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Research Article

Maternal Care

Role of Nurses in Maternal and newborn Care at Community Health Centers of Rural and Tribal areas of Madhya Pradesh, India

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Introduction: The study is an attempt to observe maternal and newborn care provided by nurses at CHCs, understand their experiences and what barriers and facilitators they encountered. **Material and methods:** The study was carried out at two rural and two tribal CHCs. A convergent mixed-method research approach was used. The observational method was adopted to observe maternal and newborn care. The phenomenology method was followed to understand experience, barriers and facilitators. Descriptive data analysis reveals that nurses are providing comprehensive antenatal, intranatal and newborn care however certain important post-natal nursing care were missing. Iterative Qualitative analysis through ATLAS.ti has captured themes of experiences about challenging night shifts, safety threats, inter and intra-professional hierarchal issues, multitasking, professional issues and social isolation. **Results:** Results of the study identified barriers related to human resources, inadequate basic facilities, and nurses-related, culturally related, interprofessional issues. Facilitators consist of nurses' skills and competencies, good facilities and a labour room. Maternal and newborn care was performed by nurses however few gaps were identified. **Conclusion:** Nurses have a variety of interconnected experiences in rendering maternal and newborn care at CHCs. Nurses encounter several barriers and facilitators in maternal care.

Keywords: Maternal Care, Newborn Care, Rural, Tribal, Community Health Centers, Nurses, Role

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Introduction

Skilled nurses are capable of saving millions of maternal and newborn deaths worldwide. The nursing and midwifery key fact sheet of WHO (2020) endorsed those nurses and midwives render patient-centred care in the proximity of the community. Half of the health workers in the world are nurses and midwives. In most instances, nurses are the most accessible primary health care professionals who can be approached by the public. Nurses are vital for delivering high-quality care during pregnancy, birth and the post-partum duration (Miller et al. 2012). They are vital human resources for providing maternal and newborn care in the rural and tribal primary care setting. Trained nurses and midwives can significantly improve access to skilled maternal and newborn care and manage maternal complications.

MMR in India has declined in the last ten years from 254 (2004–2006) to 130 (2014–2016) (Sarma and Kakoty 2017). As per NITI Aayog data (2014-16), MMR is 130 per 1,00,000 live births and needs to be improved to 100 by 2020 (NITI Aayog, 2018 Ministry of Health and Family Welfare, 2017). The current MMR in Madhya Pradesh is 173, which is higher than the national MMR and thus is a matter of concern (Sample Registration System, SRS Bulletin 2019). Hamal et al. (2020) believe that a major reason for the imbalance of maternal health across India is its social determinants which have a nexus with access to maternal healthcare services. Poor women in remote areas are less likely to receive quality health care during pregnancy. The major social determinates observed for this are poverty, distance to facility, lack of information, poor quality health services and cultural beliefs and practices. (WHO fact sheet 2019). To improve maternal health, the barriers that limit access to quality health care should be identified & addressed at both health facility and societal levels (WHO fact sheet 2019).

In India, the three-tier health system is responsible for delivering health care in rural and tribal areas. **Sub-centre** (SC): It is the initial point of contact between primary health care and the community **Primary Health Centre (PHC)**: It is the initial junction point between the public and the medical officer. **Community Health Centre (CHC)**: A community health centre is a thirty bedded hospital Which delivers specialist care, including obstetrics and pediatrics. It has ten sectioned posts for nurses and one post for public health nurses. At CHC, Nurses are engaged in the services of round-the-clock normal and assisted deliveries, management of complications of labour, post-natal care, early and essential newborn care and family welfare services, along with various other additional routine care. (Indian Public Health Standards (IPHS) Guidelines for Community Health Centres Revised,2012)

The maternal and newborn care at Community health centres is different from that at primary and tertiary level health facilities due to various structural factors such as infrastructure, limited human resources, high volume of patients and social structure of peripheral public health facilities. Hence it is crucial to observe maternal and newborn care provided by nurses during their working time at Community health centres. It will help to understand how nurses manage maternal and newborn care.

