



University of HUDDERSFIELD

University of Huddersfield Repository

Karmacharya, Manju, Jasienska, Grazyna, Bissell, Paul, Wasti, Sharada P. and Bajracharya, Lata

Factors influencing the utilization of health facilities for childbirth in a disadvantaged community of Lalitpur, Nepal

Original Citation

Karmacharya, Manju, Jasienska, Grazyna, Bissell, Paul, Wasti, Sharada P. and Bajracharya, Lata (2017) Factors influencing the utilization of health facilities for childbirth in a disadvantaged community of Lalitpur, Nepal. *Journal of Gynecology*, 1 (1). pp. 1-27.

This version is available at <http://eprints.hud.ac.uk/31671/>

The University Repository is a digital collection of the research output of the University, available on Open Access. Copyright and Moral Rights for the items on this site are retained by the individual author and/or other copyright owners. Users may access full items free of charge; copies of full text items generally can be reproduced, displayed or performed and given to third parties in any format or medium for personal research or study, educational or not-for-profit purposes without prior permission or charge, provided:

- The authors, title and full bibliographic details is credited in any copy;
- A hyperlink and/or URL is included for the original metadata page; and
- The content is not changed in any way.

For more information, including our policy and submission procedure, please contact the Repository Team at: E.mailbox@hud.ac.uk.

<http://eprints.hud.ac.uk/>

Factors Influencing the Utilization of Health Facilities for Childbirth in a Disadvantaged Community of Lalitpur, Nepal

Manju Karmacharya¹, Grazyna Jasienska², Paul Bissell³, Sharada P. Wasti⁴, LataBajracharya⁵

United Nations Population Fund, Nepal¹, Jagiellonian University Collegium Medicum, Poland², The University of Huddersfield, UK³, Institute for Reproductive Health, Georgetown University, USA (Nepal base)⁴, Nepal Society of Obstetrics and Gynaecology⁵

*Corresponding author: Manju Karmacharya, United Nations Population Fund, Nepal; Email: karmacharya@unfpa.org

Citation: Manju Karmacharya, (2016) Factors Influencing the Utilization of Health Facilities for Childbirth in a Disadvantaged Community of Lalitpur, Nepal: Nessa J Gynecology

Received: December 3rd 2016, **Accepted:** February 1st 2017, **Published:** February 22nd 2017.

Copyright: © 2016 Manju Karmacharya, Grazyna Jasienska, Paul Bissell, Sharada P. Wasti, LataBajracharya et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract:

Background: In Nepal, half of deliveries take place at home, while institutional birth assisted by skilled birth attendants (SBAs) are still infrequent.

Objectives: This study explores factors influencing the utilization of health facilities for childbirth in a disadvantaged community of rural Nepal.

Method: A qualitative study with two focus groups: mothers-in-law and husbands, and female community health volunteers. 28 semi-structured in-depth interviews were conducted with selected participants 20 mothers and 8 grass-root and policy level stakeholders. Data were analysed by three delays model of conceptual framework. **Results:** The main reasons for giving birth at home included cultural tradition, lack of awareness about danger signs during pregnancy and childbirth, about importance of skilled birth attendants and lack of knowledge about availability of free 24-hours delivery sites/birthing centers, inability to afford two way transportation costs despite transport incentives provided by government for institutional delivery, fear of episiotomy/surgery/physical abuse and health service provider's attitude for home delivery. Health facilities were mostly used by women who experienced complications during childbirth

Policy Implications: Significant gaps from policy to grass root levels were identified which -suggests that dissemination of information about free delivery must be more effective. The health workers should convincingly inform families about benefits of institutional delivery, especially in marginalized/disadvantaged communities.

Keywords: Childbirth; Skilled Birth Attendant; Barriers; Disadvantaged

List of abbreviations used and keywords:

ANC	Antenatal Care
AMH	Anandaban Mission Hospital
BC	Birthing Center
DAG	Disadvantaged Group
DPHO	District Public Health Office
DPHO	District Public Health Officer
FCHV	Female Community Health Volunteer
FM	Frequency Modulation
HF	Health Facility
MIS	Maternity Incentive Scheme
MMR	Maternal Mortality Ratio
MMMS	Maternal Mortality Morbidity Study
MoHP	Ministry of Health and Population
MoFALD	Ministry of Federal and Local Development
NHSSP	Nepal Health Sector Support Program
SBA	Skilled Birth Attendant
SDIP	Safe Delivery Incentive Program
SHP	Sub Health Post

SMP Safer Mother Programme

WHO World Health Organization

Childbirth: also known as labour and delivery, is the ending of a pregnancy by one or more babies leaving a woman's uterus.

Skilled Birth Attendant: is a health care professionals (Doctor, Nurse and Midwife), who provides basic and emergency health care services to women and their newborns during pregnancy, childbirth and the postpartum period. Birth attendants are trained to be present at childbirth, whether the delivery takes place in a health facility or at home, to recognize and respond appropriately to medical complications, and to implement interventions to help prevent them in the first place including through prenatal care.

Barriers: the factors that prevent a pregnant women access to health services, such as socio-cultural, geographical, financial and health system.

Disadvantaged: deprived of some of the basic necessities or advantages of life, such as adequate housing, medical care, or educational facilities.

