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ABSTRACT

Background: According to the World Health Organization, maternal health services (MHS) include antenatal care, perinatal care, and postnatal care. MHS have been underutilized in Nepal and are contributing to an increased morbidity and mortality in the region leading to various adverse outcomes for both mothers and their newborns. Many of these adverse outcomes can be avoided with increased use of antenatal, perinatal, and postnatal checkups.

Methods: Literature reviews of existing information about MHS in Nepal presents an opportunity to identify the source of underutilization and by understanding the source, plans can be proposed to improve MHS. Search for the data was achieved through Medline, Springerlink, and Nepal journals online; with additional articles found by branching off the references of those articles. Publications were limited to those written or translated into English, and those related to Nepal demography. Articles were excluded if the report was not referring specifically to Nepal. In this study, all three natal periods are addressed.

Results: Cultural aspects, educational aspects and accessibility have been determined to be the leading causes of the underutilization of MHS.

Conclusion: Using this new understanding, interventions focused on improving and providing education about these barriers should lead to reduced morbidity and mortality among mothers and their newborns in Nepal.

Keywords: Nepal, Maternal and Child Health Services, Antenatal Care, Postnatal Care, Culture, Education, Accessibility

INTRODUCTION

Nepal is a landlocked nation located in the Himalayas of Southern Asia and includes parts of the Indo-Gangetic plain. Over the past two decades, the socio-political history of Nepal may have contributed to challenges in reducing morbidity and mortality among its mothers and infants.[1]

According to the World Health Organization, maternal health services (MHS) cover antenatal care, perinatal care, and postnatal periods.[2] These are high-risk time-periods for both the mother and the newborn. In Nepal, maternal and infant deaths related to childbirth most commonly occur during the postnatal period.[3] Underutilization of MHS has been determined to significantly contribute to the morbidity and mortality of mothers and infants in Nepal.[3]

To mitigate morbidity and mortality among mothers, the World Health Organization (WHO) recommends at least three postnatal visits within the first six weeks after delivery and at least four antenatal visits before birth.[3] Lack of antenatal care (ANC) puts both children and mothers at risk for adverse outcomes such as premature pregnancy, low birth weight, intrauterine growth retardation, and even mortality.[4] In Nepal, postnatal care (PNC) underutilization poses an even larger threat to mothers and infants. During these PNC visits, health care providers are tasked to assess the health of both the mother and the newborn.[5] Newborns are evaluated for birth defects, poor feeding behaviors, abnormal body temperatures, heart irregularities and respiratory difficulties; while mothers are evaluated for complications such as intrapartum hemorrhage, urinary incontinence, abnormal bowel function, perineal hygiene, obstetric fistulas, uterine prolapse and postpartum depression.[3]

Many factors contribute to the poor utilization of MHS among Nepalese mothers, including restrictive national policies and priorities, cultural practices, issues of maternal autonomy, proximity to healthcare facilities, availability of skilled birthing assistants, and quality of

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health care facilities.[6] A needs assessment performed in Mahalaxmi municipality of the Lalitpur district of semi-urban Nepal identified the main factors contributing to the underutilization of maternal healthcare, particularly postnatal care, as cultural influences, educational status, and accessibility to care.[3] Information gathered throughout the literature has pointed to these factors and confirms their influence on the underutilization of MHS in Nepal. In another study, the most frequent reasons for not attending postnatal visits were reported to be culture (7.5%), lack of awareness (88.7%), lack of education (5.7%), and great distances to facilities (1.9%).[6]

Cultural influences primarily consist of household decision makers and traditional rituals. Educational status includes academic achievement, literacy level, as well as knowledge and awareness of MHS. Accessibility focuses not only on the distance from a healthcare facility, but also the quality of the health care infrastructure and the transportation capabilities. Reviewing these three factors could provide clarity about the barriers of MHS and determine how they can be overcome to mitigate maternal mortality rates.