Nurses in India get dual registration after obtaining a degree or diploma in nursing. This dual registration is known as RNRM (registered nurse and registered midwife), which is accorded by the state nursing council. The degree or diploma holder nurses study the prescribed syllabus of maternal and newborn care which has both theory and practical components. Observation of maternal and newborn care at Community health centres may provide facts about the competency of nurses in maternal and newborn care. It may generate evidence to formulate the policy about pre-service and in-service nursing training, especially in remote areas. Understanding participant's world through their lived experience provides a better understanding of the phenomena. It is vital to understand nurses' experience in maternal and newborn care. Such endeavour provides rich and alternative information about the professional practices of nurses. Everyday workplace reality shapes the experiences of nurses. The intended outcome of the understanding of different aspects of the experiences of nurses would lead the way to improving the nursing care of mothers and newborns in remote areas.

Material and Methods

Research Approach: Considering the nature

Of the objectives of the study a mixed methodology research approach was used. It is a procedure for collecting, analyzing and mixing both methods of research, i.e. quantitative and qualitative in a single study to understand research phenomena comprehensively. A convergent mixed-method design was applied in this study.

***Study Area*:** The study was conducted in Madhya Pradesh, which is the second-largest state in India. Madhya Pradesh state was selected for this study due to the familiarity of the researcher with the state and suboptimal maternal and newborn health indicators. Out of various districts of Madhya Pradesh one rural and one tribal district was selected for the study.

***Rural District* :** Vidisha district is one of the selected rural sites for the study. It is from the Bhopal division and is situated in the central area of Madhya Pradesh.

***Tribal District*:** The district of Betul is one of the tribal regions of central Madhya Pradesh. It is from the Narmadapurum division. It is the other setting of the study.

Research Design

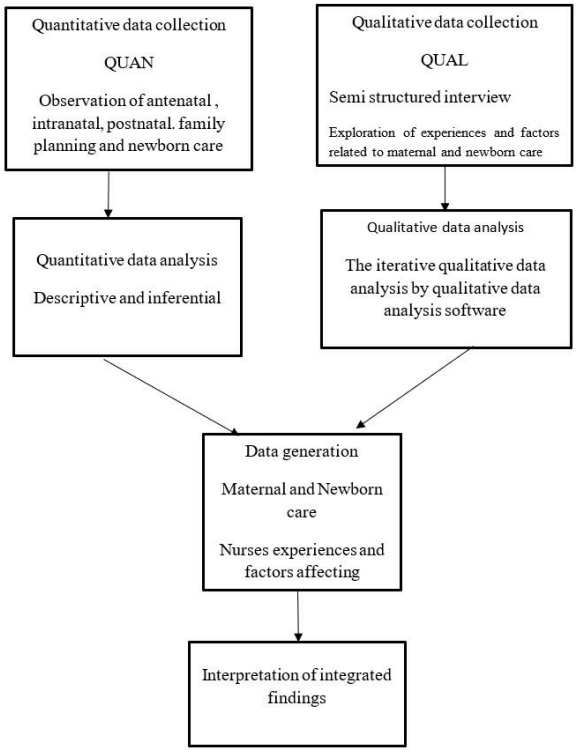

Figure:1 Convergent Mixed-method Design

One rural district Vidisha and one tribal district, Betul was selected for the study. Further, the criteria for selecting CHCs from selected districts were decided on the key hospital management and information system (HMIS) indicator performance of selected CHCs. There were six varieties of indicators antenatal care, delivery, post-natal care, newborn, abortion and family planning. Out of six key HMIS indicators, only one delivery indicator i.e., a percentage of Institutional Deliveries to total ANC registration in the year 2018- 2019 was selected. This criterion was decided due to its comprehensive coverage of the continuum of care from the antenatal phase to delivery. The rest of the indicator focus was narrow and therefore was not considered in the selection of CHCs.

Two Community Health Centres in Vidisha District (Rural) and Two Community Health Centres in Betul District (Tribal) were selected purposefully based on the selected indicator.

Participants (Nurses) Selection Criteria for Quantitative Method

For the study, all those participants were selected who meet the requirements for registered nurses and registered midwives (R.N.RM.) as per the Indian Nursing regulations. The participants (nurses) selected were those who fulfilled the criteria and were posted in maternal care units (antenatal ward, labour room and postnatal ward) of rural and tribal CHCs by purposive sampling method. On average seven nurses were deployed at each community health center. antenatal, intranatal post-natal contraception, family planning and managerial services provided by nurses were selected for the study.

Participants' Selection Criteria for Qualitative Method (Phenomenology)

As the research objective is to understand the experiences of nurses in maternal and newborn care, an additional selection criteria based on experience and duration of nursing practice was formulated.

