The Research of Medical Science Review
ISSN: 3007-1208 & 3007-1216 Volume 3, Issue 10, 2025

NURSES' EXPERIENCES AND CHALLENGES IN NEONATAL RESUSCITATION: A REVIEW OF CURRENT EVIDENCE

Iftakhar Ahmed[*1], Shahzad Bashir[2], Raja[3]

[*1]*MSN Scholar, Ziauddin University Faculty of Nursing and Midwifery (ZUFONAM) Karachi, Pakistan*
[2,3]*Associate Professor, Ziauddin University Faculty of Nursing and Midwifery (ZUFONAM) Karachi, Pakistan*

DOI: https://doi.org/10.5281/zenodo.17540219

Keywords
Neonatal resuscitation, Nurses' experience, Barriers, Low-resource settings, Simulation-based training, Pakistan, Neonatal mortality, PRISMA

Article History
Received: 11 July 2025
Accepted: 21 September 2025
Published: 08 October 2025

Corresponding Author: *
Iftakhar Ahmed

Abstract

Background: *Neonatal resuscitation is critical to the prevention of newborn death, specifically in low- and middle-income nations (LMICs) where 99% of the 2.6 million neonatal deaths each year take place, largely because of birth asphyxia and respiratory distress. Nurses, who work at the front lines in delivery rooms and neonatal intensive care units (NICUs), frequently encounter obstacles in the form of insufficient knowledge, emotional stress, and limited resources, which complicate the provision of effective care. This systematic review of literature is intended to discuss nurses' experiences, challenges, and strategies to enhance neonatal resuscitation in low-resource facilities, specifically in the case of tertiary-care hospitals in Pakistan, in alignment with the Sustainable Development Goal (SDG) of decreasing neonatal mortality to 12 per 1,000 live births by the year 2030.*

Methods: *An in-depth literature search was carried out through Google Scholar, PubMed, CINAHL, and ScienceDirect with keywords like neonatal resuscitation, nurses, barriers, and experience. Boolean operators (AND, OR) were used along with filters for 2019–2025 years, English language, full-text, and open-access publications. Among 1,647 studies identified, 34 studies were included on the basis of relevance, methodological quality, and PRISMA guidelines adherence.*

Findings: *Nurses are at the forefront of ensuring international resuscitation guidelines are followed (NRP, WHO, AAP). They also undergo immense emotional distress and anxiety in high-stakes "golden minute" rescue situations. Inhibitors that have been identified are institutional barriers (e.g., limited resources and staff), knowledge deficits (e.g., 45.6% lacked adequate knowledge in some studies), and systemic factors like the high workload and cultural factors. Interventions such as simulation-based education, interprofessional teamwork, and psychological support increase adherence and confidence. However, the qualitative evidence for nurses' lived experiences and context-related interventions in Pakistan is lacking.*

Conclusion: *Educating nurses through ongoing professional training, proper institutional support, and efficient policy changes is necessary to increase neonatal survival. Qualitative studies in Pakistan in the future are suggested to bridge knowledge–practice gaps, contextual constraints, and culturally appropriate interventions that enhance neonatal resuscitation in low-resource environments.*

