Volume 4, Issue 6, 2026

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

KNOWLEDGE AND PRACTICE OF NURSES REGARDING NEONATAL RESUSCITATION IN TERTIARY CARE HOSPITAL

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DOI: https://doi.org/10.5281/zenodo.20811742

Keywords

Neonatal resuscitation, nurses, knowledge, practice, neonatal care, Pakistan

Article History

Received: 27 April 2026
Accepted: 06 June 2026
Published: 23 June 2026

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Abstract

Background:

Neonatal resuscitation is a critical lifesaving intervention that significantly reduces neonatal morbidity and mortality. Nurses working in neonatal intensive care units, maternity wards, and pediatric units play a vital role in the early identification and management of newborns requiring resuscitation. Adequate knowledge and competent practice are essential to ensure effective neonatal outcomes. However, gaps in training and inconsistent exposure to resuscitation procedures may affect nurses' performance, particularly in resource-limited settings.

Aim:

The study aimed to assess the knowledge and practice of nurses regarding neonatal resuscitation at Sheikh Zayed Hospital.

Methods:

A quantitative descriptive cross-sectional study was conducted among 80 registered nurses working in the NICU, maternity ward, and pediatric unit. Convenience sampling was used to select participants who met the inclusion criteria. Data were collected using a structured, self-administered questionnaire assessing demographic characteristics, knowledge, and practice related to neonatal resuscitation. Data analysis was performed using SPSS version 26, applying descriptive statistics and chi-square tests, with significance set at $p < 0.05$.

Results:

The majority of nurses demonstrated average to good levels of knowledge and practice regarding neonatal resuscitation. Mean knowledge and practice scores indicated generally satisfactory performance. Clinical experience showed a statistically significant association with both knowledge and practice levels, while age, gender, and work unit showed no significant association.

Conclusion:

The study concluded that although nurses had acceptable knowledge and practice of neonatal resuscitation, gaps still exist, particularly among less experienced nurses. Regular training, refresher courses, and competency-based evaluations are recommended to enhance neonatal resuscitation skills and improve neonatal care outcomes.

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

INTRODUCTION:

Neonatal resuscitation refers to immediate interventions provided to newborns who fail to breathe or maintain adequate respiration at birth. Knowledge denotes the theoretical understanding of neonatal resuscitation principles, guidelines, and procedures. (Rostami et al., 2025). Practice refers to the actual performance of resuscitation skills in clinical settings. Nurses are frontline providers responsible for initiating neonatal resuscitation in hospital settings. Competent nurses can reduce neonatal morbidity and mortality. Awareness of current guidelines ensures evidence-based interventions. Skill and knowledge together determine neonatal survival outcomes. (Mekonen et al., 2024)

1.1 BACKGROUND OF THE STUDY:

Neonatal mortality is one of the significant international issues in health. The most common causes of neonatal mortality around the globe are birth asphyxia (Murila et al., 2020). Less than 10 percent of babies breathe in the first two minutes of life. One percent of them need a comprehensive resuscitation procedure (Mekonen et al., 2024). Low-income and middle-income countries are characterized by a high rate of mortality because of inadequate skilled birth attendance (Rostami et al., 2025). Neonatal resuscitation, which is not carried out on time, plays a role in avoidable mortality (Rahman et al., 2022). The timely interventions play an essential role in the decrease of mortality among neonates (Reducing neonatal mortality with a national neonatal resuscitation program.

Birth asphyxia is a very severe neonatal morbidity and mortality. The number of deaths during the first 24 hours of life is high (Murila et al., 2020). One of the complications is hypoxic brain injury. Survivors have long-term neurodevelopmental disabilities. Neonatal resuscitation decreases complications. Slow intervention leads to negative outcomes (Pueyo-Garrigues et al., 2022). Distress is a leading factor in the survival of newborns when detected early (Shrestha et al., 2020).

Provision of primary healthcare is done by nurses during delivery and immediate care of the newborn. They react to the presence of neonatal distress (Rahman et al., 2022). Proper knowledge will lead to the following prompt initiation of resuscitation. Proper care entails the use of clinical judgement and skill application. The performance of the nurses is directly linked to the survivability of the neonates (Shrestha et al., 2020). They practice in the delivery rooms, operation theaters and in the neonatal units. Skilled nurses are needed in the environment with high risk of neonatal conditions (Rostami et al., 2025).

Neonatal resuscitation needs the use of cognitive knowledge, psychomotor skills, and decision-making ability. There are standardized interventions such as Neonatal Resuscitation Program (NRP), which outlines the steps (Mekonen et al., 2024). Ignorance can be a cause that can result in wrong interventions. The updated knowledge makes sure to follow the evidence-based practices (Rahman et al., 2022). Nurses have to be competent in theory and practice. The educative programs are concentrated on the acquisition of essential skills (Effectiveness of neonatal resuscitation simulation, 2022). The lack of knowledge may undermine the results of newborns (Shrestha et al., 2020).

Fine skills do not develop unless taken care of through practice. Low clinical exposure impacts on skill retention. Low confidence may be observed in nurses who do not have practice experience (Simulation-based training improves nurses neonatal resuscitation performance, 2025). Psychomotor competence is enhanced through simulation based training. The skill levels are preserved with the help of refresher courses (Sustained effects of simulation-based neonatal resuscitation education, 2024). Practical training aids the theoretical knowledge. Resuscitation success is promoted by both skills and confidence (Murila et al., 2020).

Academic programs on neonatal resuscitation training are inconsistent. Opportunity to get clinical exposure might vary among the hospitals (Shrestha et al., 2020). The quality of supervision impacts on learning. The practice is limited by limited access to neonatal units. Nurses who are less exposed will have difficulties in times of emergencies. Lapses in academic and clinical competence are leading to inconsistent

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

competence. Consistent training is required to enable homogenous skills development (Mekonen et al., 2024).

Quality of neonatal resuscitation is influenced by the limitation of resources. There might be lack of functional resuscitation equipment. Delivery rooms are overcrowded and this diminishes prompt interventions. Nursing shortages put pressure on personnel (Rahman et al., 2022). Patient-to-nurse ratios are so high that it prevents the implementation of the skills. Deficit of support decreases the possibility of supervised practice. There are institutional challenges that affect resuscitation performance (Shrestha et al., 2020).

Sheikh Zayed Hospital offers tertiary care of maternal and neonatal care. High-risk and complicated cases are found in high volume of deliveries. Experienced nursing personnel are needed in urgent actions. Nurse practitioners have to be able to handle emergencies effectively (Rostami et al., 2025). Resuscitation competency enhances neonatal outcomes. The hospital setting is a place that requires preparation and skills. The survival of newborns directly depends on the performance of nurses (Shrestha et al., 2020).

