



ISSN: 2091-2749 (Print)  
2091-2757 (Online)

#### Correspondence

Pratiksha Pathak  
Dept. of Community Health  
Sciences, Patan Academy of  
Health Sciences, Lalitpur, Nepal  
Email:  
pratikshapathak@pahs.edu.np

#### Peer Reviewers

Prof. Dr. Nabees MS Pradhan,  
Patan Academy of Health  
Sciences, Nepal

Asst. Prof. Dr. Pawan Sharma,  
Patan Academy of Health  
Sciences, Nepal

#### Submitted

19 Dec 2022

#### Accepted

25 Dec 2022

#### How to cite this article

Pratiksha Pathak, Naresh  
Manandhar, Sunil Kumar Joshi.  
Delivery site preferences and  
associated factors among  
married women of Panauti  
Municipality, Kavrepalanchok  
district, Nepal. Journal of Patan  
Academy of Health Sciences.  
2022Dec;9(3):53-60.

<https://doi.org/10.3126/jpahs.v9i3.52264>

## Delivery site preferences and associated factors among married women of Panauti Municipality, Kavrepalanchok district, Nepal

Pratiksha Pathak<sup>1</sup>  , Naresh Manandhar<sup>2</sup> , Sunil Kumar Joshi<sup>3</sup> 

<sup>1</sup>Lecturer, Dept. of Community Health Sciences, Patan Academy of Health Sciences, Lalitpur, Kathmandu, Nepal; <sup>2</sup>Assoc. Prof., Dept. of Community Medicine, Nepalese Army Institute of Health Sciences, Kathmandu, Nepal; <sup>3</sup>Prof. Dept. of Community Medicine, Kathmandu Medical College, Kathmandu, Nepal

### Abstract

**Introduction:** Maternal mortality is a top global developmental agenda. The main cause of being underutilization of available delivery services especially in a developing country like Nepal. Various socio-demographic, socio-cultural and health service-related factors affect the utilization of these services. Thus, the study aims to identify the delivery site preferences and its associated factors among the married women of Panauti municipality of Kavrepalanchok district.

**Method:** A cross-sectional study was conducted among the married women between the ages of 15-49 years residing in Panauti municipality. The face-to-face interviews were conducted using semi-structured questionnaires. The statistical analysis was done using Statistical Package for Social Sciences (SPSS) version 21.

**Result:** A total of 106 women of 15-49 years were included in the study. The proportion of institutional delivery among the participants was 68%. 90.6% of total participants would prefer health facility for their future deliveries; 7.5% were not sure about their preferences and very few (1.9%) preferred to deliver at home. The factors like knowledge regarding safe-motherhood program and age at marriage were found to be significantly associated with their delivery site preference ( $p < 0.05$ ).

**Conclusion:** In a country like Nepal, home delivery is still in practice and pregnancy and childbirth are regarded as normal life events. Thus, efforts should be made to change that perception, increasing utilization of available services and improving maternal and child health. This in turn will help to achieve the Sustainable Development Goal target in reducing the Maternal Mortality Rate.

**Keywords:** Home delivery, institutional delivery, maternal mortality, sustainable development goals

## Introduction

Maternal mortality is a top global developmental agenda as reflected in third Sustainable Developmental Goal (SDG) especially in Sub-Saharan Africa and Asia.<sup>1-3</sup> The main cause being non-utilization of available delivery services or delays in accessing those services. Thus, most of these deaths are preventable by timely utilization of adequate, quality maternal health services.<sup>4,5</sup>

The Maternal Mortality Rate (MMR) of Nepal (239/100,000 live births) is still highest among the South Asian countries even though a free delivery policy has been implemented by the since 2009.<sup>5-7</sup> The main reason for this being under-utilization of maternal health services as only 57% of the births nationwide take place at a health facility, and home delivery is still practiced especially in rural areas.<sup>7,8</sup>

In the countries like Nepal, pregnancy and childbirth are regarded as normal life events thus there is no justification to seek professional help.<sup>4</sup> Other factors hindering birth at a health facility are socio-demographic factors, warm environment at home, care from the family members, shyness of the women, previous bad experience at the health facility, availability and accessibility of health facility and perceived lack of competence of health care provider.<sup>9</sup> Even though these factors play an important role in the utilization of institutional health services, very few researches have been in this context. So there is a need to fill in the research gap and rectify the problem. Thus, the study aims to assess the delivery site preferences and associated factors among the women of Panauti Municipality of Kavrepalanchok district.

