



Pharmacological Interventions in Maternal and Perinatal Care: A Qualitative Study Among Nursing Students in a Developing Country

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Abstract: Background: Nursing learners practice pharmacological interventions in maternal and perinatal health care to understand how to avert complications and tackle them. In many poor countries, due to institutional problems and insufficient resources and facilities and lack of professional training methods, there is often delay and disruption in the proper use of the medications. Despite the important role of maternal nursing and gynecological nursing students in health education and drug administration for patients, there is little exploration of pregnant women's views on pharmacological practices.

Objective : This study aimed to determine the perceptions, knowledge, and barriers of maternal and gynaecology nursing students regarding the administration of pharmaceutical drugs in antenatal and postnatal care in a developing country. Through selective sampling and semi-structured interviews, we selected students from nursing colleges who provided prenatal and maternal care at their institutions. We used inductive thematic analysis to identify patterns in the data. **Conclusion** Nursing students aiming to become maternal and gynaecological students are aware that drugs are important for helping pregnant mothers during pregnancy and after delivery in terms of challenges associated with (a) availability of information, (b) patient safety, (c) professional ethics, and (d) system issues. Working effectively as a team and using the right pharmacological education can help improve maternal health in poor countries.

Keywords: Clinical pharmacy, developing nations, maternal health, nursing students, pharmacological interventions, qualitative research, gynecological nursing students

INTRODUCTION

The health of mothers and newborns is one of the most critical public health issues worldwide and especially in developing countries where most maternal morbidity and mortality are preventable. Pharmacotherapy plays a vital role in the prevention and management of obstetric complications during pregnancy, labour and postpartum. The medicines

used frequently by individuals to safeguard the health of mothers and newborns include iron and folic acid supplements, antihypertensives, antibiotics, anti-seizures, uterotonics, and analgesics. Even with evidence-based clinical guidelines available, the use of pharmacological recommendations is not consistent in low-resource settings. Drug therapy is often less effective because of the structural problems with the

availability of drugs, health care institutions infrastructure, personnel, and access to continuous professional education. The medication safety and informed consent ethical issues complicate maternal pharmacology.

The World Health Organization (WHO) says that giving pregnant women enough folic acid (400 g) and iron (30–60 mg) right away can lower the risk of low birth weight, anemia, and encephalitis, which can lead to death during pregnancy, birth, and after birth. The World Health Organization (WHO) says that between 50% and 58% of maternal mortality are caused by anemia in both poor and rich countries. To solve these problems, the health ministries of some countries, such as Ethiopia, have made it a rule to provide pregnant women iron and folic acid (IFA) in tablet form, either alone or in combination. The World Health Organization (WHO) says that giving pregnant women enough folic acid (400 g) and iron (30–60 mg) right away can lower the risk of low birth weight, anemia, and encephalitis, which can lead to the deaths of mothers, babies, and babies. The World Health Organization (WHO) says that anemia is responsible for 50% to 58% of maternal fatalities in both poor and rich countries. To solve these problems, the health ministries of various nations, including Ethiopia, have made it a rule to provide pregnant women iron and folic acid (IFA) in tablet form, either on their own or together .

Nurses play a crucial role in maternal healthcare by administering medications, monitoring adverse drug reactions, and educating patients about their health. Maternal and gynaecological nursing students acquire knowledge of these responsibilities during clinical training, enhancing their competence and confidence in their profession. Their experiences during this developmental phase profoundly impact future therapeutic practices .

While recent studies have investigated medication usage trends and maternal outcomes, there is a lack of qualitative evidence regarding maternal and gynaecological nursing students' perspectives and experiences with pharmacological interventions in maternal and perinatal care, especially in low-income countries. Comprehending diverse perspectives is essential for recognizing deficiencies in education, practice, and health system support.

This study aimed to explore nursing students lived experiences and perceptions of pharmaceutical treatments in maternal and perinatal care through a qualitative methodology based on clinical pharmacy.

2. Introduction:

Maternal and perinatal health care includes preventive, therapeutic, and emergency measures. Therapeutic agents are important for controlling

pregnancy-induced hypertension, gestational diabetes, infections, seizures, etc. Uterotonics and other agents are required during labour and delivery to prevent postpartum haemorrhage. Analgesic and aesthetic used during labour and surgery alleviate pain. Postnatal pharmacological treatment includes preventing infections, relieving pain and stimulating lactation. When not used yet or inadequately used, any of these drugs could lead to ill effect in both mother and infant. It is, thus, essential to implement safe and evidence-based pharmacotherapy.

Healthcare system of underprivileged countries faces ongoing challenges to realize pharmaceutical care practice. Due to disruptions in the supply chain, maternal medicines often go missing that delays the treatment. Some patients may have to buy their own medication if they cannot afford it, making it harder for them to access and adhere to treatment. Healthcare providers often work in situations that involve high caseloads and limited resources, which restricts the opportunity for comprehensive medications counselling and monitoring. These limitations augment the risk of medication errors and hinder the provision of patient-focused medicinal therapy .

