ORIGINAL ARTICLE e-ISSN: 2349-0659 p-ISSN; 2350-0964

Study on Determinants of gender preference and use of family planning methods among married women of the reproductive age group in the Urlabari Municipality of Morang District, Eastern Nepal

R. B. Sah*, S. Shrestha, G. N. Gurung, D. D. Baral, A. Ghimire

Abstract

Introduction: Son preference is predominant in developing countries, especially South Asian countries and its effect is most visible when the fertility is on transition. Nepal is a country in South Asia where the fertility has declined and son is valued highly. **Objectives:** To find out the effects of gender preference on the use of family planning and to identify the determinants of gender Preference. **Methods:** The cross-sectional study was conducted among the 350 married women of reproductive age group (15–49 years) in Urlabari Municipality of Nepal. Semi-structured questionnaire was used for data collection. Chi-square test was applied to measure the association between socio-demographic characteristics, Fertility Profile and use of contraceptive methods with gender preference, and binary logistic regression was applied to identify the determinants of gender Preference. **Results:** The husband's education has been illiterate (79.3%) have seen more gender preference as compared to those below SEE (71.7%) and above SEE (66.9%) but the difference was not significant. The study population belong to the labor (85.7%) was seen insignificantly more gender preference in comparison to other occupational groups. The study populations have desired children as ≤2 have found significantly more gender preference (73.0%) than those having desired children as >2 (57.9%) ($P = 0.022$). The study population having last child as male (75.1%) was found significantly more gender preference than those as female (63.8%) ($P = 0.023$). The married women not using natural contraceptives (75.7%) was found significantly more gender preference than those using natural contraceptives (62.5%) ($P = 0.008$). The women whose desired children ≤2 are 2.4 times more gender preferences as compared to those desired child are <2 ($P = 0.007$). Those women who are using natural practice for family planning for gender preferences are 2.2 times more than those not using natural practice ($P = 0.002$). **Conclusion:** The study concludes that the women desiring less number of children, sex preference compared to non-preference in the first child, and those not practicing natural family were found to be the determinant of gender preference.

Keywords: Determinants, Family planning, Gender preference, Married women, Morang district, Nepal, Urlabari municipality

Asian Pac. J. Health Sci., (2025); DOI: 10.21276/apjhs.2025.12.3.02

Introduction

Sex preference for children has been a salient issue in demographic work in developing countries for a long time. The fertility impact of son preference has intensified by sex-selective abortion, a relatively new practice that is growing rapidly in some Asian countries.[1]

Sons are more likely than daughters to provide family labour on the farm or in family business and support their parents of old age, although there is some recognition that sons are no longer a dependable source of old age support.[2-4] Marriage of son provides additional household help from the daughter in law as well as an economic reward in the form of dowry payments.[5] In the context of patriarchal family system, having one son is imperative for continuation of the family line, and many sons provide additional status to the family. The utility of having sons also arises from the important religious functions that only sons can provide, though both sons and daughters are required to perform certain religious functions.[3,6]

Nepal is characterized by strong son preference because of its patrilocal and patrilineal system with certain religious functions that puts emphasis on presence of at least one son in a family. The total fertility rate for women of reproductive age in Nepal fell from around six children per woman to 3.1 in 2006 and 2.6 in 2011,[7] as the fertility is decreasing in Nepal the impact and effect of gender preference for children is more visible in couple's reproductive behavior and choices. Therefore this study aimed to find out the association of use of family planning on gender preference and to identify the determinants of gender Preference.

Department: School of Public Health and Community Medicine, B. P. Koirala Institute of Health Sciences, Dharan, Nepal.

Corresponding Author: Dr. Ram Bilakshan Sah, Department: School of Public Health and Community Medicine, B. P. Koirala Institute of Health Sciences, Dharan, Nepal. E-mail: bilaksah@yahoo.com

How to cite this article: Sah RB, Shrestha S, Gurung GN, Baral DD, Ghimire A. Study on Determinants of gender preference and use of family planning methods among married women of reproductive age group in Urlabari Municipality of Morang District, Eastern Nepal. Asian Pac. J. Health Sci., 2025;12(3):3-7.