## Method

A cross-sectional community-based study was conducted in Panauti municipality of Kavrepalanchok district of Nepal. Before conducting the study, the ethical clearance was sought from the Institutional Review

Committee (IRC) of Kathmandu Medical College and Teaching Hospital (KMCTH), Sinamangal, Kathmandu. A face-to-face interview was conducted for the data collection using a semi-structured questionnaire during 3-10<sup>th</sup> January 2019. The questionnaire was pretested before the data collection among the married females of Kathmandu Metropolitan city and necessary corrections were made. All the participants were informed in detail about the study and its objectives, and written informed consent was taken. Married women of reproductive age group (15-49 years) from selected households, who gave consent for the study were included. Women suffering from a chronic medical condition or mental illness were excluded from the study. The calculated sample size was 106 taking the prevalence of institutional delivery as per NDHS 2016 as 57% and also adding 10% of non-response rate.<sup>10</sup>

The data was cleaned and entered in MS-EXCEL, the statistical analysis was done using Statistical Package for Social Sciences (SPSS) version 21. The descriptive statistical tools like frequency, percentage, median, Inter-quartile Range (IQR), tables and graphs were used to express the results. Pearson chi-square test was used for bivariate analysis to determine the association between independent and dependent variables. Independent variables with a significance level of less than 0.05 (p-value <0.05) were said to be significantly associated with the dependent variable.

## Result

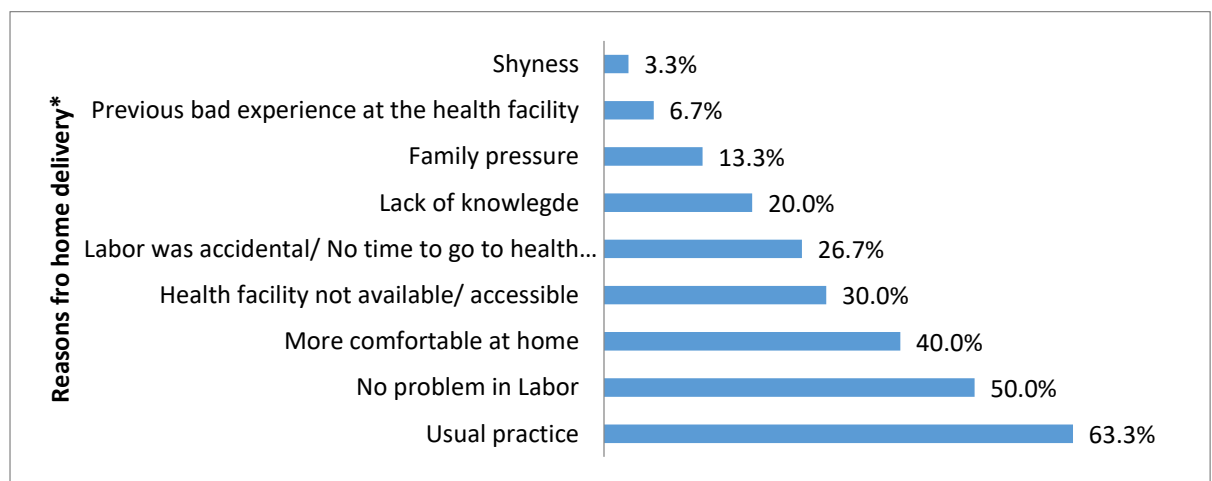
A total 106 married females aged 15-49 years were included in the study. Information was obtained regarding their socio-demographic profile, obstetric history, knowledge on Safe-motherhood and preferences of delivery sites.

Majority of respondents were in the age group 25 to 34 years (43.4%) with median age and inter-quartile range of 30.5 years and 13 years respectively. Hinduism (78.3%) was the most common religion and most of them (41.5%) belonged to the Janajati ethnic group.

