study questionnaires. Participants were informed that the questionnaires would take approximately 15 to 30 minutes to complete. Participants were also advised that questionnaires did not contain any identifying information linking the questionnaire to the participant and all information obtained was confidential. Completed questionnaires were returned directly to the researchers. Some participants were familiar with the researchers distributing and collecting the questionnaires while others were not.

DATA ANALYSIS PLAN

Quantitative data were analyzed with descriptive and inferential statistics using SPSS for Windows Release 18.0. Pre analysis data screening was conducted prior to statistical analysis. Descriptive statistics including frequencies, percentages, means, standard deviations and correlations were performed and reported on demographic variables, perceived self-confidence, and leadership ability scores. Inferential statistics, including regression analysis, were conducted to determine the relationship between independent variables (age, years licensed, certification

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3 status, and highest nursing degree) and perceived self-confidence and leadership ability scores. A
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6 p value of $\leq .05$ was considered statistically significant.
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RESULTS**Sample**

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12 From the 500 questionnaires distributed, 148 medical-surgical nurses completed
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15 questionnaires, representing a 29.6% response rate (Table 1). The majority of nurses were female
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17 (93.2%, $n = 138$) and Caucasian (70.8%, $n = 105$). Nurses ranged in age from 22 to 63 years (M
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19 = 40.8, $SD = 10.4$) and over half (65.4%, $n = 97$) held baccalaureate degrees in nursing. Years
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21 practiced as a nurse ranged from 1 to 41 years with a mean of 13.8 years ($SD = 10.8$). Only a
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23 third (32.4%, $n = 48$) held a national certification. Most of the nurses worked full time (96.6%, n
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25 = 143) during the day shift (66.9%, $n = 99$).
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Self-Confidence

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32 Self-confidence scores ranged from 33 to 60 with a mean of 52.38 ($SD = 6.75$), indicating
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34 that nurses felt very confident in handling APD events. Over half of the nurses felt very
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36 confident in recognizing signs and symptoms of a respiratory (64.2%, $n = 95$) or cardiac (58.8%,
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38 $n = 87$) event (Table 2). In contrast, only 33.1% ($n = 49$) felt very confident in recognizing signs
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40 and symptoms of a neurological event, with 24.3% ($n = 36$) not confident or somewhat
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42 confident. Less than three quarters of the nurses felt very confident in accurately assessing
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44 patients with shortness of breath (60.8%, $n = 90$), while just over half (50.7%, $n = 75$) felt very
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46 confident in accurately assessing patients with chest pain. Only 40.5% ($n = 60$) felt very
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48 confident in their ability to accurately assess patients with a mental status change. Nurses felt
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50 more confident (very confident category) in evaluating the effectiveness of their interventions
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3 when responding to a patient with shortness of breath (60.1%, $n = 89$), compared to patients
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5 experiencing chest pain (53.4%, $n = 79$) or a change in mental status (36.5%, $n = 54$).
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8 Reliability of the self-confidence scale was assessed resulting in a Cronbach's alpha
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10 reliability coefficient of .95. The alpha score indicated a high degree of internal consistency.
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Leadership Ability

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15 Leadership ability scores ranged from 10 to 32 with a mean of 26.97 ($SD = 5.12$),
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17 indicating that nurses felt moderately comfortable in their leadership abilities during APD
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19 situations. Only 35.1% ($n = 52$) were comfortable a great deal with being identified as a leader
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21 until the emergency team arrived with 19.6% ($n = 29$) not at all or a little comfortable with being
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23 identified as a leader (Table 3). Less than half (45.9%, $n = 68$) of the nurses were comfortable a
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25 great deal in coordinating immediate responders from their unit. Only half (52.0%, $n = 77$) were
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27 comfortable a great deal in performing the handover procedure to the emergency team leader,
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29 while 55.4% ($n = 82$) were comfortable a great deal in supporting the emergency team leader.
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31 Over half (57.4%, $n = 85$) felt comfortable a great deal with sharing information and keeping
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33 others informed during an emergency and voicing concerns to others during an emergency
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35 (52.0%, $n = 77$), while 62.8% ($n = 93$) were comfortable a great deal with listening and
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37 responding to others' concerns during an emergency.
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43 Reliability of the leadership ability questionnaire was assessed. Cronbach's alpha
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45 reliability coefficient was .94. The alpha score indicated a high degree of internal consistency.
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Relationship between Perceived Self-Confidence and Leadership Abilities

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50 A Pearson's correlation coefficient was calculated for the relationship between
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52 participants' perceived self-confidence and leadership abilities. A moderate, positive correlation
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54 was found ($r(148) = .553, p < .001$), indicating a significant linear relationship between the two
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variables. As perceived self-confidence increased, perceived leadership abilities in handling acute patient deterioration events increased.

