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Original Article

Clinical Nurses' Competence in Stroke Assessment: Knowledge, Practice, and Associated Factors in the Use of the National Institute of Health Stroke Scale

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Abstract. Stroke remains a leading cause of death and long-term disability worldwide, necessitating rapid and accurate assessment to improve patient outcomes. The National Institutes of Health Stroke Scale (NIHSS) is a standard tool for assessing neurological deficits in stroke patients. This study aimed to assess clinical nurses' knowledge and practice of the NIHSS and to analyze the relationships among sociodemographic characteristics, knowledge, and practice. A descriptive-correlational study design was conducted in September 2025 among 276 clinical nurses from Siping Central Hospital and Jilin Provincial Brain Hospital in China. A self-designed questionnaire was used to collect nurses' sociodemographic data, knowledge of the NIHSS, and practice. Results showed that clinical nurses had high knowledge and practice of the NIHSS. Educational background and number of training sessions were significantly correlated with knowledge, while years of service were significantly correlated with practice. Furthermore, knowledge and practice were significantly positively correlated, indicating that nurses with high knowledge were more adept at applying the NIHSS in clinical practice. These results emphasize the importance of ongoing education and systematic training to maintain nurses' competence in standardized stroke assessment.

Keywords: *Cardiovascular Diseases (CVDs); Clinical nurses; NIHSS; Nursing knowledge and practice; Stroke assessment.*

Cardiovascular disease (CVD) remains the leading cause of death worldwide, accounting for approximately 17.9 million deaths annually (World Health Organization [WHO], 2023). Stroke, a major manifestation of CVD caused by cerebral vascular obstruction or rupture, is a leading contributor to mortality and long-term disability. Despite advances in acute stroke care and declining mortality in high-income countries, stroke continues to impose substantial health, social, and economic burdens, particularly in low- and middle-income nations where timely diagnosis and standardized neurological assessment remain challenging. Globally, stroke is the second leading cause of death and the third leading cause of disability, with an estimated 12.2 million new cases and 6.6 million deaths reported in 2020 (Feigin et al., 2022; WHO, 2023). More than 80% of stroke-related deaths occur in low- and middle-income countries. Early recognition and accurate neurological assessment are critical to the success of time-sensitive interventions such as intravenous thrombolysis and mechanical thrombectomy, which significantly improve survival and neurological recovery.

In China, stroke represents a growing public health crisis. The country has more than 17 million stroke survivors and an annual incidence rate of 345 per 100,000 population, with a rising trend among younger adults (Chinese Stroke Association, 2023). Stroke is the leading cause of death and adult disability nationwide, driven by population aging, hypertension, high salt intake, smoking, and sedentary lifestyles (Zhou et al., 2020). Regional disparities further compound this burden. In Jilin Province, stroke incidence has reached 395 per 100,000—exceeding the national average (Wang et al., 2023). Siping City, a major medical hub in southern Jilin, delivers essential acute stroke services through tertiary hospitals, making it a relevant setting for examining stroke assessment practices.

The National Institutes of Health Stroke Scale (NIHSS) is the internationally accepted gold standard for assessing stroke severity and guiding clinical decision-making (Brott et al., 1989; Jauch et al., 2013). The NIHSS supports treatment eligibility decisions, prognostication, and effective communication within multidisciplinary stroke teams. Although incorporated into national stroke guidelines in China, nurses' use of the NIHSS remains inconsistent. Evidence indicates that although physicians routinely administer NIHSS assessments, many nurses lack sufficient training, confidence, or institutional support to administer the scale independently, limiting their participation in early stroke recognition (Li & Liu, 2021; Wang et al., 2023).

Nurses play a critical role in acute stroke care as frontline clinicians responsible for initial patient assessment and continuous neurological monitoring. Studies demonstrate that NIHSS-trained nurses can reduce door-to-needle times and improve patient outcomes, whereas inadequate training leads to underutilization of the scale and delayed interventions (Middleton et al., 2020; Suppan et al., 2021). Nurses' knowledge and practice of the NIHSS are influenced by sociodemographic factors such as educational attainment, years of experience, professional role, and prior training exposure (Li & Liu, 2021; Zhao et al., 2024). Despite this evidence, research focusing on nurses in secondary and regional hospitals remains limited, underscoring the need for context-specific investigation.