1.Introduction

Childbirth by skilled birth attendant (SBA) (doctors, nurses or midwives) is a vital intervention for prevention of maternal mortality, which is one of the indicators for progress of Millennium Development Goal-5 (MDG, 2007). In developed countries, 99%of deliveries are assisted by SBAs. In developing countries, only 65%of births are assisted by professionals (Hounton et al, 2008), while in Nepal this is as low as 55.6%(HMIS, 2014).

The Maternal Mortality Ratio in Nepal has declined by 76 %in the last 20 years: from 790 per 100,000 live births in 1990 to 190 in 2013 (WHO, 2014). Delays in seeking care (45%of maternal deaths), reaching care in health facility (14%) and receiving care (41%) are key factors behind the maternal and new born morbidity and mortality in Nepal (MMMS, 2009). Moreover, more than two-thirds (71%) of maternal deaths occur shortly after childbirth (MMMS, 2009) and almost all could had been prevented or avoided if women had accessed to SBA services. However, there is a long way to go to achieve sustainable development goal reaching less than 70/100,000Live Birthby 2030 unless the government of Nepal addresses the issuesof individual, family and community level delay to improve health seeking behaviour focusing on disadvantaged community as well as health system improvement focusing on qualityto increase accessibility, availability of SBA with 24 hours emergency obstetric and newborn care services.

In order to increase the number of institutional births, Nepal government's program of health sector emphasized safe motherhood and made significant progress in development and implementation of policies (i.e. Maternity Incentive Scheme in 2005, SBA policy in 2006, Birthing center guideline in 2007, Free Delivery Policy in 2009 with Safe Delivery Incentive Program also called safer Mother Program revised in 2012). Maternity Incentive Scheme initiated in 2005 (MoHP, 2050) to provides payment to mothers immediately after institutional delivery along with payment to 25 Low Human Development Index districts out of 75 districts to address the inequity of women's access to health facilities for childbirth. Safer Mother Program (Aama Surakchhya Program) implemented since 2009 to encourage\ institutional delivery assisted by the SBA (SMP, 2012) for all pregnant women. This includes incentive payment to health facilities in 75 districts as well as transport (from 5 US \$ to 15US \$) incentive to mothers who gave birth at the health facilities. To further promote institutional delivery, the Nepalese government has been expanding 24 hours service delivery sites at community level birthing centers. Increasing trend of institutional delivery from 35%in 2011 to 55.6%in 2014, and from 36%SBA assisted delivery in 2011 to 55.6%in 2014 (HMIS, 2014) has been reported.

While some data at national level are available there is very limited research conducted at the community level. Our study is the first focusing on most disadvantaged community in Nepal. This study explores women's experience and reasons for using or not using health facilities and SBAs for childbirth in Lalitpur district in Nepal.

2.Main body:

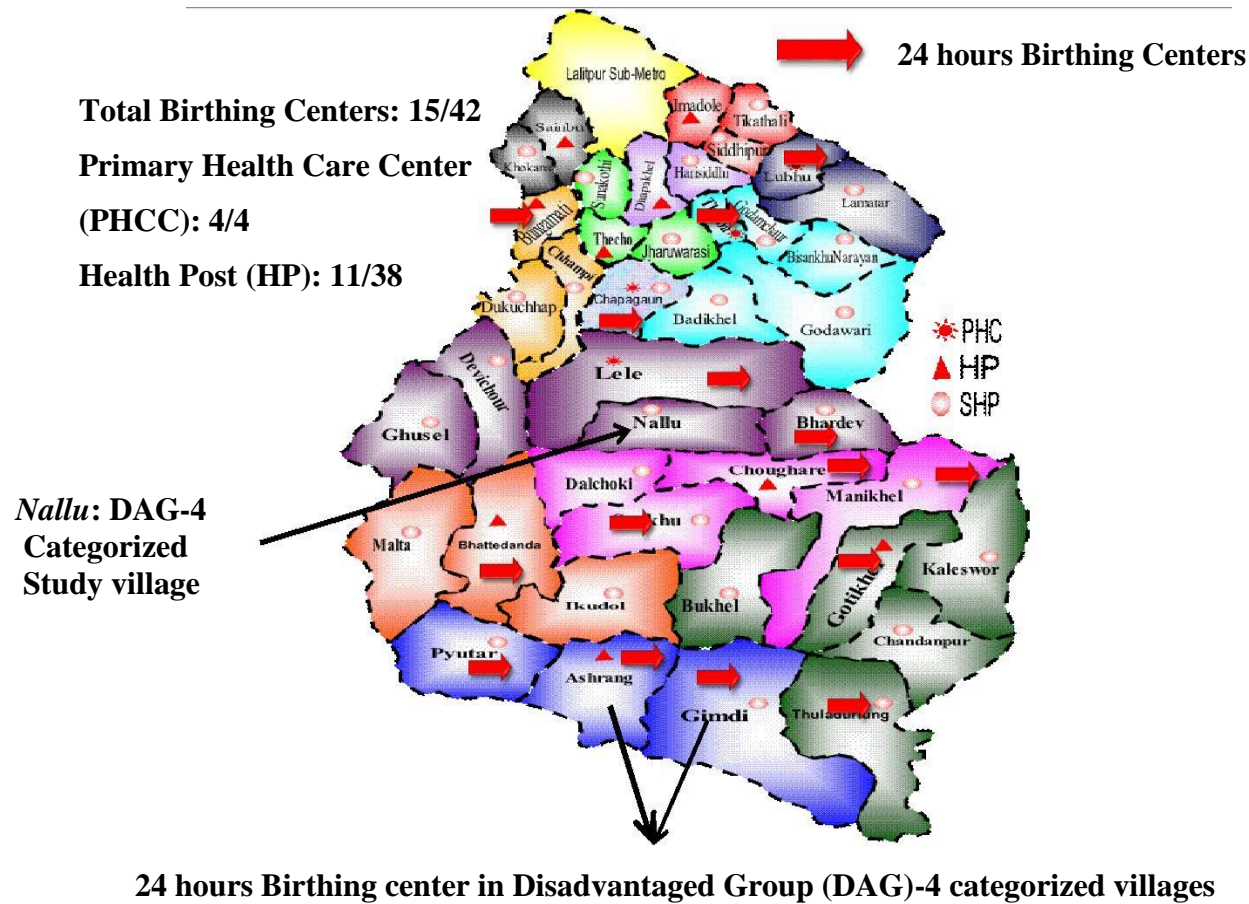
Methods

This study is based on a non-experimental cross-sectional design and qualitative approach for primary data collection to explore factors influencing the utilization of health facilities during childbirth. Data were collected from July to September 2012.

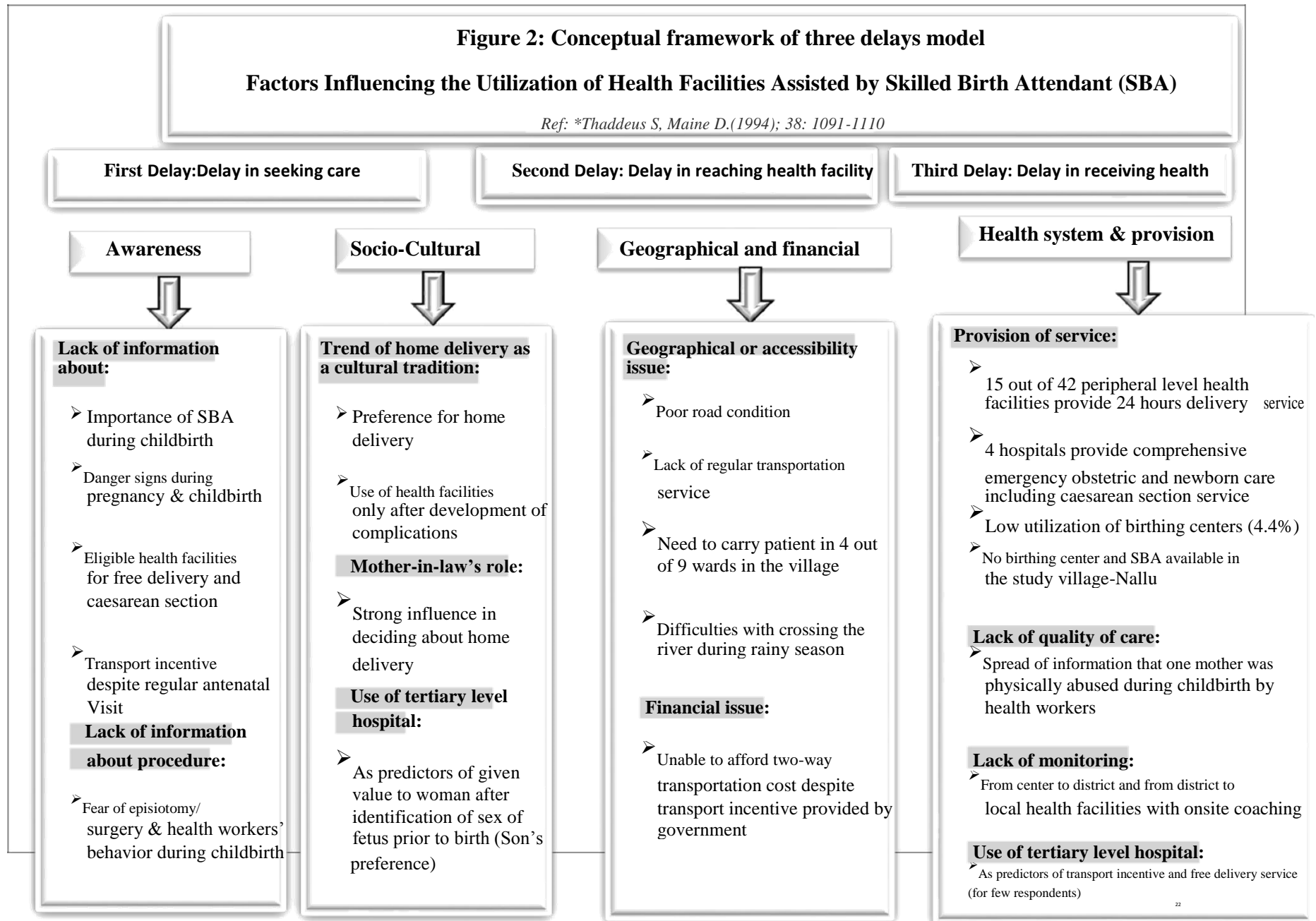
Study site:

The study site *Nallu* is located 25 kilometers from capital, at the centre of *Lalitpur* district with population of 2,697 and 89 expected pregnancies during study period. The majority of the households in *Nallu* are engaged in agriculture, physical labour and migrant labour. Around 97.6% of the population are Tamang ethnic group, considered as Janjatis (disadvantaged) and selected *Nallu*, a one of the disadvantaged Group (DAG) 4 categorized (mostly marginalized) village for study purposively out of total 8 disadvantaged Group 4 categorized villages in Lalitpur district (MoLD, 2009).