Regression

To determine the multiple regression model with the best fit to predict participants' perceived self-confidence and leadership abilities based on their age, years licensed, highest nursing degree, and certification status (predictor variables), the researchers in consultation with a statistician, conducted 15 different regression models which included all possible combinations of the four predictor variables. Based on these analyses, age and certification status were identified as the best variables to predict participants' perceived self-confidence and leadership abilities. Both regression models were statistically significant (Table 4). The first overall model significantly predicted the dependent variable, self-confidence, $R^2 = .08$, $R^2_{adj} = .07$, $F(2,139) = 5.948$, $p = .003$. This model accounted for 7% of the variance in the dependent variable, self-confidence. Review of the β weights specified that the two predictor variables, age, $\beta = .122$, $t(139) = 2.23$, $p = .027$ and certification status, $\beta = 2.65$, $t(139) = 2.20$, $p = .030$, significantly contributed to the model, with greater age and having a national certification predicting greater perceived self-confidence in managing as a first responder in an acute deterioration event.

The second overall model significantly predicted the dependent variable, leadership abilities, $R^2 = .10$, $R^2_{adj} = .08$, $F(2,139) = 7.406$, $p < .01$. This model accounted for 8% of the variance in the dependent variable, leadership ability. Review of the β weights specified that the two predictor variables, age, $\beta = .108$, $t(139) = 2.66$, $p = .009$ and certification status, $\beta = 2.06$, $t(139) = 2.28$, $p = .024$, significantly contributed to the model, with greater age and having a national certification predicting greater perceived leadership ability in managing as a first responder in an acute deterioration event.

DISCUSSION

In this research study we aimed to explore and understand medical-surgical nurses' perceived self-confidence and leadership abilities as first responders in recognizing and responding to patients experiencing acute deterioration prior to the arrival of a RRT or cardiac resuscitation team. The 148 participants were typical of nurses working within healthcare organizations in that the majority was female and Caucasian with varying years of work experiences (U. S. Department of Health and Human Services, Health Resources and Services Administration 2010). A significant, positive, moderate relationship was found between nurses' perceived self-confidence and leadership abilities in handling APD events. Nurses who are more self-confident in handling APD events felt more comfortable in executing leadership abilities during APD events. Failure to rescue, or inability to successfully intervene after complications have developed, affects cost and mortality/morbidity rates and has been determined to be the most frequently reported cause of preventable hospital deaths and intensive care unit (ICU) transfers (Hatler *et al.* 2009). Nurses who are more self-confident, execute leadership abilities, and use strong clinical reasoning skills may impact patient outcomes by identifying early warning signs of clinical deterioration and initiating early interventions to reduce failure to rescue events and patient mortality (Bobay *et al.* 2008, Brunt 2005, Clarke 2004).

Nurses in this study were more confident in recognizing, assessing, and evaluating the effectiveness of their interventions with patients experiencing respiratory and cardiac clinical deterioration, than patients experiencing neurological clinical deterioration. To our knowledge, this is the first study that has delineated between various patient types and nurses' perceived self-confidence in handling patient deterioration events. This information is significant in aligning best practice strategies directed at nurses in handling a variety of acute patient deterioration