Results

Description of Participants

Most participants have G.N.M. qualifications, while one participant had Post basic B.Sc. nursing degree, and one participant had a B.Sc. nursing degree.

Nine participants obtained their qualifications from Government GNM training centres. The experience of participants ranged from 2 to 45 years.

- Antenatal care: Antenatal history was "mostly performed" in all the rural and tribal CHCs. Antenatal general physical examinations were "poorly performed" in rural CHC. Abdominal examinations were "poorly performed" in rural CHCs in comparison to the tribal ones. Sample collections were either "poorly performed" or "fairly performed" in most of the rural and tribal CHCs.Data depicts that antenatal history collection and risk identification were "mostly performed".

Nursing Care Implementation

When participants were asked to talk about antenatal care experiences, they revealed that nurses are taking active participation in antenatal care. They perform an antenatal examination, antenatal counselling, abdominal examination, Basal Metabolic Index assessment, administration of intravenous iron sucrose, and follow-up.

"*Every Monday, we have an antenatal checkup camp. Women from the surrounding villages come for antenatal examinations. We do all types of antenatal care and manage*." (T-6)

Documentation of activities and records

Most participants believe that documentation is extensive and time-consuming. They said that due to excessive documentation, nurses need to work beyond their duty time.

"Apart from direct patient care documentation, I maintain 14 types of documentation registers such as OPD, IPD, Iron Sucrose, ANC High-risk ANC routine check-ups and ANTARA family planning record register. My documentation is never over within time and my registers are not timely maintained. I stay back and do overtime along with my juniors and finish documentation work." (P-1)

Communication with patients and family members

Nurses, by their experience, understand family dynamics in rural areas. Therefore they seek a family leader when they convince the family to adopt modern maternal care practices.

"*When I counsel, I focus upon convincing family members because I know women have no choice, They follow the decision of the family. That's why convincing relatives is my priority."* (P-1)

A respondent believed that patients' disrespectful attitude is hierarchy-driven. They misbehave more with nurses than doctors, more so as patients are first seen by nurses when they seek care at CHC. Nurses habitually bear disrespect from tribal people during duties.

"*They don't listen to us. They argue with us because we are nurses, but if an MBBS doctor comes suddenly, they become quiet. Although behind our backs, they abuse us, we keep quiet and focus on work. We ignore abusive patients.*" (T-2)

Some nurses have positive interpersonal communication experiences with patients and family members. In the beginning, the patient's family members are overwhelmed and misbehave with nurses. However, if nurses maintain calm and approach the patients and family members therapeutically, many issues will be resolved.

"I care with love and politeness and explain realities to the patient, and they understand."(T-5)

"Patients are usually restless when they come here. We counsel them." (T-1)

Tribal communities' rituals and culture

Two respondents reported that tribal women have little access to antenatal care. The major reasons are illiteracy and ignorance of pregnant women.

We give tribal women Iron Folic Acid tablets, which they throw away when they return home. They are reluctant for ANC follow-up, stating that they did not get time. They do get TT vaccination."(T-2)

Intra-natal care

- It is mostly performed" practices in both rural and urban CHCs.
- Preparation of delivery tray and equipment, triage of care and humanized care.
- Assessment of vital parameters during delivery and care during all three stages of delivery were performed.

Conducting Labor: All participants were asked to recall their initial on-the-job experience of conducting labour. Most participants said they were terrified, anxious and unconfident when they first conducted a normal delivery independently

In rural CHC. It is common practice that nurses are placed in clinical areas without any orientation and training. They learn from incidents, in the circumstances and by observation. Nurses were apprehensive when they first performed the delivery.

"*Now I conduct delivery so well, but in the beginning, I was so afraid. I was afraid, and my hands and legs were shaking but my senior supported and motivated me, and that's how I learnt*." (P-6)

"*But when I got the opportunity to work here and conduct labour cases, I felt good initially but now I feel okay as it becomes a routine. I have learnt from my colleagues.*" (P-3)

There was consensus among most participants that their diploma or degree training programme did not make them competent and confident to conduct delivery alone in a rural setting. The feeling of inadequacy was more expressed by participants who were trained in private nursing training institutions.