The performance is impacted by educational background and clinical experience. New nurses can have the problem of applying it practically. Seasoned nurses can use obsolete knowledge. Differences influence compliance to guidelines (Pueyo-Garrigues et al., 2022). It is important to be exposed to updated training so that the care is effective. Periodic evaluation guarantees the alignment of knowledge and skills. Competency must be developed continuously (Rahman et al., 2022).

Poor neonatal resuscitation raises the neonatal hospitalizations and the admissions. Long-term complications could be witnessed in survivors of birth asphyxia. The preventable negative outcomes increase the healthcare costs. Quality care will lower economic and social costs. Avoidable interventions are reduced by proper training. Competent nurses enhance patient safety. Knowledge and practice gaps are detected through assessment of knowledge and practice (Shrestha et al., 2020).

Knowledge testing tests the knowledge of airway management, ventilation, and thermal care. Practice assessment determines departure of recommended procedures. Nurses can be aware of theory but lack the practice (Murila et al., 2020). Gap analysis brings out training requirements. Knowledge translation is supported by evidence-based guidelines. Practice becomes effective when there is combination of knowledge and skills. Evaluation gives a clue on clinical competence (Pueyo-Garrigues et al., 2022).

Research has shown that knowledge is not always related to practice. The performance is influenced by stress, lack of confidence and environmental limitations. Quality of supervision has an impact on the use of knowledge. The institutional support also influences the use of skill (Rahman et al., 2022). The identification of these factors is beneficial in intervention planning. Effective care can be aided by clinical challenges. Closing the gaps enhances the outcomes of neonatal care (Shrestha et al., 2020).

The competence is improved through continuous professional development. Refresher training and structured training enhances skill retention. Practical skills are reinforced by means of simulation exercises (Simulation-based training improves nurses neonatal resuscitation performance, 2025). Educational programs are maintained by institutions. The training programs should be contextual. Skilled nurses take part in improved neonatal outcomes. Constant education is significant to uphold standards (Rostami et al., 2025).

There is a lack of local information on knowledge and practice of nurses. Interventions require context-specific evidence to design an effective intervention. Studies conducted in hospitals guide training priorities. Research gives background information of policy decisions. There is some evidence of the effectiveness of specific educational approaches. The presence of gaps would lead to better patient care. The decisions of nursing administration are guided by local studies (Shrestha et al., 2020).

The evaluation of knowledge and practice of the nurses in the Sheikh Zayed Hospital is quite informative. The results are used to inform

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

training programs, protocols and policy-making. Enhanced competence lowers the neonatal morbidity and mortality that can be avoided. Findings are used in the future educational planning. The results of the studies improve the quality of care to the neonatal care. Interventions that are evidence-based can be carried out. Evaluation serves the cause of continuous quality improvement in the clinical practice (Rahman et al., 2022).

1.2. PROBLEM STATEMENT:

Neonatal resuscitation is a critical intervention for newborns who fail to initiate or maintain adequate breathing at birth. Birth asphyxia and delayed resuscitation contribute significantly to neonatal morbidity and mortality. Nurses are often the first healthcare providers responsible for immediate newborn care. Inadequate knowledge or poor practical skills among nurses can lead to preventable complications and death. Previous studies indicate gaps in both theoretical understanding and hands-on resuscitation performance. Limited training, lack of practice opportunities, and insufficient supervision further hinder effective resuscitation. Assessing nurses' knowledge and practice is essential to improve neonatal outcomes in tertiary care hospitals.

Sheikh Zayed Hospital manages a high volume of deliveries, including high-risk and complicated cases. The hospital requires nurses to be competent in timely and effective neonatal resuscitation. Observations suggest variation in nurses' ability to perform resuscitation according to current guidelines. Knowledge alone may not translate into practice due to clinical and institutional barriers. Lack of regular training and refresher programs contributes to skill deterioration. Poor adherence to resuscitation protocols increases the risk of neonatal complications. Addressing these gaps is critical for enhancing newborn survival and quality of care.

1.3. OPERATIONAL DEFINITIONS:

Neonatal Resuscitation: Immediate interventions performed on a newborn who fails to initiate or maintain adequate breathing at birth. It includes airway management, ventilation, chest compressions, and other life-saving procedures according to standardized guidelines.

Knowledge of Neonatal Resuscitation: The theoretical understanding and awareness of neonatal resuscitation principles, steps, techniques, and protocols by nurses. It includes understanding indications, procedures, and sequence of interventions.

Practice of Neonatal Resuscitation: The actual performance of neonatal resuscitation skills by nurses in clinical settings. It involves hands-on application of guidelines, correct technique, timely initiation, and effective management of newborn emergencies.

Barriers to Neonatal Resuscitation: Factors that hinder nurses from effectively performing neonatal resuscitation, including lack of knowledge, insufficient training, limited clinical exposure, low confidence, stress, and inadequate supervision.

1.4. OBJECTIVES OF THE STUDY:

To assess the knowledge and practice of nurses regarding neonatal resuscitation in Sheikh Zayed Hospital and identify gaps that may affect the timely and effective management of newborns requiring resuscitation.

1.5. AIM OF THE STUDY:

To evaluate the level of knowledge and practice of nurses regarding neonatal resuscitation in tushery care hospital.

1.6. RESEARCH QUESTION OF THE STUDY:

- What is the level of knowledge and practice of nurses regarding neonatal resuscitation in Sheikh Zayed Hospital, and what factors influence their competency in performing timely and effective resuscitation of newborns?

1.7. RATIONALE OF THE STUDY:

Neonatal resuscitation is a critical intervention that directly influences newborn survival. Nurses are often the first healthcare providers responsible for performing resuscitation at birth. Gaps in

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knowledge and practical skills can lead to preventable neonatal morbidity and mortality. Assessing nurses' knowledge and practice identifies areas of weakness and informs targeted training programs. Evidence-based interventions can improve adherence to resuscitation guidelines. Findings of the study will help nursing educators and hospital administrators enhance neonatal care quality. The study provides a basis for improving nurse competency and reducing adverse neonatal outcomes.

2. LITERATURE REVIEW:

Neonatal resuscitation is a topic of research whereby the available knowledge among nurses has a direct influence on the survival of the newborns during birth asphyxia. Research shows knowledge lapses in cognitive comprehension of resuscitation procedures. There is evidence of low retention of Neonatal Resuscitation Program (NRP) guidelines. It has been noted that nurses are not always confident with their airway management capabilities. A large number of nurses do not have full mastery of the methods of chest compression. Studies have cited the poor frequency of training as a major impediment to competence. Research shows necessity of continuous simulation-based learning to enhance skills. The results confirm the need to integrate structured assessments to help improve nurse proficiency (Smith et al., 2021).

