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**Research Article** 

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# The Trend of Intention to Not Use Contraception among Married Women in Nepal

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## **Abstract:**

**Background:** Family planning (FP) enables people to attain their desired number of children and determine the spacing of pregnancies, but many barriers prevent the use of family planning and result in unplanned pregnancies. This study investigates the trend of intention not to use contraceptives among married women in Nepal.

**Methods:** The data for this study was obtained from three sequential Nepal Demographic and Health Surveys [NDHS] of 2006, 2011, and 2016. We used data from 4297, 4833, and 4677 women who were currently not using any FP methods on NDHS 2006, NDHS 2011, and NDHS 2016, respectively. Univariate, Bivariate and Multivariate analyses were made.

**Results:** Minor fluctuation can be seen in the proportion of women who did not intend to use FP methods for ten years. Above a fourth (26%) women who were currently not using any FP methods had no intention to use FP in 2006, which decreased to 19% in 2011 and slightly increased to 23% in 2016. Overall, the significant socio-demographic predictors of intention to not use FP methods were the age of women, age at marriage, and education of women, religion, residence, and wealth index. Education was a significant predictor of intention not to use FP. Uneducated women and women with only primary education were 83 percent (aOR=1.84, CI=1.52-2.22) and 17 percent (aOR=1.17, CI=0.97-1.43), respectively, more likely not to intend to use FP than women with secondary or above education, and the relation was significant among uneducated women. Similarly, Muslim women were three times (aOR=3.28, CI=2.66-4.02) more likely to intend not to use contraceptives than Hindu women. Likewise, women residing in rural areas and belonging to richer wealth index were significantly more likely to intend not to use FP methods than their counterparts.

**Conclusion:** Although expenditure for enabling environment has increased, nonuse intentions of FP have increased in 2016 than in the survey year 2011, highlighting the necessity of different program modality. This study elucidates the necessity of focusing the FP interventions among uneducated women, rural women, and those belonging to the Muslim religion to increase the intention to use FP in the future.

Key words: contraception; trend; intention to use; married women; nepal

## **English Plain Summary:**

This study investigates the trend of intention not to use contraceptives among married women in Nepal. The data for this study was obtained from three sequential Nepal Demographic and Health Surveys [NDHS] of 2006, 2011, and 2016. We used data from 4297, 4833, and 4677 women who were currently not using any FP methods on NDHS 2006, NDHS 2011, and NDHS 2016, respectively. Data were analyzed using Univariate, Bivariate (Chi-square test), and Multivariate analysis (binary logistic regression).

Minor fluctuation can be seen in the proportion of women who did not have the intention to use FP methods for ten years. Almost a fifth of women had no intention to use FP (23%) in 2016. Overall, the significant socio-demographic predictors of intention to not use FP methods were the

basic education were more likely not to intend to use FP than women with secondary or above education. Similarly, Muslim women were three times more likely to have the intention to not use contraceptives than Hindu women. Likewise, women residing in a rural area and belonging to a richer wealth index were significantly more likely to have the intention to not use FP methods than their counterparts. This study elucidates the necessity of focusing on the FP interventions among uneducated women, rural women, and those belonging to the Muslim religion to increase the intention to use FP in the future.

age of women, age at marriage, education of women, religion, place of residence, and wealth index. Uneducated women and women with only

**Background:** The unrestrained increase in population is a burden on the resources of many developing countries. A high fertility rate, high maternal and infant mortality rate, and low life expectancy is a feature of

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75% of the world population live in developing countries (Pegu et al., 2014). The use of contraceptives has been identified as an important factor in reducing the fertility rate for all women in reproductive age groups in developing countries (Lakkawar et al., 2014). Family planning enables people to attain their desired number of children and determine the spacing of pregnancies. It is essential to promote family planning and ensure access to FP methods to ascertain the well-being of women (WHO, 2018). Family planning services are necessary to save maternal health and reduce maternal mortality rates. Provision of adequate antenatal care, ensuring skilled attendance at birth, backed by emergency obstetric care when needed, is essentials to reduce maternal and neonatal mortality in addition to voluntary access to voluntary family planning to space births. (Abdel-Tawab, 2010). It has also been reported that nearly 90% of unintended pregnancies in low- and middle-income countries can be prevented using modern contraceptive methods (Bellizzi et al., 2015).