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3 events. Healthcare organizations routinely focus on respiratory and cardiac events by educating
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5 nurses on cardiopulmonary resuscitation but may neglect to educate nurses on other types of
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7 clinical deterioration. Andrews and Waterman (2005) stress the importance of educating nurses
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9 in the use of a systematic approach for conducting patient assessments and developing nurses'
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11 knowledge of pathophysiology associated with varying signs of clinical deterioration in order to
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13 enhance nurses' interpretation of assessment findings to improve patient outcomes.
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17 In this study, age and certification status were found to influence nurses' **perceived self-**
18
19 **confidence and leadership abilities** in handling acute patient deterioration events. Increase in age
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21 and obtaining a national certification were associated with higher levels of **perceived self-**
22
23 **confidence and leadership abilities**. Interesting, only about 50% or less of nurses felt comfortable
24
25 a great deal of the time in being identified as a leader, coordinating immediate responders from
26
27 their unit, performing handover procedures to the emergency response team, supporting the
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29 emergency response team, sharing information and keeping others informed, and listening and
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31 responding to others' concerns during an emergency. These findings not only highlight the
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33 importance of experience and certification as important factors in developing clinical reasoning
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35 skills **and self-confidence** in nurses, but also identify the impact a lack of **self-confidence and**
36
37 **leadership skills** may have on patient outcomes. Patients experiencing clinical deterioration
38
39 require staff within a nursing unit to respond promptly and perform in a coordinated, efficient
40
41 manner in order to provide the best opportunity for patient survival (Kilday *et al.* 2013). Nurses
42
43 caring for patients must have **self-confidence and leadership skills** to direct other team members
44
45 in resuscitation efforts within the first few minutes prior to the arrival of the RRT or cardiac
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47 resuscitation team as well as being a proficient and contributing team member to assist response
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49 teams throughout the resuscitation period.
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LIMITATIONS

Although the research study was carefully prepared there were some limitations. These limitations include the use of a convenience sample of nurses within one, five hospital integrated healthcare organization located in the southeast United States which may limit the ability to generalize the findings to other nurses and geographic locations. Using a convenience sample may introduce sampling bias; therefore caution is warranted when making inferences about the study findings. Future studies should focus on using random samples of nurses to further support the study findings. Additionally, nurses completed the questionnaires during work hours on their nursing units. This may have allowed nurses to interact with each other when completing the questionnaires.

Another limitation was the length of the questionnaires. This may have resulted in instrument fatigue for some nurses completing the questionnaires as well as being a deterrent to recruiting other nurses for the study.

The final limitation was an education intervention that occurred at one of the five hospitals. The rapid response team at one of the hospitals conducted education on acute signs of deterioration on medical-surgical nursing floors during the data collection phase. This may have influenced the response results on the questionnaires by nurses who obtained the training.

CONCLUSIONS

Although nurses felt **very** confident and comfortable with leadership abilities, there is a need for improvement to ensure nurses are competent in recognizing patients' deterioration cues and making sound decisions in taking appropriate, timely actions to rescue patients. Further strategies need to be developed to increase nurses' self-confidence and execution of leadership abilities in handling deterioration events for positive patient outcomes. Medical-surgical nurses

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3 are the front line defense in assessing and trending patient data for potential indicators of acute
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5 clinical deterioration and nurses must be knowledgeable and confident to be leaders in directing
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7 and initiating early interventions to improve patients' survival during APD events.
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RELEVANCE TO CLINICAL PRACTICE

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12 To ensure best outcomes for patients, healthcare organizations need to conduct baseline
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14 assessments of nurses to identify areas needing improvement in assessment skills, recognition,
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16 knowledge, leadership abilities, and self-confidence in clinical deterioration events on a routine
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18 basis. Fox (2007) stated that nurses should abide by the National Institute of Health and Care
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20 Excellence guideline (National Institute for Health & Care Excellence [NICE] 2007) that
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22 recommends that all nurses have an adequate competency in assessing and recording
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24 physiological signs, interpreting physiological signs, and responding to abnormal physiological
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26 signs promptly and correctly. In order to achieve this level of accountability, the development of
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28 educational programs addressing various types of clinical deterioration scenarios such as the
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30 *Acute Life-Threatening Events: Recognition and Treatment* program (ALERT 2013), need to be
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32 implemented within healthcare organizations.
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39 Additionally, team training using an evidence-based curriculum, TeamSTEPPs® (Team
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41 Strategies and Tools to Enhance Performance and Patient Safety) (Agency for Healthcare
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43 Research and Quality 2006), needs be implemented to optimize leadership abilities of medical-
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45 surgical nurses prior to the arrival of the RRT or cardiac resuscitation team. Furthermore, team
46
47 training is needed to enhance medical-surgical nurses' abilities to communicate effectively and
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49 optimize team performance when working with rapid response and cardiac resuscitation team
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51 members. During a clinical deterioration event, medical-surgical nurses are instrumental in
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3 conveying pertinent information leading up to the deterioration event that guides the emergency
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5 response team in differentiating causes of the event.
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8 To promote optimal patient outcomes, nurses within healthcare organizations should be
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10 encouraged to obtain and maintain national certification to increase knowledge and clinical
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12 reasoning skills. Becoming nationally certified recognizes nurses' specialized knowledge, skills,
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14 and experience in meeting national standards in promoting optimal patient outcomes (American
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16 Board of Specialty Certification 2005). Although controversial, some research supports a link
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18 between certification status and improved patient outcomes (Coleman *et al.* 2009, Kendall-
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20 Gallagher *et al.* 2011).
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Table 1