**Table 1. Obstetrical history of the participants (N=106)**

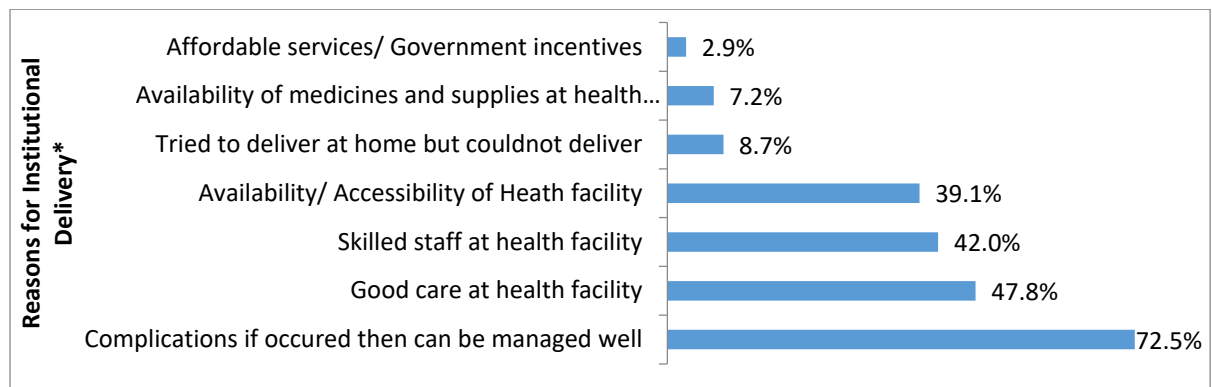
Variables	N	%
<b>Age at marriage (years)</b>		
< 18	46	43.4
≥ 18	60	56.6
<b>Age at first pregnancy (years)</b>		
< 18	27	25.5
≥ 18	79	74.5
<b>Adverse pregnancy outcomes*</b>		
None	94	88.7
Abortion	5	4.7
Intrauterine Deaths	2	1.9
Still born	3	2.8
Neonatal/ Infant Death	2	1.9
<b>ANC visits during last pregnancy</b>		
No	16	15.1
Yes	90	84.9
<b>Place of last child delivery</b>		
Home	34	32.1
Health Facility	72	67.9