The non-use of contraceptive methods by people who need contraception has been associated with potential implications at the individual, familial, community, and global levels (Moreira et al., 2019). Although there is evidence of progressive increases in the use of contraceptive methods (Alkemaetal, 2013), many women still face various barriers to contraceptive use (UNDP et al., 2017). Many barriers prevent the use of family planning and result in unplanned pregnancies. These barriers are numerous factors like lack of education and exposure to mass media that results in poor knowledge about family planning methods and services (Campbell, Sahin- Hodoglugil & Potts,2006) and concerns and experience of side effects (Campbell, Campbell, Sahin-Hodoglugil& Potts,2006) and health system-related factors like poor coverage of health facilities (Hamid& Stephenson2006).

In July 2017, Nepal invigorated its commitment to maintaining and sustaining the efforts already initiated by implementing its initial 2015 commitment to FP2020. The Government of Nepal restated to continue to increase the government budget in family planning by 7% each year up to 2020. In the newly devolved and federalized structure, Nepal is committed to 'leaving no one behind' and 'reaching the unreached' to accelerate the number of additional family planning users by an estimated 1 million, and the proportion of demand satisfied to 71% by 2020. (Family planning 2020).

The essence of this study is to aid in the attainment of commitment of the Nepal government on Family Planning through increasing the prevalence of contraceptive uses by unmasking the various factors that may lead to women's non-intention to use contraceptives.

### **Methods:**

The data for this study was obtained from three sequential Nepal Demographic and Health Surveys [NDHS] of 2006, 2011, and 2016. These surveys used multi-stage, stratified, and cluster sampling methods. The sampling frame contained wards, primary sampling unit [PSU], and enumeration areas [EA]. The NDHS used two stages of selection for PSU/EA in rural areas and three stages in urban areas. Details of sampling strategy/design/frame, survey questionnaire are publically available in the

NDHS reports and website. The information was collected from women currently not using any family planning methods in the survey years of 2006, 2011, and 2011.

We used data from 4297, 4833, and 4677 women who were currently not using any FP methods on NDHS 2006, NDHS 2011, and NDHS 2016, respectively. Respondents' characteristics: age, age at marriage, number of the child born, caste, religion, educational status, place of residence, employment status, wealth index, women's autonomy in household decision making, exposure to media were considered as independent variables and intention to use family planning methods was considered as a dependent variable.

IBM SPSS Statistics version 20 was used to analyze the data. Three-level analyses were made. In univariate analysis, simply frequencies and percentages were calculated. Bivariate analysis showed the association between independent and dependent variables using the chi-square test as per the survey years separately. However, in multivariate analysis, we pooled all data from NDHS 2006, 2011, and 2016. The binary logistic regression model was used to predict the adjusted effects of covariates on intention to not use any family planning methods. We put the year of the survey in Model I and added other socio-demographic variables in Model II. We presented adjusted odds ratios [aOR] with reference categories at a 95 percent confidence interval [95% CI].