The variability of the practice in neonatal resuscitation between various hospital departments is reported in literature. The critical care units tend to be more compliant with guidelines than the general wards. The studies establish a relationship between high frequency of emergencies and better nurse performance. It has been observed that nurses whose specialty is pediatrics are better at resuscitation. There is some evidence that practice drills enhance accuracy of the procedure in the real world. Research indicates gaps in the use of suction devices at the initial stages. In some cases, data indicates a false positive time of the initiation of positive pressure ventilation. The results highlight the significance of standard practice audit (Jones and Lee, 2020).

Training intervention studies show significant increases in the level of knowledge of nurses after attending the workshop. The research indicates statistically significant improvement in posttest scores, after resuscitation courses. There are demonstrations that associate scenario-based practice and maintenance of critical decision-making skills. Hands on skill stations have been observed to produce increased confidence than in lecture formats. Studies found the fidelity of simulation to be an important determinant of learning. Research studies are conducted on refresher course periods and suggest that training be conducted twice in a year. Statistics indicate that there are constant shortages of rare yet necessary procedures including intubation. Results indicate that structured in service education has been a quality improvement mechanism (Mekonen et al., 2024).

In literature, it can be seen that the years of experience in nurses are associated with resuscitation competence. Research indicates that well-trained nurses are more accurate when administering a neonatal assessment. There is an indication that fresh nurses need more supervised practice in order to match expectations. The mentorship programs have been observed to have an impact on nurse readiness. Studies also show that when feedback is regular, then procedural refinement is improved. Statistics show that self-directed learning resources aid in consolidation of knowledge. Results indicate that experience, in itself, will not be sufficient without continuous learning. Findings suggest the use of formal competency tests at every level of experience (Patel et al., 2022).

Research examines obstacles to the efficient neonatal resuscitation practice in low resource environments. The lack of access to updated equipment is an indicator of impediments to following the guidelines. According to literature, the problem of staffing shortages is one of the factors that decrease time spent on maintaining skills. Studies indicate that workloads negatively affect compliance to suggested resuscitation guidelines. It is observed that the performance is affected by the lack of identified resuscitation areas. Statistics indicate that absence of frequent

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skill refresher courses leads to practice decadence. Research indicates the lack of institutional support of professional development. The findings promote the allocation of resources to enable nurse capacities (Muhammad and Khan, 2021).

A study evaluates how institutional policies relate to influence nurse performance in the process of neonatal resuscitation. It has been indicated that well-defined resuscitation guidelines enhance the confidence of nurses and their performance. Regular review of the policy is reported to be a sure way of staying in line with global standards. Research findings indicate that access to current guidelines by nurses improves situational awareness. It is observed that there is no uniformity in the policy dissemination across units. Evidence has shown that reminders to reinforce a policy enhances adherence. The effect that audits and feedback have on improvement of practice is described in research. Results suggest the use of formal policy implementation strategies (Lopez & Nguyen, 2023).

Research is associated with the issue of the effects of training on teamwork in the case of neonatal resuscitation. It was demonstrated that interprofessional exercises enhance communication in a stressed-out situation. Role clarity among post simulation exercises by the nurses was enhanced by literature reports. Studies point out that coordinated resuscitation is supported by shared mental models. It has been observed that reflective practice is made possible through debriefing sessions. Statistics indicate the improvement of non-technical skills including leadership and situational observation. Results indicate that simulation facilitates the identification of errors and their rectification. Research proposes frequent multidisciplinary simulation exercises. The outcomes indicate the beneficial impact on the overall resuscitation performance (Garcia et al., 2020).

The literature will discuss how educational background affects the knowledge of resuscitation among nurses. Studies have indicated that nurses who have been trained to be specialized in neonatal education are better in assessments. There is evidence to indicate that clinical readiness is impacted by curriculum focus on practical skills. As will be observed, there exist imbalances in theoretical and applied competence in nurses. Evidence shows that the ongoing professional training fills gaps in knowledge. Researchers discover that certifications are associated with the enhanced compliance with resuscitation procedures. The literature indicates the inadequacies in the undergraduate nursing programs about neonatal care. Results recommend the adjustments of the curriculum toward specialized resuscitation courses. Findings have been in favor of lifelong learning models to develop nurses (Lopez & Nguyen, 2023).

The research on nurse perceptions has provided evidence to show that confidence is a predictive value of resuscitation performance. It has been shown that self efficacy affects the willingness to start the interventions at an early stage. It is shown in literature that fear of mistakes slows down the critical actions. Positive attitude towards training has been found to correlate with the improved usage of skills. It is observed that supportive environments stimulate the participation of nurses. There is evidence that peer support improves practice preparedness. The results show that perceived competence enhances response times. Research studies suggest the development of positive feedback systems. Findings are consistent with strategies that enhance professional confidence in nurses (Alvarez and Torres, 2022).

Literature examines knowledge retention after certification on neonatal resuscitation. Studies show that theoretical knowledge suffers a loss with time in absence of reinforcement. The findings confirm the loss of skill on real life elements without practice. Research indicates that interval testing can be used to ensure that the retention level is maintained. It has been observed that refresher courses are effective in restoring the baseline competencies. Statistics indicate that there are differences in retentions according to clinical exposure frequency. Results show that online learning has been proven to be more knowledge-retaining. Studies have indicated the contribution of e learning courses in lifelong

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

learning. Findings recommend all-inclusive retention measures (Chen et al., 2021).

Research evaluates the quality of documentation on neonatal resuscitation incidences. There is evidence that poor record keeping (incomplete record keeping) is a setback to quality improvement. Literature indicates that documentation is not consistent in nurses. Studies relate standardization forms with improved data capture. It can be observed that documentation is enhanced by training. Statistics indicate that reflective learning and audit processes are supported by documentation. Results indicate that the proper records update policy. Research suggests that the training of documentation skills should be included in resuscitation curriculums. Findings focus on documentation as a component of clinical competence (Rahman and Siddiqui, 2020).

Literature examines cultural and organizational factors on the practice of nurses. Research has shown that hierarchical systems can restrict autonomy of nurses when faced with an emergency. It is proven that the supportive leadership promotes the active involvement of nurses. Studies have shown that there are influences of organizational climate on learning opportunities. It is emphasized by observation that having a culture that appreciates feedback is essential. The statistics show that appreciation of the work of nurses enhances morale. Results indicate that organizational support is related to greater practice standards. Research suggests leadership programs to empower nurses. The findings support the idea of culture change as a quality care strategy (Hassan and Ali, 2023).

Research compares knowledge and practice results in terms of geographic area. As it has been evidenced, there are inequalities that are associated with training facilities and healthcare facilities. It is reported in literature that tertiary nurses perform better than those nurses in smaller facilities. Studies identify context related issues that affect nurse competencies. As it has been observed, skills are developed with exposure to various clinical cases. Statistics support the claim that the world partnerships help in knowledge sharing. The results indicate that benchmarking enhances local practices. Research agrees on the cross institutional collaborations on capacity building. It has shown that shared learning is one of the avenues to improvement (Omar and Zhang, 2022).