"I did not get a chance to conduct delivery during my student life as it was conducted by only doctors. Although we were eager to conduct normal labour, we did not get the opportunity." (P-5)

"*During training, we did a lot of paperwork on nursing care but real conduction of labour was not done*."(P-2)

"I did my training from a private nursing college; I did not have that much experience of community health centre." (P-3)

Intranatal care is significant in preventing maternal deaths. Timely and effective management in the first, second and third stages of labour is vital. A respondent described in detail the nursing care she delivered in the intranatal period.

"If a woman is in full dilation, I ask her to lie down on the labour table, and I check her blood pressure. Then I wash my hands and wear gloves to do per vaginal examination if dilatation is good. I keep aside documentation and conduct normal delivery first while explaining to the mother how to take pains and help and cooperate with us. I also keep an eye on the progress of labour. At the same time, I counsel the mother about family planning and early initiation of breastfeeding And most of them follow our instructions. As labour progresses, I also fill partograph simultaneously." (T-3)

Issues related to documentation

All participants stated that they are engaged in excessive documentation work. They maintain multiple registers and update them daily. They record nursing care inpatient case sheets but were more enthusiastic about a new high-tech labour process documentation app, 'ASMAN', which stands for Alliance for Saving Mother and Newborn.

This app is a pilot intervention introduced by the state government. All nurses underwent a training programme to use this e-documentation app for maternal and newborn care. Initially, nurses were not accustomed to it, but now they are well versed in it, therefore, nurses' skills, as well as the quality of maternal and newborn care, have become considerably better. Senior participants demonstrated to me the functioning of the ASMAN app.

"*We have two tablets: one in the labour room and one in the OPD room. We have to report every delivery through it. I have entered the full details of delivery in it. I enter the progress of labour every 15 minutes, including postnatal data. We have a digital labour room. We have been using the ASMAN app for the last year. We fill in data as per the application of the app like antenatal, intranatal, the postnatal and fourth stage of labour (that is, the placenta should be out within 2 hours). We document the patient's progress every 15 minutes*." (P-1)

Documentation of nursing care is an integral component of a nurse's daily routine. I asked the participants to describe their documentation experiences. Most respondents reported that they do extensive documentation about maternal and newborn care.

In addition to direct patient care, they maintain many registers. While performing deliveries, they document the labour process in parallel.

"The main registers are the admission register, labour room register, delivery register, vitamin K register, IUCD register, Antra register. The reporting of the labour progress we do on case sheets in the labour room." (T-1)

Subordinates

Nurses are required to keep the labour room disinfected. When the cleaning staff do not clean as required, the nurses pour and spread the disinfectant solution on the labour table, forcing the cleaning staff to clean it. The cleaning staff complain about excessive work allocation by nurses.

"If a nurse asks them to clean labour rooms, they are reluctant to do it. They don't change and make new bleaching solution as per nurses' instruction." (P-1)

Birth companion in the labour room

A birth companion is a good support for a woman in labour; however, a respondent said some birth companions interrupt nursing care and trouble nurses.

"W*e take a mother-in-law or a sister-in-law as a birth companion; some are of great help but some birth companions unnecessarily trouble us and object to many care provisions which we provide*." (T-3)

Obstetric Emergencies

Nurses in tribal CHCs manage obstetric emergencies such as twin and breech presentation delivery. Successful management of such cases is challenging for nurses, but it enhances their self-confidence. A respondent expressed that she manages complicated delivery cases. Tribal women generally do not prefer sonography scans in the antenatal period. Nurses, when conducting such women's deliveries in CHCs, are unaware of the number of fetuses and fetal lie positions in the uterus because sonography facilities are not available in community health centres. When women approach full dilation and nurses confirm so by doing per vaginal examination, the nurse must conduct a risky delivery.

"When I conducted a breech delivery, the mother was in full dilatation. I did her vaginal examination. This woman was multiparous. I delivered the baby comfortably as it was of low birth weight. I have delivered twin babies also. When I conduct difficult delivery successfully, my confidence level shoots up." (T-2)

Post-partum hemorrhage (PPH) is a major cause of maternal death. Nurses and other health care providers face this challenge

Every day in their practice. Managing PPH cases at tribal is crucial. As nurses conduct deliveries most of the time in remote areas, they are key to managing PPH cases. A participant was interrogated about PPH management.