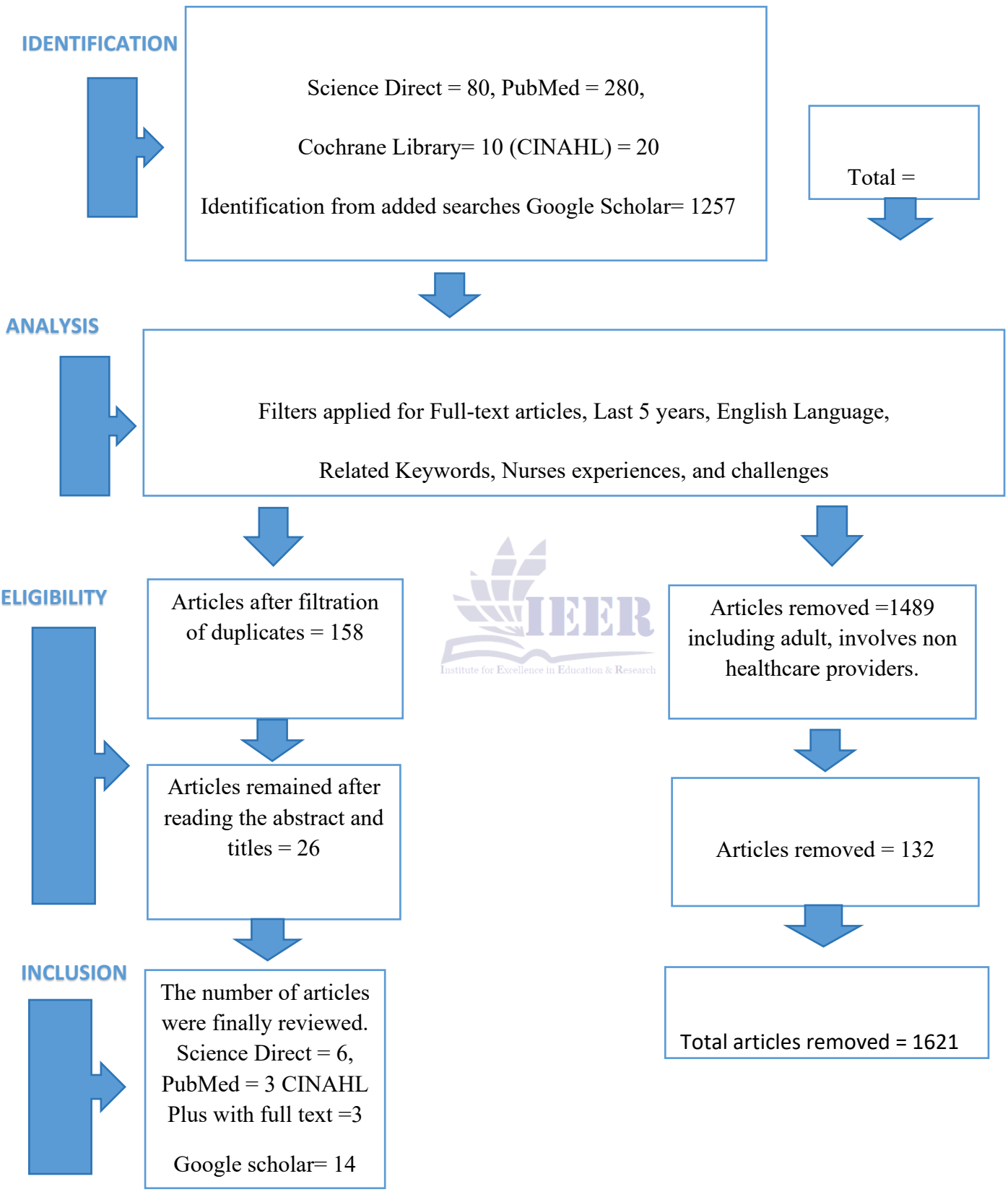
INTRODUCTION

Neonatal resuscitation is an integral aspect of newborn care, especially in the initial few minutes following birth when prompt action dictates survival and future well-being. Worldwide, nearly 2.6 million newborns die each year, and 99% of these deaths happen in low- and middle-income nations (Biya et al., 2024; Goldenberg et al., 2019). Preterm birth, infections, and birth asphyxia—of which respiratory distress is still the most preventable—account for the top causes of neonatal death (Van Heerden et al., 2021). Neonatal resuscitation, which includes procedures like airway clearance, stimulation, and assisted ventilation, is essential to avert asphyxia-related deaths and respiratory failure (Soni & Nagalli, 2025).Though its significance cannot be underestimated, discrepancies continue to exist between industrialized and poor countries. Industrialized countries like Sweden, Japan, and Finland have reduced neonatal mortality to less than one per 1,000 live births due to sophisticated neonatal care and highly trained staff (Okui, 2023; Sartorius et al., 2024). Conversely, nations like Pakistan still experience shocking rates at 46 deaths per 1,000 live births, which relate to issues like poor healthcare infrastructure, shortages of training, and limited resources (Bano et al., 2024; Moro, 2018).Nurses are key in neonatal resuscitation since they are the first to respond in delivery and neonatal intensive care units (Owusu et al., 2024). Nonetheless, they encounter several challenges such as knowledge deficits, limited experience, poor equipment, and emotional distress, all of which can impede successful resuscitation (Sawyer et al., 2019; Wyckoff et al., 2021). Additionally, the absence of institutional support, continuing professional education, and interprofessional collaboration makes it difficult for nurses to provide high-quality neonatal care (Niles et al., 2017).It is important to understand the nurses' experiences and challenges during neonatal resuscitation to enhance clinical outcomes and support fulfillment of the Sustainable Development Goal of decreasing neonatal mortality to 12 per 1,000 live births by 2030 (World Health Organization [WHO], 2016a). Thus, this review has the intention to review current literature on nurses' experiences, barriers, and coping styles regarding neonatal resuscitation practices, and how to identify nursing capacity strengthening strategies and neonatal survival improvement in low-resource settings.

Method and Material