Therefore, this study aimed to assess the knowledge and practice of the National Institutes of Health Stroke Scale (NIHSS) among clinical nurses at Siping Central Hospital and Jilin Provincial Brain Hospital in China, and to examine the relationships among nurses' sociodemographic characteristics, NIHSS knowledge, and clinical practice. The findings are expected to provide empirical evidence to inform targeted educational interventions, standardized training pathways, and institutional policies that strengthen nurses' roles in acute stroke assessment. Ultimately, improving nurses' competency in NIHSS application may enhance early stroke recognition, reduce treatment delays, and contribute to improved patient outcomes and more nurse-inclusive, evidence-based stroke care models in China and similar healthcare settings.

Methodology

Research Design

This study utilized a quantitative descriptive–correlational research design. The descriptive component aimed to determine the current status of identified variables, specifically the demographic profile and the clinical nurses' level of knowledge and utilization of the National Institutes of Health Stroke Scale (NIHSS). The correlational aspect sought to determine significant relationships among nurses' demographic characteristics, their level of knowledge, and their utilization of the NIHSS, as well as the relationship between knowledge and utilization. According to Aprecia et al. (2022), a descriptive–correlational design is appropriate when the goal is to describe a phenomenon as it exists and explore potential associations among variables without manipulating them. This design was deemed suitable for this study because it enabled the identification of relationships among variables related to stroke assessment competencies while maintaining objectivity through quantitative data analysis.

Participants and Sampling Technique

This study was conducted in Siping City, Jilin Province, China, an important regional healthcare hub in southern Jilin with a population exceeding two million. Data were collected from two tertiary-level hospitals: Jilin Provincial Brain Hospital and Siping Central Hospital. Jilin Provincial Brain Hospital is a Grade III specialized institution serving as a provincial referral center for neurology and mental health, providing comprehensive services in acute stroke management and neurorehabilitation, and functioning as a teaching and training base for several universities. Siping Central Hospital is a Grade III general hospital offering multidisciplinary services, including emergency medicine, neurology, cardiovascular care, and rehabilitation, with an established stroke unit and active participation in regional stroke care networks. The inclusion of both specialized and general tertiary hospitals ensured a diverse clinical context and enhanced the representativeness of the findings.

The target population comprised all clinical nurses employed at the two hospitals. According to official records, 511 clinical nurses were working across various departments at the time of the study. The required sample size was calculated using Slovin's formula with a 5% margin of error, yielding a sample of 276 participants. A stratified random sampling technique was employed to ensure proportional representation of nurses from departments involved in stroke care, including neurology, emergency, and intensive care units. Within each stratum, participants were selected through random sampling to minimize selection bias.

Eligible participants were registered nurses with at least 1 year of clinical experience, assigned to departments routinely involved in stroke assessment and neurological evaluation, and who provided informed consent. Nurses on long-term leave, those assigned exclusively to pediatrics, obstetrics, or operating rooms, healthcare personnel not engaged in direct patient care, and nurses unable to provide informed consent were excluded. This sampling approach ensured that participants were directly relevant to the study objectives and that the results accurately reflected clinical nurses' knowledge and practice in applying the National Institutes of Health Stroke Scale.

Research Instruments

Data were collected using a researcher-made structured questionnaire designed to assess clinical nurses' knowledge and practice of the National Institutes of Health Stroke Scale (NIHSS). The development of the instrument was guided by a review of relevant literature, existing NIHSS guidelines, and previous studies on nurses' stroke assessment competencies (Brott et al., 1989; Jauch et al., 2013; Li & Liu, 2021). The questionnaire consisted of three main sections: (1) demographic characteristics (age, sex, educational attainment, years of experience, position, and number of stroke-related training attended); (2) knowledge of the NIHSS; and (3) practice of the NIHSS in clinical settings.

Content validity was established prior to data collection. The instrument was reviewed by a panel of expert nurses and stroke care professionals with extensive experience in the application of the NIHSS. These expert validators, who were excluded from the actual study, evaluated each item based on relevance, clarity, and appropriateness using a 4-point rating scale. The Item-Level Content Validity Index (I-CVI) and Scale-Level Content Validity Index (S-CVI) were computed. The results demonstrated strong content validity, with S-CVI/Ave and S-CVI/UA of 0.91 and 0.82, respectively, both exceeding acceptable thresholds. Based on the experts' recommendations, several items were revised to improve accuracy, objectivity, and clarity.