Figure 1: Map of Laitpur district with availability of Birthing Centers in Fiscal Year 2011-12



Lalitpur district (Figure 1) has 15 health facilities with 24 hours birthing services in the peripheral level health facilities (Primary Health Care Centers and Health Posts) (out of total 42 health facilities), and 4 hospitals providing Comprehensive Emergency Obstetric and New born care services including caesarean sections. Utilization of 24 hours birthing centers was 4.4% (in FY 2011-12) as compared to 12% at national level. The health facility delivery assisted by SBA at the district level (24 hours birthing sites and hospitals) increased from 72% to 78 % during the period between FY 2010-11 and 2011-12 which is much higher than national level; 35% (NSHS 2011) and 55.6% (HMIC 2014). However, at the *Nallu* Sub Health Post (currently upgraded to *Nallu* Health Post) at study village, home delivery conducted by Maternal and Child Health Worker (MCHW is not a Skilled Birth Attendant) is in increasing trend from 18% to 23% (Annual report 2010-11 & 2011-12).



Several types of participants were included: mothers, mother-in-law, husbands, female community health volunteers, service providers and policy makers. Two focus-group discussions, One focus group discussion was with husbands and mother's in law of the pregnant mother enrolled in the in-depth interview and the second FGD was with Female Community Health Volunteers and 28 in-depth interviews were conducted using interview guides among 20 mothers who have given birth less than one year prior to interview. Among those, 50% of mothers used health facility and the rest were primiparous. Moreover, eight in-depth interviews were conducted with service providers to policy level who had been working on issues related to maternal health and childbirth in Nepal. The central question is designed thematic wise as per 3 delay model of conceptual framework: Knowledge; socio-cultural; geographical; financial and health system and provision. For instance: in terms of knowledge on danger signs during pregnancy, importance of SBA during childbirth. Knowledge on transport incentives and free delivery service, geographical access to health facilities, its utilization; health system provision and satisfaction of the services for those who enrolled health facility delivery etc. The questions were pre tested in Lele Village before going for in-depth interview with pregnant mother in study village.

Interviews were conducted at health facility, participant's home and government offices for policy makers while maintaining privacy and confidentiality. Interviews were audio recorded, transcribed, and translated into English before analyses. The collected data were analysed using the three delays model of maternal mortality Conceptual framework (Figure 2) called "apriori thematic analysis" (Thaddeus and Maine, 1994). Data were managed by identifying a thematic framework, themes were developed under the 3 delays model: 1) delay in deciding to seek care (factors related to awareness about danger signs during pregnancy and childbirth, importance of SBAs, maternity incentives and free delivery policy/guidelines, and socio-cultural factors); 2) delay in reaching health facilities (factors related to distance to health facilities and financial barriers) and 3) delay in receiving health care (factors related to health care system and provision, e.g. availability of 24 hours delivery service and emergency obstetric and new born care service including human resource, SBA, and quality care monitoring). Verbatim quotations were used to illustrate the range of perceptions within each theme from the respondent's perspective. Ethical approval was received from the Nepal Health Research Council and the University of Sheffield, UK.

2.7.3 Data Analysis:

'Framework' analysis method was used to analyze the collected data. This approach allows for a 'systematic analysis' of the collected data through application of a 'well-defined process' (Lacey & Luff 2009). This process involves 5 key stages of analysis: (i) data familiarization, (ii) identifying a thematic framework, (iii) indexing, (iv) charting and (v) mapping and interpretation (Lacey & Luff 2009). Analysis is done using manual paper and pencil method.

(i) Data familiarization: From the beginning of data collection, rereading of collected data and habit of listening to the recorded interviews helped assess how the interviews went, to think about concerns that need to be followed-up in the next interviews and generally served principal investigator as an exercise of familiarizing with the data.

(ii) Identifying a thematic framework: Through familiarizing data and rereading of the transcripts several times, it assisted to develop the themes that emerged from the data against conceptual framework of three delay model. This level of exposure allowed for good familiarization of theme. As a next step, themes were developed under each of these apriori chosen areas; awareness, socio-cultural, geographical & financial and health care system and provision. Themes were also examined and/or modified in view of findings, and new themes were also generated based on data analysis.

(iii) Indexing: Data was coded (with different color assigned to a particular theme) and it was analyzed using Excel sheet. For privacy and confidentiality of participant's views and experiences each, participant received a code number (Table 2) with brief introduction (whether service users/providers, FGD participant, district manager or policy makers). Quotations were used to demonstrate the range of perceptions within each theme from the respondent's perspective.

(iv) Charting: The data was then charted across these themes under apriori headings. The data charting stage within the framework approach allowed for a comprehensive approach to data analysis and a level of attention to detail, and also increased the verifiability of study findings (Lacey & Luff 2009).

(v) Mapping and interpretation: This phase involved an effort to classify associations within and between themes, and make out any explanatory trend that helped to reflect on model.

Results:

Around 89% of respondents were females, 75% were between 24-49 years of age, 92% lived in joint family and 97.2% were Tamang ethnic/caste (disadvantaged) (Table 1). Around 90% (total 18 out of 20 mothers) of mothers had visited antenatal clinic. However, only 60% (Total 12 out of 18 mothers who attended antenatal clinic) completed recommended four ANC visits. In households, decisions about general health seeking behavior were usually made by husbands. Interestingly, however, mothers-in-law made decisions about potential institutional delivery. Out of total 10 women who delivered in health facilities, 8 used health facilities only after development of intra-partum complications, mostly prolonged labour (Table 2).