A systematic and extensive literature review was performed to search for scientific articles. Detailed data were retrieved from Google Scholar, CINAHL, PubMed, and Science Direct by searching these Key terms: “Neonatal Resuscitation” OR “Practices” OR “Methods" OR “Intervention” OR “Procedure” AND “Experience” AND “Barriers” to identify relevant research articles. A total of thirty-four articles out of 1,647 were selected based on their relevance to the topic and the quality of the research. Boolean operators (OR, AND) were used in the search strategy. Moreover, filters of 2019 to 2025, English language, full text, and free academic journals were applied to get more accurate data. Experiences, Barriers, Challenges, Caregivers, Nurses, Knowledge, Newborn, Neonate, Neonatal Resuscitation and Practice, and Intervention were used as keywords

PRISMA Flow Diagram



Importance of Neonatal Resuscitation and Nurses' Role

Neonatal resuscitation plays a pivotal role in minimizing neonatal morbidity and mortality, especially for infants who do not breathe on their own at birth. Indeed, about 10% of neonates need to be resuscitated, and some receive advanced treatment such as positive-pressure ventilation (AHA, 2015; Thakre, 2021). Further, effective and timely resuscitation provides sufficient oxygenation and circulation, avoiding long-term neurological complications (McCarthy et al., 2021). With this, as first responders in delivery rooms and NICUs, nurses have a significant role in triggering resuscitation and following implemented protocols, directly influencing neonatal outcomes (Soraisham & Srivastava, 2022; Kromah, 2023). Additionally, continuous training through initiatives like NRP and HBB is necessary to sustain nurses' proficiency and readiness (Singhal et al., 2012; AAP, 2020). Thus, ongoing education and organizational support are essential to upgrading the competency of nurses and neonatal resuscitation procedures (Karlsson et al., 2023; Owusu et al., 2024).**2.3**

Neonatal Resuscitation Guidelines, Training, and Protocols

International and national neonatal resuscitation guidelines, e.g., by the Neonatal Resuscitation Program (NRP), World Health Organization (WHO), and American Academy of Pediatrics (AAP), normalize resuscitation practice (Berglund et al., 2020). These guidelines provide necessary steps, e.g., maintaining warmth, clearing airways, and stimulating breathing. If these are not effective, positive pressure ventilation or chest compressions are administered depending on the infant's heart rate and status. Nonetheless, inconsistencies in persistent implementation are hindered by barriers. Hence, ongoing competency-based training and education are essential for nurses' sustained capability. Though uniform methods could exist, heterogeneities in neonatal resuscitation practices may influence outcomes in neonates (Alves et al., 2024).