"The mother was bleeding profusely. Blood was flowing like tap water despite using cotton pads and gauze pieces. The doctor and I administered drugs and managed to control the bleeding, and we saved the woman's life." (T-5)

Referral care

When a nurse transfers a woman in labour to a referral centre, she is afraid of post-referral complications. If such things happen, ultimately, the nurse is blamed. It's a very difficult experience for nurses. Nurses manage complicated cases in the absence of doctors and other resources. But they have no option other than taking the risk and managing these patients. Nurses are not given due credit for their critical thinking and decision-making for the mother's benefit.

"Sometimes, when we transfer a woman for labour, we do intense minute-to-minute follow-up and ask the ASHA worker who accompanied the woman about the progress of labour. We get demotivated in such situations." (T1)

Nurses provide effective referral care. Even when a mother is referred from her CHC, nurses care during transportation. They coordinate with drivers and follow up with her till she reaches the higher facility centre safely.

"If a PPH patient under my care does not improve and is referred to a higher facility, I follow up on her progress. We take the mobile number of the ambulance driver or ASHA worker. We ensure her safe transportation." (T-5)

Tribal rituals

A participant observed that tribal women remain strong in the normal birthing process. They bear great pain and push very hard. They are physically tough and mentally prepared to deliver the baby naturally.

"Tribal women are very courageous. They may not consume nutritious food in pregnancy but they show tremendous power and courage in the labour process." (T5)

Mothers, even when admitted to the labour room, follow their tribal rituals and cultural practices to ease the labour process.

Participants threw light on these tribal rituals.

"*Bhagat Bhumika, a religious guru, offers seeds and thread to women in labour and chants some mantras to accelerate the labour process. Many tribal people offer a brew of* Jadi booty *(the root of a plant) to a woman in labour pain. They believe it accelerates dilatation which induces labour"* (T2).

Postnatal care

"Mostly performed" practices Health education about postnatal care and neonatal care

Poorly performed Postnatal physical examination.

Financial incentives misutilization

Financial incentives for institutional deliveries are often mis-utilized by patients and families. Instead of using the money on postnatal mother and newborn care, families waste money on buying alcohol. Nurses act as a liaison between patients and public health institutions. Policymakers should consider their experiences to reform financial assistance to postnatal women.

"The money the postnatal women get for institutional delivery is spent by their husbands on buying alcohol. The entire money is wasted on alcohol, which older women in the family also consume." (T-5)

Gender preference of newborn

In a rural community, people prefer a male baby. If a mother delivers a third or fourth girl child, there is no celebration, which is common with male babies.

"We support and encourage them, counsel them and tell them the importance of girl child. We give them our examples, inform them government schemes, benefits for a girl child." (P-2)

Insert post-partum intra-uterine contraceptive devices (PPIUCD)

Insert post-partum intra-uterine contraceptive devices (PPIUCD): Nurses run family planning clinics where they counsel mothers. They mentally prepare women during the antenatal, intranatal and even postnatal phases to adopt PPIUCD. Nurses of tribal CHCs are capable of inserting PPIUCDs.

"We do family planning, and we insert PPIUCD. We insert approximately 35 to 36 PPIUCDs in a month. We insert PPIUCD at the time of discharge also." (T-1)

Family planning and abortion Managerial roles

It is observed that family planning and abortion care were "mostly performed" practices in all the rural and tribal CHCs.Administrative skills are "fairly performed" in tribal CHCs while "mostly performed" in Rural PHCs.

Passive women in the decision of family planning services

Most of the participants stated that women do not have the freedom to decide about the method of contraception, which is generally decided by their mother-in-law or husband, and they accept without giving any thought.

"After delivery, if we ask women about the choice of contraception or family planning method, they say 'I don't know, ask a family member or husband whatever their decision I am willing to follow that'. It means women have no autonomy to decide ways of contraception and family planning, and it's only family members who choose methods for them. I say to women, 'It's your life, you are bearing pain now and you will bear it the same in the next pregnancy so you should choose and make the decision,'. But women say, 'I am unable to make a decision, ask husband or family member'" (P-1)

Counselling about family planning

Many times nurses bear the brunt of family members' anger but keep quiet. A participant cited an incident when a patient and her family members misbehaved with her when she counselled them about family planning.

"Many times, when we counsel them on family planning, we get angry and abusive responses, such as 'What if we have ten or twelve children? It's our issue, not yours. We will manage our children. You should mind your business and focus on your job. You are getting paid by the government. Do your job, and don't tell us what to do and what not to do in contraception and family planning.' We bear these negative responses and misbehavior." (P-2)

A participant stated that the tribal community does not welcome counselling for family planning.