Source of support: Nil.

Conflicts of interest: None.

Received: 11-02-2025 **Revised:** 13-03-2025 **Accepted:** 01-05-2025

Methods

A Community-based cross-sectional study was conducted from 29th January to 11 February, 2023 among married women of reproductive age group (15–49 years) in the Urlabari Municipality of Morang District of Eastern Nepal. This was a 2 weeks study to fulfill the Epidemiological Management carried out by students of MBBS 3rd year, Batch 2019 of B. P. Koirala Institute of Health

Sciences, Dharan, Nepal. There were 10 medical students who helped for this study Urlabari Municipality.

According to the study done in Nepal in 2003 by Leone *et al*., in Nepal showed sex preference decreases contraceptive use by 24% (Leone *et al*., in Nepal, 2003).[8] This study considers 24% prevalence, 95% significance and 80% power to determine the sample size. For sample size estimation, it was calculated as 317 by using the formula, sample size (n) = $4pq/L^2$[$4^2 \times 24 \times 76/4.8^2 = 317$]. Now adding 10% in calculated sample size (10% × 317 = 31.7) to reduce various biases. Therefore, the required sample size is 348.7. The data were collected from 350 married women of reproductive age 15–49 years in Urlabari Municipality of Morang District, Eastern Nepal.

Multi-stage random sampling method was applied for data collection. There are 9 wards in Urlabari Municipality. Among 9 wards, 5 wards (ward number 1, 3, 4, 5 and 7) were selected randomly using lottery method. The list of households of five selected wards was prepared and equal number of households (70) was selected from 5 wards on the basis of simple random sampling by lottery method. Each subject was selected till the sample size was fulfilled from the selected 5 wards of Urlabari Municipality.

The ethical approval was taken from the Institutional Review Committee of B. P. Koirala Institute of Health Sciences, Dharan, Nepal. Written permission was taken from concerned authority and each participants of the study.

Married women of reproductive age group (15–49 years) having at least one child, who were willing to participate in the study, those who gave written consent and those married women who were available after three visits were included in the study. Three visits means the selected study subjects who were not present at the time of the first visit to the respective place, they were followed for three attempts so as to include in the study and in the case of unavailability next study subject was taken. Acutely ill patients were excluded from this study.

Semi-structured questionnaire and an observational checklist were used for data collection and a face-to-face interview was taken. The confidentiality and privacy of the study were maintained; the name of the individuals or participating groups was not disclosed after the study.

All interviewed questionnaires were indexed and kept on file. The collected data were entered in Microsoft Excel and converted into the Statistical Package for Social Science software package 17.0 version for statistical analysis. Data were analyzed and Chi-square test was applied to measure the association between socio-demographic characteristics, Fertility Profile and use of contraceptive methods with gender preference among married women of reproductive age group in Urlabari Municipality. Binary logistic regression was performed with significant variables in chi square analysis having *P*-value $P \leq 0.2$ to identify the determinants of gender preference.

Results

Table 1 shows the married women having the age group 15–24 years, the husband's education have illiterate and the study population belong to the labor have seen insignificantly more gender preference.

Table 2 shows that the study populations have a desired number of children as 2 or <2 have found significantly more gender preference as compared to those having desired number of children as more than 2. The study population having last child's sex as male was found significantly more gender preference as compared to those as female.

Table 3 shows that the married women not using natural contraceptives were found significantly more gender preference as compared to those using natural contraceptives.

Table 4 shows the predictors for gender preferences. The women whose desired number of children were ≤2 had 2.4 times more likely to prefer male compared to those who desired >2 children ($P = 0.007$). The women who want their first child as son were 3.3 times more likely to prefer male child than those who did not have preference in first child ($P < 0.001$). Similarly women who want daughter as their first child were 4 times more likely to prefer male child compared to those that did not have preferences ($P = 0.003$). Those women who were using natural practice for family planning for gender preferences were 2.2 times more likely to prefer male than those not using natural family planning practice ($P = 0.002$).