Furthermore, training based on simulation enhances skill, decision-making, and ease with neonatal care (Bekele et al., 2021).

Nurses' Experiences and Emotional Challenges in Neonatal Resuscitation

The emotional and psychological reaction of nurses to neonatal resuscitation is complex and strong. Purposive sampling was used to recruit sixteen nurses in a qualitative Swedish study of 2023, and examined to determine their attitudes and practices during neonatal resuscitation. Results revealed that successful resuscitation had the nurses feel happy, proud, and professionally satisfied, whereas unsuccessful resuscitation resulted in emotional exhaustion, sadness, and anxiety (Karlsson et al., 2023). In the same vein, a qualitative phenomenological study in Norway from August 2018 to January 2019 explored experiences of midwives during neonatal resuscitation. Clinically experienced midwives with high anxiety, enhanced sense of responsibility, and exposure to their feelings—especially during the Golden Minute—were identified. Participants indicated that following resuscitation, they required emotional support and cited barriers of insufficient knowledge, skills, and experience (Ljungblad et al., 2020).

Similarly, nurses highlighted psychological support and vindication following resuscitation incidents, given the emotional price of such an experience. By doing so, organizational support structures—i.e., formal debriefing, support groups with peers, and access to mental health care—are invaluable in fostering resilience and emotional integrity. In Japan, by qualitative research, it was explored the living experience among NICU nurses who encountered ethically problematic resuscitation experiences was explored. The research established that moral distress was triggered by organizational restrictions, unresolved emotional occurrences, and occupational regret. Failure to treat it with effective intervention will result in psychological trauma and low self-esteem. Therefore, the development of moral resilience and psychological safety was advocated to facilitate ethical decision-making in

clinical practice (Sakai et al., 2024). In addition, qualitative content analysis performed in Nepal in 2017 investigated nurses' attitudes toward teamwork during neonatal resuscitation. It revealed that inefficient teamwork correlated with ill-defined guidelines, poor mutual accountability, and poor leadership. The authors therefore concluded that well-defined protocols, communication, and facilitative management were essential to improve collaborative performance and neonatal outcome in low-resource maternity facilities (Wrammert et al., 2017). Besides, an Indian qualitative study examined traditional neonatal resuscitation practice within the Porja hilly tribe of Andhra Pradesh. The research found that cultural beliefs had a strong impact on home-based practices of resuscitation, some of which—like thumbs being pressed or shouting very loudly—were symbolic in nature but not scientifically accurate. The authors suggested sustaining positive traditional practices while avoiding dangerous ones to enhance neonatal care in resource-poor environments (Samakya, Pati, & Acharya, 2022).

Lastly, a descriptive cross-sectional study in Lahore, Pakistan, explored the clinical practice of 153 nurses to manage birth asphyxia. The research revealed that nurses with more than ten years of experience had greater adherence to guidelines, while nurses with fewer than five years of experience had worse practice (Noor et al., 2020).

Barriers to Effective Neonatal Resuscitation Practices

In spite of the acknowledged need for neonatal resuscitation, a number of barriers are still impeding its effectiveness. Institutional barriers in the form of poor staffing, lack of sufficient equipment, and poor infrastructure dramatically undermine the quality of neonatal resuscitation practice (Trevisanuto et al., 2022). A 57% response rate electronic cross-sectional survey in 730 neonatal hospitals across Europe in 2018 revealed substantial inconsistencies in the application of neonatal resuscitation policies, which reflected variations in standardization and resource allocation (Trevisanuto et al., 2022). Similarly, the Union of European Neonatal and Perinatal Societies (UENPS) conducted a cross-sectional survey via the internet to assess knowledge, attitudes, and barriers to using the laryngeal mask airway (LMA) in neonatal resuscitation. Of 858 respondents from 42 countries, 26.1% indicated that LMAs were not available in delivery rooms, and only 6% had specifically been trained with LMAs, indicating substantial concerns regarding available equipment and training of providers (Trevisanuto et al., 2024).