"*They prefer the male gender. They don't believe in family planning. They say 'you are not going to take care of our children. We will decide how many children we should have'.*" (T-2)

Adoption of family planning depends on whether the family has a male child. Women opt more than men for permanent family planning solutions, but they have to adopt whatever method is decided by the family.

"*Here, couples adopt family planning only if they have a male child. Tubectomy is preferred over vasectomy as a method of family planning. The family decides the family planning method; Women agree to the family's decisions to avoid any family disputes."* (T-5)

Nurse-nurse mutual working

At a community health centre, four to six nurses with varying degrees of educational qualification and experience may be posted. The senior-most nurse assumes the post of nurse in charge and holds maximum accountability and administrative role.

"I am an in-charge nurse here. People and staff have a lot of expectations from me. I am accountable and can't say no as I am the senior-most nurse. I am responsible for reporting national data, organizing programs organizations etc. As a senior, I have more responsibilities than others." (P-1)

A senior nurse disclosed that a hierarchy exists among nurses. Nurses have differences among themselves, which leads to mismanagement of services. She shared her experience about how she deals with difficult juniors:

"*I can reinforce anything twice and thrice, but if they don't do, ultimately I have to do. If they do not listen to me, I can't scold them. They are younger to me in age and experience."* (P-1)

Newborn care

- Immediate newborn care was "mostly performed" or "fairly performed" in rural community health centres. Poor performance of immediate newborn care practices was noticed in tribal community health centres.
- Routine newborn care Nurses have "mostly performed" neonatal care in the post-natal period at both rural community health centres and "fairly performed" at tribal community health centres.
- Health education about neonatal care on discharge was "mostly performed" at rural as well as tribal community health centres.

Immediate newborn care

A participant informed that she could manage immediate and routine newborn care. She was encouraged to learn advanced neonatal skills by her colleague doctor. When the doctor was not available, she managed sick newborn babies as per her experience.

"We learnt to manage golden hours. Here we manage hypothermia. Doctors motivate us to study more and manage. We administer injection Vitamin K, antibiotics, fluids calculations as per weight even in newborn and even seizures we manage." (P-4)

Participants shared that skill upgradation for neonatal resuscitation has been of great help to them. It has enabled them to save the lives of newborn babies.

"*We have received much training and learning about maternal and newborn care, newborn resuscitation*." (P-4)

Rituals and cultural practices

Nurses experience various fallacies about maternal and newborn care. Besides practices such as giving pre-lacteal feed to the newborn, respondents described some myths about breastfeeding. These myths are harmful to the newborn baby but promoted by the family due to cultural reasons.

"A lady thinks that she will be unable to breastfeed her baby immediately after birth because she will be too tired. Another myth is that breastfeeding should start once the mother washes her hair. They believe that hair wash will promote milk discharge and enhance milk production." (P-3)

The tribal community generally does not comply with instructions related to newborn health education. Even though nurses instruct the mothers not to massage their newborn babies in the hospital and not to apply anything to the cord, they still do it discreetly in the ward. However now, due to effective coverage of ASHA and ANM workers and field visits of doctors in remote tribal areas, people are more aware of newborn care practices.

"Many times, they top feed the baby without our notice. We instruct them not to massage a newborn baby in the hospital, but they still do it. We educate them about safe newborn practices, but some still apply oil to the umbilical cord. However, community awareness has increased as doctors are being sent for field visits." (T-1)

Discussion

The quantitative results of this study highlight the fact that nurses are providing remarkable maternal and newborn care at community health centres in rural and tribal areas of Madhya Pradesh. Nurses efficiently collected detailed antenatal history and conducted general physical examinations as per guidelines. However, it was found that abdominal examination of pregnant women was done better by tribal nurses in comparison to rural nurses.

Nurses were performing more abdominal examinations for late second and third-trimester pregnant women. Alehagen et al. (2012) have reported a positive impact of nurse-based antenatal and child health care services, specifically on rates of referral and institutional delivery. It is associated with an increased institutional delivery rate and less referral to higher centres. However, Rurangirwa et al. (2018) in their study reported contrary findings. According to the authors, the quality of antenatal care provided by nurses in Rwanda was suboptimal, especially because nurses and midwives there failed to report many pregnancy-related complications. Risk identification by nurses in early pregnancy is a very important task that determines pregnancy outcomes. This study shows that it was performed comparatively better by nurses in a few CHCs. Crispin Milart et al. (2019) have established similar results in their study. They have described how nurses can contribute by identifying risky pregnancies in a rural setting.