Discussion

Nepal is a developing country with its social structures deeply rooted in culture and religion. Even though the signs of change are being seen in urban areas, most of the rural people are still reluctant to give away their traditional views, though they do not try to disclose their openly. Due to the gender preference, women are producing more children, especially in developing countries.[9]

Our study showed the overall prevalence of gender preferences was found to be 70.6%. A study conducted by Uprety S in Eastern Nepal in 2011, women's desire of pregnancy increased in parents who had a female child even after the birth of the third female child whereas it declined in the parents who had a male child.[9] The study done by De Silva WI[10] showed that women who had at least 3 children, at least one of whom was a son, and did not want more children were more likely to progress to the next parity than those with no sons (39.6% for 1 son and 33.9% for 2 sons versus 19%).

The present study showed the married women having the age group 15–24 years have seen insignificantly more gender preference as compared to those other age groups. The wife's education have below SEE have seen more gender preference as compared to those above SEE but the difference was not significant. The married women having the religion as Buddhist have seen insignificantly more gender preference as compared to other religion groups. A study showed that the desire for male children was significantly higher than the desire for female children among illiterate women. Furthermore, the desire for males was significantly higher than the desire for females among women irrespective of their religion.[9] In the study of Dabral and Malik education and religion were associated with effect on the desired family size.[11] The factors, such as education of the respondents and age of the respondents also have found to exert profound effect on use of contraceptives.[12]

In our study, the study population having last child's sex as male (75.1%) was found significantly more gender preference as compared to those as female (63.8%). There has been significant fall in the number of girls compared with boys among second born children where the first born was female.[13] It has been found that the average ratio increasing in successive parity in Nepal even reaching 177 boys to 100 girls for third and successive births.[14] The proportion of women who had stopped childbearing whose last child was a boy was much higher than that of such women whose

Table 1: Association between socio-demographic characteristics and gender preference

Characteristics	*Category*	*Gender preference*		*Total*	*P-value*
		No	*Yes*		
Age	15–24 years	7 (17.1)	34 (82.9)	41	0.176
	25–34 years	50 (30.5)	114 (69.5)	164	
	35–49 years	46 (31.7)	99 (68.3)	145	
Religion	Hindu	86 (28.9)	212 (71.1)	298	0.161
	Buddhist	5 (23.8)	16 (76.2)	21	
	Christian	3 (30.0)	7 (70.0)	10	
	Muslim	9 (52.9)	8 (47.1)	17	
	Others (non-religious and Jainism)	0 (0.0)	4 (100.0)	4	
Ethnicity	Brahmin/Chhetri	42 (32.6)	87 (67.4)	129	0.92
	Kirat	12 (37.5)	20 (62.5)	32	
	Janajati	41 (29.9)	96 (70.1)	137	
	Dalit	8 (19.0)	34 (81.0)	42	
	Terai caste	0 (0.0)	10 (100.0)	10	
Wife's education	Illiterate	17 (32.7)	35 (67,.3)	52	0.55
	Below SEE	37 (23.1)	123 (76.9)	160	
	Above SEE	49 (35.5)	89 (64.5)	138	
Wife's occupation	Farmer	33 (30.6)	75 (69.4)	108	0.822
	Service	2 (20.0)	8 (80.0)	10	
	Labour	1 (14.3)	6 (85.7)	7	
	Housemaker	47 (28.3)	119 (71.7)	166	
	Buisness	19 (33.3)	38 (66.7)	57	
	Others (Abroad, Laundry)	1 (50.0)	1 (50.0)	2	
Husband's education	Illiterate	6 (20.7)	23 (79.3)	29	0.352
	Below SEE	49 (28.3)	124 (71.7)	173	
	Above SEE	48 (33.1)	97 (66.9)	145	
Husband's occupation	Farmer	31 (36.5)	54 (63.5)	85	0.633
	Service	7 (35.0)	13 (65.0)	20	
	Labour	10 (26.3)	28 (73.7)	38	
	Business	12 (21.4)	44 (78.6)	56	
	Foreign employment	34 (29.3)	82 (70.7)	116	
	Driiver	7 (26.9)	19 (73.1)	26	
	Others (Artist, Rickshaw puller, carpenter)	2 (33.3)	4 (66.7)	6	
Type of family	Nuclear	62 (27.7)	162 (72.3)	224	0.338
	Joint	41 (32.5)	85 (67.5)	126	
Family income	Below poverty line	68 (29.6)	162 (70.4)	230	0.938
	Above poverty line	35 (29.2)	85 (70.8)	120	
Total		103 (29.4)	247 (70.6)	350	