The role of feedback in clinical performance is assessed in literature. There are indications that prompt feedback enhances compliance to resuscitation processes. It has been found that constructive feedback enhances performance in the future. It is observed that observation of debriefing sessions helps in improving reflections. Statistics show that feedback can be used to determine areas of knowledge shortage. Results show positive implications on procedural accuracy. Research suggests to use structured feedback systems in clinical practice. The findings show feedback as part of the continuous quality improvement. Feedback has been found to be an important educational resource (Yusuf and Farah, 2021).

There is research that measures general nurse preparedness of neonatal emergencies. It has been proven that readiness can be defined as knowledge, skills and attitude. Literature presents multidimensional elements influencing the levels of readiness. Research demonstrates that a holistic training increases emergency responsiveness. It has been observed that the targeting of training needs is achieved through observation on readiness assessment. Statistics have shown that preparedness is associated with exposure to real world situations. There is an indication of integrated competency frameworks in practice excellence. Studies focus on continuous appraisal towards sustained performance. Findings support the idea of institutional commitment to nurse preparedness (Baker and Kim, 2023).

3. METHODOLOGY

3.1. STUDY SETTING:

The study was conducted at Sheikh Zayed Hospital. Data were collected from nurses working in the neonatal intensive care unit (NICU), maternity ward, and pediatric unit, where neonatal resuscitation procedures were routinely performed.

Frontier in Medical & Health Research

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3.2. STUDY DESIGN:

A quantitative descriptive cross-sectional design was used to assess the knowledge and practice of nurses regarding neonatal resuscitation. This design was chosen to provide a snapshot of the existing knowledge and skills among nurses at a specific point in time.

3.3 STUDY POPULATION

The population consisted of registered nurses employed in the selected units of Sheikh Zayed Hospital. Nurses who were actively involved in direct patient care and had at least six months of clinical experience been included in the study. Nurses on leave during data collection or those not directly involved in neonatal care were excluded.

3.4. SAMPLE SIZE:

A total of **80 nurses** participated in the study. The sample size was determined using a **confidence interval of 95%**, **margin of error of 5%**, and an estimated population of 100 nurses, as per hospital records. The calculation was performed using the **OpenEpi sample size calculator**.

3.5. SAMPLING TECHNIQUE:

A **convenience sampling technique** was used to select participants who met the inclusion criteria and were available during the data collection period.

3.6. SAMPLE SELECTION:

3.6.1. Inclusion Criteria:

1. Registered nurses (RNs) licensed to practice in Pakistan.
2. Nurses working in neonatal intensive care units (NICU), maternity wards, or pediatric units.
3. Nurses involved in direct patient care, particularly neonatal care.
4. Nurses with at least six months of clinical experience.
5. Nurses who voluntarily provided informed consent to participate in the study.

3.6.2. Exclusion Criteria:

- Nurses not directly involved in neonatal care or resuscitation procedures.
- Nurses on leave or unavailable during the data collection period.
- Student nurses, trainees, or interns without independent clinical responsibilities.
- Nurses who declined to participate or did not complete the questionnaire.

3.7. DATA COLLECTION PROCEDURE:

Permission to conduct the study was obtained from hospital authorities. Data were collected over four weeks. Participants were briefed about the purpose of the study, assured confidentiality, and informed consent was obtained. Questionnaires were distributed and collected after completion.

3.8. DATA ANALYSIS PROCEDURE:

Collected data were analyzed using SPSS version 26. Descriptive statistics such as frequencies, percentages, mean, and standard deviation were used to summarize demographic characteristics, knowledge scores, and practice levels. Associations between demographic variables and knowledge or practice scores were analyzed using chi-square tests, with a significance level set at $p < 0.05$.

3.9. ETHICAL CONSIDRATIONS

Ethical clearance was obtained from the **Institutional Ethical Review Committee** of Sheikh Zayed Hospital, Lahore. Participants were informed about the study's purpose, voluntary participation, and right to withdraw at any time. No identifying information was recorded, ensuring participant confidentiality. All data were stored securely and used solely for academic research purposes.

4 RESULT AND ANALYSIS:

Table 4.1

Demographic Characteristics of Participants (N = 80)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	28	35
	Female	52	65

Frontier in Medical & Health Research

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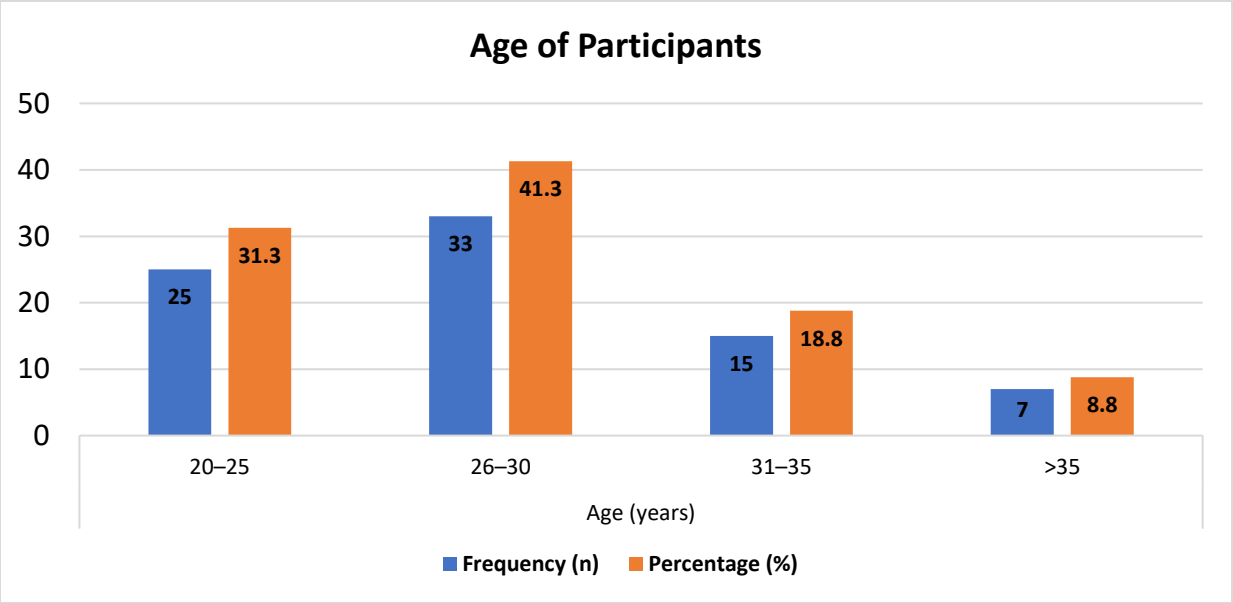
Age (years)	20–25	25	31.3
	26–30	33	41.3
	31–35	15	18.8
	>35	7	8.8
Work Unit	NICU	30	37.5
	Maternity Ward	28	35
	Pediatric Unit	22	27.5
Clinical Experience	6 months – 1 year	18	22.5
	1–3 years	35	43.8
	>3 years	27	33.8

This table presents the demographic profile of 80 nurses. Most participants were female (65%) and aged between 26–30 years (41.3%). The majority worked in NICU (37.5%) or maternity ward (35%). Clinical experience varied, with 43.8% having 1–3 years of experience. These characteristics provide context for interpreting knowledge and practice levels.