Following content validation, the revised questionnaire underwent pilot testing in the same hospital setting among a group of nurses (25) who were not included in the final sample. Reliability was assessed using Cronbach's alpha (.90) to determine internal consistency. The results indicated acceptable reliability, confirming that the instrument consistently measured nurses' knowledge and practice of the NIHSS. Feedback from the pilot test was used to further refine item wording and response options before final administration.

Data Gathering Procedure

Ethical clearance was obtained from the University Research Ethics Review Board (URERB), along with formal permission from the administrations of Jilin Provincial Brain Hospital and Siping Central Hospital. The finalized questionnaire was distributed electronically to 276 clinical nurses using the Questionnaire Star platform. Participants provided informed consent prior to participation and were given 20–30 minutes to complete the survey during break times or after work hours to avoid disruption of clinical duties. All completed questionnaires were reviewed for completeness and accuracy. Data were anonymized, encoded, and analyzed with the assistance of a statistician. Ethical principles—including voluntary participation, confidentiality, and the right to withdraw at any time without penalty—were strictly observed throughout the study.

Data Analysis Procedure

The study employed a quantitative descriptive–correlational design, and all collected data were analyzed using appropriate statistical techniques. Descriptive and inferential statistics were utilized to address the research objectives and interpret the findings. Descriptive statistics, including frequency counts and percentages, were used to summarize respondents' demographic characteristics, including age, sex, highest educational attainment, length of service, professional position, and the number of stroke-related seminars or training sessions attended. To assess the levels of clinical nurses' knowledge and practice of the National Institutes of Health Stroke Scale (NIHSS), the weighted mean was computed for each scale. Mean scores were interpreted using predefined rating

scales. Knowledge scores were categorized as very high, high, moderate, low, or very low based on their corresponding mean ranges, reflecting the extent of nurses' understanding of NIHSS components. Practice scores were interpreted as always, often, sometimes, rarely, or never, indicating the frequency of NIHSS utilization in clinical settings.

To determine relationships between variables, the Pearson Product–Moment Correlation Coefficient (r) was applied. Correlation analyses examined: (a) the relationship between nurses' demographic characteristics (age, years of service, educational attainment, position, and number of training attended) and NIHSS knowledge, and (b) the relationship between NIHSS knowledge and practice. All statistical tests were conducted at a 0.05 level of significance, where a p-value ≤ 0.05 indicated a statistically significant relationship, and a p-value > 0.05 indicated no significant association. The validity and reliability of the quantitative data were ensured through rigorous instrument development and testing procedures. Content validity was established through expert review by stroke care professionals with extensive experience in the application of the NIHSS. Item relevance, clarity, and appropriateness were evaluated using a structured rating scale, and content validity indices were computed, indicating acceptable validity.

Reliability was assessed using Cronbach's alpha to determine the internal consistency of the questionnaire. Pilot testing was conducted among nurses who were excluded from the final sample, allowing refinement of the instrument prior to actual data collection. The results indicated that the instrument consistently measured nurses' knowledge and practice of the NIHSS. As this study employed a quantitative methodology, criteria for qualitative trustworthiness—such as credibility, dependability, confirmability, and transferability—were not applicable. Instead, methodological rigor was maintained through standardized data collection procedures, appropriate statistical analyses, and adherence to ethical research standards.

Ethical Considerations

This study was conducted in full compliance with established ethical standards for research involving human participants. Prior to data collection, ethical approval was obtained from the University Research Ethics Review Board (URERB), and formal authorization was secured from the administrations of Jilin Provincial Brain Hospital and Siping Central Hospital**.** Informed consent was obtained from all participants before their inclusion in the study. Nurses were provided with clear verbal and written explanations regarding the study's purpose, procedures, expected duration, potential risks, and anticipated benefits. Participation was strictly voluntary, and respondents were informed of their right to refuse participation or withdraw from the study at any stage without penalty or adverse consequences.

To ensure participant protection, the study posed minimal risk and involved no physical, psychological, or professional harm. Measures were implemented to prevent coercion or undue influence, particularly given the institutional setting. Data collection was scheduled during break periods or after work hours to avoid disruption of clinical duties. Confidentiality and anonymity were rigorously maintained throughout the research process. No personal identifiers were collected, and all responses were assigned numerical codes for analysis. Completed questionnaires and electronic data files were stored in password-protected systems accessible only to the principal investigator. All data were used solely for research purposes and were securely disposed of following study completion in accordance with institutional ethical guidelines. Throughout the study, participants were treated with respect and transparency. Clear instructions were provided during questionnaire administration, and the researcher remained available to address questions or concerns. These measures ensured the protection of participants' rights, dignity, and welfare while upholding the ethical integrity of the research.

