Why women do not utilize maternity services in Nepal: a literature review

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ABSTRACT

The structure and provision mechanism of maternity services in Nepal appears to be good, with adequate coverage and availability. Utilization of maternity services has also improved in the past decade. However, this progress may not be adequate to achieve the Millennium Development Goal to improve maternal health (MDG 5) in Nepal. This paper reviews the factors that impede women from utilizing maternity services and those that encourage such use. Twenty-one articles were examined in-depth with results presented under four headings: (i) sociocultural factors; (ii) perceived need/benefit of skilled attendance; (iii) physical accessibility; and (iv) economic accessibility. The majority of the studies on determinants of service use were cross-sectional focusing on sociocultural, economic and physical accessibility factors. In general, the education of couples, their economic status and antenatal check-ups appeared to have positive influences. On the other hand, traditional beliefs and customs, low status of women, long distance to facilities, low level of health awareness and women’s occupation tended to impact negatively on service uptake. More analytical studies are needed to assess the effectiveness of the Safer Mother Programme, expansion of rural birth centres and birth-preparedness packages on delivery-service use. Moreover, it is important to investigate women’s awareness of the need of facility delivery and their perception of the quality of health facilities in relation to actual usage.

Key words: Millennium Development Goal 5, safe motherhood, utilization, maternal health service, Nepal

INTRODUCTION

Safe motherhood has been a national priority programme in Nepal since formulation of the National Safe Motherhood policy in 1998. The National Safe Motherhood plan (2002–2017), revised in 2005, formed the basis of the current Safe Motherhood and Newborn Health Long Term Plan (2006–1017).1 This Safe Motherhood Programme has attracted international support for programmatic activities, policy formulation and infrastructure development to improve maternal health in line with Millennium Development Goal (MDG) 5.

As a result of these programmes, there is good coverage of maternity services across most of Nepal. The Safe Motherhood Programme provides essential maternity services to all women through an extensive four-tiered district health system: (i) sub-health post; (ii) health post; (iii) primary health care centre; and (iv) district hospital. In addition, there are outreach mobile clinics and female community health volunteers at the peripheral level. At the sub-health posts, maternal and child health workers provide antenatal and postnatal care and assist in home deliveries. Auxiliary nurse midwives provide antenatal and postnatal care at health posts, some of which have birthing facilities. The primary health care centres and district hospitals provide antenatal, postnatal and delivery care as well as emergency obstetric services. There has been a substantial growth in primary health care facilities that reach out to peripheral areas.

The Government of Nepal – in partnership with Jhepigo and other nongovernmental organizations – has incorporated birth preparedness and complication readiness packages into the Safe Motherhood Programme. The Government also launched the Aama Surakchhya Karyekram (Safer Mother Programme), which includes two components: the safe delivery incentive programme (initiated in July 2005) and free delivery care for uncomplicated, complicated and caesarean section births at all health facilities capable of providing these services (initiated in January 2009). The incentive programme provides cash to women as well as payment to the health facility.
There has been an increase in the utilization of maternal services over the past decade. For example, antenatal visits, the use of skilled birth attendants and contraceptive usage increased from 9%, 10% and 28.5% in 1996 to 29%, 19% and 48%, respectively, in 2006. An indicator of MDG 5 is to achieve 60% of births by skilled birth attendants by 2015; in 2011 this figure was 36% in Nepal. Utilization of skilled birth attendants varies by place of residence, family income and ethnicity. Delivery at a health facility linked to a referral hospital remains the core strategy of the Safe Motherhood Programme to reduce maternal mortality, since the majority of maternal deaths result from pregnancy-related complications such as haemorrhage, infections, hypertensive disorders and obstructed labour. Therefore, the low utilization of maternity services in Nepal is of great concern.

Three major reviews on factors associated with maternity service use have been published. Thaddeus and Maine reviewed the determinants of maternal mortality and proposed the “three delays”. They classified the factors that account for these delays into four broad categories: sociocultural, distance, cost and quality. Say and Raine investigated inequalities in the use of maternal health care. They found wide urban–rural and rich–poor variations and concluded that such variations were usually framed by contextual issues relating to funding and organization of health care, as well as social and cultural issues. Based on these two reviews and more than 80 original research articles, Gabrysch and Campbell identified 20 potential determinants associated with maternity service usage. These previous reviews also indicated that the impact of determinants is context specific, such that a particular factor significant in one geographical setting might not be relevant in another. The aim of this paper is to review the factors that impede or encourage the use of maternity services in Nepal.