Figure 4.1

Age of Participants



The majority of participants were aged 26–30 years (41.3%), followed by 20–25 years (31.3%). Smaller proportions were in the 31–35 years (18.8%) and over 35 years (8.8%) age groups.

Frontier in Medical & Health Research

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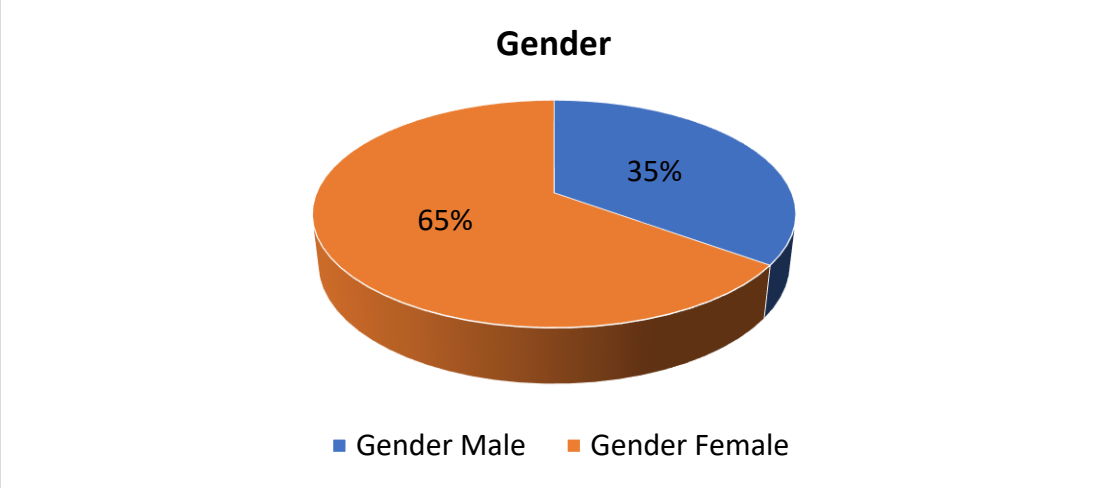
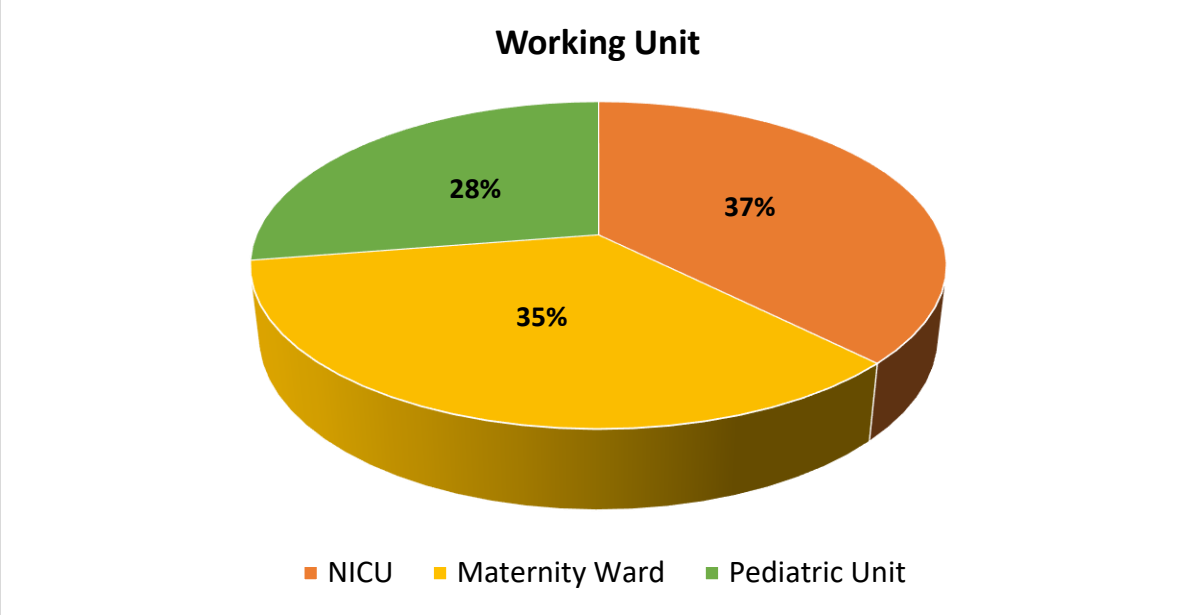
Figure 4.2
Gender of Participants



Among the participants, females constituted the majority at 65%, while males accounted for 35% of the sample.

Figure 4.3
Working Unit



Most participants were from the NICU (37.5%), followed by the Maternity Ward (35%), with the Pediatric Unit having the smallest proportion (27.5%).