METHODS

This is a literature review based on existing articles relevant to MHS in Nepal. A search for the following key phrases was conducted through PubMed: "maternal health services in Nepal", "medical accessibility in Nepal", "cultural influences on healthcare in Nepal", "educational influences on healthcare in Nepal". This rendered a compilation of descriptive studies and statistical results. Publications were limited to those written or translated into English and those related to the demography of Nepal. Articles were excluded if the report was not referring specifically to Nepal. After a thorough filtering process and critical evaluation, 20 articles were deemed relevant to understand the association between accessibility, culture, and educational status regarding maternal health services in Nepal. Further search for original sources for this narrative review was achieved on Medline, Springerlink, and Nepal Journals Online.

RESULTS

Accessibility

Accessibility is essential to healthcare and includes the distance between healthcare facilities, cost of transportation, medical supplies, capability of the healthcare workers, and availability of specialized care. Without adequate accessibility to healthcare, there is often a decreased attendance in MHS.[7] In Nepal, many of these accessibility variables are strained and can lead to the underutilization of MHS. There is also a range of accessibility to healthcare in Nepal that is dependent on distance from urban centers, with greater accessibility near the urban centers, and lesser in rural areas.[8]

During a pilot study performed in the Mahalaxmi municipality of Nepal, 98 women from the semi-urban region were asked to respond to a questionnaire. Only 20 percent of the respondents reported that the nearest healthcare facility was over 30 minutes away.[3]

A study done in 2016, where adjusted odds ratios were used to compare urban to mountainous and rural communities that utilize MHS. Mothers from urban Nepal were approximately 3.5 times more likely to attend PNC services than their rural counterparts.[8] The combination of these studies illustrates the wide range in the availability of healthcare throughout Nepal. Similar results emphasizing the increased distance from Nepalese healthcare facilities in rural areas were shown in a study that discussed the barriers to surgical care in Nepal. The median travel time to healthcare facilities from rural areas was 1.1 hours and the cost was an average of 100 Nepalese rupees.[9] Most patients reported relying on some form of public transportation (71.4%), with a fraction of them reporting that they did not have the means to afford the public transportation (23.4%).[10]

Another important aspect of accessibility are the diagnostic and treatment resources, including tests and medications, and skill level of the healthcare workers. Nepal's accessibility to healthcare has dramatically improved since the late 1990s. Initiatives like the Nepal Safe Motherhood program, Millennium Development Goals (MDG) and the Sustainable Development Goals (SDG) projects have led to an increased use of MHS.[11] The one drawback to growth occurring at this rate, is the potential for growth to exceed the capacity of the healthcare workforce in the region. As more facilities open, there is an increased demand on the number of skilled healthcare workers and an increased stress on the infrastructure that provides medications and medical supplies. Studies done in the Sarlahi district of Nepal, illustrate how development exceeds the regions capacity. These supply shortages included iron and folic acid, ampicillin, gentamicin, and magnesium sulfate.[11] In addition, many of these hospitals lacked specialty care directed to postnatal needs. Of the 23 healthcare facilities reviewed, 10 facilities were found to have separate dedicated space for PNC services. Furthermore, only four of the 10 facilities had more than one room available for examination and consultation of PNC needs.[11] Lacking MHS has led to a threefold increase in wealthier women of Nepal seeking healthcare in private facilities or facilities outside the country.[12]

Accessibility to care can improve the trust of patients in the healthcare system and lead to increased postnatal care utilization.[7] Overcoming the accessibility barriers in Nepal can be an important step in encouraging MHS and improving mortality rates.

Education

School curricula and educational programs build an essential learning foundation for children and adolescents. Studying reproductive health allows young girls to understand proper hygiene, progression of pregnancy, and the miracle of childbirth.[13]

In Nepal, the level of education attained by a woman has been shown to influence the likelihood of her seeking medical attention during pregnancy.[14] A needs assessment found that women with higher levels of education were more likely to have at least four ANC visits.[14] The correlation between education level and the utilization of MHS is currently under study. Nepalese women with background knowledge of MHS are five times more likely to seek out ANC.[15] In a study with 98 respondents, 89% reported attending over four ANC visits, and 83% admitted that they did not receive any additional PNC within six weeks postpartum.[3] Furthermore, 65% of those respondents denied any awareness or knowledge of PNC.[3] Regarding PNC utilization, less than one in five women (19%)

reported receiving care within 48 hours of giving birth, and lack of awareness was concluded to be the main barrier.[9]