In addition, systemic issues such as high workloads and corridor communication issues contributed to inconsistencies in resuscitation practice. In Portugal, the authors of a cross-sectional study noted that team briefings, thermal care completeness, and having equipment were absent and collectively inhibited effective protocol performance (Alves et al., 2024). In South Africa, a focused qualitative exploratory study of 12 purposively selected nurses indicated barriers such as shortages in staff, poor neonatal intensive care unit (NICU) infrastructure (for example, no beds), overwork, and poor availability of necessary supplies (Mathebula et al., 2024). In Ghana, the authors of a qualitative descriptive study reporting on 12 purposively recruited nurses revealed that, while midwives demonstrated high compassion and commitment in neonatal resuscitation efforts, important delays occurred as they were variably prepared, warranting improved training and resources (Agbenohevi et al., 2024).

In terms of knowledge gaps, a cross-sectional study of 360 randomly recruited nurses in Northwest Ethiopia found that only 45.6% of them had adequate knowledge of neonatal resuscitation. The writers emphasized the role of simulation training in enhancing healthcare workers' knowledge and preparedness (Bekelee et al., 2021). A descriptive quantitative study at Zagazig University in Egypt indicated that 31% of the nurses had poor or fair practice and only 22% had good practice in neonatal resuscitation (Mohamed Ali et al., 2023).

Providing neonatal care is further complicated by structural, logistical, and cultural barriers. A qualitative study in India named some specific barriers, including inadequate management of facilities, supply, and human resources, and a lack of referral systems. They also reported that there are socio-cultural factors (e.g., a preference for male

infants, clinical hierarchy) and poverty, which were the major supra-structural barriers (Vail et al., 2018). In Kenya, there was a qualitative study of the disinfection of neonatal resuscitators that shows that physical, social, and logistical factors inhibit the successful reprocessing of equipment. The researchers suggested low-cost supply chains, transparency in protocols, and continuous education of staff to support infection control and neonatal outcomes (Parsons et al., 2021).

Lastly, a quantitative study in Lahore, Pakistan, in 2021 assessed 200 nurses' knowledge, attitude, and practice in neonatal resuscitation. The outcome indicated that participants possessed fair knowledge, yet 53% were not performing well in immediate newborn care practices, emphasizing the pressing need for focused training and institutional reforms (Begum et al., 2021).

Strategies to Improve Nurses' Competence and Adherence to Neonatal Resuscitation Practices

With regard to these endemic problems, several strategies have been advocated to improve nurses' competency and compliance with neonatal resuscitation practice guidelines. For instance, in a 2024 ethnographic study conducted in New South Wales, Australia, the researchers utilized the snowball sampling technique in order to examine rural nurses' experience of being pre- and post-resuscitation prepared. Findings confirmed that simulation training and workshop hands-on sessions were highly ranked as being extremely effective in developing resuscitation competence, decision-making, and self-perception of confidence (Karlsson et al., 2023). Likewise, Olaniyi, Ncama, and Amod (2021) commenced a scoping review protocol whose aim was to establish the impact of neonatal resuscitation training on practice among unqualified birth attendants in low-income countries. The review was intended to map existing evidence on the effect of the training on practice and self-efficacy, with the ultimate goal of a decrease in neonatal mortality caused by birth asphyxia. This research highlights the requirement for suitable and well-structured training in the context of resource-constrained settings for improved outcomes in care.

