JOURNAL OF HEALTH PROMOTION **ISSN:** 2631-2441 (Print) **Received:** 09-06-2022
Volume 10, 2022, **pp:** 39-48 **ISSN:** 2822-1591 (Online) **Accepted:** 25-11-2022 **DOI:** https://doi.org/10.3126/jhp.v10i1.50985

Original Research Article

Women's autonomy and its effect on antenatal care visits among Tharu women of reproductive age (15-49) of Khairahani Municipality, Nepal

Anuska Adhikari[1*] Maheshor Kaphle[1]

[1]Central Institute of Science and Technology (CiST) College, Kathmandu Nepal
*Correspondence: adhikari.anuska144@gmai.com

Abstract

Women's autonomy in health care decision-making is enormously essential for improved maternal and child health outcomes and women's empowerment. This study examines women's autonomy and its effect on antenatal care (ANC) visits among the women of the *Tharu* community of Khairahani municipality, Chitwan. The probability proportional to size (PPS) sampling technique was adapted for sample estimation in each selected ward. A list of all the *Tharu* households in the community was prepared from which 294 women were selected using systematic random sampling techniques. Univariate, bivariate (Chi-square test), and multivariate analyses (binary logistic regression) were performed. One-fifth of women were youths aged 15-24 (mean 27.8 years). One out of ten women was illiterate, and about two-thirds (65%) were involved in agriculture. More than two in five women (42%) did not have autonomy. Women's autonomy, age group, educational status, occupational status, and husband's occupational status were significantly associated with antenatal care visits. A significantly high number of women ($p<0.001$) who had high autonomy (89%), compared with those who had no autonomy (65%), used ANC services for their last birth. Women with low autonomy and high autonomy were three times (OR=3.05; 95% CI=1.01-8.5) and 4.5 times (OR=4.5; 95% CI 2.3-8.6) more likely to utilize ANC visits than those who had no autonomy. Women's autonomy in healthcare decision-making, household purchases, and money expenditure were significantly associated with the use of antenatal care visits. Women's participation in the decision-making process regarding health care and household matters should be focused on and increased for better utilization of antenatal care services.

Keywords: antenatal care, health decision making, Nepal, women's autonomy

Introduction

Pregnancy and childbirth complications, the leading causes of maternal mortality worldwide, account over 94% of all maternal deaths in low- and middle-income countries and most of them are preventable (WHO, 2019). Comparatively, women in less developed countries have higher pregnancy rate and their lifetime risk of pregnancy is higher than the women in developed countries (WHO, 2019). Women's empowerment is positively related to reproductive health-seeking behavior. Among women who participated in a minimum of one decision, 85% received antenatal care, 63% received delivery care from a skilled provider, and 57% received postnatal checkups within the first two days after birth (Ministry of Health, New ERA, & ICF, 2017).

Nepalese women's level of autonomy and social rank is low, their status at the household level has to be further explored in terms of health service utilization, which directly influences

maternal and infant mortality and morbidity (Adhikari, 2016). Overall, the literacy rate of Nepalese women is low (57.4%). The literacy rate among women residing in Chitwan is less than the national average (40.9%) (CBS, 2014). Studies have shown that lack of education may prevent awareness of life-threatening obstetrical complications, which consecutively reduces medical assistance even in places where the services are easily available (Ahmed, Creanga, Gillespie, & Tsui, 2010; Shah et al., 2015). The importance of education in women's autonomy is that if women understood their conditions, knew their rights, and learned skills traditionally denied to them, autonomy would follow. According to the 2075/76 Department of Health Services (DoHS) annual report, the percentage of women who had 4 ANC visits in 2073/74 is 53%, 2074/75 is 50%, and in 2075/76 is, 56% (DOHS, 2020). Available maternal health services are found to be underutilized in developing countries, especially among indigenous group where the necessity for such services is greatest (Ahmed et al., 2010).

Although there are perceived impacts on women's improved status in reproductive behaviors, empirical evidence to approve this influence is considerably lacking (Adhikari, 2016). A research gap is observed on whether there is an observable link between women's autonomy and utilization of maternal health care (Ahmed et al., 2010) among the women of reproductive age (15-49) of the tribal group in Chitwan district.