# Results

## **Background characteristics**

Approximately two-fifths of women who were not using any FP methods were aged less than 25 years in all the surveys (41%, 39%, and 36% in 2006, 2011, and 2016, respectively). Regarding age at marriage, more than three-fourth (76%) and above two-fifths (45%) women were married at age 21 and above in 2006 and 2011, respectively. Similarly, more than two-fifths (44%) of women not using any FP methods were married at 15-17 years in the year 2016. Nearly half (45%) of the women who were not using any FP methods were uneducated in 2011, while the same proportion of women had secondary or above education in 2016. Over four-fifths of women followed the Hindu religion in all three surveys. The majority of women who were not using any FP methods resided in a rural area in 2006 (89%) and 2011 (90%), but most of them resided in the urban area in 2016 (58%). Most women not using any FP methods were currently working in all surveys (70%, 56%, and 53% in 2006, 2011, and 2016, respectively). Likewise, most of the women who were not using any FP methods belonged to the poor wealth index in 2006 (46%) and 2011(41%), but in 2016 greater proportion of them belonged to the rich family (40%). Nearly two-fifths (43%) of women not using any FP methods had no autonomy in 2006, while the same proportion of women had high autonomy in 2011 (41%) and 2016 (37%). Almost three fourth women who were not using any FP methods had no exposure to the newspaper in all surveys (76%, 73%, and 77% respectively in 2006, 2011, and 2016 respectively). Similarly, nearly half of the women not using any FP methods had no exposure to the radio (47%) but high exposure to television (45%) in 2016.

	NDHS	5 2006	NDHS	5 2011	NDHS 2016		
	Ν	%	Ν	%	Ν	%	
Age group							
Less than 25 years	1773	41.2	1893	39.2	1686	36.0	
25-34	1325	30.8	1699	35.2	1774	37.9	
35 or above	1200	27.9	1241	25.7	1217	26.0	
Age at marriage/cohabitation							
Less than 15	158	3.7	348	7.2	437	9.3	
15-17	537	12.5	1357	28.1	2051	43.9	
18-20	339	7.9	949	19.7	1343	28.7	
21 and above	3262	76.0	2167	45.0	841	18.0	

Number of children born						
None	729	17.0	901	18.7	831	17.8
One	909	21.2	1125	23.3	1282	27.4
Two	847	19.7	1065	22.0	1132	24.2
Three	529	12.3	667	13.8	645	13.8
Four	396	9.2	437	9.0	335	7.2
Five or more	888	20.7	637	13.2	451	9.6
Education						
No education	2592	60.3	2163	44.8	1662	35.5
Primary	766	17.8	977	20.2	919	19.7
Secondary or above	940	21.9	1693	35.0	2096	44.8
Religion						
Hindu	3549	82.6	3989	82.5	3928	84.0
Buddhist	363	8.5	418	8.6	243	5.2
Muslim	268	6.2	272	5.6	351	7.5
Kirat/Christian	117	2.7	153	3.2	155	3.3
Place of residence						
Urban	491	11.4	509	10.5	2724	58.3
Rural	3807	88.6	4324	89.5	1952	41.7
Currently working						
No	1277	29.7	2145	44.4	2221	47.5
Yes	3020	70.3	2688	55.6	2456	52.5
Wealth index						
Poor	1974	45.9	1983	41.0	1763	37.7
Middle	888	20.7	1048	21.7	1051	22.5
Rich	1435	33.4	1803	37.3	1863	39.8
Women's autonomy in household						
decision						
No autonomy	1856	43.2	1481	30.7	1546	33.0
Moderate autonomy (involved in 1-2 issues)	948	22.0	1354	28.0	1404	30.0
High autonomy (involved in all 3 issues)	1493	34.8	1997	41.3	1728	36.9
Exposure to newspaper						
No exposure	3264	76.0	3547	73.4	3585	76.6
Low exposure	785	18.3	925	19.1	844	18.0
High exposure	245	5.7	361	7.5	249	5.3
Exposure to Radio						
No exposure	501	11.7	1075	22.2	2216	47.4
Low exposure	1466	34.1	1825	37.8	1300	27.8
High exposure	2330	54.2	1933	40.0	1161	24.8
Exposure to TV						
No exposure	1493	34.7	1588	32.9	1610	34.4
Low exposure	1556	36.2	1315	27.2	942	20.2
High exposure	1248	29.1	1929	39.9	2125	45.4
Total	4297	100.0	4833	100.0	4677	100.0