METHODS

Search strategy and inclusion criteria

The electronic databases Medline, EMBASE, Science Direct, PubMed, CINAHL, and BioMED Central were searched for relevant articles. Key words used to identify the four main concepts were: (i) maternal health care (matern*/ obstetric*/ reproduct*/ delivery/ antenatal/ postnatal/ postpartum/ newborn); (ii) health service use (utilization/access*/ health service/ use); (iii) determinants or influencing factors (factor/ determinant/ barrier/ quality/ decision); and (iv) geographical area (Nepal). First, a search was conducted by combining the first two concepts in the title and abstract fields using Boolean terms, word truncation and wildcards. A further search then included the other two concepts. All articles were exported to EndNote for criteria analysis. Inclusion criteria of the articles were: (i) published during 1990–2012; (ii) quantitative or qualitative study; (iii) reported in English; (iv) related to Nepal and published in peer-reviewed journals; and (v) antenatal, delivery or postnatal factors as outcomes. The full texts of the potentially relevant articles were retrieved and quality assessment and data extraction were then undertaken.

Conceptual framework on determinants of maternal service use

Since the determinants of maternal service use are context specific, study methodologies vary and thus a formal systematic review of this broad topic was impractical. The results of this review are therefore presented in a narrative form, organized according to the four themes: (i) sociocultural factors; (ii) perceived need/benefit of skilled attendance; (iii) physical accessibility; and (iv) economic accessibility.

Search outcomes

The search of the first three concepts (maternal health care, health service use, and influencing factors) in the title and abstract field yielded 19,036 articles (Figure 1). When the geographical region (Nepal) was added, the result narrowed to 151 articles. These articles were screened for relevance. Only 21 articles, which are summarized in Table 1, satisfied the inclusion criteria. The majority of studies were carried out in and around the Kathmandu valley. One study used qualitative methods; some studies employed a combination of qualitative and quantitative methods; others applied quantitative methods including an analysis of secondary data derived from national surveys.

Figure 1: Selection process for the literature review
Table 1: Summary of studies on determinants of maternity service use in Nepal

