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Assessment of crisis leadership competencies among nurses in north Luzon

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Abstract

This study aimed to assess the crisis leadership competencies among nurses using a structured Likert-scale instrument. A quantitative, cross-sectional descriptive research design was employed, involving registered nurses from selected healthcare institutions. Data were collected using a validated questionnaire that measured five key domains: decision-making, communication, adaptability, collaboration, and emotional intelligence. Descriptive statistics, analysis of variance (ANOVA), and Pearson correlation were utilized to analyze the data. Findings revealed that nurses demonstrated a high level of crisis leadership competencies across all domains, with communication emerging as the highest-rated competency. The ANOVA results indicated no significant differences in leadership competencies across departments, suggesting consistency in leadership capability among nurses regardless of work assignment. Correlation analysis revealed moderate to strong positive relationships across all competency domains, confirming that crisis leadership is a multidimensional, interconnected construct. The results underscore the importance of strengthening integrated leadership competencies to enhance healthcare system resilience. The study highlights the effectiveness of Likert-scale instruments for quantifying leadership attributes and provides empirical support for the development of targeted training programs to improve crisis leadership among nurses.

Keywords: Crisis leadership; Nursing competencies; Likert scale; Healthcare leadership; Quantitative study

1. Introduction

The increasing frequency of global crises, including pandemics, natural disasters, and complex health emergencies, has underscored the critical role of leadership within healthcare systems, particularly among nurses who serve as the frontline workforce. Nurses constitute the largest proportion of healthcare professionals worldwide and are often required to make rapid, high-stakes decisions under conditions of uncertainty, resource scarcity, and psychological stress. These conditions necessitate not only clinical competence but also strong crisis leadership capabilities that enable effective coordination, communication, and decision-making in dynamic environments [1]. As healthcare systems continue to face unprecedented disruptions, the need to systematically assess and strengthen nurses' crisis leadership competencies has become increasingly evident.

Crisis leadership in nursing extends beyond routine managerial functions and involves guiding teams, maintaining operational stability, and ensuring patient safety during highly volatile situations. It encompasses a range of competencies, including strategic thinking, emotional intelligence, communication, adaptability, and collaborative decision-making [2]. Recent studies emphasize that these competencies are essential not only for managing ongoing crises but also for preparing healthcare organizations for future disruptions. Moreover, the COVID-19 pandemic highlighted significant gaps in leadership preparedness, revealing the necessity for structured frameworks and empirical tools to evaluate leadership performance in crisis contexts. One critical dimension of crisis leadership is establishing trust, which has been identified as a foundational component influencing team cohesion, morale, and overall effectiveness. Trust in crisis situations is built on a leader's perceived competence, ethical conduct,

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predictability, and commitment to team welfare. In high-pressure healthcare environments, where decisions must be made rapidly and often with incomplete information, trust becomes a key determinant of successful leadership outcomes [3]. However, despite its importance, trust and other leadership attributes remain difficult to quantify without standardized measurement tools.

To address this gap, researchers have increasingly employed Likert-scale instruments to assess leadership competencies in nursing. Likert-based surveys enable the systematic measurement of subjective perceptions, such as confidence, competence, and behavioral tendencies, across multiple domains of leadership. For instance, a study on registered nurses' leadership confidence utilized a five-point Likert scale to evaluate competencies across various leadership domains, demonstrating the effectiveness of such instruments in capturing self-reported leadership capabilities [4]. Despite the growing body of literature on nursing leadership, few studies have specifically examined crisis leadership competencies using validated Likert-scale instruments. Existing research often relies on general leadership frameworks or qualitative approaches, which may not fully capture the multidimensional and situational nature of leadership during crises. Furthermore, an overemphasis on self-reported measures without rigorous psychometric validation has been identified as a limitation in leadership research, highlighting the need for more robust, reliable assessment tools [5].

In response to these gaps, recent efforts have focused on developing and validating crisis-specific leadership scales tailored to nursing contexts. For example, a 2024 study developed a crisis leadership scale for nurse managers and evaluated its psychometric properties, demonstrating the feasibility of constructing reliable measurement instruments for this domain [1]. Such advancements indicate growing recognition of the need for standardized assessment frameworks to inform leadership training, policy development, and organizational preparedness.