Previous studies have attempted to explore the obstacles to the utilization of antenatal care services, some from demographic, economic, and some from a sociocultural and behavioral perspective (McNamee, Ternent, & Hussein, 2009; Titaley, Hunter, Heywood, & Dibley, 2010). Apart from the socioeconomic aspects, a growing number of studies also emphasize the role of women's decisions on maternal health service utilization and pregnancy outcomes (Ganle et al., 2015; Ghose et al., 2017).

A number of studies have been conducted concerning the factors contributing to the low utilization of maternal healthcare services, and most of them are found to be focused on the provision and geographic accessibility of services. However, fewer studies focus on women's autonomy and its association with maternal healthcare services utilization, especially among the women of the indigenous population (Chaudhary, Dhungana, & Ghimire, 2013). Tharu community belongs to the old ethnic group where limited studies are conducted (Chaudhary et al., 2013; Panthi & Bharatpur, 2004; Shah et al., 2015),

Women's autonomy comprises both control over resources (physical, human, intellectual, and financial) and ideologies (beliefs, values, attitudes, internal strength, self-esteem, and self-confidence). It is termed as a multidimensional concept (Pradhan, 2003; Tiruneh, Chuang, & Chuang, 2017). Women's autonomy can be defined as the capacity and freedom of women to act independently. It encompasses women's ability to formulate strategic choices, control resources, and participate in decision-making (Adhikari, 2016; Adhikari & Sawangdee, 2011). The autonomy of women in healthcare decision-making is enormously essential for improved maternal and child health outcomes and women's empowerment (Alemayehu & Meskele, 2017).

Antenatal care (ANC) refers to the care provided by skilled healthcare professionals to pregnant women and adolescent girls to ensure the best health conditions for both mother and baby during pregnancy. Risk identification, prevention and management of pregnancy-related or concurrent diseases, and health education and health promotion are the components of ANC (WHO, 2016). World health organization (WHO) has recommended that a woman should have at least four ANC visits. Regular ANC is a vital maternal service that helps identify a wide range of health outcomes for women and children and prevent adverse pregnancy outcomes

(Adhikari, 2016). Evidence from developed and developing countries indicate that women's autonomy is the major contributing factor to maternal healthcare utilization and deliberates benefits such as long-term reduction in fertility and higher child survival rates (Adhikari, 2016; Ahmed et al., 2010; Osamor & Grady, 2016).

According to WHO, women of reproductive age are all women aged 15-49 years (WHO, 2020). Tharus are indigenous ethnos found in Terai in southern Nepal (Rajaure, 1981). *Tharu* holds the fourth rank and is scattered in 13 districts of Nepal (CBS, 2014). Arranged marriage is commonly practiced, and polygamous marriage is customary, with rich landholders marrying between two and five women. (Kittelsen & Gurung, 1999; Pun, 2000) This study aims to find out women's autonomy and its effect on ANC visits among *Tharu* women of Khairahani municipality, Chitwan.

Methods and Materials

Study Design

This study adopted a cross-sectional design based on quantitative data.

Study Respondents

Individual women of reproductive age within the study area were taken as a study unit. A total of 3554 Tharu households were in the study area. The probability proportional to size (**PPS**) sampling technique was adapted for sample estimation in each selected ward. A list of the Tharu households was prepared, and from these households, 294 women were selected using systematic random sampling techniques. One married woman of reproductive age (15-49 years) who had at least one child in the past five years preceding the survey was interviewed. In the past five years, if women had more than one birth, information of the most recent birth was analyzed to minimize the recall bias.

Research Tools

Face-to-face interview technique was used using a structured interview schedule. A structured questionnaire from Nepal Demographic Health Survey (NDHS) was used. The structured questionnaire was pre-tested with about 10 % of the sample size (n=20) in other wards of the same municipality. The household was later excluded from the sampling frame. The pre-tested data was entered; analyzed, and necessary modification was done as required before the data collection.