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Study design</th>
<th>Independent variables</th>
<th>Sample</th>
<th>Year; location</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acharya and Cleland 29</td>
<td>Cross-sectional</td>
<td>Distance, quality</td>
<td>592 women</td>
<td>1994; western and mid-western Nepal</td>
<td>High structural quality of the nearest health posts had a positive effect on service uptake</td>
</tr>
<tr>
<td>Bolam et al. 13</td>
<td>Cross-sectional survey with community follow-up</td>
<td>Maternal education, maternal age, parity, poverty indicators</td>
<td>357 Pregnant women</td>
<td>1996; Kathmandu</td>
<td>Poor maternal education and multiparity increased the likelihood of home delivery</td>
</tr>
<tr>
<td>Brunson 23</td>
<td>Household survey, participant observation, case studies</td>
<td>Woman’s social position, custom</td>
<td>250 households and 30 case studies</td>
<td>2003–2005; Kathmandu</td>
<td>Women were not in a position to demand biomedical care</td>
</tr>
<tr>
<td>Chaudhary 31</td>
<td>Cross-sectional hospital-based</td>
<td>Cost, distance, availability of transport, antenatal check-up, obstetric factors</td>
<td>45 women who delivered on the way to hospital</td>
<td>2004; Kathmandu</td>
<td>Delivery on the way to hospital was caused by (i) lack of ability to recognize onset of labour and (ii) transport delay</td>
</tr>
<tr>
<td>Dhakal et al. 17</td>
<td>Cross-sectional community-based</td>
<td>Women’s and husband’s occupation and education, ethnicity, parity, antenatal check-ups</td>
<td>150 mothers</td>
<td>2006; Kathmandu</td>
<td>Wealth, husband’s education and antenatal check-ups positively influenced postnatal care</td>
</tr>
<tr>
<td>Furuta and Sakway 11</td>
<td>Nepal Demographic Health Survey data analysis</td>
<td>Women’s position: decision-making, working, control over earnings; education; spousal discussion of family planning</td>
<td>8400 ever-married women</td>
<td>2001; Nepal</td>
<td>Spousal discussion, working plus control of earnings and women’s secondary education increased antenatal care and delivery-service use</td>
</tr>
<tr>
<td>Hodgins et al. 27</td>
<td>Pre- and post-intervention surveys</td>
<td>Birth-preparedness package (antenatal counselling on danger signs and preparation activities)</td>
<td>900 recently delivered women in each of the two districts</td>
<td>2005 (baseline) and 2007 (endline); Jhapa and Banke districts</td>
<td>Delivery in a health facility increased only marginally</td>
</tr>
<tr>
<td>Hotchkiss 30</td>
<td>Analysis of Nepal Living Standard Survey data</td>
<td>Age, education, birth order, religion, women’s employment, household characteristics, physical accessibility</td>
<td>1434 women</td>
<td>1996; Nepal</td>
<td>Improved physical access has significant impact but further physical increase would have modest impact</td>
</tr>
<tr>
<td>Matsumura and Gubhaju 14</td>
<td>Analysis of National Family Health Survey data</td>
<td>Education, work status, job type, income, decision-making, family structure, region</td>
<td>1388 women</td>
<td>1996; Nepal</td>
<td>Women’s education, good economic status and extended households had positive influences while women’s employment had a negative influence</td>
</tr>
<tr>
<td>McPherson et al. 26</td>
<td>Pre- and post-intervention survey</td>
<td>Birth preparedness: antenatal-care visit, financial preparations, transport preparations, knowledge of danger signs (prolonged labour and excessive bleeding)</td>
<td>300 mothers of infants younger than 1 year</td>
<td>2002 (baseline) and 2004 (endline); Siraha district</td>
<td>No increase in skilled birth attendance but increase in postnatal care</td>
</tr>
<tr>
<td>Mesko et al. 21</td>
<td>Cross-sectional, case studies, focus groups</td>
<td>Traditional beliefs, information availability, health knowledge, cost</td>
<td>8798 women; 30 case studies; and 43 focus groups</td>
<td>2001; Makawanpur district</td>
<td>Cultural requirement for maternal seclusion; poor health knowledge of danger signs; and perceived expense delayed care-seeking</td>
</tr>
<tr>
<td>Mullany et al. 18</td>
<td>Randomized controlled trial</td>
<td>Husband’s health education</td>
<td>442 women seeking antenatal services</td>
<td>2004; Kathmandu</td>
<td>Husband’s antenatal health education had a positive impact on birth preparedness and postpartum visits</td>
</tr>
<tr>
<td>Neupane and Doku 19</td>
<td>Analysis of Nepal Demographic and Health survey data</td>
<td>Sociodemographic variables: age, place of residence, education, parity, occupation, religion, smoking status, wealth index, sufficiency of advice</td>
<td>4136 women aged 15–49 years</td>
<td>2006; Nepal</td>
<td>Maternal age, education, parity, wealth and sufficiency of advice were associated with skilled attendance at birth</td>
</tr>
</tbody>
</table>
Neupane and Doku \textsuperscript{20} Analysis of Nepal Demographic and Health survey data Sociodemographic variables: age, place of residence, education, parity, occupation, religion, smoking status, wealth index 4136 women aged 15-49 years 2006; Nepal Maternal age, education, parity and wealth were associated with timing and the number of antenatal-care visits

Pandey et al. \textsuperscript{24} Analysis of Nepal Demographic and Health survey data Women’s empowerment 7878 previously pregnant women 2006; Nepal Women’s age at birth of their first child, their education and knowledge about sexually transmitted diseases increased utilization of antenatal and delivery services

Sharma et al. \textsuperscript{28} Analysis of National Family Health Survey (1996) and Nepal Demographic Health Survey (2001) data Women’s status, information availability, household characteristics, region 8148 women for prenatal care; 8218 for delivery care; and 7788 for postnatal care 1996, 2001; Nepal Health workers’ visits, educational status and household economic status have a positive influence

Shrestha et al. \textsuperscript{25} Community-based cross-sectional study Age, education, residence, ethnicity, parity, number of antenatal-care visits 732 married women of reproductive age 2011; Kavrepanchok district Multiparity, teenage pregnancy, few or no antenatal visits were likely to be associated with home delivery

Simkhada et al. \textsuperscript{22} In-depth interview Sociocultural factors 30 mothers; 10 husbands and 10 mothers-in-law 2006; Kathmandu Mothers-in-law frequently had a negative influence on uptake of antenatal care

Thapa et al. \textsuperscript{16} Household survey, focus group discussions, in-depth interviews Custom and beliefs, level of knowledge, woman’s education, husband’s education, religion, ethnicity, parity, age, husband’s occupation 657 women who gave birth during previous 5 years; 29 participants in 4 focus groups; and 14 key-informants 1996; Jumla district Local customs, traditional beliefs and lack of knowledge caused high-risk delivery practices; husband’s education level was positively associated with hygienic delivery practices