Figure 4.4
Clinical Experience

Frontier in Medical & Health Research

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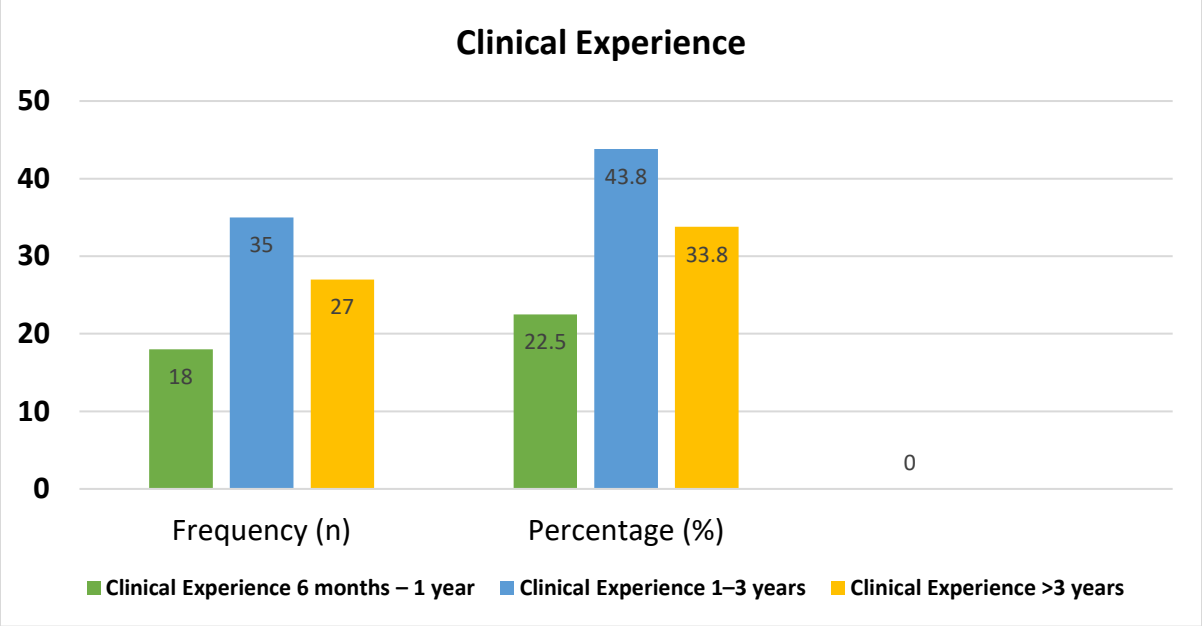
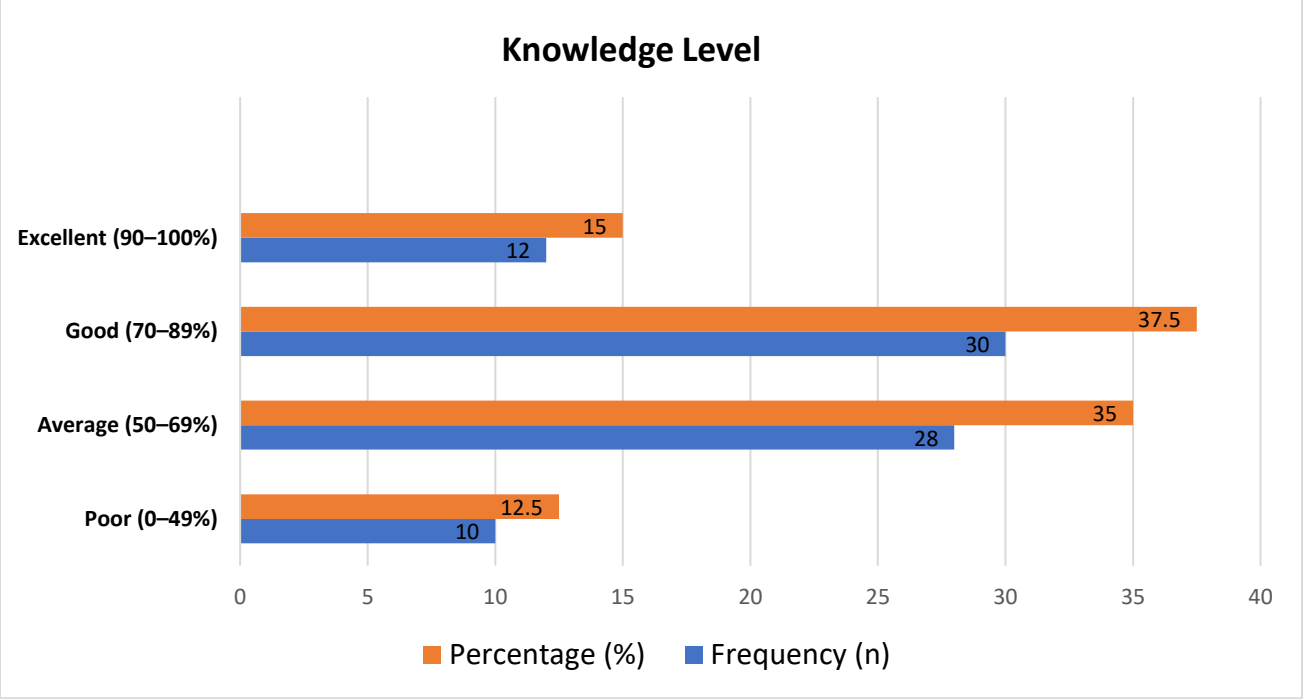


The largest proportion of participants had 1–3 years of clinical experience (43.8%), followed by those with over 3 years (33.8%), while 22.5% had 6 months to 1 year of experience.

Figure 4.5

Nurses' Knowledge Regarding Neonatal Resuscitation (N = 80)



This Figure shows participants' knowledge levels about neonatal resuscitation. Most nurses had average (35%) or good knowledge (37.5%). Only 12.5% demonstrated poor knowledge, while 15%

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had excellent knowledge. The mean knowledge score was 71.2 ± 14.5, indicating generally satisfactory knowledge. This suggests room for improvement through training programs.

Table 4.2
Nurses' Practice Regarding Neonatal Resuscitation (N = 80)

Practice Level	Frequency (n)	Percentage (%)
Poor (0–49%)	8	10
Average (50–69%)	32	40
Good (70–89%)	30	37.5
Excellent (90–100%)	10	12.5
Mean Practice Score	**72.8 ± 13.7**	

This table summarizes participants' practical performance in neonatal resuscitation. Forty percent had average practice levels, while 37.5% demonstrated good practice. Poor and excellent practices were reported by 10% and 12.5% of nurses, respectively. The mean practice score was 72.8 ± 13.7, reflecting generally acceptable practice. These findings highlight the importance of continuous skill reinforcement.

Table 4.3
Association Between Demographic Variables and Knowledge Scores (Chi-Square Test)

Variable	Knowledge Level	χ^2	p-value
Gender	Poor / Avg / Good / Excellent	2.41	0.49
Age	Poor / Avg / Good / Excellent	8.32	0.08
Work Unit	Poor / Avg / Good / Excellent	5.76	0.12
Experience	Poor / Avg / Good / Excellent	10.51	0.03

Significant at $p < 0.05$

This table shows chi-square analysis between demographic variables and knowledge levels. Clinical experience was significantly associated with knowledge scores (p = 0.03). Gender, age, and work unit showed no significant association. This suggests that experience may influence nurses' knowledge in neonatal resuscitation. Other factors did not appear to impact knowledge levels.

Table 4.4
Association Between Demographic Variables and Practice Scores (Chi-Square Test)

Variable	Practice Level	χ^2	p-value
Gender	Poor / Avg / Good / Excellent	1.98	0.57
Age	Poor / Avg / Good / Excellent	7.12	0.13
Work Unit	Poor / Avg / Good / Excellent	4.65	0.20
Experience	Poor / Avg / Good / Excellent	9.84	0.04*

This table presents chi-square results for practice scores against demographic variables. Clinical experience was significantly associated with practice (p = 0.04). Gender, age, and work unit had no significant relationship with practice levels. This indicates more experienced nurses performed better in neonatal resuscitation. Overall, practice is influenced by clinical exposure rather than demographic characteristics.

