Socioeconomic Determinants of Inequalities in the Use of Modern Contraception among Currently Married Women

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ABSTRACT

Background: Despite interventions for over four decades, the unmet need for family planning is high in Nepal. This study aims to examine the status and the socioeconomic determinants of inequalities in modern contraception among currently married women.

Methods: We applied a mixed-method design. We interviewed key informants for qualitative information and analyzed secondary data from the Nepal Multiple Indicator Cluster Survey, 2019, and different rounds of Nepal Demographic and Health Surveys. We calculated ratios, differences in percentages, and concentration indices to analyse the inequality. We ran a binary logistic regression model to estimate the adjusted effect of each factor on the use of modern contraception.

Results: The richest-to-poorest difference in using modern contraception has decreased over 13 years. The richest-to-poorest difference decreased from 23.6 percentage points in 2006 to 13.3 percentage points in 2011 and further to 1.2 percentage points in 2016. The richest-to-poorest difference was negative in 2019, indicating poor people are using more contraception than the richest. Multivariate analysis showed the wealth is a significant predictor for using contraception. Women of richer households (aOR=1.29, 95% CI=1.13-1.48), middle (aOR=1.21, 95% CI=1.05-1.40), poorer (aOR=1.36, 95% CI 1.17-1.58) and poorest (aOR=1.18, 95% CI=1.05-1.34) were more likely to use contraception than women from the richest households.

Conclusions: Poor people are increasingly using the modern contraception, and the gap between the poor and rich people has decreased. However, the trend of contraception use in each wealth quintile indicates that Nepal struggles to meet the sustainable development goal target of reducing the unmet need for family planning to less than 10% by 2030.

Keywords: Contraception; inequalities; married women; nepal; wealth status.

INTRODUCTION

Modern contraceptive use has remained stagnant in Nepal at around 44% for more than a decade.[1-5] This has been attributed to spousal migration, unmet need, and low contraceptive use among adolescents. On a closer examination, the data reveal a different picture as differences in contraceptive rates by individual and household characteristics. The reason for the differing magnitude of inequalities in wealth and other socioeconomic attributes is not apparent. Studies so far have not used concentration index in analysing inequalities modern contraceptive usage. Understanding the extent and nature of these socioeconomic inequalities is essential to determine the use of family planning services essential for enabling equitable policies and programmes at the national and subnational level so that the vulnerable and underserved populations in Nepal are not left behind. The objective of the study was to identify the socioeconomic determinants of inequalities in modern contraception among currently married women in Nepal.

METHODS

We used quantitative and qualitative data for this study. We analysed secondary data from Nepal Multiple Indicator Cluster Surveys (NMICS) 2014 and 2019, and Nepal Demographic and Health Surveys (NDHS) 2006, 2011 and 2016 to assess the trends of contraception use and examine the inequality access to contraction by using concentration indices. A total of 11,183

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currently married women were covered in the NMICS, 2019.[5] Details of NMICS, NDHS study methodology have been published elsewhere.[1-5] This manuscript is part of the study entitled 'Socioeconomic determinants of inequalities in the use of sexual and reproductive health services among currently married women in Nepal.[6]

We applied binary logistic regression model to determine the adjusted effect of each factor on the use of modern contraception (dependent variable).

Variable identified in other literature[7-9] and suggested by key informants during interviews were included in the multivariate analysis. We controlled the age of respondents and place of residence in fitting the regression model. We presented the estimate with adjusted odds ratio with 95% confidence interval. SPSS Statistics version 26 (SPSS Inc) was used to analyse the quantitative data.

In this paper, we used ratios, absolute and relative differences in percentages, concentration indices, and concentration curves to analyse the inequality. The concentration curve plots the cumulative percentage of modern contraception (y-axis) against the cumulative percentage of the population, ranked by wealth, beginning with the poorest and ending with the richest (x-axis). The concentration index is zero if there is no income-related inequality. If the curve lies above the line of equality, the index has a negative value (indicating a disproportionate concentration of the health variable among the poor) and a positive value if it lies below equality.[10,11] These inequalities measure the disparity in use of family planning services between the richest (highest wealth quintile) and the poorest (lowest wealth quintile).

At the same time, we used semi-structured interview schedules to interview 15 carefully selected key informants from federal, provincial, and local governments, as well as development partners, to better identify potential hurdles and opportunities to expand contraceptive services in Nepal. The interviews took place in Nepali, then were transcribed, and translated into English. The impediments to contraceptive usage and possible areas for enhancement of contraceptive provision in Nepal were the focus of the thematic analysis.