Table 1: Socio-Demographic Characteristics

Socio-demographic Characteristics	Mothers	Mothers-in-law	Husbands	FCHV	Total	%
Total Participants	20	5	4	7	36	100%
Sex						
Male	0	0	4	0	4	11.1
Female	20	5	0	7	32	88.9
Age (completed years)						
17-19 Years	4	0	1	0	5	13.9
20-49 years	16	1	3	7	27	75.0
50 + years	0	4	0	0	4	11.1
Parity						
1 child (alive or dead)	10				10	50.0
2 to 4 children (alive)	10				10	50.0
Type of Family						
Joint or extended family	17	5	4	7	33	91.7
Nuclear or single family	3	0	0	0	3	8.3

Caste and ethnicity						
Tamang	20	5	4	6	35	97.2
Chhetri	0	0	0	1	1	2.8
Religion						
Buddhist	8	5	4	6	23	63.9
Hindu	11	0	0	1	12	33.3
Christian	1	0	0	0	1	2.8
Education of participants						
Illiterate	14*	4	0	3	21	58.3
Literate	6**	1	4	4	15	41.7
Education of husbands of 20 women participants						
Illiterate	6				6	30.0
Literate	13**				13	65.0
Do not know	1				1	5.0
Occupation of participants						
Household work	9	5	1	5	20	55.6
Agriculture + Household	10	0	1	2	13	36.1
Service	1	0	2	0	3	8.3
Occupation of husbands of 20 women participants						
Household work + Student	1				1	5.0
Agriculture	8				8	40.0
Service	11				11	55.0

* All mothers who gave birth at home were illiterate, **All husbands of health facility delivery were literate and 6 out of 10 mother who gave birth at health facility were literate

*&**This shows major educational differences between health facility users and non-users during childbirth.

Table 2: Service Utilization Related Characteristics among 20 Mothers who gave birth one year prior to interview

Maternal health indicators	Primiparous mothers	Multiparous mothers	Total	%
Antenatal Care (ANC) Service				
Yes	10	8	18	90.0
No	0	2	2	10.0
ANC service received at				
<i>Nallu</i> Sub Health Post	8	6	14	70.0
MH- Tertiary Level Hospital	2	2	4	20.0
No Antenatal Care (ANC)	0	2	2	10.0
Number of ANC visits attended				18
No ANC visit	0	2	2	10.0
ANC first visit	1	0	1	5.0
ANC 2 to 3 Visit	1	4	5	25.0
ANC four Visit	4	2	6	30.0
>5 ANC Visit	4	2	6	30.0
Place of delivery (Health Facility)				
Maternity Hospital -Tertiary level (<i>2.5 hours distance</i>)	5	1	6	30.0
Ananadaban Mission Hospital (<i>30 min. distance</i>)	2	0	2	10.0
Kist (Private) Medical hospital (<i>1 hour distance</i>)	1	0	1	5.0
Lele PHCC-Birthing Center (<i>20-30 min. distance</i>)	0	1	1	5.0
Place of Delivery (Home)	2	8	10	50.0
Delivery assisted at home by				
Maternal and Child Health Worker/Mother-in- Law	1	3	4	20.0
Maternal and Child Health Worker	1	3	4	20.0
Only family members (Mother, Mother/Sister-in- law)	0	2	2	10.0
Delivery assisted at health facility by SBA	8	2	10	50.0
Decision makers at home in health seeking (in general)				
Father-in-law	0	2	2	10.0
Husband	5	6	11	55.0
Mother-in-law	5	1	6	30.0
Self	0	1	1	5.0

Factors influencing the utilization of health facilities for delivery services

Key findings are presented based on three delay model conceptual framework of Thaddeus and Maine, 1994 (Figure II). The findings are presented in four interwoven categories; (i) Awareness (ii) Socio-cultural (iii) Geographical and Financial and (iv) Health care system and provision.

(1) Awareness

Importance of SBA and danger signs during pregnancy

Almost none of the mothers knew who SBA is and understood their importance during childbirth. Other family members who influenced decisions about childbirth, especially mothers-in law and husbands, were unaware about importance of SBA. However, some mothers, mothers-in-law and Female Community Health Workers who participated in the focusd group discussion had some knowledge about danger signs (at least two to three) during pregnancy and childbirth. A mother said:

Seeing of hand or feet instead of head of baby at the perineum and labour pain for many days are danger signs and if so, needs to go to hospital. [Multiparous, HF non-user]

The sources of information about danger signs included radio for mothers and local health workers for Female Community Health Volunteers (FCHV), and maternal and child health workers for mothers-in-law. By contrast, husbands had no information about danger signs. One mother(Primiparous, HF users), who got pregnant after nine years of being married, lost her new-born baby due to delay in seeking care by her mother-in-law. A factor that makes women more likely to deliver at home is short labour pain. A mother stated:

I had my experience with short labour pain during my first child birth. This time also, I went to forest to collect wood, grasses and had meal at night. Then around 1 to 2 am labour pain starts and after some time baby was delivered at home with support of mother-in-law. [Multiparous, HF non-user]

Government's provision of financial support

The majority of mothers were aware about maternity transport incentive and how much money (USD\$ 10) they would receive after utilization of health facilities. Almost all mothers who delivered at home were also aware about incentive. However, a lack of information about incentive was expressed by multiparous mother attending antenatal care in the tertiary level hospital who stated:

I heard about maternity incentive only after I received it at hospital after my childbirth. [Multiparous, HF user]

None of the mothers-in-laws knew about free delivery service or maternity transport incentive.