Tuladhar et al. \textsuperscript{15} Prospective hospital-based study Education, parity, age, antenatal care 114 attempted home-delivery cases 2004–2008; Kathmandu Low education, multiparity and young age were associated with complications of home delivery

Wagle et al. \textsuperscript{12} Cross-sectional Distance, economic status, education, parity, antenatal-care visits, obstetric history, age of mother, ethnicity, family structure 308 postpartum women 2002; Kathmandu and Dhading district Distance, low socioeconomic status, low education and not seeking antenatal care were significantly associated with home delivery

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**RESULTS**

**Sociocultural factors**

Sociocultural factors include maternal age, marital status, ethnicity, religion, traditional beliefs, family composition, mother’s education, husband’s education and women’s status. Most of the reviewed studies analysed at least one of these factors. Higher female education was found to be positively associated with facility use, while women who delivered at home had a lower level of education.\textsuperscript{11-15} Higher male education also had a positive effect on service use.\textsuperscript{16,17} The inclusion of husbands in antenatal health education appeared to improve birth preparedness and postpartum visits.\textsuperscript{18} An analysis of the national family health survey data suggested that women’s education and economic status, and extended households, are positively associated with service use.\textsuperscript{14} Moreover, sociodemographic factors including maternal age, education, parity and wealth were associated with delivery assisted by a skilled attendant,\textsuperscript{19} as well as timing and number of antenatal care visits.\textsuperscript{20} Thapa et al. \textsuperscript{16} described traditional beliefs and customs in the remote western area of Nepal, which had a significant negative impact on the use of maternal health services. They found that many women used an animal shed for delivery, mainly due to cultural belief that the household deity would be angry if delivery took place inside the house, and that menstruation and childbirth were considered to be pollution. The cultural requirement of maternal seclusion up to 12 days after delivery might cause delays in seeking care for
postnatal complications in central Nepal. However, ethnicity, age of the mother, ritual observance of menarche, type and size of family were not significantly associated with the place of delivery. Mothers-in-law tended to have a negative influence on service use.

An ethnographic study of childbirth concluded that pregnant women lack the power to demand biomedical care, and that men remain largely uninvolved in the care-seeking process. In our review, few women participated in household decision-making, and even fewer had any control over their own earnings. Although involvement in decision-making had no significant impact on antenatal and delivery care, spousal discussion on family planning and earnings were linked to an increased likelihood of health service use. Similarly, other indicators of women’s empowerment, including age at birth of their first child and education and knowledge about sexually transmitted diseases, could significantly increase the use of maternal health services.

**Perceived need/benefit of skilled attendance**

A range of factors such as knowledge of pregnancy and health risks, importance given to pregnancy, previous facility use, antenatal visits and pregnancy complications, can affect whether a women perceives the need for facility delivery. Some studies reported that multiparity was perceived as a significant risk factor for a home delivery, and associated with use of postnatal care. Having an antenatal check-up usually leads to subsequent health service use. However, birth-preparedness interventions that include antenatal counselling on danger signs and preparation activities appeared to exert no impact or marginal impact on skilled attendance. Based on a comparative analysis of the 1996 and 2001 Nepal Demographic Health Surveys, Sharma et al. showed that the use of maternal health services increased during this period, partly because of improved dissemination of maternal health information through various mass media sources. Only one study reported that the structural quality of the nearest health post had an important effect on the use of health services. (Structural quality was assessed in terms of physical infrastructure, number of staff, availability of drugs and provision of maternal and child health clinics.)

**Physical accessibility**

Physical accessibility includes place of residence, distance to the health facility and transport availability. Residence in rural and mountainous areas makes it difficult to access health facilities and may be responsible for not seeking maternal care. Improved physical access may thus enhance the use of antenatal care and birth delivery by a trained health-care provider, but further physical advantage would offer only a modest impact. Distance and availability of transport were also found to be important in urban areas for the timely utilization of emergency delivery services.

**Economic accessibility**

Economic accessibility encompasses household socioeconomic status, husband and wife’s occupation, family income and cost of facility delivery. The latter includes transportation and opportunity costs of travel time. Higher household economic status was found to be positively associated with facility use. However, one study near Kathmandu found that poverty indicators were not a significant risk factor for home delivery. No study investigated the effect of direct or indirect cost of delivery, and only one study identified “perceived cost” as a deterrent in seeking care beyond the household. Women’s employment or working status appeared to have a negative influence on the use of health services, and women who work but have no control over the use of their earnings are least likely to receive antenatal and delivery services.