Results and Discussion

Most participants were female (81.16%**)**, aged 21–30 years (71.38%), and held a bachelor's degree (66.67%). The majority had 1–5 years of service (67.75%) and attended 1–5 stroke-related seminars or training (53.26%). These results show that the nursing workforce was predominantly young and early in their professional careers.

The study showed the clinical nurses' level of knowledge on the NIHSS. As indicated in the table, the overall mean score was 3.57, interpreted as High, suggesting that clinical nurses possessed a strong understanding of the NIHSS and its essential components. This finding indicates that nurses were generally well-versed in stroke assessment principles and procedures, reflecting the integration of both theoretical learning and applied clinical experience.

The items *"I am knowledgeable in assessing a patient's eye movement by asking them to follow an object (Best Gaze)"* and *"I know that the tool is widely used in clinical practice, research, and emergency care settings"* obtained the highest mean scores (3.64), both interpreted as High. This demonstrates that the majority of clinical nurses were confident in performing fundamental components of the NIHSS and recognized its broad relevance across healthcare settings. Knowledge acquired during academic training was likely reinforced by hands-on clinical exposure, enabling accurate and confident application of standardized stroke assessments.

Table 1. *Frequency and Percentage of Respondents' Socio-Demographic Profile*

Variable	Category	Frequency	Percentage
Sex	Female	224	81.16
	Male	52	18.84
Age	21 - 30	197	71.38
	31 - 40	64	23.19
	41 - 50	8	2.90
	51 and more	7	2.54
Highest Educational Attainment	Bachelor Degree	184	66.67
	Masters Degree	81	29.35
	Doctoral Degree	11	3.99
Position in the Hospital	Staff Nurse	138	50.00
	Head Nurse	90	32.61
	Nurse Manager	16	5.80
	Supervisor	32	11.59
Length of Service(years)	1 - 5	187	67.75
	6 - 10	63	22.83
	11 - 15	16	5.80
	16 and more	10	3.62
Number of Related Seminars and Training Attended	1 - 5	147	53.26
	6 - 10	71	25.72
	11 - 15	30	10.87
	16 and more	28	10.14

n=276

Table 2. *Clinical Nurses' Knowledge of NIHSS*

Item	Mean	Interpretation
1. I know that the NIHSS tool is a systematic assessment designed to evaluate the neurological status of a person who has had a stroke.	3.40	High
2. I know how to evaluate a patient's alertness and responsiveness to a simple question or command.	3.51	High
3. I am knowledgeable in assessing a patient's eye movement by asking them to follow an object (Best Gaze).	3.64	High
4. I know that the NIHSS tool consists of 15 items that measure specific neurological function.	3.59	High
5. I know that the NIHSS tool has a total score range from 0 to 42, with higher scores indicating a more severe stroke.	3.57	High
6. I know that the tool is widely used in clinical practice, research, and emergency care settings.	3.64	High
7. I know how to assess a patient's attention to their environment and detect sensory neglect (extinction/inattention).	3.61	High
8. I know how to recognize and evaluate loss of fluency and limitations in verbal expression.	3.59	High
9. I know how determine the level of slurred or unclear speech (dysarthria) in a patient.	3.59	High
10. I know that the NIHSS tool was developed by the National Institute of Neurological Disorders and Stroke (NINDS).	3.54	High
Overall Mean	**3.57**	**High**

Recent literature supports these findings. Kumar et al. (2022) reaffirmed that the NIHSS remains a psychometrically valid and reliable instrument for evaluating stroke-related neurological deficits across multidisciplinary users. Its standardized structure promotes consistent knowledge acquisition and minimizes scoring variability among trained clinicians. Similarly, MacArthur et al. (2023) reported excellent interrater reliability between emergency and neurology physicians in NIHSS scoring, highlighting the importance of a shared, well-established knowledge base among all healthcare providers involved in stroke care. These studies corroborate the present results, indicating that structured training and consistent use of the NIHSS enhance professional competence and diagnostic reliability.