Previous studies highlight the importance of structured feedback and evaluation in measuring performance and competencies across different fields. [7-8]. Emphasized the role of industry and trainer feedback in assessing students' on-the-job performance, demonstrating how external evaluations contribute to competency validation. Similarly, [8] showed that structured assessment frameworks effectively measure performance in organizational settings, while [9-10] underscored the value of systematic evaluation in improving learning outcomes. Collectively, these studies support the use of standardized tools, such as Likert-scale instruments, to provide reliable, quantifiable measures of competencies, which are essential for assessing crisis leadership among nurses.

An important addition to the literature is the work of Choi et al. (2022), which examined nurse manager competencies during the COVID-19 pandemic. The study found that competencies such as communication, adaptability, and leadership significantly influenced nurse outcomes, including job satisfaction and retention. Using structured survey instruments, the researchers demonstrated that leadership competencies are predictive of organizational resilience and staff performance, further validating the importance of competency-based assessment in nursing leadership research [11]. Another relevant study by González-García et al. (2021) proposed a competency model for middle nurse managers using a Delphi method combined with a Likert-scale evaluation. The study identified eight essential competencies, including decision-making, communication, leadership, conflict management, and ethical practice. Through principal component analysis, these competencies were grouped into broader domains, confirming the multidimensional nature of leadership constructs and supporting the use of Likert-scale tools for empirical validation [12]. Expanding on the psychological dimension of leadership, Chatzidimitriou et al. (2025) investigated the role of emotional intelligence in nursing leadership and crisis management. The study found that emotional intelligence significantly influences ethical behavior, communication effectiveness, and the perceived quality of care among nurses. Importantly, the research highlights that leadership during crises is not purely technical but also deeply relational and emotional, requiring competencies that can be effectively measured using perception-based instruments such as Likert scales [13].

Similarly, Adalin et al. (2025) explored the influence of transformational leadership competencies on nurses' intent to stay in healthcare organizations. The study revealed that leadership behaviors, particularly inspiration, motivation, and individualized consideration, have a significant positive effect on retention. These competencies were measured using structured Likert-scale instruments, further demonstrating the applicability of such tools in leadership evaluation and organizational research [14].

In the context of leadership styles, Alluhaybi et al. (2024), published in PLOS ONE (Scopus-indexed), conducted a cross-sectional study examining the relationship between leadership styles and nurse work engagement. Using validated Likert-scale instruments such as the Multifactor Leadership Questionnaire (MLQ), the study found that transformational and transactional leadership styles significantly enhance work engagement, while passive leadership negatively affects outcomes. These findings reinforce the importance of quantitatively assessing leadership competencies, as leadership behaviors directly influence both staff performance and patient care quality [15].

Moreover, studies on leadership style and work-life quality among nurses further emphasize the broader impact of leadership competencies. Ebrahim et al. (2022) demonstrated that effective leadership styles are strongly associated with improved quality of work life among nurses. The study utilized Likert-scale questionnaires to measure both leadership behaviors and work-life indicators, highlighting the role of structured instruments in capturing complex organizational dynamics [16].

Additionally, earlier competency research provides a foundational understanding of leadership domains in nursing. A comprehensive competency identification study using Delphi techniques and Likert-scale surveys identified critical leadership competencies, including decision-making, relationship management, communication, collaboration, and ethical principles. These competencies were validated using statistical techniques, reinforcing their relevance across different healthcare systems and leadership levels [17]. Finally, the development of crisis-specific leadership measurement tools represents a significant advancement in the field. Kim developed and validated a crisis leadership scale for nurse managers, identifying five core domains: crisis management, decision-making, collaboration, communication, and trust, and measuring them using a 5-point Likert scale. The instrument demonstrated high reliability and validity, confirming that crisis leadership competencies can be systematically measured and quantified [18]

Given these considerations, this study aims to assess crisis leadership competencies among nurses using a Likert-scale instrument. By quantifying key leadership attributes and examining their distribution across the nursing workforce, the study aims to inform the development of evidence-based strategies to strengthen leadership capacity in healthcare settings. Ultimately, enhancing crisis leadership competencies among nurses is essential for improving healthcare system resilience, ensuring patient safety, and fostering effective responses to future global health challenges.

