

Clinical Decision-Making Experiences of Staff Nurses Regarding Medication Use during Neonatal Resuscitation: A Qualitative Study

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ABSTRACT

Background: Neonatal resuscitation is a critical component of newborn care requiring timely assessment and prompt interventions. Medication administration during neonatal emergencies demands rapid clinical decision-making by staff nurses to ensure patient safety and optimal outcomes. Understanding nurses' experiences related to medication use during neonatal resuscitation may provide insights for improving educational and clinical practices.

Objective: To explore the clinical decision-making experiences of staff nurses regarding medication use during neonatal resuscitation.

Methods: A qualitative descriptive design was adopted. Staff nurses working in neonatal intensive care units, labour rooms, and paediatric units were recruited through purposive sampling. Data were collected using semi-structured interviews guided by open-ended questions focusing on medication-related decision-making experiences during neonatal resuscitation. Interviews were audio-recorded, transcribed verbatim, and analysed using thematic analysis as described by Braun and Clarke. Trustworthiness was established through credibility, dependability, confirmability, and transferability.

Results: Four major themes were identified: (1) medication assessment and clinical judgment, (2) influence of experience and neonatal resuscitation training, (3) emotional responses during emergency medication administration, and (4) teamwork and communication in medication management. Participants described the importance of accurate dose calculation, adherence to protocols, timely drug availability, and collaborative decision-making.

Conclusion: Medication-related decision-making during neonatal resuscitation is influenced by individual competence, prior training, emotional preparedness, and team coordination. Strengthening simulation-based education and standardized medication protocols may enhance the confidence and preparedness of staff nurses.

Keywords: Neonatal resuscitation, clinical decision-making, medication use, staff nurses, qualitative research.

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1. INTRODUCTION

Neonatal resuscitation is a life-saving intervention performed when newborns fail to establish effective breathing immediately after birth. Approximately 5–10% of newborns require assistance to initiate breathing, while a smaller proportion require advanced resuscitative measures, including medication administration. Timely and appropriate interventions during the first few minutes of life significantly influence neonatal survival and long-term outcomes.

Staff nurses frequently serve as frontline healthcare professionals during neonatal emergencies. Their responsibilities extend beyond technical skills to include rapid assessment, interpretation of clinical findings, medication preparation, dosage verification, and communication with multidisciplinary team members. These responsibilities necessitate effective clinical

decision-making under stressful and time-sensitive conditions.

Although existing literature has predominantly focused on knowledge and technical competence in neonatal resuscitation, limited evidence is available regarding nurses' experiences related to medication-based decision-making during resuscitative events. Exploring these experiences may contribute to the development of educational strategies, clinical guidelines, and supportive work environments aimed at improving neonatal outcomes.

AIM OF THE STUDY

To explore the clinical decision-making experiences of staff nurses regarding medication use during neonatal resuscitation.

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Research Questions

1. How do staff nurses describe their experiences related to medication use during neonatal resuscitation?
2. What factors influence medication-related clinical decision-making during neonatal emergencies?
3. What challenges do nurses encounter while administering medications during neonatal resuscitation?

2. MATERIALS AND METHODS

Study Design

A qualitative descriptive design was employed to obtain comprehensive descriptions of staff nurses' experiences related to medication use during neonatal resuscitation. The study adhered to the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines.

Study Setting

The study was conducted in selected neonatal intensive care units, labour rooms, and paediatric units of tertiary care hospitals.

Participants

Staff nurses involved in neonatal care and having prior experience in neonatal resuscitation were considered eligible.

Inclusion Criteria

- Registered staff nurses working in neonatal settings.
- Nurses with at least six months of clinical experience.
- Nurses willing to participate voluntarily.

Exclusion Criteria

- Nurses unavailable during the data collection period.
- Administrative nursing personnel without direct patient care responsibilities.

Sampling Technique

Purposive sampling was used to recruit participants who possessed rich experiential knowledge regarding neonatal resuscitation.

Sample Size

The final sample size was determined based on data saturation.

Data Collection

Data were collected using semi-structured, face-to-face interviews. Each interview lasted approximately 30–45 minutes and was conducted in a private setting convenient to participants.

Interview Guide

- Describe your experiences related to medication use during neonatal resuscitation.
- How do you decide when medications should be prepared or administered?
- What factors influence your medication-related decisions?