\*Multiple responses



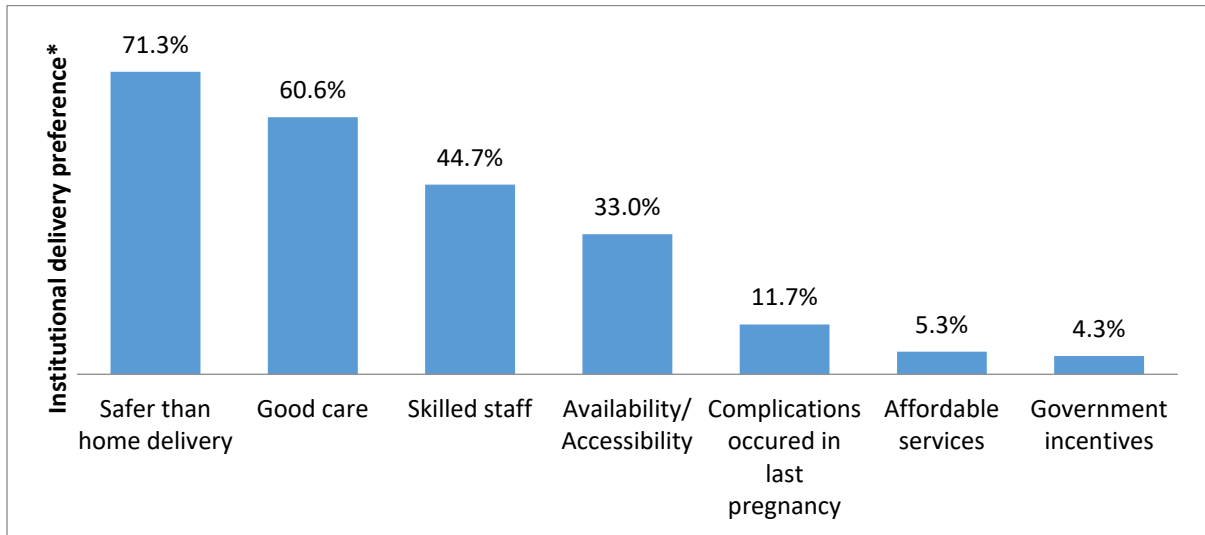
\*Multiple responses

**Figure 1. Reasons for delivering at home among the participants. (N= 34)**



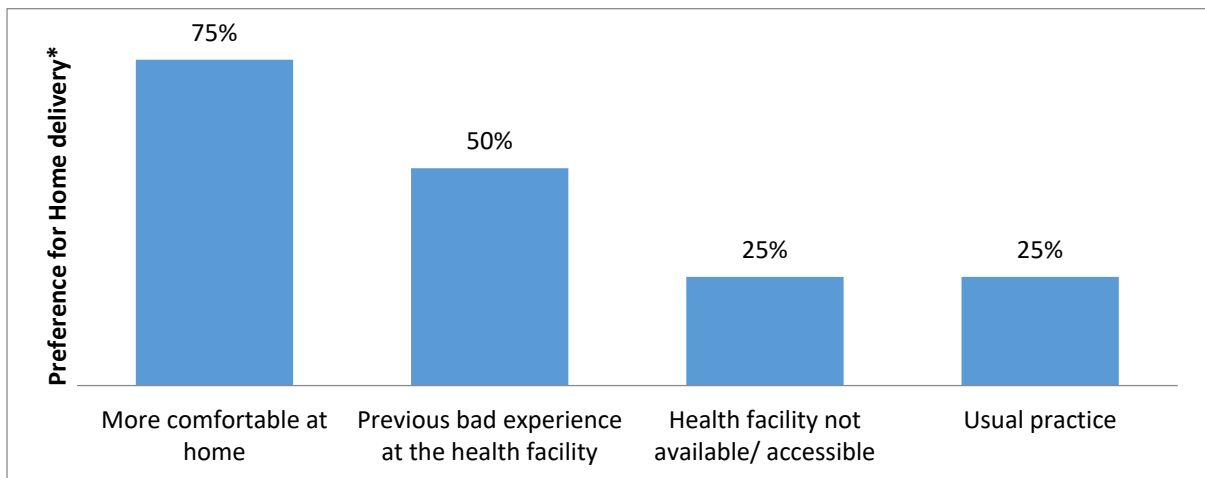
\*Multiple responses

**Figure 2. Reasons for delivering at a health facility delivery among the participants (N=72)**



\*Multiple responses

Figure 3. Reasons for preferring institutional delivery among the participants (N=72)



\*Multiple responses

Figure 4. Reasons for preferring home delivery among the participants (N=34)

Table 2. Relationship between delivery site preferences among the participants and their age at marriage (N=106)

Variables	Institutional delivery preference		COR [95% CI]	p-value
	Yes	No		
Knowledge regarding Safe motherhood program				
Good	93	7	13.29 [0.01-0.44]	0.01
Poor	3	3	1	
Age at marriage (years)				
< 18	37 (80.4 %)	9 (19.6 %)	0.07 [0.01-0.57]	0.002
≥ 18	59 (98.3 %)	1 (1.7 %)	1	

Around one-fifth of the respondents (21.7%) were educated up to High school level and the majority of them (56.6%) were home-makers by occupation. The socio-economic status was calculated using Modified Kuppusswamy's

Socio-economic status scale for Nepal.<sup>11</sup> More-than 86% of them belonged to upper-middle class socioeconomic status.

Among the participants, 60% got married after the age of 18 years and three-quarter of respondents had their first child after the age of 18 years. While asking about adverse pregnancy outcomes, few of them (11.3%) had experienced some adverse pregnancy outcomes like abortion, intrauterine deaths, stillborn, neonatal deaths, infant deaths, etc. Majority of the women (85%) had gone for at least one Antenatal checkup (ANC) in their last pregnancy whereas only two-third of them completed at least four ANC checkups. The proportion of delivery at a health facility was about 68% among which most of them had delivered in a private institution. Furthermore, the women who delivered at home were assisted by untrained persons (relatives/ friends) in majority of the cases (Table 1).