Most of mothers, husbands and FCHVs were unaware about eligible health facilities where free delivery services were available. Furthermore, none of them knew that caesarean section is also free of cost.

Mother who attended the tertiary level hospital stated:

I knew about free delivery service at tertiary level hospital, but did not know free delivery service was available at the nearest village at Lele Birthing centre. [Primiparous, HFuser]

Most of the mothers were informed about incentives through radio (the main source), during ANC attendance, childbirth and through relatives.

(2) Socio-cultural factors

Role of mother-in-law

More than half of the mothers did not express willingness for institutional delivery though they were facing labour pain for more than two days. Women had low status within family and limited financial means. A woman stated:

I was at home for 3 days with labour pain. MCHW told my mother-in-law to take me to hospital due to prolonged labour but my mother-in-law did not want to take me to hospital. Finally, I was taken and gave birth at tertiary level hospital. [Primiparous, HF user]

Most of the mothers-in-law pressured their daughters-in-law to give birth at home, based on their own experience of home delivery. One of the FCHV stated:

Even though I know the danger signs, prolonged labour and I made aware mothers in this village about that, I, myself had to suffer with prolonged labour and cried for 3 days at home. Finally I was taken to hospital for delivery. [FCHV- Focus Group]

Culture of this village, along with the traditional beliefs of mothers-in-law and their role in decision making process not only affected mothers of that village, but also more knowledgeable

FCHV when she was in a role of daughter-in-law. This illustrates the power relation between mothers-in-law and daughters-in-law.

Son preference (facilitating for institutional delivery)

Of the 10 health facility users, two mothers went there directly, without experiencing complications; one went to a private hospital and another used tertiary level hospital. One of these mothers knew from the ultra-sonogram that she is carrying a male baby and was pressured by mother-in-law and husband to deliver in an institution. This suggests that rural Nepal still is a society with a strong son's preference.

(3) Geographical variation and financial problems

Transportation difficulties, poor road conditions, and lack of regular transport were serious obstacles for institutional delivery. In 4 out of 9 wards of this village, pregnant mothers had to be carried by villagers using local bamboo made *doko* (basket), or in stretcher, to access a public transportation or an ambulance. During monsoon season, flooding made access to ambulance even more challenging.

Financial problems emerged as the most important barrier for institutional delivery. The majority of participants reported difficulties in paying for costs of transport. A mother reported:

The reason for not being unable to go to health facility for childbirth was due to money not at hand. One way ambulance costs US\$10 to reach hospital, which is 2 hours away and the same amount needs to be paid for return. However, we receive incentives of only US\$10. [Multiparous, HF non-user]

The fact, that ambulance cost is not affordable for many families of this village, remained a key reason for not accessing health facility for childbirth, even though they were aware about incentives.

(4) Health care system and provision

Availability of 24 hours birthing center services

Maternal and Child Health Worker from the village stated:

This year no one from District Public Health Office had come for monitoring. Even I was not updated on information about where free service is available.

One of the policy makers, who worked in National Health Sector Support Program under Family Health Division, commented on monitoring issue:

Here we can see the lack of seriousness. There has been plan to do monitoring from central to regional, regional to district and district to community/grass root level. However, lack of human resources and commitment are affecting the monitoring.

Other central level policy makers also reported that human resources for monitoring are lacking. As reported by a mother who had given birth at the Kist (private) Medical hospital, she did not receive transport incentive. This is only one example of not getting incentive, but it suggests a need of regular monitoring visits.

Quality of care (privacy and behaviour of SBA)

Satisfaction of clients of health services, including service providers, and privacy in the health facility during childbirth are some of the indicators of quality of care. A mother stated:

I like home delivery because I have to take off my clothes at hospital and there is no privacy during check-up. [Multiparous, HF non-user]

Majority of interviewed women who used health facilities confirmed professional behaviour of SBAs. A mother who attended the nearest 24 hours birthing centre stated:

The service and behaviour of nurse is good in Lele birthing centre. [Multiparous, HFuser]

A mother who was referred to tertiary level hospital said:

The service was very good and doctor, nurses' behaviour was also good. At home I was uncertain about delivery but after reaching Mission hospital, I was able to give birth and it was good [Primiparous, HF user]

Although most of mothers had good experience with health services and attitude of SBAs, one faced physical abuse from health workers at maternity hospital. With such kind of incident, the information gets quickly disseminated to the village inhabitants and creating negative image of health facilities. Furthermore, fear of medical procedures such as episiotomy and surgery were also identified as barriers in utilization of institutional delivery.

Well! Everybody in this village gives birth at home. My husband told me to go to hospital but I have fear of operation/surgery. I thought they may do operation/surgery. [Multiparous, HF non-user]

Use of institutional delivery after facing complications

Majority of health facility users were referred to health facility by MCHW after prolonged labour. A mother, referred to hospital stated:

I reached maternity hospital at 3:00am after 2 days of labour pain, they examined me immediately and baby was born at 8:00am. The doctor, nurses' behaviour was also very good. I will go for my second baby too. [Primiparous, HF-user]

Of all women who used health facility, five gave birth at tertiary level health facility. These women were educated and had knowledge about incentive and free service, which can be seen as predictors to utilize health facilities after complications occur.