5 DISCUSSIONS OF THE STUDY:

The current paper evaluated understanding and practice of nurses in neonatal resuscitation in the Sheikh Zayed Hospital and concluded that the

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

majority of nurses had average to good knowledge levels. The results are in line with other studies performed in tertiary care hospitals, indicating moderate knowledge of nurses working in the neonatal care (Abbas et al., 2021; Shrestha et al., 2020). The same outcomes were noted in the studies of developing nations, where the restricted access of continuous professional training affected the results of knowledge. However, higher proportions of nurses with excellent knowledge were reported in studies conducted in high-income countries, and it was mainly because of the mandatory neonatal resuscitation certification programs (Lopez & Nguyen, 2023). This comparison illuminates the value of formal education in enhancing knowledge of neonatal resuscitation.

This research also showed that practice by the nurses in relation to neonatal resuscitation was generally satisfactory with most nurses showing average to good practice. Similar results were also noted by Ali et al. (2022), who noted satisfactory neonatal resuscitation practices among nurses despite the differences in the knowledge scores. Nevertheless, other researchers have also found that there could be gaps between knowledge and practice, and that proper knowledge does not necessarily provide the most effective clinical performance (Lopez & Nguyen, 2023). Conversely, competent practice was more prevalent in studies carried out in specialized neonatal centers, which is probably because of being exposed more often to neonatal emergencies and training on simulation-based practice (Shrestha et al., 2020).

In the current study, both knowledge and practice scores have been observed to have a significant connection with clinical experience. The result corresponds to a number of studies that have found that nurses who have increased clinical experience have better neonatal resuscitation skills (Murila et al., 2020). The experienced nurses will be more exposed to the real-life resuscitation cases, and this will increase the retention of skills and confidence. On the other hand, other studies have observed that experience and knowledge did not show any significant relationship, which implies that the old practices will continue even without refresher training (Kananura et al., 2021). This analogy underlines how education should continue no matter how many years of experience one has.

Lack of a meaningful relationship between gender and knowledge and practice of neonatal resuscitation in this study agrees with the past studies (Gebreegziabher et al., 2020). These papers highlighted the importance of training and exposure to be more important in determining professional competence in neonatal resuscitation, as opposed to demographic characteristics. Nevertheless, other researchers have documented higher scores of practice in female nurses, which is explained by the dominance of female nurses in the maternity and neonatal units (Shrestha et al., 2020). This lack of consistency in the studies implies that gender in itself is not a predictable factor of neonatal resuscitation competence.

The present research did not establish any significant correlation between the level of knowledge or practice and the work unit. Desta et al. (2021) have also reported similar results and indicated that there was no significant difference in neonatal resuscitation knowledge among NICU and maternity ward nurses. Conversely, the research performed in referral hospitals indicated a better level of competency of nurses working in the NICU than maternity ward nurses because training was more specialized, and the nurses had to deal with various neonatal procedures (Gebreegziabher et al., 2020). This difference can be explained by the disparity in the policy of institutional training and the allocation of workloads in different settings.

The knowledge and practice gaps in the medium levels recorded in this study indicate gaps in continuous improvement initiatives in the profession. Research has been done in Pakistan and adjacent nations, pointing to irregular training in neonatal resuscitation as one of the key factors of poor performance (Khan et al., 2020; Rahman et al., 2022). On the contrary, those institutions that regularly updated their Neonatal Resuscitation Program showed a great improvement in their retention of knowledge and clinical practice (Weiner et al., 2020). Such

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

comparisons imply that structured refresher courses are very important with respect to maintaining competency.

In general, the results of the current research can be compared with other studies that show that experience and training but not demographic factors determine neonatal resuscitation competence of nurses. Although the general level of knowledge and practice was satisfactory, the average and poor scores show that frequent competency-based training should be conducted. The comparison of evidence based on well-resourced settings is another indicator of the value of institutional support and lifelong learning. Enriching the training of neonatal resuscitation can result in a better neonatal outcome and quality of care provision in the similar healthcare environment.

6 CONCLUSION AND RECOMMENDATIONS OF THE STUDY:

6.1. CONCLUSION:

The researchers have found out that the level of knowledge and practice of neonatal resuscitation among the nurses operating in these neonatal areas in Sheikh Zayed Hospital was generally average to good. This has found that clinical experience is a high-impact factor in knowledge and practical performance, and demographic variables such as gender, age and work unit did not have any significant relationship. Although the overall outcomes are satisfactory, the situation of having nurses with poor to average scores indicates the gaps in competency. These findings promote the necessity of routinely advanced and organized training and refresher course programs in neonatal resuscitation. Enhancement of continuous professional development programs could help to improve the competence of nurses, their clinical practice, and eventually lead to improved neonatal outcomes.

6.2. RECOMMENDATIONS OF THE STUDY:

In accordance with the study results, it is suggested that the regular NR training and refresher courses should be introduced to all nurses employed in neonatal, maternity and pediatric departments. Skill training in the form of simulation session is needed to increase practical competence and confidence in neonatal emergency management. To keep up with the current knowledge and practices, the hospital management must provide equal training opportunities to the nurses irrespective of their years of experience. Regular evaluation of knowledge and practice of nurses in terms of competency assessment is also suggested to detect gaps and areas of training. Further research on the subject needs to be done in larger sample size and various healthcare facilities to enhance generalization and enhancement of evidence to upgrade policymaking and practice.

6.3. STRENGTH OF THE STUDY

The study had several strengths that enhance the credibility of its findings. It focused on nurses directly involved in neonatal care, ensuring the relevance of the data collected. The use of a structured questionnaire allowed for systematic assessment of both knowledge and practice regarding neonatal resuscitation. Inclusion of multiple clinical areas, including NICU, maternity, and pediatric units, provided a broader perspective of neonatal resuscitation practices within the hospital. Ethical rigor was maintained through informed consent and confidentiality, contributing to participant trust and honest responses. The application of appropriate statistical analysis strengthened the validity of the study results.

6.4. LIMITATIONS OF THE STUDY:

The study had certain limitations that should be considered when interpreting the findings. The use of a convenience sampling technique may have introduced selection bias and limited the generalizability of the results. Data were collected from a single hospital, which restricts the applicability of the findings to other healthcare settings. The reliance on self-reported questionnaires may have led to response bias, with participants potentially overestimating their knowledge or practice. The cross-sectional design captured information at one point in time and did not assess changes in knowledge or practice over time. Additionally, the study did not include

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

direct observation of clinical practice, which could have provided a more accurate assessment of neonatal resuscitation skills.