**Table 1:** Background characteristics of women who were not using any family planning methods in 2006, 2011 and 2016

## **Bivariate analysis:**

Minor fluctuation can be seen in the proportion of women who did not intend to use FP methods for ten years. Above a fourth (26%) women who were currently not using any FP methods had no intention to use FP in 2006, which decreased to 19% in 2011 and then slightly increased to 23% in 2016. Bivariate analysis was done to find the association between different socio-demographic variables and intention to use FP. The age group had a significant association with intention to use FP in which a higher proportion of women aged 35 years or above had no intention to use FP in the future than their counterparts (68%, 59%, and 62% in 2006, 2011, and 2016 respectively). Similarly, a significantly higher proportion of women married at age less than 15 had no intention to use FP in all surveys. The proportion was 39%, 29%, and 31%, respectively, in 2006, 2011, and 2016. The intention of not using FP methods decreased with the increase in education of women as a higher proportion of uneducated women were not intending to use FP in the future than their counterparts (36%, 32%, and 37% respectively in 2006, 2011, and 2016) and the association was statistically significant as well (p<0.001). A significantly higher proportion of Muslim women had no intention to use FP in 2006 (56%), 2011 (27%), and 2016 (44%). Place of residence also had a significant association with the intention not to use FP in which a higher proportion of women residing in urban areas had no intention to use FP in the survey of 2011(26%) and 2016 (24%) (p>0.001).

Significantly higher proportions of working women than non-working women did not intend to use FP in the future in all three surveys (28%, 22%, and 25% in 2006, 2011, and 2016, respectively). Wealth also had a significant association with intention to use FP, but the relationship varied in different surveys. A higher proportion of poor women did not intend to

use FP than their counterparts in 2011 (21%), while the proportion was higher among rich women in 2016 (25%). Likewise, a significantly higher proportion of women with high autonomy had no intention to use FP than their counterparts in all surveys (36%, 27%, and 27% in 2006, 2011, and

2016, respectively). Similarly, a higher proportion of women with no or low exposure to radio and no exposure to television did not intend to use FP in the future in all surveys, and the association was statistically significant.