A qualitative Australian study also looked at the staff attitudes towards simulating neonatal resuscitation training for student midwives. The research highlighted that simulation training broadly increased student' knowledge and understanding of resuscitation practices and improved their self-confidence. The most common themes that emerged were confidence development, knowing when to seek help, and curriculum changes to know the key themes related to the learner's needs. Active learning was highlighted through developing their skills and knowledge, or as the authors called it, replicating manual simulation and validating that they were ready for neonatal emergency practice (Carolan et al., 2017). In addition, another qualitative study conducted in Australia examined the experiences of NICU clinicians undergoing the Neonatal Resuscitation Video Review (NRVR) program. The study established that NRVR facilitated experiential learning, reflective practice, and facilitated team discussion. Despite some psychological safety concerns being disclosed, participants overwhelmingly supported the program because of its anticipated educational benefit. The findings were supportive of NRVR's potential to enhance situational awareness, interprofessional communication, and improve clinical performance in neonatal resuscitation (Weimar et al., 2024).

There was one systematic review and meta-analysis conducted in Eastern Africa in an attempt to assess the neonatal resuscitation competencies of the providers in the region. Pooled estimates among 7038 providers were 48% (95% CI: 34–62), with the highest (57%) and lowest (14%) results from Ethiopia and Somalia, respectively. Skill levels correlated significantly with neonatal resuscitation training (OR = 1.87), resuscitation knowledge (OR = 2.08), and age (>35 years; OR = 0.16) and indicate that trained and knowledgeable workers performed better than their untrained counterparts (Eyeberu et al., 2025).

Finally, institutional protocols and regular interventions continue to play a key role in maintaining compliance with neonatal resuscitation guidelines. A cross-sectional Portuguese survey of professionals estimated institutional compliance with neonatal resuscitation guidelines. There were disparities in equipment availability, course instruction, and application of protocols, and hence, uniform training and standardized application of policies are advised (Alves et al., 2024). In addition to

these structural enhancements, mentorship and emotional support programs have also been documented as pathways to promote nurses' self-efficacy and resilience while conducting neonatal resuscitation (Mathebula et al., 2024). Additionally, resource accessibility optimization and system-level enhancements are paramount in enabling improved neonatal resuscitation outcomes and minimizing care disparities.

Literature Gap Analysis

This review of literature identifies several important gaps relating to the experience and challenges that nurses face in neonatal resuscitation practices in tertiary hospitals in Pakistan. One of the major limitations is the dominance of quantitative studies, with most current studies focusing mostly on technical skills and not looking into the lived experiences, emotional reactions, and clinical decision-making of nurses involved in neonatal resuscitation. The lack of qualitative research in this area means that there is limited understanding of the situational and psychosocial challenges encountered by nurses in these high-stakes scenarios—making this an under-researched area. Furthermore, there is a critical gap in both practice and knowledge, with numerous studies stating that nurses do not follow neonatal resuscitation guidelines. This nonadherence is primarily attributed to a lack of experience and formal training, limited simulation opportunities, and even fewer available institutions. Literature notes systemic issues as barriers (e.g, inadequate staffing, limited resources, poor patient-nurse ratios), but explains little about how these barriers may have cascade effects resulting in clinical errors, delays in care, and preventable neonatal deaths. There is also very little discourse about how nurses are utilizing their theoretical knowledge to practice within emergencies, resulting in a significant gap in knowledge about why practitioners may diverge from protocols and possibilities for improving adherence.

Another significant gap exists with regard to the absence of contextually appropriate training programs, which cater to the particular challenges in healthcare provision in Pakistan. Current studies only focus on uniform neonatal resuscitation guidelines without taking into consideration the everyday practical barriers like response latency, skill decay, lack of neonatal care equipment, and hierarchical factors influencing clinical judgments. These unrepresentative factors greatly impede the application of best practices in actual clinical environments.

To the researcher's best knowledge, no qualitative study in Pakistan exists that thoroughly examines nurses' actual experiences and issues related to neonatal resuscitation. Moreover, there is a lack of recent local studies that examine the widespread gap between theoretical knowledge and clinical practice—a gap regarded as one of the key factors in poor neonatal outcomes. The main objective of the current research is to achieve a better understanding of these complex issues and the nature of support nurses need in order to enhance neonatal survival rates. An identification of such gaps will help guide the implementation of evidence-based targeted interventions, context-based training programs, and policy reforms aimed at building capacity in neonatal resuscitation practices throughout Pakistan.