The results of this study also verify the contribution of nurses in intranatal care. Most of the observations depict that nurses prepare various equipment, drugs and trays for various procedures during the delivery process. They also perform triage and assessment of danger signs during the delivery process. Nurses are vigilant in delivering humanized care, such as proper advice related to diet and posture during the delivery process. They also provide companionship and support during delivery. However, Jha et al. (2016), In their research study, demonstrated that this is not necessarily true. Often, pregnant women, during the process of labour, experience verbal and physical abuse by nurses. This leads to a situation where the women passively accept whatever services are being provided to them to avoid confrontation with the providers. Furthermore, the present study revealed that throughout the labour process, nurses recorded and documented history and all the events of delivery. Assessment of vital parameters during delivery, assessment of patients during the delivery process and recording of all labour events were performed in all cases. However, Bradley et al. (2017) found that nurses had poor knowledge about partographs.

Another Indian study (K. Iyenger and SD Iyenger 2009) found that peripheral health care workers like nurses can provide skilful care for pregnant women and newborns in rural areas. They are also skilled in caring for complicated cases of delivery without any referral to higher centres.

Kim, Singh & Weiss (2019) conducted a research study to assess maternal postnatal care in Bangladesh. Very few women received specific interventions like breast examination or assessment of vaginal discharge during maternal postnatal care. The results of that study support similar findings of the present study.

Preliminary findings suggest that nurses provide neonatal care immediately after delivery. Nurses from rural CHC have better newborn corners, and nurses provide all necessary newborn care after birth as per standard protocol except in one case at tribal CHC. Similar results were reported by Berhe et al. (2017) in a cross-sectional study of 215 nurses working at different levels of hospitals to assess awareness and practice related to neonatal care.

The study found that participants had an adequate understanding of newborn care (74.65%) and observed good newborn care practices (72.77%). At the same time, several studies suggest that nurses do not have sufficient knowledge of some very important newborn care components. For instance, Murphy et al. (2019) reported that nurses' knowledge was good in immediate, routine newborn care; however, they lacked sufficient knowledge about resuscitation and management of sick newborns.

Limitations of this study

Although adequate measures were taken in the present study, however following limitations may affect the generalizations of the results:

Observed the maternal and newborn care practices of nurses by direct observation methods. This may bias the performance of nurses.

The present study has yielded the experiences of nurses in maternal and newborn care. It means that service provider experiences were explored. Care recipient's (i.e., patient's) experiences concerning nursing care were not studied.

The study area was limited to selected CHCs of rural and tribal areas.

Conclusion and Recommendations

Based on the study findings it is clear that abdominal examination was the least followed practice as compared to other antennal care practices. Direct patient care compromises due to demanding and excessive documentation and record-keeping done by nurses. Tribal women have a preference for selective antenatal care.

In remote areas, nurses are conducting normal vaginal deliveries independently. Participants learn labour conduction onsite under the supervision of senior nurses. Nurses posted at CHCs are capable of management of obstetrics emergencies. E-documentation facilities, even in rural areas, are beneficial for quality maternal and newborn care. Indigenous tribal practices of the labour acceleration process are common. Few Compromised post-natal care practices of nurses were observed.

Nurse-midwives are actively involved in family planning abortion and administrative services however they are confronting a few issues in it. Comprehensive newborn care was performed by nurses. Evidence indicates that a heavy load of documentation is a bottleneck in effective mother and newborn care; thus, it should be rationalized. Tribal community rituals and culture are integral aspects of maternal and newborn care. It was prominent from the responses of many participants that they provide culturally oriented maternal care. Nurses motivate and support women and family and cultural sentiments and feelings.

Thus nurses may be more involved in delivering patient-centered care. Further research may be performed on rural and tribal nursing policies in the public health system. Further qualitative studies at the national level may generate more robust evidence on how nurses might be encouraged to work and continue working at CHCs in rural and tribal areas.

Nurses are delivering effective maternal and newborn care despite different challenges. Nurses have vibrant experiences while serving the mother and the newborn.

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