



Factors related to choice of place of birth in a district in Nepal



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ABSTRACT

Objective: In Nepal, both percentage of women giving birth at health facility and proportion of birth assisted by skilled birth attendant is very low. The purpose of this research was to identify predictors for choice of place of birth: either at home, primary health care facility (including birthing centres) or at tertiary health care facilities (hospitals and clinics).

Methods: A cross-sectional household survey was conducted in seven village development committee of a district lying in plain area of Nepal: Nawalparasi. A structured interview questionnaire was developed and administered face-to-face. Descriptive analysis along with chi-square test and multinomial logistic regression was used to identify the predictors of giving birth at a health care facility.

Results: Women were significantly more likely to give birth at health care facilities compared to home if the distance was less than one hour, belonged to advantaged caste, had radio, television and motorbike/scooter, decision maker for place of birth was husband, reported their frequency of antenatal (ANC) visits at 4 or more and belonged to age group 15–19.

Conclusion: The analysis indicates that husbands of women giving birth influence the choice of place of birth. The findings highlight importance of having four or more ANC visits to the health institutions and that it should be located within one-hour walking distance. Inequity in utilisation of childbirth services at health institutions exists as showed by low utilisation of such services by disadvantaged caste.

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Introduction

The new Sustainable Development Goals (SDGs) have a target specific to maternal health set under goal 3.1 which states the reduction of global MMR to 70 per 100,000 live births [1]. The estimated global maternal deaths in 2013 were 289,000 of which South Asia shared second most number of deaths (69,000) [2]. The World Health Organization (WHO) estimated the MMR of Nepal to be 190 per 100,000 live births [2].

Safe birth is often related to giving birth in the presence of skilled birth attendants (SBA) at health facilities where basic obstetric care is available preferably with midwives as the main providers and emergency obstetric care for women with complications treated at hospitals with skilled doctors as the main providers [3,4]. In Nepal, although the percentage of births taking place in

health facilities doubled from 18% in 2006 to 35% in 2011, the proportions of births assisted by a SBA was only 36% in 2011 [5]. Recent data shows only 56% of women were attended by SBA at birth in 2014, and the inequalities between the poorest (25.5%) and wealthiest (93.3%) quintiles was very wide [6]. With such high MMR, Nepal still lacks professional midwives [7]. However, current statistics shows there are around 7000 auxiliary nurse midwives, nurses and doctors trained to be SBAs through an in-service education curriculum introduced in 2007 [8]. Midwifery is associated with more efficient use of resources and improved outcomes when provided by midwives who are educated, trained, licenced and regulated. Midwives when integrated in the health system and working in interdisciplinary teams provide positive effect on maternal and perinatal outcome [9].

Health facilities in Nepal are provided in various levels: starting with sub-health posts (SHP) which are initial contact points for basic health services; health posts (HP) which offer the same services as SHPs and additionally a birthing centre; primary health care centres (PHCC); on to district, zonal, sub-regional, regional and finally to tertiary level hospitals [10]. Such hierarchy of health facilities has been designed to provide continuum of care whereby

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people can access appropriate care at a place near them at an affordable price.

Although studies have previously determined factors affecting birth at health facilities in Nepal [11,12], this study aims to go a step further to investigate the factors associated with different places of birth including home, primary healthcare and tertiary healthcare including hospitals and clinics. This study used a baseline household survey in seven village development committees (VDCs) of Nawalparasi district.

Methods

Study design and sampling

The study conducted as a baseline assessment survey consisted of a cross-sectional household survey conducted from June to August 2012. The inclusion criteria were women of reproductive age (15–49 years) having at least one child below 24 months of age at the time of survey [13]. As this was a household survey, all the eligible participants from each household in the seven VDCs who agreed to take part were approached and a structured questionnaire was completed.

Study setting

The study was conducted in Nawalparasi district lying in the plain areas of Nepal. The total population of Nawalparasi district was 643,508 according to the 2011 National Census [14]. For the baseline assessment survey, seven VDCs were identified which had highest number of vulnerable and disadvantaged group of people (including women and children, the poor, underprivileged and marginalised) based on the Disadvantage Group (DAG) mapping conducted by the Nawalparasi District Development Committee. The baseline survey aimed to establish the socio-demographic, socio-economic, maternal related and other factors affecting health facility birth especially at the birthing centres and primary care facilities.