Conclusion.

Neonatal resuscitation is a life-saving intervention with important consequences for neonatal survival and future health outcomes. As first-line providers, nurses play a key role in facilitating effective resuscitation delivery. Yet, various factors impede best practice, such as emotional distress, inadequate knowledge, and organizational barriers. Interventions like simulation-based training, formal institutional support, and the use of standardized resuscitation guidelines have been found to have potential in improving both neonatal outcomes and nurses' confidence and clinical proficiency. As such, there is a strong need for future studies to assess the effect of nurse-specific interventions on professional readiness and neonatal survival rates, especially in resource-constrained environments.

Recommendations

From the findings obtained in the reviewed literature, various recommendations can be made to improve neonatal resuscitation practice and remedy challenges encountered by nurses in tertiary healthcare facilities.

1. Continuous Professional Development

Institutionalization of structured and regular training programs should be implemented to ensure nurses' skill retention and proficiency in neonatal resuscitation. Simulation education, refresher workshops, and certifications like the Neonatal Resuscitation Program (NRP) and Helping Babies Breathe (HBB) are established methods to enhance knowledge retention and procedural adherence (Karlsson et al., 2023; Singhal et al., 2012). Incorporating these into the policies of hospitals can provide for sustained professional growth and minimize skill erosion over time.

2. Institutional and Administrative Support

Health facilities should guarantee regular availability of resuscitation devices, drugs, and properly manned NICUs. Administrative measures like enforcing SOPs, regular clinical audits, and ensuring accountability can improve adherence to evidence-based practice (Trevisanuto et al., 2022; World Health Organization [WHO], 2016). Support from leaders plays a crucial role in instilling a culture of safety, where there is prioritization of learning and improvement as opposed to blame.

3. Psychological and Emotional Support

Nurses tend to feel emotional stress, moral distress, and burnout after and even before neonatal resuscitation attempts. In order to avoid these, institutions must offer psychological support facilities in the form of post-resuscitation debriefings, counseling, and peer-support programs (Ljungblad et al., 2020; Sakai et al., 2024). Meeting mental health demands can help nurses' well-being, enhance job satisfaction, and maintain professional motivation.

4. Strengthening Interprofessional Collaboration

Effective neonatal resuscitation demands effective teamwork and communication between healthcare professionals. Interprofessional education and simulation team training have the potential to increase collaboration among nurses, physicians, and midwives, hence enhancing coordination and improving patient outcomes (Wrammert et al., 2017). Respect, shared accountability, and distinct role delegation within teams create a more effective and integrated resuscitation setting.

5. Policy Reforms and Research Initiatives

Policy-level strategies should prioritize workforce development, resource allocation, and equitable access to training opportunities. National and institutional policies must ensure that neonatal resuscitation programs are regularly updated to reflect international best practices (Bano et al., 2024). Additionally, more qualitative and interventional research is needed in Pakistan to explore nurses' lived experiences, identify context-specific barriers, and design culturally appropriate solutions aligned with the Sustainable Development Goals (WHO, 2020).

REFERENCES

Agbenohevi, U. D., Ani-Amponsah, M., Donkor, E., Klutse, K. D., Appiah, E., Agbenu, I., Annan, E., & Ali-Mustapha, S. (2025). Midwives' attitudes, motivations, and barriers to neonatal resuscitation in a tertiary hospital, Ghana: A qualitative inquiry. Journal of Neonatal Nursing, 31(2), 116–122.

Ahmed, M. A. (2022). Neonatal resuscitation: Knowledge and practices of nurses and midwives in two hospitals in Mogadishu, Somalia (Master's thesis, University of Nairobi).