We obtained ethical approval from the Nepal Health Research Council (ERB Protocol Registration No. 35/2021 P).

RESULTS

Nearly one-quarter of these respondents belonged to Bagmati Province (24%), followed by Lumbini Province (19%) and Madhesh Province (19%) and more than two-thirds of the respondents (69%) resided in urban areas.

Table 1. Household wealth index quintile and place of residence of currently married women, NMICS 2019.

	%	95% CI		Total
		Lower	Upper	N
Wealth index quintile				
Poorest	17.6	15.9	19.3	1971
Second	19.5	17.8	21.2	2178
Middle	20.2	18.5	21.9	2255
Fourth	21.4	19.8	23	2392
Richest	21.3	19.7	22.9	2386
Province				
Province 1	16	14.3	17.7	1790
Madhesh Province	18.5	16.8	20.2	2070
Bagmati Province	23.8	22.2	25.4	2667
Gandaki Province	8.8	7	10.6	985
Lumbini Province	18.9	17.2	20.6	2111
Karnali Province	5.4	3.6	7.2	607
Sudurpashchim Province	8.5	6.7	10.3	952
Place of residence				
Urban	68.7	67.7	69.7	7678
Rural	31.3	29.8	32.8	3504
Total	**100**			**11183**

One-fifth (20%) were youth aged 15-24 years, one-third of the respondents were illiterate, and only six percent had higher-level education. Almost three in ten women (29%) had three or four children. One-fourth (25%) of respondents were not exposed to the media. On the other hand, one in ten respondents were highly exposed to the media.

Although a slight increase was noted in 2014, the modern contraceptive prevalence rate (mCPR) has hovered around 44% since 2006. Among the poorest, it has increased by 13.5 percentage points from 2006 to 2019. On the other hand, mCPR decreased by 14.2 percentage points among the richest (53.9% in 2006 to 39.7% in 2019).

Table 2. Individual characteristics of currently married women, NMICS 2019.

	%	95% CI		Total
Age of women		Lower	Upper	N
15-19	4.6	2.8	6.4	517
20-24	15.8	14.1	17.5	1767
25-29	19.4	17.7	21.1	2171
30-34	17.8	16.1	19.5	1994
35-39	16.9	15.2	18.6	1886
40-44	13.9	12.2	15.6	1550
45-49	11.6	9.9	13.3	1299
Education				
Illiterate	33	31.5	34.5	3690
Basic (Grades 1-8)	30.3	28.8	31.8	3390
Secondary (Grades 9-12)	30.2	28.7	31.7	3382
Higher	6.4	4.6	8.2	720
Number of children born				
None	9.2	7.4	11	1032
1-2	55	53.8	56.2	6149
3-4	28.7	27.1	30.3	3207
5-6	5.9	4.1	7.7	664
Seven or more children	1.2	-0.7	3.1	131
Level of media exposure				
No exposure	25.1	23.5	26.7	2803
Low (Only one media, either TV or Radio or newspaper)	38.5	37	40	4302
Medium (Two medias out of three)	26.3	24.7	27.9	2939
High exposure (all three, Radio, TV and newspaper)	10.2	8.4	12	1139

Table 3. Trend of modern contraceptive prevalence rate (mCPR) in Nepal: 2006-2019.

	NDHS 2006	NDHS 2011	NDHS 2016	NMICS 2014	NMICS 2019
Poorest	30.3	35.6	41.8	44.1	43.8
Second	40.6	41.1	44.8	46.8	47.5
Middle	46.8	43.3	42.6	50.1	44.8
Fourth	48.2	45.3	41.7	48.9	45.3
Richest	53.9	48.9	43.0	45.4	39.7
All	44.2	43.2	42.8	47.1	44.2
Richest-to-poorest difference	*23.6*	*13.3*	*1.2*	*1.3*	*-4.1*
Ratio (richest to poorest)	*1.78*	*1.37*	*1.03*	*1.03*	*0.91*

Key informants broadly suggested that the main reason for stagnation of mCPR could be due to spousal separation. They elaborated that couples often perceived no need to use contraceptive methods as they met with each other infrequently and therefore chose traditional methods. However, a few key informants also mentioned that the main reason for mCPR being stagnant could be the potential swap of family planning (FP) methods by medication abortion (MA).