When enquired regarding the reason for home delivery, the women who delivered at home responded that "home delivery was their usual practice" (63.3%), "they had no problem in their labor" (50%) and "they were more comfortable at home" (40%) (Figure 1). Similarly, majority of the women had previously delivered at a health facility because they felt that complications if occurred can be managed well at the health facility (72.5%) (Figure 2). Few women (3%) had complications during their last delivery due to prolonged labor.

Various questions were asked to the participants regarding the safe- motherhood program of Nepal to assess their knowledge. More than 90% of the participants had good knowledge about the safe- motherhood program. The knowledge was categorized on the basis of median score (i.e. 3) into good knowledge (above and equals to median) and poor knowledge (below median). The most common source of information was the health personnel and media. Most of them thought that it is related to proper care to mother during pregnancy and delivery as well as the incentives given after completion of four ANC visits and institutional delivery. Similarly, majority of them (95.3%) replied that

institutional delivery is safer as compared to the home delivery.

Out of the total study participants, 90.6% would prefer health facility for their future deliveries; 7.5% were not sure about their preferences and very few (1.9%) replied that they would prefer to deliver at home.

The main reason for preferring a health facility was that complications could be managed well at the health facility (71.3%). (Figure 3) Similarly, comfort at home and emotional support from the family members was the main reason (75%) for females to prefer home delivery (Figure 4).

Bivariate analysis was performed to identify various attributes among respondents influencing their preferences for the delivery site. The difference in delivery site preferences among the participants according to their age at marriage and knowledge regarding safe-motherhood program were found to be statistically significant ( $p$  – value<0.05). Respondents who had good knowledge were more likely to prefer institutional delivery [COR: 13.29; 95% CI: 0.01-0.44] ( $p$ -value=0.01). Similarly, the respondents who got married after the age of 18 years had higher odds of preferring institutional delivery as compared to those who got married before 18 years of age [COR: 0.07; 95% CI: 0.01-0.57] ( $p$ -value=0.002) (Table 2).

## Discussion

The study aimed to find out the delivery site preferences and associated factors among the married women from Panauti municipality of Kavrepalanchok district of Nepal. The study showed that the proportion of institutional delivery was 68% which is similar to the findings from another study done in the same area in 2014 (65.5%).<sup>8</sup> However, the finding is higher than that from NDHS, 2016 data i.e., 57%,<sup>7</sup> this difference might be because the NDHS covers a wide range of geography and difference in time period whereas this study

only reflects one municipality. Similarly, the institutional delivery prevalence from rural parts of Chitwan is also lower than that of this study i.e. 55% which might be due to urban-rural differences in both the studies.<sup>6</sup> However, in Palungtar Municipality of Gorkha 93.3% of deliveries took place at a health facility which is higher than that of the present study and also the national data.<sup>1,7</sup>

Around 85% of the participants had gone for at least one Antenatal checkup during their last pregnancy which is similar to the findings from Gorkha, and WHO report on MDG to SDG.<sup>1,12</sup> In contrast, the findings from a study conducted in India revealed that only 61.7% of the pregnant women had at least one Antenatal checkup.<sup>13</sup> This difference may be due to the difference in cultural practices, educational level as well as difference in study population size in both the areas.

Home delivery being their usual practice; uneventful labor; comfort and support at home were the common reasons to deliver at home among the participants in the study which is similar to the findings from a qualitative study conducted in Chitwan where the participants believed that institutional delivery is only required in case of complications until then home delivery is their usual practice.<sup>9</sup> However, literature review of various studies identifying the factors determining utilization of maternal health care services in Nepal concluded that 'the distance to health facility' was a determining factor in maternal health care seeking. These studies also concluded that the quality of services at the health facility is very important determinant of maternal health care seeking but is usually masked by the socio-demographic and cultural factors.<sup>14</sup> Also, as the decision makers in our culture are family members, efforts should be made to aware them regarding the importance of seeking maternal health-care services. Thus, further studies are required to rectify this issue and birthing facilities should be made available in the lower-level health facilities like health post with availability of trained birth

attendants as well as the provision referral in cases when required.