Nursing staff plays a crucial role in maternity healthcare by ensuring the effectiveness of drug therapies. They prescribe medication and monitor how the patient is responding, which monitors/adverse effects as well as educate the patient on how to take it. Nursing students achieve these abilities while undergoing their clinical training, yet research indicates that they often feel unequipped to manage pharmacology; a situation that arises frequently, especially in the maternal field. Students might not engage in pharmacotherapeutic decision-making because of a lack of attention to clinical pharmacology, inadequate exposure to innocence aids, and hierarchical clinical settings. As a result, students providing maternal and gynaecological nursing care may lack the confidence to administer drugs or answer their safety .

Medication safety is essential in maternity care that could affect the safety of mother as well as the fetus. The dispensing of medicines, without adequate knowledge of your patient or consent, leads to ethical problems. In developing nations, ethical pharmaceutical practices become complicated for other reasons such as low health literacy, language, and time resources . There is much qualitative data on the ethical dilemmas and safety concerns faced by health professionals, but not much of this data is qualitative regarding what nursing students think about maternal pharmacotherapy.

Recent research on maternal medication applications

is largely quantitative, concentrated on clinical ramifications and pharmaceutical usage rates. Although they are useful, they do not address the contextual and experiential aspects of the pharmaceutical therapy completely. A qualitative study in maternal pharmacotherapy should help clarify how nursing students perceive, understand, and manage these issues in a low-resource setting .

METHODOLOGY

3.1. Design

A qualitative exploratory methodology was adopted to collect data among third-year nursing students.

3.2. Study Setting:

The study was conducted in a nursing college that is affiliated to “public healthcare institutions” in a developing country in the region of Salem district.

3.3. Sampling:

The subjects of the study were the undergraduate nursing students who had undergone the theory and clinical application of pharmacotherapy in pregnancy, labour, and the post-natal period in their maternal and child health nursing course.

3.4 Data Collection:

Interviews were conducted in individual semi-structured format in a confidential environment. Every interview took about 30 to 45 minutes to wrap up. Through open-ended questions and flexibility of inquiry, the interview guide helped in understanding the participants' experiences and asking emerging issues.

Interview Questions

1. What do you think about the role of medications in promoting the health of mothers and newborns both pre- and postnatally?
2. What challenges have you encountered in acquiring or administering maternal medications during your medical training?
3. How confident are you in your knowledge of drug administration and patient safety?
4. What are your understandings regarding the safety of pharmaceuticals and the ethics of maternal care?

3.6 Data Analysis:

The interviews were audio-recorded, transcribed, and then coded using an inductive thematic analysis. The transcripts were carefully categorised and themes further sharpened through repeated review. The researcher kept reflexive notes to enhance the study's credibility and avoid biases. While reading through the transcripts the researchers often went back to check that their interpretations reflected the participants' meanings. Data analysis was influenced by the researchers' background in nursing and clinical

education. They maintained reflexive notes to avoid bias in data interpretation. Approval was obtained from an ethics board prior to data collection. Every participant signed a document confirming their willingness to participate. The anonymity and confidentiality of participants were guaranteed during the research.

THEMATIC ANALYSIS

Theme One: Problems related to Procurement of Medicine and Misuse of it. They mentioned that getting important medicines was a big problem. Patients asserted that public hospitals often ran out of maternity medicines, making access more difficult. Students noticed that patients often pay for their own prescriptions, adding to their financial burden and delaying treatment. Some people were found taking extra medications without a reason.

Theme Two: Insufficient pharmacological knowledge and education. Participants were confident to different degrees of their drug knowledge . The training equipped the individuals with the essential knowledge about dispensing drugs, but not the mechanism of action, contraindications and its impact on pregnant women. A good number of students relied on their doctors' advice and felt unprepared to answer the patients' questions on the safety of their medications. The nursing students' lack of knowledge about clinical pharmacy principles lowered their confidence.

The World Health Organization (WHO) asserts that the prompt and sufficient provision of folic acid (400 g) and iron (30–60 mg) during antenatal care (ANC) can reduce perinatal, neonatal, and maternal mortality by preventing low birth weight, anemia, and encephalitis. The WHO believes that 50% to 58% of maternal deaths are linked to anemia in both poor and developed countries. To address these issues, the health ministries of several countries, including Ethiopia, have instituted a policy to provide iron and folic acid (IFA) to pregnant women, either separately or in conjunction, in tablet form. The World Health Organization (WHO) asserts that the prompt and sufficient provision of folic acid (400 g) and iron (30–60 mg) during antenatal care (ANC) can reduce perinatal, neonatal, and maternal mortality by preventing low birth weight, anemia, and encephalitis. The WHO believes that 50% to 58% of maternal deaths are linked to anemia in both poor and developed countries. To address these issues, the health ministries of several countries, including Ethiopia, have enacted a policy to provide iron and folic acid (IFA) to pregnant women, either separately or in combination, in tablet form .

