

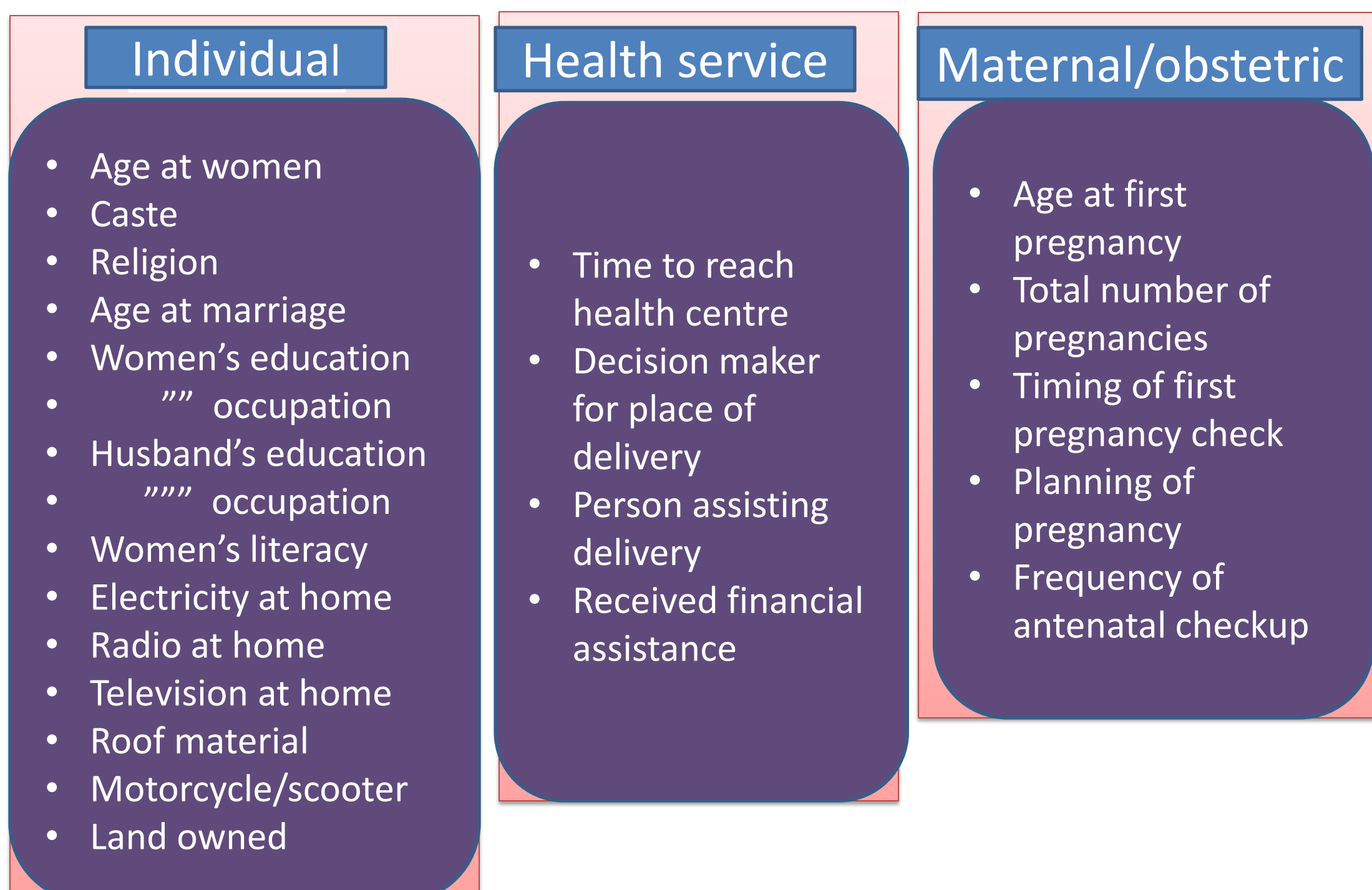