In the present study, 90.6% of the participants preferred to deliver at a health facility in their future deliveries which is similar to findings from Ethiopia (88.3%) and Jharkhand, India (90%).<sup>3,15</sup> Availability of good facilities, care and skilled staff were the most common reasons for females for preferring institutional delivery. This is similar to findings from India where the availability of medicines and perceived health benefits were the main reason for delivery at a health facility.<sup>3</sup>

The delivery site preferences were significantly associated with their knowledge regarding safe- motherhood program and age at the time of marriage in the study. The NDHS also revealed that factors contributing to this were female's age, education, socio-economic status and the geographical conditions.<sup>7</sup> These findings are similar to those of the study conducted in rural area of Nepal which concluded that younger females are literate as compared to older ones. Also, literacy acts as proxy for women empowerment and independence thus encouraging institutional deliveries.<sup>5,17</sup>

ANC visits are likely to encourage institutional deliveries by raising awareness of possible complications and safe delivery practices among women as concluded by studies done in developing countries including Nepal.<sup>7,18-21</sup> However, the findings were not consistent with that of the present study which might be due to other influencing factors that need to be explored.

Further-more, previous delivery site, female perception about pregnancy and health workers, mother's age at marriage and first pregnancy, knowledge of incentives, waiting hours at the health facility and knowledge on differences between home and institutional delivery also significantly affected the preferences for the delivery site.<sup>1,7,17</sup> Thus, it can be concluded that a complex interplay of socio-demographic, socio-cultural and health

service-related factors affected the preferences for the delivery site.<sup>6</sup>

Even though the study could not explore all the factors favoring or hindering delivery at a health facility and could not cover a larger geographical area, these evidences collectively reflect that assuring a safe delivery service is a key to the reduction of maternal mortality and morbidity. Thus, the factors that affect the delivery site preferences in the females need to be explored for further understanding of the area so that proper planning and policy implementation can be done.

### Conclusion

Home delivery is still in practice and there is non-utilization of institutional delivery services. The preference for delivery at a health facility is high even though the utilization is low. As most of the studies conducted in Nepal are just focusing upon socio-economic and cultural factors ignoring the fact that the context of culture and beliefs have changed in the past decades. Thus, there is a need for identifying the disparity in preference and utilization and efforts should be made to change the perception of the society regarding pregnancy and childbirth hence improving Maternal and child health which in turn will help to achieve the SDG target in reducing the MMR.

### Conflict of Interest

None

### Funding

None

### Author Contribution

Concept, design, planning: PP, NM, SKJ; Literature review: PP; Data collection: PP, NM; Data analysis: PP, NM; Draft manuscript: PP, NM; Revision of draft: PP, NM, SKJ; Final manuscript: PP, NM, SKJ; Accountability of the work: PP, NM, SKJ.