Inclusion and Exclusion Criteria

Inclusion criteria included married women of reproductive age who had at least one child in the past five years preceding the survey and were willing to participate. Exclusion criteria included the women who were below 15 years and above 49 years. Also, married women of reproductive age of another ethnic group, married women of reproductive age who were not available and unwilling to participate in the study during data collection were also excluded.

Data Analysis

Missing values and outliers in the datasets were checked prior to analysis. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) software (version 16). The association between women's autonomy and ANC service utilization was assessed via bivariate and multivariate analysis. Descriptive statistics were used to describe the basic socio-demographic variables. A Chi-square test was performed to examine the association between independent and dependent variables. In addition to bivariate analysis, multivariate analysis was performed to identify the net effect of women's autonomy on ANC service utilization after controlling other independent variables. Two models were fitted for both dependent variables to

identify the independent relationship between the variables of autonomy and utilization of ANC services.

Variables

Dependent Variable

ANC utilization for the most recent live birth within five years was selected as the outcome measure. A dichotomous variable was used for ANC to indicate whether a woman attended four or more ANC visits with a trained healthcare provider (0=No, 1=Yes).

Independent Variables

Women's autonomy was measured in the study using the indicators related to women's decision-making power in the household (Adhikari, 2016; Adhikari & Sawangdee, 2011). Decision-making power in the household was measured using the answers to the following seven questions: who decides matters affecting (a) usage of money earned by the respondent, (b) usage of money earned by the respondent's husband, (c) healthcare for respondent and her child (d) large household purchase (e) minor household purchase and (f) children's education (g) visits to family or relatives. A woman who made all seven decisions, either alone or jointly with her husband, was categorized as having high decision-making autonomy. A woman who made 1-6 decisions was categorized as having low autonomy, while a woman who did not decide at all was categorized as having no decision-making autonomy.

Table 1

Variables Used in the Study

Independent variables	Dependent variable
Women's autonomy • Decision on the usage of money earned by respondent • Decision on the usage of money earned by the respondent's husband • Decision on the healthcare for the respondent and her child • Decision on large household purchase • Decision on minor household purchase • Decision on children's education • Decision on visits to family or relatives Socio-demographic factors • Age group • Family size • Religion • Educational status • Occupational status • Husband's educational status	ANC service utilization

Ethical Considerations

Permission was taken from the concerned municipal office (i.e. Khairahani Municipality). Approval was taken from IRC-CiST (ref no.07077078). Written consent was taken from the educated respondents, while oral consent was taken from illiterate women. Confidentiality of the information from the respondents was strictly maintained. The right to withdraw from the study at any time was ensured.

Results

Socio-demographic Characteristics of Respondents

Table 1 shows the socio-demographic characteristics of the total interviewed respondents. Of 294 respondents, 71% were in the age group of 25-34 years, with a mean age of 27.8. Most of them lived in a joint family (81.6%) and belonged to the Hindu community (89%). A higher percentage of the respondents (35%) had completed higher-level education, and 65 were involved in agriculture. In addition, (43%) of the respondents' husbands had completed higher-level education, and 72% were involved in the non-agriculture sector.

Table 2

Socio-demographic Characteristics of Respondents

Variables	N	%
Age group		
15-24	60	20.41
25-34	210	71.43
35 and above	24	8.16
Mean (years)	27.8	
Standard Deviation	4.09	
Type of family		
Nuclear	54	18.4
Joint	240	81.6
Religion		
Hindu	262	89.1
Christian	32	10.9
Respondent's educational status		
Illiterate	28	9.52
Primary Level	70	23.81
Secondary level	94	31.97
Higher and above	102	34.69
Respondent's husband's educational status		
Illiterate	15	5
Primary level	37	12.6
Secondary level	116	39.5
Higher and above	126	42.9
Respondents' occupation		
Agriculture	192	65.31
Non-agriculture	102	34.69
Respondent's husband's occupational status		
Agriculture	83	28.23
Non-agriculture	211	71.77

Women's Autonomy

Table 2 shows the frequency of women having autonomy in all types of household and healthcare decisions. In most cases, the decisions were made by the other family members, while in some cases, decisions were made jointly by the respondent and her husband. A higher percentage of women had no autonomy (41.5%), 47.3% had high autonomy, and 11.2% had low autonomy.