The education level of the entire family is another critical element to consider. Women married to husbands with higher education levels were more likely to attend four or more ANC visits.[14] Paternal and maternal education are also associated with having a skilled health worker present at the time of birth.[16]

Higher levels of education have shown to decrease gender disparity and empower women to make their own well-informed decisions.[14] It fosters new values in women and creates a sense of autonomy that may enlighten them to the benefits of modern healthcare. The most important predictive factors of a woman's autonomy were identified as her education level, her husband's education level, and her household socioeconomic status.[3] In a separate study, a woman's autonomy was found to be positively associated with a couple's education, consisting of over 10 years of schooling.[17] The education rates of young women, and their sense of autonomy, play a key role in the underutilization of MHS and may impact maternal mortality in Nepal

Cultural Influences

Common cultural practices may affect the utilization of MHS and mortality rates. Nepal has a large Hindu population that celebrates childbirth with specific rituals including Nwaran and birthing events in a Gotha. Some of the rituals, perceptions, and familial influences may affect the decision to seek out MHS.

A mother's husband and mother-in-law may influence her pregnancy decisions since the pregnant woman is often considered as the lowest in the family hierarchy in some rural regions of Nepal.[18] Antenatal care visits prepare the mother for birth, provide prevention services, and inform the mother of potential complications.[15] Advice provided by family members that is not consistent with medical recommendations could put the new mother and the fetus at risk. In the study consisting of randomly selected 98 women respondents a question was asked about who makes household decisions. Forty-two percent (42%) of the women reported that the husbands made the decisions; 28% reported that both the husband and wife made the decisions; 23% reported that the whole family made the decisions; and only 8% stated that the decisions were made by the wife alone.[3]

In Kathmandu valley, Nepal, advice given by mothers-in-law relative to pregnancy have been reported as a negative influence on maternal access to healthcare.[18] Since many mothers-in-law may not have utilized MHS during their own pregnancies, they may not fully appreciate the value of their daughters-in-law seeking medical attention, and subsequently encourage their daughters-in-law to prioritize household chores during pregnancy.[3]

Another practice that could restrict new mothers' access to a health facility in some rural areas of Nepal is the cultural belief that pregnant women should not cross over rivers.[19] This limitation on mobility can cause underutilization of ANC and lead to poorer maternal and neonatal outcomes. Since ANC utilization was reported to be a good predictor for PNC utilization, it raises a concern across the spectrum of MHS.[3]

Pregnant women are expected to continue their daily routines even through the course of their pregnancy. As a result, women have been reported giving birth on their way home from work or farmlands.18 Some mothers-in-law seem to support this lifestyle and often encourage prioritization of household chores up until delivery.3 Working in unhygienic, isolating environments raises safety concerns. In addition, completing strenuous tasks during pregnancy have proven to put mothers-to-be at increased risk of falls and injuries.[18]

The birthing process is generally viewed as a polluted event in some regions of Nepal where women are required to be in seclusion during birthing.[19] Juthosutak is defined as the time of birth up to three weeks postpartum and is perceived as a period of pollution.[18] This isolation associated with the birthing process could be unsafe and may delay treatment of preventable complications such as postpartum hemorrhage. Postpartum seclusion can also trigger postnatal depression, which is reported to be present in 4.9-12% of mothers in Nepal.[19] Moreover, it is traditional for the birthing process to take place in a Gotha, which is an area located below the house; an area occupied by cattle and goats.18 This practice could facilitate infection and prevent timely medical treatment.

Postnatal care visits should also be an integral part of the MHS in Nepal. A PNC check up on postpartum day one can prevent 38.7% of maternal deaths, which is a notable proportion of women.[19] Low attendance of PNC visits can be attributed to the purification and naming ceremonies that occur postpartum.20 Mothers are usually assigned to one place during the immediate postpartum period because they are deemed impure after birth for a certain period of time.[20] For example, during the days leading up to a naming and purification ceremony, known as Nwaran,a mother is confined to the home.[19] With such restrictions, new mothers may not benefit from PNC visits.