3. Discussion with Public Health Implications:

Our study identified several key barriers to institutional birth in rural Nepal. Most important of these include cultural tradition of giving birth at home, especially encouraged by mothers in-law, lack of knowledge about a necessity for presence of professionals during birth, not enough information about free services, and not being able to afford costs of transportation to health facility, due to insufficient incentives.

Use of SBA during childbirth and health seeking behaviour immediately after recognising danger signs reduces incidence of maternal mortality substantially (Ronsmans and Graham, 2006, Koblinsky et al; 2006, Penn-Kekana et al; 2007, Hounton et al; 2008). It is important to make communities (especially husbands) more aware about importance of SBA during childbirth through community mobilization (Compbell and Graham, 2006, Hraham et al; 2008). In Uganda and Nepal male involvement in decision-making increased the likelihood of women having attendance by SBA at birth (Kabakyenga et al; 2012, Shah et al; 2015). Proper counselling and health education of husbands by health workers should occur during the 1st antenatal visit while they accompany their wives. Similar studies (Dhakal et al; 2011, Pradhan, 2005) also found that antenatal visit could be the entry point to encourage pregnant mothers to utilize SBAs during childbirth. A study in Northwest Ethiopia shows that women who had 4 or more ANC visits with quality conselling were 2.8 times more likely to have delivery assisted by SBA as compared to those who did not have ANC follow up (Mengesha et al; 2013). SBA must be held accountable in delivering quality services and correct messages, with focusing on four ANC visits, the benefits of institutional delivery and available incentives. Although delivery service is free in Nepal from 2009 at eligible healthfacilities, most of mothers-in-law were unaware about it. Awareness raising program about eligible free delivery sites/Birthing Centers for poor and disadvantaged populations needs to be conducted. Majority of the mothers (almost all from Tamang ethnic group), due to traditional beliefs, did not feel the need of seeking professional care when there were no complications during childbirth. Tamang women were less likely to use health facilities for childbirth than Brahmin/Chhetri (a higher caste in Nepal) women. Low socioeconomic status of women restricts access to SBA and increases chances of unassisted delivery at home not only in Nepal but also in India, Kenya, Nigeria and other developing countries (Sharma et al; 2007, Babalola and Fatusi, 2009, Gabrysch and Compbell, 2009). Mothers who had home delivery even though they were aware about maternity incentives reported that they did not accessed health services because they could not afford two-way transportation cost. Out of pocket expenditure occurs in Sub-Saharan African countries, even though there is fee exception policy in place (Babalola and Fatusi, 2009). Studies in Nepal and developing countries also found that the real problem of non-utilization of health facilities for childbirth is due to transportation difficulties and long distances to reach health facility (Sharma et al; 2007, Babalola and Fatusi, 2009, Wgle et al; 2004, Tuladhar et al; 2009).

Systematic review on the effectiveness of emergency obstetric interventions in developing country settings shows that having funds for transport reduced neonatal deaths, with the largest effect seen in India (Hussein et al; 2012). While establishing 24 hours birthing centre, prioritization should be given to the village which is categorized as most marginalized and having more disadvantaged populations. Establishing emergency fund is vital for supporting those who are unable to afford two way transportation for delivery. Service providers need to encourage pregnant mothers to use the nearest 24 hours birthing centers. This may prevent catastrophic out of pocket expenditure on health from the poor and disadvantaged people.

In Northwest Ethiopia (Powell-Jackson and Wolfe, 2008) transport incentives had been successful in shifting behaviour of mothers: 24% were more likely to give birth in a public health facility, 5% were less likely to have a home delivery and 13% were more likely to have a SBA at delivery. In Ghana 12% increase for giving births in facilities was observed after introduction of exemption of delivery fees (Witter et al; 2007). Our results also suggest that financial incentives and free delivery services, together with professional treatment of women may be crucial for disadvantaged mothers and allow them to develop trust and gain confidence for use of institutional delivery services.

4. Conclusion:

This study documented a range of barriers in accessing utilization of health facilities and SBAs for childbirth. Health facilities were mostly used after development of intra-partum complications. The main reasons for giving birth at home included cultural tradition, lack of awareness about danger signs during pregnancy and childbirth, importance of SBAs and lack of knowledge about availability of eligible free 24-hours delivery sites/birthing centers, inability to afford two way transportation costs despite transport incentives provided by government for institutional delivery, geographical terrains fear of episiotomy/surgery/physical abuse and health service provider's attitude. Our results strongly suggest that addressing these major barriers is crucial for increasing rate of institutional delivery. The free safe delivery incentive policy needs to be disseminated widely at the grass root level to be beneficial to marginalized/disadvantaged communities.

5. Acknowledgements

We are grateful to all participants of Nallu village, grass root to policy level key stakeholders, Nallu Sub Health Post and District Health Office staffs of Lalitpur for their valuable participation in this study. Manju would like to thank Jagiellonian University, Poland, The University of Sheffield, UK, The School of Public Health, France and Consortium of European Commission for awarding Erasmus Mundus Scholarship.