Demographic Characteristics of the Participants (N = 148)

Characteristic	<i>M</i>	<i>SD</i>
Age	40.8	10.4
Years Practiced	13.8	10.8
	<i>N</i>	<i>%</i>
Gender		
Male	10	6.8
Female	138	93.2
Ethnicity/Race		
White/Caucasian	105	70.8
Black/African American	26	17.6
Hispanic/Latino	4	2.7
Native American	2	1.4
Asian/Pacific Islander	8	5.4
Other	1	.7
Missing	2	1.4
Degree		
Diploma LPN	2	1.4
Diploma RN	6	4.1
Associate Degree	41	27.7
Baccalaureate Degree	97	65.4
Master's Degree	2	1.4
Employment Status		
Fulltime	143	96.6
Part-time	3	2.0
PRN	2	1.4
Primary Shift		
Day	99	66.9
Night	49	33.1
Certification Status		
No	100	67.6
Yes	48	32.4

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Table 2

Percentages and Frequencies of Self Confidence Scale (N = 148)

Item	Somewhat Not Confident	Somewhat Confident	Moderately Confident	Very Confident
	% (n)	% (n)	% (n)	% (n)
Recognition Signs/Symptoms				
Cardiac arrest	.7 (1)	7.4 (11)	33.1 (49)	58.8 (87)
Respiratory event	.7 (1)	5.4 (8)	29.7 (44)	64.2 (95)
Neurological event	5.4 (8)	18.9 (28)	42.6 (63)	33.1 (49)
Assessment				
Chest pain	2.0 (3)	11.5 (17)	35.1 (52)	51.4 (76)
Shortness of breath	1.4 (2)	6.1 (9)	32.4 (48)	60.1 (89)
Mental status change	1.4 (2)	13.5 (20)	43.9 (65)	41.2 (61)
Intervention				
Chest pain	1.4 (2)	12.8 (19)	31.1 (46)	54.7 (81)
Shortness of breath	2.0 (3)	3.4 (5)	38.5 (57)	56.1 (83)
Mental status change	3.4 (5)	20.2 (30)	39.9 (59)	36.5 (54)
Evaluate Effectiveness				
Chest pain	2.0 (3)	11.5 (17)	33.1 (49)	53.4 (79)
Shortness of breath	1.4 (2)	8.1 (12)	30.4 (45)	60.1 (89)
Mental status change	4.1 (6)	15.5 (23)	43.9 (65)	36.5 (54)

* The category, "not at all confident" was not added to the table since nurses did not choose this category as a response on the questionnaires.

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Table 3

Percentages and Frequencies of Leadership Abilities Scale (N = 148)

Item	Not At All	A Little	To Some Extent	A Great Deal
	% (n)	% (n)	% (n)	% (n)
Be identified as a leader	7.4 (11)	12.2 (18)	45.3 (67)	35.1 (52)
Coordinate immediate responders	2.0 (3)	14.3 (21)	37.8 (56)	45.9 (68)
Perform handover to emergency team leader	2.7 (4)	15.6 (23)	29.7 (44)	52.0 (77)
Support emergency team leader	2.0 (3)	12.2 (18)	30.4 (45)	55.4 (82)
Share information & keep others informed	0.0 (0)	8.1 (12)	34.5 (51)	57.4 (85)
Voice concerns to others	2.0 (3)	9.5 (14)	36.5 (54)	52.0 (77)
Listen and respond to others concerns	1.4 (2)	5.4 (8)	30.4 (45)	62.8 (93)
Utilize resources and external experts	1.4 (2)	7.4 (11)	34.5 (51)	56.7 (84)

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Table 4

Multiple Regression for Variables Associated with Perceived Self-Confidence and Leadership Abilities (N = 148)

Regression Variables	Self-Confidence			Leadership Ability		
	B	SE B	β	B	SE B	β
Age (in years)	.122	.054	.186*	.108	.041	.219**
Certification Status	2.65	1.21	.183*	2.06	.903	.188*
R^2		.08			.10	
Adjusted R^2		.07			.08	
F (p-value for model)		5.948 (p = .003)			7.406 (p = .001)	

* $p < .05$, ** $p < .01$