Table 3

Women's Autonomy Characteristics

Variables	N	%
Decision on the usage of money earned by the respondent		
Not involved	151	51.36
Respondent's involvement	143	48.64
Decision on the usage of money earned by the respondent's husband		
Not involved	150	51.02
Respondent's involvement	144	48.98
Decision on the health care for the respondent and her child		
Not involved	134	45.58
Respondents' involvement	160	54.42
Decision on major household purchases		
Not involved	154	52.38
Respondent's involvement	140	47.62
Decision on minor household purchases		
Not involved	136	46.26
Respondents' involvement	158	53.74
Decision on children's education		
Not involved	141	47.96
Respondent's involvement	153	52.04
Decision on visits to family or relatives		
Not involved	164	55.78
Respondent's involvement	130	44.22
Women's autonomy		
No autonomy	122	41.5
Low autonomy	33	11.2
High autonomy	139	47.3

Bivariate Analysis

Almost four-fifths of women (79%) visited four or more ANC for their last child. This study demonstrated that more than half of the women started to receive ANC care in the early stage of pregnancy, and 40% started after three months of pregnancy (table not shown). Among the factors included in this study, women's autonomy, age group, educational status, occupational status, and husband's occupational status were significantly associated with antenatal care service utilization. A significantly higher ($p<0.001$) percentage of women who have high autonomy (89%) had four or more times ANC visits than those who have no autonomy (65%). A significantly higher ($p<0.05$) percentage of younger women aged 15-24 (82%) had visited four or more times for ANC than those who were 35 years or above (54%). Education had a significant and positive effect on the utilization of ANC visits. For instance, 93 percent of women with higher education visited four or more ANC, and only 32 percent were among illiterate women. The association between education and ANC visits is statistically significant ($p<0.001$). Similarly, a significantly higher percentage ($p<0.01$) of women who were involved in non-agriculture sectors (89%) than agriculture (73%) visited for four or more ANC. Furthermore, husband's education was found significantly associated with ANC visits of women. For instance, a significantly higher ($p<0.001$) percentage of women whose husbands

had higher education visited ANC for their last child (87%) than those whose husbands were illiterate (40%).

Table 4

Utilization of Adequate ANC Services by Background Characteristics

		Adequate ANC checkup				Total
		Less than four times		Four or more times		
		n	**%**	**n**	**%**	n
Women autonomy	No autonomy	43	35.2	79	64.8	122
(Chi-square= 23.9; p<0.001)	Low Autonomy	5	15.2	28	84.8	33
	High Autonomy	15	10.8	124	89.2	139
Age group	15-24	11	18.3	49	81.7	60
(Chi-square= 9.3; p<0.010)	25-34	41	19.5	169	80.5	210
	35 and above	11	45.8	13	54.2	24
Family size	Nuclear	12	22.2	42	77.8	54
(Chi-square= 0.25; p=0.875)	Joint	51	21.3	189	78.8	240
Religion	Hindu	59	22.5	203	77.5	262
(Chi-square= 1.7; p=0.192)	Christian	4	12.5	28	87.5	32
Educational status	Illiterate	19	67.9	9	32.1	28
	Primary level	15	21.4	55	78.6	70
(Chi-square= 48.9; p<0.000)	Secondary level	22	23.4	72	76.6	94
	Higher and above	7	6.9	95	93.1	102
Occupational status	Agriculture	52	27.1	140	72.9	192
(Chi-square= 10.5; p<0.001)	Non-agriculture	11	10.8	91	89.2	102
Husband's Educational status	Illiterate	9	60.0	6	40.0	15
(Chi-square= 27.1; p<0.000)	Primary level	15	40.5	22	59.5	37
	Secondary level	23	19.8	93	80.2	116
	Higher and above	16	12.7	110	87.3	126
Total		63	21.4	231	78.6	294

Multivariate Analysis

Two logistic regression models were used. In the first model, the association between women's autonomy variable and utilization of ANC service was examined. Women with low autonomy and high autonomy were 3 times (OR=3.05; 95% CI=1.01-8.5) and 4.5 times (OR=4.5; 95% CI 2.3-8.6) more likely to utilize ANC visits than those who have no autonomy. In the second model, we added socio-demographic and economic variables. Women's autonomy remained a significant predictor even after controlling the other socio-demographic and economic variables.