American Academy of Pediatrics. (2021). Neonatal resuscitation: Updated guidelines from the American Heart Association. American Family Physician. Available at https://www.aafp.org/pubs/afp/issues/2021/1000/p425.html

Berglund, S., et al. (2020). Neonatal resuscitation after severe asphyxia: A critical evaluation of 177 Swedish cases. Guidelines on Basic Newborn Resuscitation. Available at https://www.ncbi.nlm.nih.gov/books/NBK137876/

Bekele, F. A., Assimamaw, N. T., & Ali, M. S. (2021). Knowledge and associated factors towards neonatal resuscitation among nurses and midwives at the University of Gondar Comprehensive Specialized Hospital, Northwest Ethiopia. International Journal of Africa Nursing Sciences, 15, 100365. https://doi.org/10.1016/j.ijans.2021.100365

Fatima, K., Zulfiqar, S., Naseer, N., Shabbir, S., & Bano, T. (2024). Assessment of pre- and post-Neonatal Resuscitation Program (NRP) training in a neonatal intensive care unit of Pakistan. Journal of University Medical & Dental College, 15.

Karlsson, L., Gustafsson, U., Thernström Blomqvist, Y., Wallström, L., & Broström, A. (2023). Neonatal resuscitation: A critical incident technique study exploring pediatric registered nurses' experiences and actions. Advances in Neonatal Care, 23(3), 220–228. https://doi.org/10.1097/ANC.0000000000001063

Kattwinkel, J., et al. (2015). Part 15: Neonatal resuscitation: 2015 American Heart Association guidelines update for cardiopulmonary resuscitation and emergency cardiovascular care. Circulation, 132(18), S204–S241. https://doi.org/10.1161/circulationaha.110.971119

Ljungblad, L. W., Skovdahl, K., McCormack, B., & Dahl, B. (2020). Balancing life and death during the golden minute – Midwives' experiences of performing newborn resuscitation. Journal of Multidisciplinary Healthcare, 13, 943–952. https://doi.org/10.2147/JMDH.S268959

Mathebula, M. G., Bopape, M. A., Mutshatshi, T. E., & Ramavhoya, T. I. (2024). Challenges faced by midwives who care for neonates in neonatal intensive care units of public hospitals in Limpopo Province, South Africa. The Open Public Health Journal, 17(1). https://doi.org/10.2174/1874944502317010014

Mohamed Ali, A. E., Eldakhakhny, A. M., Mohamed, B. M., & Hanfy, M. M. A. (2023). Evaluation of neonatal resuscitation practices among nurses in NICU and delivery rooms at Zagazig University Hospitals. Zagazig Nursing Journal, 19(1), 196–215. Available at https://znj.journals.ekb.eg/article_320412.html

Trevisanuto, D., Gizzi, C., Cavallin, F., Beke, A., Buonocore, G., Charitou, A., Cucerea, M., Filipović-Grčić, B., Jekova, N. G., Koç, E., Saldanha, J., Stone, D., Varendi, H., De Bernardo, G., Madar, J., Hogeveen, M., Orfeo, L., Mosca, F., Vertecchi, G., & Moretti, C. (2024). Laryngeal mask airway in neonatal resuscitation: A survey of the Union of European Neonatal and Perinatal Societies. Neonatology, 121(6), 780–790. https://doi.org/10.1159/000538808

Trevisanuto, D., Gizzi, C., Gagliardi, L., Ghirardello, S., Di Fabio, S., Beke, A., Buonocore, G., Charitou, A., Cucerea, M., Degtyareva, M. V., Filipović-Grčić, B., Jekova, N. G., Koç, E., Saldanha, J., Sanchez Luna, M., Stone, D., Varendi, H., Vertecchi, G., Mosca, F., & Moretti, C. (2022). Neonatal resuscitation practices in Europe: A survey of the Union of European Neonatal and Perinatal Societies. Neonatology, 119(2), 184–192. https://doi.org/10.1159/000520617