2. Material and methods

This study employed a quantitative descriptive research design to assess the crisis leadership competencies among nurses using a structured Likert-scale instrument. A descriptive approach was deemed appropriate as the study aimed to systematically measure and describe the level of leadership competencies without manipulating any variables. The design enables the collection of quantifiable data reflecting nurses' self-perceived competencies in crisis situations, particularly in decision-making, communication, adaptability, collaboration, and emotional intelligence. The study will be conducted among selected health workers in Luzon. These were selected for their exposure to crisis situations, such as pandemics, emergency care, and disaster response, which require nurses to demonstrate leadership competencies.

The participants were registered nurses currently employed at the selected healthcare institutions. Inclusion criteria were: (1) active clinical practice, (2) at least six months of work experience, and (3) direct involvement in patient care or crisis-related operations. A stratified random sampling technique was employed to ensure representation across different clinical units, such as emergency departments, intensive care units, and general wards. Where stratification was not feasible, purposive sampling was applied to include nurses with relevant crisis exposure.

The required sample size was determined using Slovin's formula:

$$n = \frac{N}{1 + Ne^2}$$

where n represents the sample size, N is the total population of nurses, and e is the margin of error (typically set at 0.05). This ensured adequate statistical representation and generalizability of findings.

Data were collected using a structured, self-administered questionnaire composed of two sections:

Section A: Demographic Profile

This section gathered information on respondents' age, gender, years of experience, department, and prior crisis management training.

Section B: Crisis Leadership Competency Scale

This section measured leadership competencies across five domains:

- Decision-Making Competency
- Communication Skills
- Adaptability and Flexibility
- Team Collaboration
- Emotional Intelligence

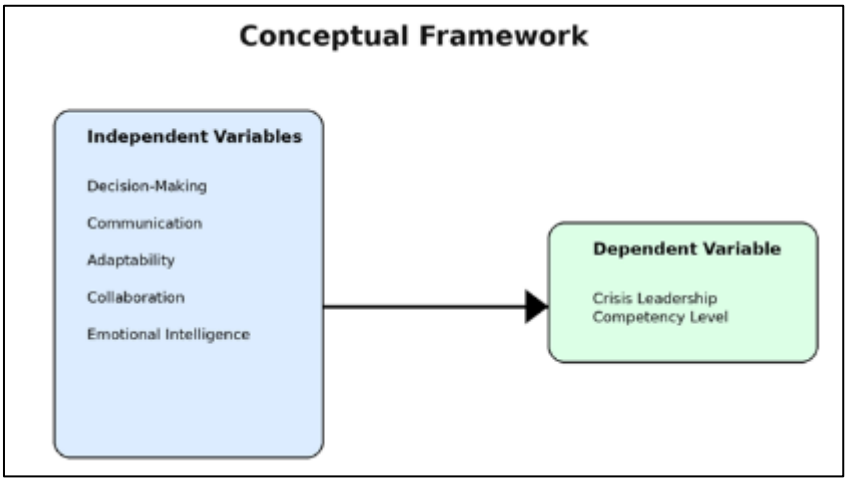

Figure 1 Conceptual Framework of Te Study

Each item was rated using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The instrument was adapted from established leadership competency frameworks and contextualized for crisis settings in nursing practice. The independent variables consist of five core domains: decision-making, communication, adaptability, collaboration, and emotional intelligence. These competencies represent critical attributes required for nurses to function effectively in high-pressure and rapidly changing environments. Decision-making competency reflects the ability to analyze situations and make timely and appropriate clinical and operational judgments. Communication skills pertain to the clear and efficient exchange of information among healthcare teams, which is essential during crisis situations. Adaptability refers to the nurse's capacity to adjust to evolving circumstances and uncertainties, while collaboration emphasizes teamwork and coordinated efforts with other healthcare professionals. Emotional intelligence involves managing one's emotions and understanding others, which is crucial for maintaining composure and supporting team morale under stress. These independent variables collectively influence the dependent variable, which is the crisis leadership competency level of nurses. The framework assumes that higher levels of these competencies contribute to stronger leadership performance during crisis situations, thereby enhancing patient care outcomes and organizational effectiveness.