"... I think the practice of using self-MA have also replaced the family planning service utilization" Participants, 10

"People in remote areas still believe FP as the only permanent method. Many people do not know about the LARC. They know about Depo and the permanent FP method. They are not fully aware of the options they have. Highly educated people are more likely to use natural methods" Participants, 3

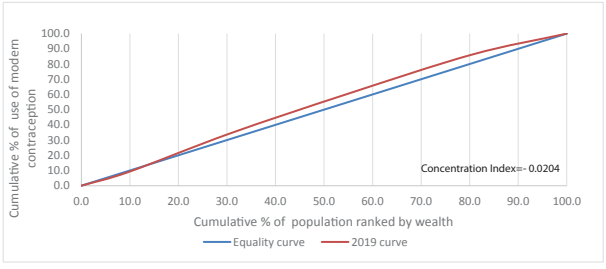

Figure 1. Concentration curve and index for the use of modern contraception, Nepal, 2019.

The province-wise concentration index shows that Province 1 (concentration index = -0.0447), Bagmati Province (concentration index = -0.0549), Gandaki Province (concentration index = -0.0631) and Lumbini Province (concentration index = -0.0204) have negative values on the other hand, Madhesh Province (concentration index = 0.0192), Karnali Province (concentration index = 0.0256) and Sudurpashchim Province (concentration index = 0.0342) have positive values of concentration index.

Multivariate analysis showed that wealth status, province, age of women, education, number of children born, and level of media exposure variables were significant determinants of the use of modern contraception. Women from richer, middle, poorer and poorest quintile households were 1.3 times (aOR =1.29, 95% CI=1.13-1.48), 1.2 times (aOR=1.21, 95% CI=1.05-1.40), 1.4 times (aOR= 1.36, 95% CI= 1.17-1.58) and 1.2 times (aOR=1.18, 95% CI= 1.05-1.34) were more likely to use modern contraception compared to women from richest households. Women in Bagmati province were more likely to use modern contraception (aOR=1.24, 95% CI=1.08-1.43), whereas women from Gandaki Province were less likely to use it (aOR=0.64, 95% CI=0.55-0.77).

Women who had basic education (aOR=0.876, 95% CI=0.79-0.98), secondary (aOR=0.81, 95% CI= 0.72-0.93) or higher education (aOR=0.61, 95% CI=0.49-0.75) were less likely to use modern contraception than illiterate women. Women who had a higher number of children were more likely to use modern contraception (aOR= 5.2 for women with seven or more children, aOR=7.8 for women having 5-6 children, aOR=9.7 for women having 3-4 children, and aOR=6.6 for women who have 1-2 children) than women who do not have children. Similarly, women who had high exposure to mass media were more likely (aOR=1.24, 95% CI 1.04-1.47) to use contraception than women who had no exposure to mass media (Table 4).

Table 4. Use of modern contraception by wealth index and other predicators in Nepal (adjusted odds ratios (aOR) with 95% CI), NMICS 2019.

		Any modern method % (95% CI)	adjusted Odds Ratios aOR (95% CI)	Total N
Wealth index quintile	Poorest	43.8 (41.6-46.0)	1.184 (1.049-1.337)**	1971
	Second	47.5 (45.4-49.6)	1.359 (1.170-1.579)***	2178
	Middle	44.8 (42.7-46.9)	1.211 (1.047-1.400)**	2255
	Fourth	45.3 (43.3-47.3)	1.292 (1.132-1.476)***	2392
	Richest	39.7 (37.7-41.7)	ref.	2386
Province	Province 1	44.3 (42.0-46.6)	ref.	1790
	Madhesh Province	46.9 (44.8-49.0)	1.061 (0.922-1.221)	2070
	Bagmati Province	45.2 (43.3-47.1)	1.243 (1.084-1.426)*	2667
	Gandaki Province	32.5 (29.6-35.4)	0.649 (0.547-0.770)***	985
	Lumbini Province	45.6 (43.5-47.7)	1.166 (1.018-1.337)*	2111
	Karnali Province	45.7 (41.7-49.7)	1.187 (0.963-1.464)	607
	Sudurpashchim Province	43.4 (40.3-46.5)	0.975 (0.823-1.156)	952