Conversely, the lowest-rated statement—*"I know that the NIHSS tool is a systematic assessment designed to evaluate the neurological status of a person who has had a stroke"*—had a mean of 3.40, still interpreted as High. This suggests

that while nurses' overall knowledge was commendable, periodic reinforcement is necessary to maintain a clear conceptual understanding of the NIHSS as a standardized neurological assessment tool. This observation aligns with the randomized controlled trial by Suppan et al. (2025), which demonstrated that, even among previously certified healthcare professionals, NIHSS knowledge and performance declined over time without refresher training. The study also showed that interactive e-learning modules produced significantly higher knowledge retention than traditional video-based reviews, underscoring the importance of active, structured, and technology-enhanced learning. Professional guidelines recommending NIHSS recertification every one to two years further underscore the necessity of continuous education to preserve accuracy and consistency in stroke assessments.

Overall, the findings of the present study affirm that clinical nurses were highly knowledgeable regarding the NIHSS, with competence reinforced through formal education, clinical experience, and ongoing professional development. Nonetheless, the inclusion of regular, interactive refresher courses could further strengthen nurses' mastery and ensure sustained excellence in acute stroke assessment.

Table 3 presents the clinical nurses' self-reported frequency of practicing the National Institutes of Health Stroke Scale (NIHSS) in routine clinical care. The overall mean score of 3.61, interpreted as "Often," indicates that nurses regularly integrate the NIHSS into their stroke assessment practices, demonstrating general adherence to standardized neurological evaluation. This consistent engagement with the NIHSS reflects its perceived relevance and applicability in acute stroke management. Across individual items, nurses reported that they "often" use the NIHSS as part of the standard assessment for stroke patients (M = 3.49). Although this score is slightly lower than other items, it still suggests that the NIHSS application is a common clinical practice. Research shows that regular use of structured tools, such as the NIHSS, improves stroke detection accuracy, facilitates early intervention, and enhances interprofessional communication (Middleton et al., 2020).

Table 3. *Practice of the NIHSS*

Item	Mean	Interpretation
1. I perform NIHSS as part of the standard assessment for stroke patients.	3.49	Often
2. I am confident in scoring each item of the NIHSS correctly.	3.62	Often
3. I use NIHSS to detect subtle changes in a patient's neurological status.	3.59	Often
4. I document the NIHSS score routinely in patient charts.	3.60	Often
5. I can accurately assess each NIHSS component without supervision.	3.51	Often
6. I received adequate practical training on how to perform the NIHSS.	3.57	Often
7. I believe NIHSS is an essential tool in stroke management.	3.91	Often
Overall Mean	**3.61**	**Often**

Nurses expressed confidence in scoring each NIHSS item correctly (M = 3.62) and reported frequent use of the NIHSS to detect subtle changes in neurological status (M = 3.59) and to document scores routinely in patient charts (M = 3.60). The high confidence and documentation practices align with evidence indicating that clinicians who regularly engage with stroke severity tools exhibit greater accuracy and clinical vigilance, resulting in better patient monitoring and outcomes (Suppan et al., 2021). Moreover, the ability to assess NIHSS components without supervision (M = 3.51) suggests that nurses possess a degree of practical proficiency likely developed through experiential learning and ongoing clinical exposure. Respondents also indicated that they received adequate practical training on the NIHSS (M = 3.57), which may contribute to their confidence and frequency of use. Structured and repeated training has been shown to enhance both competence and confidence among healthcare practitioners using standardized assessment scales, with simulation and interactive e-learning modalities yielding sustained improvements in clinical performance (Nazari et al., 2025).

The highest mean score was observed for the statement *"I believe NIHSS is an essential tool in stroke management"* (M = 3.91), indicating strong professional consensus on the NIHSS's importance in effective stroke care. This aligns with current practice guidelines that endorse the NIHSS as a fundamental component of early stroke assessment, given its predictive validity for clinical outcomes and therapeutic decision-making (Jauch et al., 2013; Kwon et al., 2021). Nurses' strong endorsement of the tool suggests that they perceive its utility not merely as a procedural task but as a core element of evidence-based stroke practice.

Overall, the pattern of mean scores indicates that clinical nurses not only frequently apply the NIHSS but also hold positive attitudes toward its value, likely enhancing the quality and consistency of neurological evaluation

in stroke care. Nonetheless, the slightly lower mean for routine application as a "standard assessment" indicates potential areas for strengthening institutional protocols and reinforcement mechanisms to fully embed the NIHSS into standard nursing assessment workflows.