References:

1. Babalola S and Fatusi A. (2009). Determinants of use of maternal health services in Nigeria-looking beyond individual and household factors. *BMC Pregnancy Childbirth*; (9):43.
2. Campbell OM and Graham WJ. (2006). Strategies for reducing maternal mortality: getting on with what works. *Lancet*; 368(9543):1284-1299.
3. Dhakal S, van Teijlingen EV, Raja EA et al. (2011). Skilled care at birth among rural women in Nepal: Practices and challenges. *Journal of Health, Population and Nutrition*; 29(4):371-378.
4. Gabrysch S and Campbell OM. (2009). Still too far to walk: literature review of the determinants of delivery service use. *BMC Pregnancy Childbirth*; (9):34.
5. GoN and NPC (2012). Multi-Sector nutrition plan: for accelerating the reduction of maternal and child under-nutrition in Nepal, 2013-2017, Government of Nepal-National Planning Commission; Kathmandu.
6. Graham W, Themmen E, Bassane B, et al. (2008). Evaluating skilled care at delivery in Burkina Faso: principles and practice. *Trop Med Int Health*; 13(1):6-13.
7. Hounton S., Chapman G., Menten J., et al. (2008). Accessibility and utilization of delivery care within a Skilled Care Initiative in rural Burkina Faso. *Trop Med Int Health*; 13 (1):44-52.
8. Hussein J, Kanguru L, Astin M, Munjanja S. (2012). The effectiveness of emergency obstetric referral interventions in developing country settings: A Systematic Review. *PLoS Med*; 9(7): e1001264.
9. Kabakyenga JK., Östergren PO, Turyakira E et al. (2012). Influence of birth preparedness, decision-making on location of birth and assistance by skilled birth attendants among women in South-Western Uganda. *PLoS ONE*; 7(4):e35747. doi:10.1371/journal.pone.0035747.

10. Koblinsky M., Matthews Z., Hussein J., et al. (2006). Going to scale with professional skilled care. *Lancet*; 368(9544):1377-86.
11. Mengesha ZB, Biks GA, Ayele TA et al. (2013). Determinants of skilled attendance for delivery in Noethwest Ethiopia: a community based nested case control study, *BMC Public Health*; 13-130.
12. Millennium Project 2002-2006. Goals, targets and indicators. 2007 [Available in: <http://www.unmillenniumproject.org/goals/gti.htm#goal5>] [Accessed on 15 March 2012]
13. MMMS (2009). Nepal maternal mortality and morbidity study 2008-2009: Summary of preliminary findings. Kathmandu, Nepal. Family Health Division, Department of Health Services, Ministry of Health, Government of Nepal. [Available in: http://www.dpiap.org/resources/pdf/nepal_maternal_mortality_2011_04_22.pdf] [Accessed on 16 March 2012]
14. MoHP (2005). Operational guidelines on incentives for safe delivery services (2062 B.S.), Family Health Division, Department of Health Services, Ministry of Health and Population. [Available in: <http://www.safemotherhood.org.np/pdf/84Costpercent20Sharingpercent20Policy.pdf>] [Accessed on 9 April 2012]
15. MoLD (2009). Disadvantaged group (DAG) mapping. Ministry of Local Development, Kathmandu Nepal.
16. NDHS (2011). Nepal demographic and health survey preliminary report, Kathmandu, Nepal, Ministry of Health and Population, New ERA, and Macro International Inc. [Available in: <http://www.measuredhs.com/pubs/pdf/PR11/PR11.pdf>] [Accessed on 15 March 2012]
17. Penn-Kekana L, McPake B and Parkhurst J. (2007). Improving maternal health: getting what works to happen. *Reprod Health Matters*; 15(30):28-37.
18. Powell-Jackson T and Wolfe R. (2008). Encouraging Women to Use Professional Care at Childbirth, Does Nepal's Safe Delivery Incentive Programme work? Evidence from the district of Makwanpur. Available in: <http://www.towards4and5.org.uk/PDFs/Nepal%20briefing%20notepdf>] [Accessed on 22 Nov 2012]

19. Pradhan A. (2005). Situation of antenatal care and delivery practices. Kathmandu Univ Med J, 3:266-270.
20. Ronsmans C and Graham WJ (2006). Maternal mortality: who, when, where, and why. Lancet; 368(9542):1189-200.
21. Shah R, Rehfuess EA, Maskey MK, Fischer R, et al. (2015). Factors affecting institutional delivery in rural Chitwan district of Nepal: a community-based cross-sectional study, BMC Pregnancy and Childbirth: 15 (27).
22. Sharma SK., Sawangdee Y and Sirirassamee B. (2007). Access to health: women's status and utilization of maternal health services in Nepal. J Biosoc Sci; 39(5):671-692.
23. SMP Guideline (2012). Safer mother programme revised working guideline-II 2069/2012, working guideline" for "free delivery service to all". Family Health Division, Department of Health Services, Ministry of Health and Population.
24. Thaddeus S. and Maine D (1994). Too far to walk: maternal mortality in context. Soc Sci Med; 38: 1091-1110.
25. Tuladhar H, Khanal R, Kayastha S et al. (2009). Complications of home delivery: our experience at Nepal Medical College Teaching Hospital. Nepal Med Coll J; (11):164-169.
26. Wagle RR, Sabroe S &, Nielsen BB. (2004). Socioeconomic and distance to maternity hospital as predictors for place of delivery: an observation study from Nepal. BMC Pregnancy Childbirth; 4:8.
27. WHO (2014). Trends in maternal mortality: 1990-2013, estimate developed by WHO, UNFPA, UNICEF and The World Bank. Geneva, World Health Organization.
28. Witter S, Arhiful DK, Kusi A, et al. (2007). The experience of Ghana in implementing a user fee exemption policy to provide free delivery care; ReproductiveHealthMatters;1530):61-71.