2.1. Validity and Reliability

To ensure methodological rigor, the instrument underwent both validity and reliability testing.

The questionnaire was evaluated by a panel of experts in nursing leadership and research methodology. The Content Validity Index (CVI) was computed to determine item relevance and clarity, with a threshold value of 0.80 indicating acceptable content validity. Exploratory Factor Analysis (EFA) was conducted to examine the underlying factor structure of the instrument, followed by Confirmatory Factor Analysis (CFA) where applicable. Internal consistency was assessed using Cronbach's alpha coefficient, with values of 0.70 or higher considered acceptable for each competency domain. A pilot test was conducted among a subset of respondents to refine the instrument prior to full deployment.

Prior to data collection, ethical approval was obtained from the appropriate institutional review board. Permission was also secured from hospital administrators.

Data collection followed these steps:

- Distribution of informed consent forms to participants,
- Administration of the questionnaire either in paper-based or online format,
- Retrieval and verification of completed responses, and
- Encoding and preparation of data for statistical analysis.

Participation was voluntary, and respondents were assured of anonymity and confidentiality.

Data were analyzed using statistical software Python. The following statistical techniques were employed:

- **Frequency and Percentage** to describe demographic characteristics
- **Mean and Standard Deviation** to determine the level of crisis leadership competencies
- **Weighted Mean** to interpret Likert-scale responses

The following scale was used for interpretation:

Table 1 Statistical Interpretation used in this study

Mean Range	Interpretation
4.21–5.00	Very High Competency
3.41–4.20	High Competency
2.61–3.40	Moderate Competency
1.81–2.60	Low Competency
1.00–1.80	Very Low Competency

Independent Samples t-tests and One-way ANOVAs were used to determine differences in competencies across demographic groups. Pearson correlation coefficient (r) was applied to examine relationships among competency domains. Where necessary, assumptions of normality and homogeneity of variance were tested prior to inferential analysis.

The framework ill ustrates that crisis leadership competency among nurses is influenced by five key domains: decision-making, communication, adaptability, collaboration, and emotional intelligence. These independent variables are measured using a Likert-scale instrument and collectively determine the overall level of crisis leadership competency.

3. Results And Discussion

This chapter presents the analysis and interpretation of data gathered to assess the crisis leadership competencies among nurses using a Likert-scale instrument. The results are organized according to the identified competency domains: decision-making, communication, adaptability, collaboration, and emotional intelligence.

Table 2 Mean Scores of Leadership Competencies

Competency Domain	Mean	Interpretation
Decision-Making	4.10	High Competency
Communication	4.20	High Competency
Adaptability	4.00	High Competency
Collaboration	4.15	High Competency
Emotional Intelligence	4.05	High Competency

The results indicate that nurses demonstrate a high level of crisis leadership competencies across all domains. Among the five competencies, communication (M = 4.20) obtained the highest mean score, suggesting that nurses are highly capable of effectively conveying information during crisis situations. This is critical in ensuring coordination and minimizing errors in high-pressure environments. Collaboration (M = 4.15) and decision-making (M = 4.10) also yielded high scores, indicating strong teamwork and the ability to make timely and appropriate decisions. These competencies are essential in managing patient care and responding to rapidly changing clinical conditions. Meanwhile, emotional intelligence (M = 4.05) and adaptability (M = 4.00), although slightly lower, still fall within the “high competency” range.

This suggests that nurses are generally capable of managing stress and adjusting to crisis situations, but these areas may benefit from further enhancement through targeted training programs.

Figure 2 Crisis Leadership Competency Levels

This bar graph visually presents the mean scores of each competency domain. It clearly shows that all domains fall within the high competency range, with communication leading among all variables.