Data collection

A structured interview questionnaire was developed and administered face-to-face to collect information related to birth at health facilities and the associated factors. The questionnaire was adapted from the Nepal Demographic and Health Survey (NDHS) and Health Survey (NDHS) and Water and Sanitation Survey. The questionnaire which was originally developed in English was translated to Nepali. A similar version was used elsewhere in Nepal [13] and this adaptation was piloted [15] in a sample population of selected seven VDCs in Nawalparasi. Three enumerators were trained and mobilised for data collection and entry. These enumerators had at least a Bachelor level qualification in a health subject.

Measures

The outcome variable for the study was place of birth categorised as either (a) home/on way (on way referred to while traveling to the health facility), or (b) at primary care facility including birthing centres, and (c) hospitals/clinics. The explanatory variables were based on previous literature on the determinants of institutional birth and grouped under three main categories - individual, household, and obstetric/maternal characteristics. The individual characteristics included age of the women, caste, religion, literacy, occupation, husband's education and husband's occupation.

The age of women was categorised into four groups (15–19, 20–24, 25–29, 30+ years). The Health Management and Information System (HMIS) of the Government of Nepal use a classification system with six groups for caste - Dalits, disadvantaged Janajatis (indigenous), disadvantaged non-Dalit Terai caste groups, religious minorities, relatively advantaged Janajatis and upper caste group [16]. This study included two groups - disadvantaged including Dalit, disadvantaged Janjati, religious minority and Terai caste; and advantaged including Brahmin, Chhetri and advantaged Janajati. Education was categorised as illiterate, primary, and secondary and above. The women were first asked about their literacy status, the grade they attended, and finally were categorised into three groups as mentioned above. In contrast, husbands' education was based on that reported by the women. Women's occupation was grouped differently for women and their husbands based on their gender roles in society. Women's occupation was grouped as housewife and others (including student, farmer, service, business) whereas husband's occupation was grouped as farmer, skilled labour (including teacher) and unskilled labour.

Various individual variables were used to assess socio-economic status (SES) rather than using a wealth index as used by some studies [11,12], as wealth indices are useful when controlling for SES but individual variables are needed to examine different dimensions of SES [17]. Another main aim of this paper was to assess inequality in utilising childbirth service which can be measured by individual socio-economic variables rather than a wealth index because a wealth index could potentially be a good proxy for wealth but provide poor measurement of inequality [18]. Individual variables used for determining SES in this study included maternal literacy, having electricity at home or not, possession of radio/television [19], type of toilet facility, main roof material [20], ownership of motorcycle/scooter and land ownership [21].

Health service characteristics included time taken to reach the health facility, decision maker for the place of birth and person assisting birth. Time to reach the health facility was categorised as less than one hour, one hour and above, and don't know/no response. The decision maker for place of birth was recoded into three categories as participants, husbands, and family members and others. Finally, the grouping for the person assisting birth was skilled health professionals and others with the latter group including both unskilled and others.

Obstetric and maternal characteristics included total pregnancy, timing of first pregnancy check-up, planning for the most recent pregnancy and frequency of antenatal check-up (ANC) visits.

Analysis

Data collected through the questionnaire were entered into SPSS 16 (IBM SPSS Inc., USA) based on the codes provided to the questions and the analysis carried out using this software. Before performing analysis, recoding of the variables into appropriate categories was conducted (as detailed above). At the initial stage, descriptive analyses were carried out. Chi square tests were conducted to identify associations between explanatory variables and the outcome of interest (the three different places of birth). Multinomial logistic regression was then used to compare the birth at primary health centre and hospitals/clinics with birth at home/on way as the reference category after adjusting for age of respondents, time to reach health facility, caste, husband's education, husband's occupation, literacy of respondents, radio at home, television at home, having a motorcycle or scooter at home, decision maker of pregnancy, timing for first antenatal check-up and frequency of ANC visit. Only these factors were adjusted for since they showed a significant association with place of birth using the chi-square test. However, three factors which showed significant

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