DISCUSSION

Accessibility, cultural values, and educational support are essential to the improvement of utilization of MHS. In terms of accessibility, when there is access such as travel, proximity to healthcare centers, availability of medications and adequacy of healthcare providers, MHS utilization is most likely to improve. A few ideas have been proposed to enhance accessibility to healthcare services in Nepal. One option is the utilization of telemedicine. This concept was explored enthusiastically in 2015. Although telemedicine may improve the utilization of PNC in urban areas of Nepal, implementation in the rural areas may lead to challenges such as lack of digital infrastructure and human resources, inadequate technology, and insufficient funds.[10] For these reasons, in the short term, improvements in PNC utilization should focus on improving transportation and building the capacity of existing healthcare facilities.

A significant remedy to the stressed healthcare workforce in Nepal has been the creation of a new healthcare service position, the skilled birth attendant (SBA).[11] Using SBAs has significantly facilitated access to healthcare services and decreased the workload of physicians and nurses, particularly in the rural communities.[11] This solution is an exemplary strategy towards enhancement of MHS access in Nepal.

Assessment of the impact of education on the MHS depends on an evaluation of the educational system and health literacy of the population. Education level

seems to correlate with a Nepalese woman's decision to access MHS during pregnancy.[14] Therefore, advocacy and support for reproductive health programs and education among Nepalese women could lead to higher MHS utilization rates. Education is reportedly closely correlated with a woman's autonomy, which is thought to influence her decision-making power in the family.[3] In the family hierarchy, autonomy is driven by higher education levels which can empower pregnant women to seek medical attention. In Nepal, the importance of education and empowerment of mothers should be emphasized in the planning of MHS development.

Cultural lifestyles affect maternal health and should also be addressed in the planning of MHS. During pregnancy in Nepal, it is traditional for husbands to play a less active role in the care and decision-making related to the pregnancy. Mothers-in-law, however, have a more significant influence in decision-making related to the course of pregnancy.[3] This family dynamic may affect a mother's access to healthcare and her daily routine. Family counseling and group interventions can enlighten the family on the importance of MHS and the complexity of pregnancy.

Traditions of Juthosutak and Nwaran should also be discussed in the realm of MHS. The cultural practice of Juthosutak can prevent women from seeking medical attention during childbirth and may put them at risk of unfavorable pregnancy outcomes. Nwaran ceremonies may unintentionally discourage mothers from using PNC services. Advocacy and awareness of the value of MHS should be addressed among religious and traditional leaders.[18]

Education, culture, and accessibility factors related to MHS utilization seem to be interconnected, such as the practice in some rural areas that forbids pregnant women from crossing over rivers, which may limit accessibility to MHS.[19] Another example is Gharbar, the need to impregnate a woman early in life, which is perceived to be essential for a successful marriage. This may influence girls to repeatedly bear children at a young age and invertedly put them at risk of dropping out of secondary education, and of achieving socioeconomic success.[13]

Many approaches have been proposed to encourage MHS relative to education, culture, and access. Positive role models and peer networks that promote education for children and adolescents can influence academic retention and success.[13] In addition, health education provided to pregnant women and their husbands has been more beneficial than that provided to the pregnant women alone.[15] Participatory discussions on the long-term effects of Gharbar and Gotha rituals, as well as early child marriage, may provide better outcomes of MHS utilization.[18] Evidently, greater access to transportation and to healthcare facilities are two of the most important strategies to enhance MHS utilization. With these proposals in mind, Nepal can continue to encourage MHS and mitigate maternal mortality.

CONCLUSION

Underutilization of MHS is a major contributor to morbidity/mortality and should be seriously addressed. Accessibility, education, and culture play key roles in a woman's decision to seek ANC, perinatal care, and PNC. Since these factors are intertwined, the most successful way to mitigate mortality rates is to approach the problems comprehensively. This should include enhancement of transportation, improvement of healthcare infrastructure, empowerment of mothers, implementation of health literacy programs, open discussions of the impact of culture on healthcare, promotion of education for women, development of academic role models, further training for SBAs, utilization of telemedicine, enhancement of technology, and promotion of participatory discussions on maternal and child health. Using these strategies and those like them, significant improvement in maternal healthcare can be achieved.

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