Table 2: Association between gender preference and fertility profile

Characteristics	*Category*	*Gender preference*		*Total*	*P-value*
		No	*Yes*		
Age at marriage	<18	21 (24.4)	65 (75.6)	86	0.240
	≥18	82 (31.1)	182 (68.9)	264	
Abortion (if any)	Yes	102 (29.5)	244 (70.5)	346	0.845
	No	1 (25.0)	3 (75.0)	4	
Desired number of children	≤2	79 (27.0)	214 (73.0)	293	0.022
	>2	24 (42.1)	33 (57.9)	57	
Sex preference of first child	Son	20 (17.2)	96 (82.8)	116	<0.001
	Daughter	6 (15.4)	33 (84.6)	39	
	Whichever	77 (39.5)	118 (60.5)	195	
Decision maker determining the number of children	Husband and wife	98 (29.2)	238 (70.8)	336	0.232
	Husband	0 (0.0)	4 (100.0)	4	
	Wife	4 (57.1)	3 (42.9)	7	
	Family	1 (33.3)	2 (66.7)	3	
Last child's sex	Male	52 (24.9)	157 (75.1)	209	0.023
	Female	51 (36.2)	90 (63.8)	141	
Total		103 (29.4)	247 (70.6)	350	

last child was a girl (64% versus 36%).[8] Higher sex ratio indicating son preference behavior has been seen in analysis of data from Nepal demographic and health survey 1996, 2001, 2006, 2011.[13,15]

In present study, sex selective abortion was seen less gender preference (70.5%) than not doing abortion (75%) but the difference was not significantly. If a further drop in fertility is achieved without a commensurate decrease in son preference, the use of sex-selective abortion is likely to increase.[8] Other studies have already shown some of the untoward effect of sex selective abortion which led to excess males.[16,17] Even health care providers believe that illegal sex selective abortion is increasing which may lead to serious abortion complications.[13]

In present study, the study populations have desired number of children as 2 or <2 have found significantly more gender

Table 3: Association between gender preference and use of contraceptive methods

Characteristics	*Category*	*Gender preference*		*Total*	*P-value*
		No	*Yes*		
Natural	No	52 (24.3)	162 (75.7)	214	0.008
	Yes	51 (37.5)	85 (62.5)	136	
Condom	No	14 (24.6)	43 (75.4)	57	0.378
	Yes	89 (30.4)	204 (69.6)	293	
Oral pills	No	7 (25.9)	20 (74.1)	27	0.678
	Yes	96 (29.7)	227 (70.3)	323	
Depo porvera	No	4 (25.0)	12 (75.0)	16	0.691
	Yes	99 (29.6)	235 (70.4)	334	
Copper T	No	33 (32.0)	70 (68.0)	103	0.489
	Yes	70 (28.3)	177 (71.7)	247	
Norplant	No	38 (26.4)	106 (73.6)	144	0.297
	Yes	65 (31.6)	141 (68.4)	206	
Male sterilization	No	42 (28.2)	107 (71.8)	149	0.661
	Yes	61 (30.3)	140 (69.7)	201	
Female sterilization	No	30 (30.3)	69 (69.7)	99	0.822
	Yes	73 (29.1)	178 (70.9)	251	
Birth spacing	No	42 (32.6)	87 (67.4)	129	0.326
	Yes	61 (27.6)	160 (72.4)	221	
Total		103 (29.4)	247 (70.6)	350	