The findings of this study demonstrate that selected socio-demographic variables—specifically age, sex, length of service, position in the hospital, and participation in stroke-related seminars and training—are significantly associated with clinical nurses' practice of the National Institutes of Health Stroke Scale (NIHSS). In contrast, the highest educational attainment showed no statistically significant relationship with NIHSS practice, indicating that formal academic credentials alone do not necessarily predict consistent or effective application of the tool.

Table 4. *Relationship Between Socio-Demographic Profile and Practice of the NIHSS*

Variable	*p-value*
Age	0.002
Highest Educational Attainment	0.956
Length of Service	<0.001
Number of Related Seminars and Training Attended	<0.001
Sex	0.004
Position in the Hospital	<0.001

The significant association between age and NIHSS practice suggests that older nurses are more likely to perform the NIHSS consistently and confidently. This relationship may be explained by cumulative clinical exposure, enhanced situational judgment, and greater familiarity with stroke care pathways developed over time. Similarly, the significant relationship observed between sex and NIHSS practice implies that gender-related differences in clinical assignments, workload distribution, or exposure to neurological cases may influence opportunities for practice and confidence in using the tool.

Length of service emerged as a particularly strong determinant of NIHSS practice, underscoring the value of experiential learning in developing assessment competence. Nurses with greater professional experience are likely to have repeated opportunities to refine their skills, integrate the NIHSS into routine care, and respond effectively to complex stroke presentations. Likewise, nurses in higher- or specialized positions—such as those assigned to stroke units, emergency departments, or leadership roles—used NIHSS more frequently, reflecting the demands of their responsibilities and the necessity of accurate neurological monitoring for critical decision-making.

The highly significant relationship between participation in stroke-related seminars and training and NIHSS practice further highlights the central role of continuing professional development. Ongoing education enhances nurses' technical skills, reinforces standardized assessment procedures, and builds confidence in clinical application. In contrast, the absence of a significant relationship between educational attainment and practice reinforces the notion that practical competence in stroke assessment is shaped more by hands-on experience and targeted training than by degree level alone.

These findings suggest that professional experience, clinical role, and continuous education are more critical determinants of NIHSS practice than formal academic attainment, as practical competence develops through repeated exposure and structured training rather than degree level alone (Benner, 1984; Ibrahim et al., 2025; Zhang et al., 2023).

Table 5. *Relationship Between Knowledge and Practice of the NIHSS*

Variable	*ρ*	*p-value*
Knowledge vs. Practice	0.885**	<0.001

The analysis revealed a very strong, positive correlation between clinical nurses' NIHSS knowledge and practice ($\rho = 0.885$, $p < 0.001$), indicating that nurses with higher NIHSS knowledge were significantly more likely to use the tool consistently and effectively in clinical settings. This association suggests that theoretical mastery of stroke assessment significantly translates into practical competence, supporting the notion that knowledge empowerment is central to evidence-based nursing practice. The strength and significance of this relationship highlight the critical role of knowledge acquisition in driving practice performance.

Such findings align with recent evidence indicating that structured education and training positively influence nurses' clinical application of assessment tools. For example, Ibrahim et al. (2025) found a significant correlation between nurses' knowledge and practice of neurological assessments, emphasizing that targeted interventions can enhance clinical performance in neurologically complex tasks. Likewise, broader studies on nursing knowledge–practice relationships in diverse clinical domains support this correlation. Zhang et al. (2025) reported that intensive training significantly improved nurses' documentation quality and practice in hospital settings, demonstrating that educational intensity is linked with enhanced practical outcomes. These studies collectively suggest that while knowledge alone does not guarantee optimal practice, it is a critical facilitator—particularly when combined with structured training, institutional support, and practice opportunities.

Conclusion

In conclusion, this study highlights the critical role of structured, continuous education in enhancing nurses' competence in stroke assessment. For nursing practice, the findings support integrating regular NIHSS training, mentorship, and standardized assessment protocols to optimize early stroke recognition and improve patient outcomes. For nursing education, the results advocate the inclusion of comprehensive, interactive NIHSS instruction in both academic curricula and continuing professional development programs.

Finally, future research should explore longitudinal and interventional approaches to evaluate the sustained impact of nurse-focused NIHSS training on clinical performance and stroke-related outcomes. Collectively, these efforts may strengthen nurse-inclusive, evidence-based stroke care and improve the quality and timeliness of stroke management across diverse healthcare settings.

Contributions of Authors

The main author conceptualized the topic and equally contributed in the finalization of the study.

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Conflict of Interests

The authors declares no conflict of interests.

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