### Reference

1. Paudel G, Yadav UN, Thakuri SJ, Singh JP, Marahatta SB. Utilization of services for institutional deliveries in Gorkha District. *J Nepal Health Res Counc.* 2016;14(3):202-6. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) |
2. Wilunda C, Scanagatta C, Putoto G, Takahashi R, Montalbetti F, Segafredo G, et al. Barriers to institutional childbirth in Rumbek North County, South Sudan: a qualitative study. *PloS One.* 2016;11(12):e0168083. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) |
3. Bhattacharyya S, Srivastava A, Roy R, Avan BI. Factors influencing women's preference for health facility deliveries in Jharkhand state, India: a cross sectional analysis. *BMC Pregnancy Childbirth.* 2016;16:50. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) |
4. Karkee R, Lee AH, Khanal V. Need factors for utilisation of institutional delivery services in Nepal: an analysis from Nepal Demographic and Health Survey, 2011. *BMJ open.* 2014 Mar 1;4(3):e004372. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) |
5. Maru S, Rajeev S, Pokhrel R, Poudyal A, Mehta P, Bista D, et al. Determinants of institutional birth among women in rural Nepal: a mixed-methods cross-sectional study. *BMC Pregnancy Childbirth.* 2016;16(1):252. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) |
6. Shah R, Rehfuess EA, Maskey MK, Fischer R, Bhandari PB, Delius M. Factors affecting institutional delivery in rural Chitwan district of Nepal: a community-based cross-sectional study. *BMC Pregnancy Childbirth.* 2015;15:27. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) |
7. Shahabuddin A, De Brouwere V, Adhikari R, Delamou A, Bardaji A, Delvaux T. Determinants of institutional delivery among young married women in Nepal: evidence from the Nepal Demographic and Health Survey, 2011. *BMJ Open.* 2017;7(4):e012446. | [DOI](#) | [Google Scholar](#) | [Full Text](#) |
8. Sharma SR, Poudyal AK, Devkota BM, Singh S. Factors associated with place of delivery in rural Nepal. *BMC Public Health.* 2014;14:306. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) |
9. Shah R, Rehfuess EA, Paudel D, Maskey MK, Delius M. Barriers and facilitators to institutional delivery in rural areas of Chitwan district, Nepal: a qualitative study. *Reprod Health.* 2018;15(1):110. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) |
10. Ministry of Health and Population, Nepal, New ERA, ICF International Inc. Nepal demographic

- and health survey 2016. Kathmandu: Ministry of Health; 2017. | [Google Scholar](#) | [Full Text](#) |
11. Ghosh A, Ghosh T. Modification of Kuppuswamy's socioeconomic status scale in context to Nepal. *Indian Pediatr.* 2009;46(12):1104–5. [cited 2017 Oct 22] | [PubMed](#) | [Google Scholar](#) |
  12. World Health Organization. Health in 2015: from MDGs to SDGs [Internet]. World Health Organization. 2015 Dec 8. | [Weblink](#) |
  13. Jat TR, Ng N, San Sebastian M. Factors affecting the use of maternal health services in Madhya Pradesh state of India: a multilevel analysis. *Int J Equity Health.* 2011;10:59. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) |
  14. Karkee R, Lee AH, Binns CW. Why women do not utilize maternity services in Nepal: a literature review. *WHO South East Asia J Public Health.* 2013;2(3-4):135-41. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) |
  15. Ababulgu FA, Bekuma TT. Delivery site preferences and associated factors among married women of child bearing Age in Bench Maji Zone, Ethiopia. *Ethiop J Health Sci.* 2016;26(1):45-54. | [DOI](#) | [PubMed](#) | [Google Text](#) | [Full Text](#) |
  16. Wako WG, Kassa DH. Institutional delivery service utilization and associated factors among women of reproductive age in the mobile pastoral community of the Liban District in Guji Zone, Oromia, Southern Ethiopia: a cross sectional study. *BMC Pregnancy Childbirth.* 2017;17(1):144. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) |
  17. Dahal RK. Factors influencing the choice of place of delivery among women in eastern rural Nepal. *Int J Matern Child Health.* 2013;1(2):30. | [DOI](#) | [Google Scholar](#) | [Full Text](#) |
  18. Karkee R, Binns CW, Lee AH. Determinants of facility delivery after implementation of safer mother programme in Nepal: a prospective cohort study. *BMC Pregnancy Childbirth.* 2013;13(1):193. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) |
  19. Rai RK, Singh PK, Singh L. Utilization of maternal health care services among married adolescent women: insights from the Nigeria Demographic and Health Survey, 2008. *Womens Health Issues.* 2012;22(4):e407-14. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) |
  20. Kamal SM, Hassan CH, Alam GM. Determinants of institutional delivery among women in Bangladesh. *Asia Pac J Public Health.* 2015;27(2):NP1372-88. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) |
  21. Berhan Y, Berhan A. Antenatal care as a means of increasing birth in the health facility and reducing maternal mortality: a systematic review. *Ethiop J Health Sci.* 2014 Sep 12;24:93-104. | [DOI](#) | [PubMed](#) | [Google Scholar](#) | [Full Text](#) |