Theme 3: Safety and ethical issues related to

medicines: Trainees are always worried about the safety of the drugs. But these drugs could affect the baby too. Students were concerned when faced with giving medications which they didn't fully understand their workings. According to Stolic S et al., there were 6 to 11% of pharmaceutical mistakes made by nursing students on clinical placement. There were a number of reasons, including students, education, and the environment. Mistakes in medication calculations, using the wrong name for a patient, giving the wrong drug, or forgetting to give medication are all types of errors .

Theme 4: Some ethical issues included insufficient patient counseling, inadequate informed consent, and inability to help patients make decisions on the medications. Students often felt moral discomfort but did not intervene. The need for systemic and educational reforms. The education and healthcare systems were identified by participants as areas of need. Some suggestions offered to improve the pharmacy practice course included better pharmacology classes, simulation experiences, and time spent with pharmacists. Students emphasized the necessity of current clinical guidelines, consistent training sessions, and improved drug supply chains to enhance the safety of pharmacological practice .

DISCUSSION

In a developing nation setting, this qualitative study explored the views and experiences of the maternity nursing students on drug interventions for maternal and perinatal care. The findings provide insight into nursing students' understanding of drug delivery in maternal settings and indicate educational, ethical and structural barriers that impact pharmacological practice. Nursing students' knowledge regarding the efficacy of pharmaceutical agents in safeguarding maternal and neonatal well-being was found to be on the higher side. Participants commonly reported that treatment of frequently occurring obstetric disorders like anemia, hypertensive disorders, infections, and post-partum hemorrhage was with medicines.

Nursing students have sound knowledge of various aspects related to drug administration. However, knowing it was useful didn't mean you were always confident it was something you could use in practice .

Many incapacitated students said they didn't know how to offer medications, especially when the situation was hazardous or tough. Some people spoke about challenges they face with their drugs. The participants reported several maternal medicines are still not available in public health facilities so they get delayed treatment or spend money on getting a wrong prescription. These results show that there are bigger flaws in the health system that directly affect the

pharmacological treatment given in maternity services. From a clinical pharmacy perspective, inconsistent medication availability increases the likelihood of suboptimal therapy and disrupts continuity of care .

A significant issue was the uncertainty over their comprehension of pharmaceuticals. Students indicated their preparedness to perform fundamental medication administration activities; however, many expressed a lack of comprehensive understanding regarding the mechanisms of medications, contraindications, and potential complications during pregnancy. Nursing students' ability to safely give medications improved thanks to simulation experiences, technology aids, and online learning modules. However, not all nursing programs may have access to simulation equipment, some technological aids, and online learning resources; hence, educators should contemplate the development and evaluation of classroom-based instructional interventions. This deficiency in depth may hinder their ability to provide sound counsel to patients and identify medication-related hazards. Nursing students faced ethical problems. This was because they did not have time to talk to patients. Patients had a time understanding health information.

If pharmacists are part of the teams that take care of women it can help keep patients safe, from bad medicine help nurses learn and make sure that what they do is based on facts. The students did not have experience working with patients, which probably affected how they rated things so we need to think about this from many different angles. Pharmacology education is very important. Pharmacology education needs to be improved. This study demonstrates the complexities of using medications to treat pregnant women in underdeveloped countries. The findings indicate that in order to ensure that pharmaceutical practices in maternal and perinatal care are safe and effective, the curriculum must be enhanced, interdisciplinary collaboration should be promoted, and systemic support should be provided.

5. Limitations:

This study provides substantial qualitative insights into the perspectives of nursing students, particularly pertinent in low-resource environments. However, the findings may lack generalizability beyond analogous circumstances, and dependence on self-reported data may induce response bias.

CONCLUSION

This qualitative study examined nursing students' perceptions and experiences about pharmacological interventions in maternal and perinatal care within a poor country. The findings indicate that nursing

students acknowledge the significance of pharmaceutical treatments in the prevention and management of pregnancy problems, which may ultimately save lives. Their experiences reveal significant challenges, including a lack of knowledge on drugs, concerns about medication safety, ethical dilemmas, and systemic flaws within healthcare environments. Inadequate pharmacological knowledge and limited chances for interdisciplinary collaboration were recognized as major obstacles to safe and effective drug practice. World Health Organization. (2019). WHO comprehensive guidelines on pharmacological use during gestation. WHO Press. Nursing students often demonstrated dependence on prescribers and minimal participation in pharmacological decision-making, hence undermining patient education and medication safety. The findings suggest that maternity nursing schools should integrate more intensive and comprehensive pharmacology education. To enhance the health of mothers and babies, collaboration between nurses and clinical pharmacists must improve, women should have access to necessary medications, and pharmacological practices must prioritize ethical standards and patient-centred care. Addressing these shortcomings in the education system will enable maternity nursing students to provide safe, effective, and evidence-based pharmaceutical care in underdeveloped nations.

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