Furthermore, education level was also a significant predictor for utilizing the ANC service. Women who had primary-level education were 6 times more likely to use ANC visits than those who were illiterate. Similarly, women who had secondary and higher than secondary were more likely to utilize ANC services than illiterate women.

Table 5

Predicting ANC Visits among Reproductive-aged Tharu Women

Selected Predicators		Model I			Model II		
		OR	95% CI		aOR	95% CI	
			Lower	Upper		Lower	Upper
Women autonomy	No autonomy (ref.)	1.00					
	Low autonomy	3.048*	1.097	8.466	3.361*	1.069	10.563
	High autonomy	4.500***	2.344	8.636	2.304*	1.009	5.263
Age group	15-24 (ref.)						
	25-34				1.215	0.536	2.754
	35 and above				.652	0.187	2.275
Family size	Nuclear (ref.)						
	Joint				1.918	0.810	4.544
Religion	Hindu (ref.)						
	Christian				1.893	0.577	6.206
Educational status	Illiterate (ref.)						
	Primary level				6.380**	1.771	22.984
	Secondary level				3.832*	1.970	15.144
	Higher and above				13.582**	2.503	73.699
Occupational status	Agriculture (ref.)						
	Non-agriculture				1.791	0.772	4.156
Husband's	Illiterate (ref.)						
Educational status	Primary level				0.739	0.151	3.621
	Secondary level				1.404	0.278	7.084
	Higher and above				.982	0.166	5.801
Constant		1.837**			00.186*		
-2 Log-likelihood		281.529[a]			244.692[a]		
Cox & Snell R Square		0.078			0.187		
Nagelkerke R Square		.121			.289		

Discussion

This study showed that most women (88.4%) had attended ANC services which was quite good and this is similar to the findings of one of the studies conducted in a Semi-urban community in North-Central Nigeria where 89.4% of the women utilized ANC care services during their last pregnancy (Abimbola et al., 2016). The present study also found that most of the women (78.9%) had attended four or more ANC visits which is consistent with the recent study conducted in Dalit communities in Gorkha, Nepal, that showed about 72.8% of women had received four or more ANC visits during their pregnancy (Awasthi et al., 2018). Majority of women received antenatal care from skilled professionals which is similar to a situation in Lilongwe district, Malawi, where 91% of women received antenatal care from skilled providers (Kazanga, Munthali, McVeigh, Mannan, & MacLachlan, 2019).

This study demonstrated that more than half of the women started to receive ANC care in their early stage of pregnancy, and 40% started after 3 months of pregnancy. This study is similar to the findings of an earlier study conducted in the urban squatter settlement of Karachi, Pakistan, which shows about half of the women 8eceive ANC care during the first trimester of their pregnancy.(Nisar & White, 2003) However, two studies conducted in Nepal (Awasthi et al., 2018) and Kenya (Van

Eijk et al., 2006) showed that fewer women started ANC services in the early period of pregnancy, while more than half started ANC care in the second trimester of pregnancy.