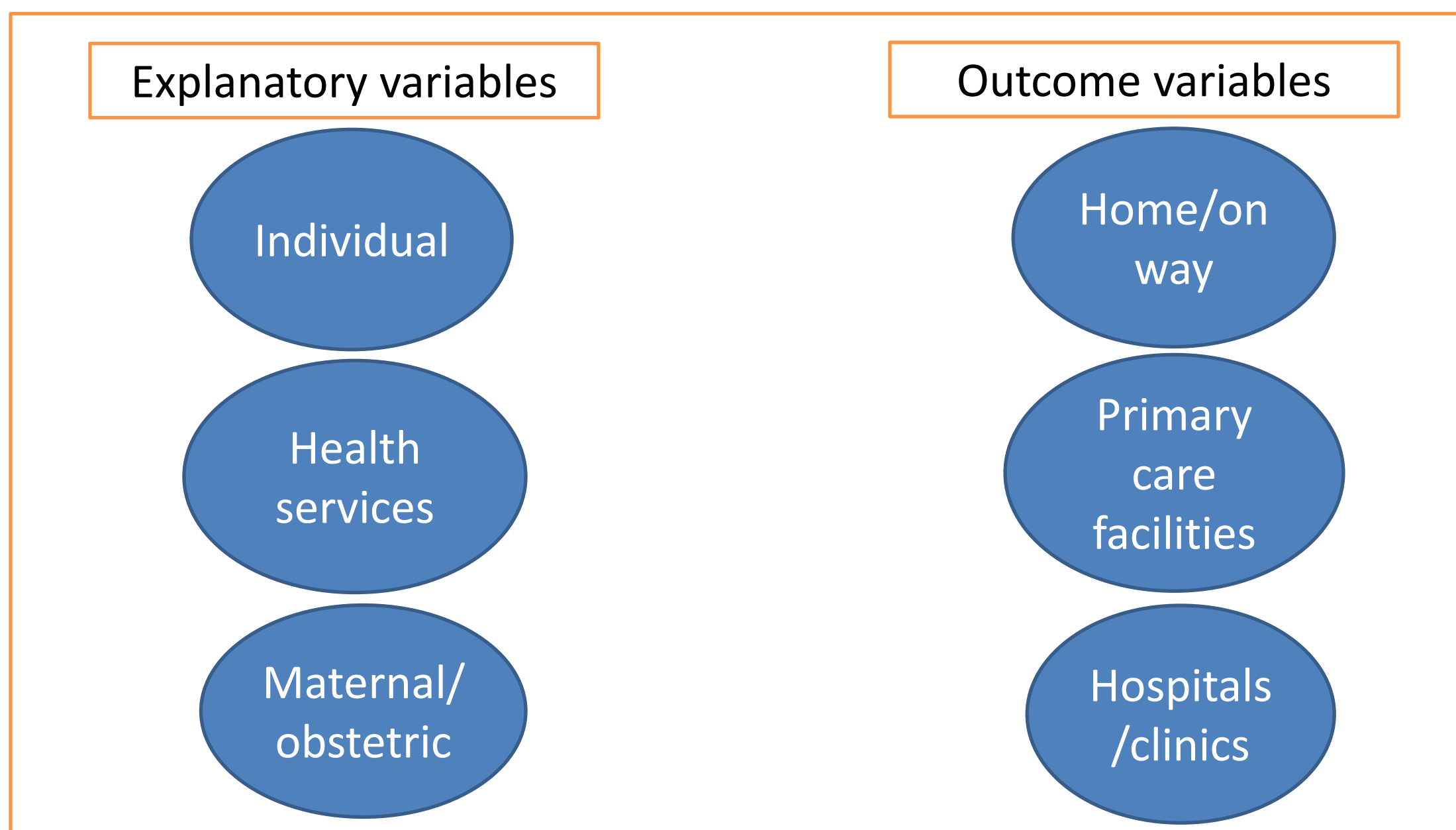
## Introduction:

Safe delivery means 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. In Nepal, both percentage of women giving birth at health facilities and the proportion of birth attended by skilled birth attendants is very low.

This research investigates factors related to health facility delivery in two levels of care in Nepal: primary health care and tertiary health care facilities.

## Methods:

A cross-sectional household survey was conducted in seven Nepali villages near the Indian border. Descriptive analysis along with chi-square test and multinomial logistic regression was used to identify the predictors of institutional delivery.



- Approved by Nepal Health Research Council.
- Multinomial logistic regression was used to compare the delivery at primary health centre and hospitals/clinics with delivery 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.



## Multinomial logistic regression of factors affecting place of delivery

Variables	Primary health centre vs home/on way	Hospitals/clinics vs home/on way
	Odds Ratio (95% CI)	Odds Ratio (95% CI)
<b>Age of respondent (years) (Ref 30 and above)</b>		
15-19	2.15 (0.73,6.29)	2.87* (1.19,6.89)
20-24	0.89 (0.38,2.10)	1.38 (0.70,2.73)
25-29	1.34 (0.57,3.13)	1.25 (0.62,2.51)
<b>Time to reach health facility (Ref one hour+)</b>		
Less than one hour	2.18* (1.09,4.36)	0.92 (0.58,1.47)
<b>Caste of respondent (Ref advantaged group)</b>		
Disadvantaged	0.33* (0.14,0.77)	0.54 (0.25,1.15)
<b>Husband's education (Ref Secondary+)</b>		
Illiterate	0.74 (0.29,1.85)	0.37** (0.18,0.78)
Primary	0.66 (0.30,1.40)	0.46* (0.25,0.84)
<b>Husband's occupation (Ref Unskilled and others)</b>		
Farmer	0.39** (0.19,0.79)	0.42** (0.27,0.74)
Skilled	0.89 (0.45,1.99)	0.63 (0.34,1.18)
<b>Literacy of respondent (Ref Illiterate)</b>		
Literate	1.50 (0.82,2.72)	1.40 (0.87,2.24)
<b>Radio at home (Ref No)</b>		
Yes	2.61* (1.20,5.66)	2.36* (1.19,4.69)
<b>Television at home (Ref = No)</b>		
Yes	1.92* (1.05,3.51)	1.05 (0.65,1.67)
<b>Have a motorcycle/scooter (Ref = No)</b>		
Yes	1.03 (0.48, 2.19)	1.87* (1.05,3.35)
<b>Timing of 1<sup>st</sup> antenatal check (Ref Don't want to disclose)</b>		
1 <sup>st</sup> trimester	1. (0.14,7.27)	0.87 (0.17,4.43)
2 <sup>nd</sup> and 3 <sup>rd</sup> trimester	4. (0.14,7.46)	0.73 (0.14,3.68)
<b>Decision maker for place of delivery (Ref Family members/others)</b>		
Participant	0.14*** (0.05,0.39)	0.17*** (0.08,0.35)
Husband	2.19** (1.20,4.00)	1.87** (1.16,3.01)
<b>Frequency of ANC visit (Ref 4 or more)</b>		
1-3	0.37** (0.19,0.71)	0.73 (0.46,1.16)

p<0.05, \*\*p<0.01, \*\*\*p<0.001 OR – Odds Ratio CI – Confidence Interval



## Results:

- Women who resided  $\leq 1$  hour from health facility were twice as likely to deliver in primary health centre compared to home/on the way than those an hour or more away (OR 2.18, p 0.027).
- Odds of advantaged caste attending primary health centres are 1/0.33= 3.03 times more than for disadvantaged caste.
- Women whose husbands were illiterate (OR 0.37 p 0.009) or had only primary education (OR 0.46, p 0.01) were significantly less likely compared to women with husbands with secondary education to give birth at hospitals/clinics compared to home.
- Literacy of women: no significant association with place of delivery.
- Odds of women (husbands=farmers) delivering at both primary care centre/hospital compared to delivering at home/on way were respectively 0.39 (p 0.009) and 0.42 (p 0.003) times lower than women whose husbands' were unskilled.
- Respondents were more likely to deliver both at primary health centres (OR 2.61, p 0.015) and hospital (OR 2.36, p 0.014) than delivering at home/on way if they owned a radio than those who did not.
- Similarly, those with television (OR 1.92, p-value 0.034).
- Women whose husbands were decision makers for place of delivery had increased odds of delivering at both primary health centres (OR 2.19, p 0.01) and hospitals/clinics (OR 1.87, p 0.10) than women whose family members/others were decision makers.
- Respondents who had 1-3 ANC visits instead of 4 or more had lower odds for giving birth at primary health facility than at home/on way.

## Health services, Obstetric and Maternal characteristics

Characteristics	Frequency (n)	Percentage
<b>Time to reach health centre</b>	628	
Less than one hour	416	66.2
One hour and above	156	24.9
Don't know/ didn't disclose	56	8.9
<b>Decision maker place birth</b>	625	
Woman	103	16.5
Husband	273	43.7
Family members/others	249	39.8
<b>Person assisting delivery</b>	620	
Skilled health professionals	341	55.0
Unskilled people and others	279	45.0
<b>Financial assistance birth</b>	617	
Yes	216	35.0
No	401	65.0
<b>Age at first pregnancy</b>	619	
Below 15	24	3.9
15-19	278	44.9
20 and above	317	51.2
<b>Total pregnancies</b>	627	
1-3	519	82.8
4 and above	108	17.2
<b>Timing first pregnancy check up</b>	627	
First trimester	268	42.7
Second and third trimester	294	46.9
Didn't disclose	65	10.4
<b>Last pregnancy</b>	622	
Planned	562	90.4
Unplanned	60	9.6
<b>Frequency antenatal care</b>	628	
Less than 4	197	31.4
4 and above	376	59.9
Don't prefer to disclose	55	8.8

## Conclusion:

- Women have less control over place of birth than family members. Such decisions are made especially by husbands.
- The importance of having four or more ANC visits.
- Inequity in utilisation of delivery services at health institutions as showed by low utilisation by disadvantaged caste.
- Level of literacy determines uptake of delivery services
- Availability of health institutions one hour walking distance and focusing on education should be focus of government.

## Highlights:

- % women giving birth at health facility very low in Nepal
- Determinants of health facility delivery was investigated at two levels of care: primary and tertiary care
- Women have less control /choice for place of birth
- Socio-economic inequity in utilisation of delivery services at health institutions exists
- Health facilities should be located within one-hour walking distance

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