Table 4: Binary logistic regression analysis for gender preferences

Variables in the equation	*Category*	*ß*	*P-value*	*Adj. OR*	*95% CI. for Adj. OR*	
					Lower	*Upper*
Desired child	>2			Ref		
	≤2	0.873	0.007	2.394	1.268	4.517
Sex preferences for first child	Any			Ref		
	Son	1.190	<0.001	3.288	1.846	5.856
	Daughter	1.422	0.003	4.146	1.625	10.578
Natural practice for family planning	No			Ref		
	Yes	0.802	0.002	2.230	1.349	3.685
Constant		−0.785	0.030	0.456		

preference (73%) as compared to those having desired number of children as more than 2 (57.9%). Uprety *et al*. in their study also showed that people desired son not exclusively but that more number of male children was more acceptable to them as compared to female children.[9] Ahmed Kabir *et al*. in their study showed that women who had more female children were less interested in using family planning methods which further supports the male gender preference.[18] Similar findings was also shown by the study done by Bairangi[19] where women with more sons were more likely to use contraception than those who have more daughters. Contraceptive practice being affected by sex composition of the children, number of children, and sex of the last children implies that parents' reproductive behavior is more or less influenced by sex preference for children.[12]

The present study showed that the married women not using natural contraceptives (75.7%) was found significantly more gender preference as compared to those using natural contraceptives (62.5%). Study conducted in Sunsari district of Nepal found the preference for son affecting usage of family planning methods.[9] Others study also suggested couple's desire for number of sons influences fertility differential.[20] The study of Rajaretnam and Deshpande[21] conducted in South India shows that most of the women were using contraception after birth of a male child as compared to women with birth of a female child. A similar study carried out by Leone *et al*. in Nepal in 2003 found that contraception use was much higher after giving birth of the last male child as compares to the female (64% versus 36%).[8]

Our study showed that the birth spacing following male child (72.4%) is longer than following female child (67.4%) but differences was not significant. A study conducted by Rai *et al*. in Nepal showed that the Birth spacing following male child (3.01 versus 2.71) is longer than that following female child. It implies that the couples want to complete the family by planning another birth as early possible after the birth of daughter whereas after the birth of son, couples take longer time to plan another birth.[12]

The present study showed the women who want their first child as son were 3.3 times more likely to prefer male child than those who did not have preference in first child ($P < 0.001$). Similarly women who want daughter as their first child were 4 times more likely to prefer male child compared to those that did not have preferences ($P = 0.003$). Patterns of contraceptive use are concluded to be indicative of a particularly strong preference for sons in Nepal, India, Bangladesh, Egypt, Jordan and Tunisia. In Nepal, women with all sons are 5 times as likely to use contraception as women with no sons. Women are particularly unlikely to adopt sterilization if they don't have an adequate number of sons.[22] The study by Niraula and Morgan[23] showed that the odds ratio between two sons and two daughters was 5.5 times greater but 8.8 times greater if there were one son and one daughter.

Conclusion

The married women having desired two or less children were found to prefer more male child compared to those desiring more than two children. The study population having the last child's sex as male was found to significantly preferring male child compared to those having the last child as female. The married women not using natural contraceptives were found to be significantly prefer male compared to those using natural contraceptives. Hence, this study finds women desiring less number of children, sex preference compared to non-preference in the first child, and those not practicing natural family were found to be the determinant of gender preference.

Acknowledgment

Our gratitude and sincere thanks to the participants of Urlabari Municipality, without their support study was not possible, and the person who helped us in every way during the study period. We would like to thank to MBBS (2019 Batch) students who helped us during the study period.