This study assessed women's autonomy regarding women's decision-making power in seeking health care, children's education, mobility, and financial matters. About 54% of women had autonomy in deciding on health care, and 44% of women were involved in decision-making regarding visits to family or relatives. A nationally representative study conducted in Nepal showed similar results: about 57% of women were involved in deciding on health care, and 49% were involved in making decisions regarding family visits or relatives (Adhikari & Sawangdee, 2011). Another nationally representative study in Nepal showed that women with autonomy in decision-making regarding their household activities had significantly higher utilization of maternal health services(Adhikari, 2016). Similarly, another study conducted in Albania showed that women's role influenced the utilization of maternal health services in decision-making.(Sado, Spaho, & Hotchkiss, 2014)

This study also found that 20.7% of women had moderate autonomy, 37.8% had higher autonomy, and 41.5% had no autonomy. A study conducted in Bangladesh (Haque, Rahman, Mostofa, & Zahan, 2012) and Nepal (Deo et al., 2015) showed somehow similar findings that 31% of women had higher autonomy. Similarly, another study conducted in India showed that 22% of women had moderate autonomy, and 25.2% had higher autonomy (Mondal, Karmakar, & Banerjee, 2020). In underdeveloped and developing countries, women are dominated mainly by men. As a result, women's involvement in decision-making regarding household activities, health care, mobility, and the financial matter is comparatively low (Adhikari & Sawangdee, 2011). However, in most developed and high-income countries, men and women are treated equally, providing every opportunity, such as education, freedom, etc. (Cohen, 2006).

This study showed that women with higher-level education were more likely to visit for ANC checkups. This is similar to Ethiopia where women who received primary or higher-level education were four times more likely to seek health care than women with no education (G. Woldemicael & Tenkorang, 2010). So was found in a study in Uganda (Rutaremwa, Wandera, Jhamba, Akiror, & Kiconco, 2015). Another study conducted in developing countries showed that education was an important factor influencing the utilization of antenatal care services (Ahmed et al., 2010)..

Utilization of ANC services was significantly associated with each indicator of women's autonomy, such as decision-making on the usage of the money earned, health care, children's education, household purchases, and visits to family or relatives. A previous study conducted in Ethiopia and Eritrea showed that women with autonomy in daily household purchases and visiting family or relatives are strongly associated with using ANC services (Gebremariam Woldemicael, 2007). Some studies conducted in Nepal (Adhikari, 2016; Thapa, 2019) and India (Chima, 2018) showed that women's autonomy influences the utilization of antenatal care. A study in Indonesia revealed that women with higher autonomy experienced 1.17-2.45 times higher odds of using adequate ANC services (Rizkianti, Afifah, Saptarini, & Rakhmadi, 2020).

Women with a high level of autonomy were more likely to attend four or more ANC visits than women with a low level of autonomy. A study in Bangladesh showed that women with higher autonomy were more likely to have adequate ANC visits (Haque et al., 2012). Similarly, another study conducted in Nepal (Deo et al., 2015) and India (Mondal et al., 2020) showed that a higher level of autonomy was connected with 4 or more ANC visits than women with low autonomy.

Strengths and Limitations

This study is one of the few studies that focuses on the association between women's autonomy and antenatal service utilization in a South Asian country i.e. Nepal. This study is conducted among one of the indigenous groups of Nepal. The study is limited to the Tribal group of the Khairahani municipality of Chitwan only. Therefore, this study cannot be generalized to other ethnic groups. As the study is cross-sectional, causal inference between women's autonomy and ANC service utilization was difficult to draw. Both the demand and supply-side factors influence the utilization of antenatal services. However, this study is only limited to the demand-side factors without reflecting the supply-side factors such as cost, availability, and distance.

Conclusion

The findings of this study suggest that women's autonomy is one of the strong predictors for higher use of antenatal care services. Participation of women in household decision-making and health care decisions boosted health care utilization during pregnancy, leading to better maternal and child health outcomes; therefore, the program should focus on increasing the participation of women in household decision-making. Based on the findings of this study, it is suggested that women should be empowered financially and educationally to ensure improvement in their status, and they retain the knowledge of the benefits of healthcare services and have the financial strongholds to back decisions to use such services for their betterment as well as to expand the utilization of antenatal care services. Sensitization programs targeted to household and community structures should be focused on enhancing knowledge of the benefits of ANC services among women. The government should focus both on the individual as well as community awareness program regarding the rights of women for maternal health service utilization.

Acknowledgements

We would like to acknowledge the respondents, participants and the administration of Khairahani municipality of Chitwan for the support we received during our research.

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