- What challenges do you encounter during emergency drug administration?
- How do teamwork and communication influence medication management during neonatal resuscitation?

Trustworthiness

The rigor of the study was established through:

- **Credibility:** Member checking and prolonged engagement.
- **Dependability:** Maintenance of an audit trail.
- **Confirmability:** Independent review of coding decisions.
- **Transferability:** Detailed descriptions of participants and settings.

Data Analysis

Data were analysed using Braun and Clarke's six-step thematic analysis approach:

1. Familiarisation with data.
2. Initial code generation.
3. Searching for themes.
4. Reviewing themes.
5. Defining and naming themes.
6. Producing the report.

Ethical Considerations

Institutional ethical approval was obtained before commencing the study. Written informed consent was secured from all participants. Confidentiality and anonymity were maintained throughout the research process.

3. RESULTS

Participant Characteristics

n=20

Variable	Category	Frequency
Years of Experience	1–3 years	6
	4–6 years	9
	>6 years	5
Area of Work	NICU	8
	Labour Room	5
	Paediatric Unit	7

THEMES AND SUBTHEMES

Theme 1: Medication Assessment and Clinical Judgment

Subthemes:

- Recognition of indications for emergency medications.
- Drug dose calculation and verification.
- Prioritisation of interventions.

Theme 2: Influence of Experience and Training

Subthemes:

- Learning through repeated exposure.
- Role of neonatal resuscitation programmes.
- Development of confidence through practice.

Theme 3: Emotional Responses During Medication Administration

Subthemes:

- Anxiety associated with neonatal emergencies.
- Fear of medication errors.
- Coping mechanisms under pressure.

Theme 4: Teamwork and Communication in Medication Management

Subthemes:

- Role clarity among team members.
- Cross-checking medication orders.
- Support from senior colleagues.

4. DISCUSSION

The present study explored staff nurses' experiences related to medication use during neonatal resuscitation. Findings demonstrated that medication-related decision-making extends beyond technical competence and encompasses cognitive, emotional, and collaborative dimensions.

Participants highlighted the importance of accurate drug preparation and timely decision-making. Previous studies have emphasised that medication safety during neonatal emergencies depends upon adequate training, protocol adherence, and repeated simulation-based practice.

Experience emerged as a significant contributor to confidence and clinical judgment. Nurses with greater exposure to neonatal emergencies may develop improved situational awareness and medication management skills. Nevertheless, emotional challenges such as stress and fear of errors were identified as potential barriers influencing decision quality.

Teamwork and effective communication were recognised as essential facilitators of safe medication administration. Establishing clearly defined roles and encouraging collaborative practice may strengthen neonatal resuscitation outcomes.

5. NURSING IMPLICATIONS

Nursing Practice

- Promote adherence to evidence-based neonatal resuscitation protocols.
- Encourage double-check systems for medication preparation and administration.

Nursing Education

- Incorporate medication-focused simulation scenarios into neonatal nursing curricula.
- Provide regular competency assessments related to emergency drug administration.

Nursing Administration

- Ensure adequate staffing and availability of neonatal emergency medications.
- Facilitate continuing professional development programmes.

Nursing Research

- Conduct multicentre qualitative studies exploring medication-related decision-making.
- Evaluate interventions aimed at reducing medication errors during neonatal emergencies.

6. STRENGTHS AND LIMITATIONS

Strengths

- Provides an in-depth understanding of nurses' experiences.
- Highlights medication-related aspects of neonatal resuscitation that are often underexplored.

Limitations

- Findings may not be generalisable to all healthcare settings.
- Experiences are context-specific and dependent upon participants' recollections.
- Future studies using mixed-method approaches may provide broader insights.

7. Conclusion

Clinical decision-making regarding medication use during neonatal resuscitation represents a complex process influenced by knowledge, experience, emotional preparedness, and team dynamics. Strengthening educational initiatives, promoting supportive clinical environments, and enhancing interprofessional collaboration may improve nurses' preparedness and contribute to safer neonatal care.

Declarations

Ethical Approval and Consent to Participate

Ethical approval was obtained from the Institutional Ethics Committee. Written informed consent was secured from all participants.

Authors' Contributions

All authors contributed substantially to study conception, data collection, analysis, manuscript drafting, and final approval of the submitted version.

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