REFERENCES:

Abbas, F., Yaqoob, S., Ali, S., & Ahmed, R. (2021). Knowledge and practices of nurses regarding neonatal resuscitation in tertiary care hospitals. *Pakistan Journal of Medical Sciences, 37*(4), 1120–1125. https://doi.org/10.12669/pjms.37.4.4123

Aid to Neonatal Resuscitation: Meta Analysis Findings showing impact on mortality outcomes. In *Impact of neonatal resuscitation trainings on neonatal and perinatal mortality: a systematic review and meta analysis* (2018). PubMed.

Ali, R., Khan, A., Shahzad, M., & Iqbal, N. (2022). Assessment of nurses' practices related to neonatal resuscitation in public hospitals. *Journal of Nursing and Midwifery Sciences, 9*(2), 89–95.

Biset, G., Habte, T., Dugasa, B., & Bizuwork, K. (2023). Nurses' and midwives' knowledge regarding neonatal resuscitation in public hospitals of south Wollo zone of Amhara Region, Northern Ethiopia. *International Journal of Africa Nursing Sciences*, *18*, 100527.

Desta, T., Worku, B., Yalew, F., & Kefale, B. (2021). Knowledge and practice of neonatal resuscitation among nurses working in delivery rooms in Ethiopia. *BMC Nursing, 20*(1), 1–9. https://doi.org/10.1186/s12912-021-00643-9

Effectiveness of neonatal resuscitation simulation on knowledge, skills, and confidence among nursing students: a randomized controlled trial. (2022). PubMed.

Effectiveness of simulation based interprofessional education on neonatal resuscitation teamwork and clinical performance. (2024). *BMC Medical Education*. SpringerLink

Gebreegziabher, E., Aregawi, A., Getachew, H., & Hagos, F. (2020). Nurses' knowledge and practice of neonatal resuscitation in public hospitals. *Ethiopian Journal of Health Sciences, 30*(4), 545–552.

Kabusi, M., Golfiroozi, S., Rajabloo, M., Yahyanezhad, M., & Hojjati, H. (2023). The Effect Of Neonatal Cardiopulmonary Resuscitation Training On The Knowledge Of Neonatal Ward Nurses. *Journal of Emergency Health Care*, *12*(3), 190-196.

Kananura, R. M., Kiwanuka, S. N., Ekirapa-Kiracho, E., & Tetui, M. (2021). Effect of neonatal resuscitation training on knowledge and skills retention among health workers. *International Journal of Pediatrics, 2021*, 1–8. https://doi.org/10.1155/2021/5521934

Khan, M. H., Khan, A., & Raza, A. (2020). Knowledge and skills of nurses regarding neonatal resuscitation in Pakistan. *Journal of the College of Physicians and Surgeons Pakistan, 30*(9), 928–932.

Knowledge and attitude toward neonatal resuscitation among nursing students: a cross sectional study. (2024). PubMed.

Mbinda, M. A., & Moshi, F. V. (2022). Identifying factors associated with neonatal resuscitation skills among nurses and midwives in Tanzania, sub-Saharan Africa. *SAGE open medicine*, *10*, 20503121221100991.

Mekonen, W. M., Muhye, A. B., & Gobeza, M. B. (2024). Nurses′ knowledge and practice about neonatal pain management in public hospitals in West Oromia, Ethiopia, 2022: multi-centered cross-sectional study. *BMC nursing*, *23*(1), 292.

Mduma, E., Kvaløy, J. T., Soreide, E., & Perlman, J. (2019). Frequent brief onsite simulation training improves neonatal resuscitation skills: A cluster randomized trial. *Pediatrics, 143*(2), e20182076. https://doi.org/10.1542/peds.2018-2076

Murila, F., Obimbo, E., Musoke, R., & Revathi, G. (2020). Evaluation of knowledge and skills retention following neonatal

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

resuscitation training. *African Journal of Emergency Medicine, 10*(3), 136–140.

Pueyo-Garrigues, M., Pardavila-Belio, M. I., Canga-Armayor, A., Esandi, N., Alfaro-Díaz, C., & Canga-Armayor, N. (2022). Nurses' knowledge, skills and personal attributes for providing competent health education practice, and its influencing factors: A cross-sectional study. *Nurse Education in Practice, 58*, 103277.

Rahman, A., Malik, A., & Zahid, N. (2022). Neonatal resuscitation training and its effect on nurses' competence in low-resource settings. *International Journal of Nursing Practice, 28*(3), e13012.

Reducing neonatal mortality with a national neonatal resuscitation programme: Evidence from China (2004–2021). (2025). PubMed.

Rostami, V., Hatam, N., Bahrami, M. A., Rakhshan, M., & Shokri, A. (2025). Transforming nursing practices: A comprehensive review of performance improvement strategies. *Health Science Reports, 8*(5), e70804.

Sarvan, S., & Efe, E. (2022). The effect of neonatal resuscitation training based on a serious game simulation method on nursing students' knowledge, skills, satisfaction and self-confidence levels: A randomized controlled trial. *Nurse Education Today*, *111*, 105298.

Shehzad, M., Ullah, A., Anjum, Z., Asher, M., Badshah, A., Mansha, R., & Johnson, J. (2025). Malaria outbreaks in Pakistan: Systematic review of malaria outbreaks and nursing roles in Pakistan. *Multidisciplinary Surgical Research Annals, 3*(4), 259–300.

Shrestha, R., Shrestha, S., & Shrestha, B. (2020). Knowledge and practice of nurses on neonatal resuscitation in maternity units. *Journal of Nepal Health Research Council, 18*(1), 85–90.

Simulation based training improves nurses' neonatal resuscitation performance and self efficacy. (2025). *Egyptian Journal of Health Care, 16*(2), 62–74.

Sustained effects of simulation based neonatal resuscitation education on knowledge and performance of NICU nurses. (2024). *Journal of Continuing Education in Nursing, 55*(2), 79–86.

Stylianos Tzeis, M. D., Gerstenfeld, E. P., Kalman, J., Saad, E. B., Shamloo, A. S., Andrade, J. G., ... Trines, S. A. (2024). 2024 European Heart Rhythm Association/Heart Rhythm Society/Asia Pacific Heart Rhythm Society/Latin American Heart Rhythm Society expert consensus statement on catheter and surgical ablation of atrial fibrillation.

Tomas, N., & Kachekele, Z. A. (2023). Nurses' knowledge, attitudes, and practice of cardiopulmonary resuscitation at a selected training hospital in Namibia: a cross-sectional survey. *SAGE Open Nursing*, *9*, 23779608231216809.

Weiner, G. M., Zaichkin, J., & Kattwinkel, J. (2020). *Textbook of neonatal resuscitation* (8th ed.). American Academy of Pediatrics & American Heart Association.

Zaher, W., Pannone, L., Thayse, K., Ebinger, K. R., Tran-Ngoc, E., de Asmundis, C., ... Sorgente, A. (2023). Safety and efficacy of a nurse-led elective cardioversion with etomidate for atrial arrhythmia in a tertiary hospital. *Heliyon, 9*(4).