Education	Illiterate	54.0 (52.4-55.6)	ref.	3690
	Basic (Grades 1-8)	43.9 (42.2-45.6)	0.876 (0.785-0.977)*	3390
	Secondary (Grades 9-12)	36.9 (35.3-38.5)	0.814 (0.716-0.925)**	3382
	Higher	29.6 (26.3-32.9)	0.607 (0.489-0.752)***	720
Number of children born	None	7.6 (6.0-9.2)	ref.	1032
	1-2	41.8 (40.6-43.0)	6.644 (5.201-8.488)***	6149
	3-4	58.4 (56.7-60.1)	9.762 (7.521-12.671)***	3207
	5-6	54.5 (50.7-58.3)	7.789 (5.757-10.538)***	664
	Seven or more children	44.7 (36.2-53.2)	5.193 (3.349-8.053)***	131
Level of media exposure	No exposure	46.0 (44.2-47.8)	ref.	2803
	Low (Only one media, either TV or Radio or newspaper)	45.1 (43.6-46.6)	1.110 (0.995-1.240)	4302
	Medium (Two medias out of three)	42.7 (40.9-44.5)	1.115 (0.983-1.265)	2939
	High exposure (all three, Radio, TV and newspaper)	40.4 (37.6-43.2)	1.237 (1.040-1.472)*	1139

*Constant aOR=0.066***, -2 Log likelihood=14042.02, Cox & Snell R Square=0.110, Note: ref= Reference category ***=P<0.001, **=P<0.01 and *=P<0.05, Models were fitted after controlling for age of respondents and place of residence.*

A few key informants felt that despite the increased demand for FP, the supply side remained weak as many health facilities could not offer the choices of modern FP methods round the year. Similarly, 'son preference' in some communities influences low FP utilization. Some informants reported misconceptions about modern FP methods among communities continued to be the dominant reason for not using the FP till they have their first child. The fear of infertility by using FP methods still remained in the community. Some postpartum mothers still believe that conception does not occur until the return of menstruation after delivery. Similarly, other issues identified were that newly married couples seem to choose natural methods over modern contraceptive devices as they still have the misconception, and many people also do not know the full range of available methods.

Table 3 shows that the richest-to-poorest difference has decreased over 13 years. The richest-to-poorest difference was high (23.6 percentage points) in 2006, which decreased to 13.3 percentage points in 2011 and further to 1.2 percentage points in NDHS 2016. NMICS data presented a slightly different scenario: the richest-to-poorest difference was 1.3 percentage points in 2014 and was negative in 2019 (Table 3).

The concentration curve is above the equality line, indicating a disproportionate concentration of modern contraception among the poor (Figure 1). Similarly, the negative value of the concentration index (-0.0204) indicates that modern contraception use is higher among the poor in Nepal.

DISCUSSION

Use of modern contraception helps reduce unintended and high-risk pregnancies and unsafe abortions, thereby contributing to save the lives of many women.[12-15] Family planning has remained one of the priorities for the Government of Nepal (GoN) and has committed to improve access to voluntary right-based FP services to all who need it since 1968.[16,17]

Our finding shows that the value of concentration index of national level is negative, which indicates that modern contraception use is higher among the poor. The concentration index of Province 1, Bagmati Province, Gandaki Province, and Lumbini Province have negative values, indicating that modern contraception is higher among the poor. On the other hand, Madhesh Province, Karnali Province, and Sudurpashchim Province have positive values of concentration index, which indicates a disproportionate concentration of modern methods among the rich, i.e., use of modern contraception is higher among the rich. Multivariate analysis also supports the finding of concentration index. It could be due to the family planning programme in Nepal mainly focus on the poor and most vulnerable groups. However, this finding needs further investigation for the cause of inequalities on use of modern contraception. Our findings contradict other studies that show that

the richest women were more likely to use modern contraception than the poorest women. Richest are more likely to use modern contraception could be due to the reason that the richest woman has more access to media and health facilities and might have a better awareness of modern contraceptive methods than those from a poor family.[7,8]

Education has a clear negative effect on modern contraception in our study, which contradicts many other studies. Educated women might be shifting to traditional methods as few key informants said. However, it needs further investigation. The 'number of children born' is positively associated with the use of modern contraception. Women who had more children were more likely to use modern methods than women who had fewer children. This finding is in line with the results of other studies.[7,18,19]

Our analysis showed that mass media exposure had an effect on the use of contraception. Women who had high exposure to mass media were more likely to use contraception than women who had no exposure to mass media. This could be because women who had media exposure might have a better awareness of modern contraceptives, source of methods, and utilization. This finding is similar to the findings of other studies.[7,18,20]

CONCLUSIONS

The overall trend of modern contraception uptake has remained stagnant over the past decade. The increased trend of spousal separation primarily due to in- and out-country labour migration, and the increased preference of people towards the traditional methods were key factors hypothesized by key informants as reasons for the stagnancy of mCPR. Nevertheless, modern contraception use has increased over time among the poor and poorest. Family planning programming needs to focus to the people who need it rather a blanket approach to cover all. Use mass media helps spread general awareness about availability and the benefit of using family planning service.

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