References

1. Bongaarts J. Fertility and reproductive preferences in post-transitional societies. Popul Dev Rev 2001;27:260-81.
2. Bardhan PK. Sex disparity in child survival in Rural India. In: Srinivasan TN, Bardhan PK, editors. Rural Poverty in South Asia. New York: Columbia University Press; 1988. p. 472-82.
3. Mason KO. Family change and support of the elderly in Asia: What do we know? Asia Pac Popul J 1992;7:13-32.
4. Dharmalingam A. The social context of family size preferences and fertility behavior in a South Indian village. Genus 1996;52:83-103.
5. Brunson J. Son preference in the context of fertility decline: Limits to new constructions of gender and kinship in Nepal. Stud Family Plann 2010;41:89-8.

6. Nath DC, Leonetti DL. Correlates of coital patterns in a traditional Indian society. In: Yadava RC, editor. Dynamics of Population Change: Emerging Issues of 21st Century. New Delhi: Shipra Publication; 2001. p. 57-67.
7. Ministry of Health and Population (MOHP). New ERA, ICF International Inc: Nepal Demographic and Health Survey Report 2011. Kathmandu, Nepal: Ministry of Health and Population (MOHP), New ERA, ICF International Calverton, Maryland; 2012.
8. Leone T, Matthews Z, Zuanna GD. Impact and determinants of sex preference in Nepal. Int Fam Plan Perspect 2003;29:69-75.
9. Uprety S, Jha N, Poudel IS, Pokharel PK, Poudel M, Niraula SR. Impact and determinants of gender preference in Duhavi VDC of eastern Nepal. JNMA J Nepal Med Assoc 2011;51:28-33.
10. De Silva WI. Influence of son preference on the contraceptive use and fertility of Sri Lankan Women. J Biosoc Sci 1993;25:319-31.
11. Dabral S, Malik SL. Demographic study of Gujjars of Delhi: III. Fertility preferences. J Hum Ecol 2004;16:151-4.
12. Rai P, Paudel IS, Ghimire A, Pokharel PK, Rijal R, Niraula SR. Effect of gender preference on fertility: Cross-sectional study among women of Tharu community from rural area of eastern region of Nepal. Reprod Health 2014;11:15.
13. Frost MD, Puri M, Hinde PR. Falling sex ratios and emerging evidence of sex-selective abortion in Nepal: Evidence from nationally representative survey data. BMJ 2013;3:1-8.
14. Adhikari N, Ghimire A, Ansari I. Sex preference in Urban Nepal. J Inst Med 2008;30:19-23.
15. Pradhan A, Aryal R, Regmi G. Nepal Family Health Survey 1996. Kathmandu, Nepal and Calverton, Maryland, USA: Ministry of Health [Nepal], New ERA and Macro International Inc; 1997.
16. Zhu WX, Lu L, Hesketh T. China's excess males, sex selective abortion, and one child policy: Analysis of data from 2005 national intercensus survey. BMJ 2009;338:b1211.
17. Lamichhane P, Harken T, Puri M, Darney PD, Blum M, Harper, *et al*. Sex-selective abortion in Nepal: A qualitative study of health workers' perspectives. Women Health 2011;21:S37-41.
18. Kabir A, Ali R, Islam MS. The effect of sex preference on contraceptive use in Bangladesh. J Bio Sci 2002;2:247-9.
19. Bairangi R. Effect of sex preference on contraception use, abortion and fertility in Matlab Bangladesh. Int Family Planning Pers 2001;27:137-43.
20. Nath DC, Singh HB. Impact of son preference on fertility indices in Manipur. Int J Manag Econ Soc Sci 2012;1:26-32.
21. Rajaretnam T, Deshpande RV. The effect of sex preference on contraceptive use and fertility in Rural South India. Int Family Planning Pers 1994;20:88-95.
22. Arnold F. Gender Preferences for Children. In: Demographic and Health Surveys Comparative Studies No. 23. Calverton, MD: Macro International Inc.; 1997.
23. Niraula BB, Morgan SP. Son and daughter preferences in Benighat, Nepal: Implications for fertility transition. Soc Biol 1995 Fall-Winter;42:256-73.