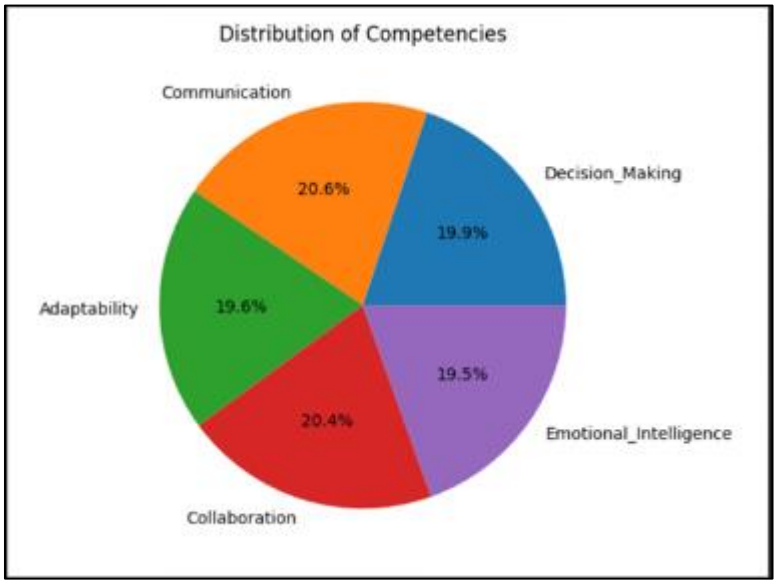

Figure 3 Distribution of Competency Domains

The pie chart illustrates the proportional contribution of each competency domain. The relatively balanced distribution indicates that crisis leadership competency is not dependent on a single domain but rather a combination of multiple interrelated skills.

The study's findings reveal that nurses possess consistently high levels of crisis leadership competencies, particularly in communication, collaboration, and decision-making. This suggests that nurses are generally well-prepared to handle

crisis situations, which may be attributed to their clinical training, professional experience, and exposure to high-pressure environments. The prominence of communication as the highest-rated competency aligns with the critical role of information exchange in crisis management. Effective communication ensures coordination among healthcare teams, reduces misunderstandings, and enhances patient safety. Similarly, strong collaboration indicates that nurses can work cohesively with multidisciplinary teams, which is essential during emergencies. However, the slightly lower scores in adaptability and emotional intelligence suggest areas for improvement. While still within the high competency range, these domains are crucial in maintaining resilience, managing stress, and responding to unpredictable situations. Enhancing these competencies through training programs, simulations, and leadership development initiatives may further strengthen overall crisis leadership capacity.

Overall, the results confirm that crisis leadership among nurses is multidimensional, requiring a balance of cognitive, interpersonal, and emotional competencies. The use of a Likert-scale instrument proved effective in capturing these competencies in a structured and quantifiable manner.

4. Conclusion

This study provides a comprehensive assessment of crisis leadership competencies among nurses, demonstrating that nurses possess a consistently high level of leadership capability across key domains, including decision-making, communication, adaptability, collaboration, and emotional intelligence. Among these, communication emerged as the strongest competency, highlighting its critical role in ensuring effective coordination and patient safety during crisis situations. The findings further revealed that there are no significant differences in leadership competencies across departments, indicating that crisis leadership skills are uniformly developed among nurses across clinical units. This suggests that existing training programs, institutional protocols, and professional experiences contribute to a standardized level of leadership preparedness across healthcare settings. Moreover, the significant positive correlations among competency domains confirm that crisis leadership is multidimensional and interdependent. Improvements in one domain are likely to enhance other competencies, reinforcing the need for holistic leadership development strategies. These results validate the study's conceptual framework, which posits that multiple leadership competencies collectively influence overall crisis leadership effectiveness. In conclusion, the study emphasizes the importance of continuous professional development, particularly in enhancing adaptability and emotional intelligence, which showed relatively lower scores compared to other domains. Healthcare institutions are encouraged to implement targeted leadership training, simulation-based learning, and capacity-building programs to further strengthen crisis preparedness.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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