**DISCUSSION**

Nepal is a culturally diverse country with 125 recorded ethnic groups. Despite this, detailed investigation of the ethnic and cultural impact on the use of maternal services in the country is lacking. Many traditional beliefs and customs, linked with ethnicity and religion, can influence the effective use of maternity services, primarily the decision to seek care. The effects of ethnicity on the uptake of maternity services have been reported in Guatemala and China. In Cambodia, professional midwives often act as “cultural brokers” because Khmer women use their own vocabulary to describe problems during pregnancy, birth and the postpartum period. In Uganda, adherence to traditional birthing practices and belief that pregnancy is a test of endurance are responsible for insufficient use of maternal services. The main reason for home delivery in slums in Mumbai, India, and in Ethiopia is custom. The mother-in-law usually makes decisions about a pregnant woman’s workload, care-seeking and the delivery process in rural Nepal, while husbands in Uganda and local healers or traditional birth attendants in Bangladesh influence care-seeking.

It is unsurprising that the majority of studies conducted in Nepal and other countries have emphasized sociocultural and demographic factors. On the other hand, emphasis on sociocultural factors can mask the relative importance of factors such as those related to service delivery, where communities may be accused of having poor pregnancy outcomes because of their cultural and social system.

Almost all studies found distance as a deterring factor in seeking maternity care in Nepal. The effect of distance is exacerbated by poor roads and limited availability of transportation vehicles. For these reasons, the expansion of birth centres and maternity services in lower-level health posts may lead to increased service uptake. Such birth centres have increased in numbers but it remains unclear whether they are adequately used for antenatal care and delivery or provide a quality obstetric service. In Uganda, women often bypass local facilities to deliver at a hospital that is further away. Various options of transportation, maternity waiting rooms, together with the combined impact of distance and perceived quality of facility delivery, deserve further investigation.
Economic factors also deter the use of maternal health services, especially in low-income and marginalized communities. In Viet Nam, even with compulsory health insurance, poor women are less likely to deliver in a facility than middle- and high-income women. The provision of free maternity services or reduction in user fees may encourage women with a low income to use appropriate health services. However, there may still be substantial “hidden costs” involved, such as transport and provider fees and costs associated with caesarean section.

Nepal’s Safer Mother Programme has resulted in increased use of maternity services. Elsewhere, initiatives that have significantly increased facility-based deliveries can be seen in Kenya, which implements a voucher programme that enables access to four antenatal care visits, a facility-based delivery including caesarean section, and treatment of delivery complications, and in China, where a cooperative medical insurance scheme includes a maternal health-care benefit package. Nevertheless, even when free services are available nearby, there is no guarantee that they will be utilized unless deemed by mothers to be beneficial. Further research is therefore required to understand the impact of Nepal’s Safer Mother Programme on the use of maternal services, especially with respect to different castes and economic groups.

Few studies have attempted the complex task of assessing women’s perceived need for health-facility delivery. This can be influenced by pregnancy-related factors as well as distance, cost and quality. A positive perception of the added value of delivery in a facility is usually the motivating factor for women and families to seek maternity care. On the other hand, since pregnancy and childbirth are often considered normal events, birth-preparedness packages often consider normal events, if this value is not perceived, professional care is unlikely to be sought.

Birth-preparedness and awareness-raising programmes may help mothers to seek and demand care. Perceived complications and health knowledge, and women’s intention about where to deliver, were associated with use of professional medical care in Bangladesh. Antenatal counselling, use of a birth plan and access to a social network reduced delays in seeking care for an obstetric emergency in Afghanistan. Unlike Nepal, birth-preparedness packages increased skilled delivery care in Bangladesh, Burkina Faso and the United Republic of Tanzania. Further studies are needed to assess the effect of birth-preparedness packages on skilled attendance at birth in Nepal.

CONCLUSION

The majority of the studies relating to determinants of maternal service use in Nepal were cross-sectional focusing on sociocultural, economic and physical accessibility factors. In general, increased educational and economic status of couples and antenatal check-up attendance appeared to have a positive influence on the use of maternity services. On the other hand, traditional beliefs and customs, low status of women, long distance, low level of health awareness and women’s occupation tended to have a negative impact on service uptake. However, the relative importance of these factors should be examined in the changing context of culture, values and the health system. More analytical studies are also needed to assess the effectiveness of Nepal’s Safer Mother Programme, expansion of rural birth centres and birth-preparedness packages in delivery-service use. Finally, it is important to investigate women’s awareness of the value of facility delivery and the relation between their perception of the quality of health facilities and actual usage.

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