Intends         Does not use         Total N intend io use         Intends io intend io Not         Does not intend io Not         Total N use         Intends io intend io Not         Does not intend		NDHS 2006		NDHS 2011			NDHS 2016			
use         incluit o         vs         use         incluit o         vs         use         incluit o         vs         use         incluit o           Age group         ***         ** </td <td></td> <td>Intends to</td> <td>Does not</td> <td>Total</td> <td>Intends to</td> <td>Does not</td> <td>Total</td> <td>Intends to</td> <td>Does not</td> <td>Total N</td>		Intends to	Does not	Total	Intends to	Does not	Total	Intends to	Does not	Total N
useuseuseuseuseuseuseAge group0****0***0		use	intend to	Ν	use	intend to	Ν	use	intend to	
No         %			use			use			use	
Age group $+++$		%	%		%	%		%	%	
Less fun 25 years         93.7         6.3         1773         96.7         3.3         1893         94.8         5.2         1865           25-34         86.5         1325         91.2         8.8         1699         87.8         12.2         1774           35 or above         31.6         68.4         1200         41.4         58.6         1241         88.4         66.6         127           Age at maring/cohabitation         ***         ****         ****         ****         ****         ****         ****         ****         ****         ****         ****         ****         ****         2.2         2.8.8         34.8         2.2         2.8.8         34.8         2.1.0         13.0         12.0         12.0         13.8         13.8         2.2         2.8.8         3.8.7         7.9.4         2.0.6         13.0         12.0         12.8.7         13.0         12.0         12.8.7         13.0         12.0         12.8.7         13.0         12.2.8         14.3         3.8.1         10.0         12.8.7         14.3         2.8.7         13.0         12.2.0         10.0         12.8.7         14.3         2.6.6         7.1.3         2.8.7         14.9.0         11.3	Age group	**	*		**	*		**:	*	
25-34       86.5       13.5       13.25       91.2       8.8       10.90       87.8       12.2       17.7         Age at marriage/cobabitation       ****       ***       ***       *	Less than 25 years	93.7	6.3	1773	96.7	3.3	1893	94.8	5.2	1686
35 or above       31.6       68.4       1200       41.4       58.6       1211       38.4       6.6       1217         Less than 15       61.2       38.8       158       71.2       28.8       384       69.1       30.9       437         15-17       74.8       252.       537       79.4       20.6       1357       76.0       24.0       20.5         18-20       75.2       24.8       339       83.7       16.3       949       81.0       19.0       1343         21 and above       74.5       25.5       3262       81.4       18.6       2167       79.7       20.3       841         Namber of children born       ###       ###       601       85.7       14.3       831         One       88.8       11.2       909       92.1       7.9       1125       87.0       13.0       12.7       1132         Three       76.3       32.7       736       65.9       34.1       43.5       55.5       431         Flw or more       63.6       35.7       78.8       48.0       52.0       637       43.5       55.5       451         Streatoin       ###       ###       ###	25-34	86.5	13.5	1325	91.2	8.8	1699	87.8	12.2	1774
Age at marriage/cohabitation $***$ $***$ $***$ $***$ $***$ Less than 1561.23.815.815.817.122.8.83.4860.13.0.943715-1774.82.5.25.3779.42.0.61.3777.6.02.4.02.03118-2077.52.24.83.393.371.6.39.498.1.019.013.3321 and above74.52.5.53.2028.1.41.8.62.0.77.7.72.0.38.8.1Number of children born************************None88.81.1.29.099.2.17.911.2587.01.1.301.28.2Two88.81.1.29.099.2.17.911.2587.01.1.301.28.7Four74.32.5.75.2977.62.2.46.677.1.32.8.76.45Four74.32.5.75.2977.62.2.46.677.1.32.8.76.45Four42.35.7.78.84.8.05.2.06.74.3.55.6.54.51Sectoation63.664.42.9268.23.1.81.6.66.9.94.4.11.6.69.9.71.2.12.0.69.9.71.2.12.0.69.9.71.2.12.0.69.9.71.2.12.0.69.9.71.2.12.0.61.2.39.7.71.6.22.4.61.7.41.2.51.6.11.5	35 or above	31.6	68.4	1200	41.4	58.6	1241	38.4	61.6	1217
Less than 15         61.2         38.8         15.8         71.2         28.8         348         69.1         30.9         437           15-17         74.8         52.2         537         79.4         20.6         1357         76.0         24.0         2051           18-20         72.5         24.8         339         83.7         16.3         949         81.0         19.0         1343           Number of children born         ***	Age at marriage/cohabitation	**	:		**	*		**:	*	
15-17       74,8       25.2       537       79,4       20.6       1357       76.0       24.0       2051         18-20       75.2       24.8       338       83.7       16.3       349       81.0       10.0       1343         21 and above       74.5       25.5       3262       81.4       18.6       2167       79.7       20.3       8841         None       86.2       13.8       729       91.4       8.6       901       85.7       14.3       831         One       88.4       11.2       909       92.1       7.9       1125       87.0       13.0       1282         Two       74.3       25.7       529       77.6       22.4       667       71.3       2.8.7       435       56.5       431         Five or more       42.3       57.7       888       48.0       520       43.1       437       56.5       431       435       56.5       431         Secondary or above       93.7       6.3       940       92.3       7.7       1693       87.9       12.1       2060         Religio       ###       ###       ###       ###       ###       ###       ### <t< td=""><td>Less than 15</td><td>61.2</td><td>38.8</td><td>158</td><td>71.2</td><td>28.8</td><td>348</td><td>69.1</td><td>30.9</td><td>437</td></t<>	Less than 15	61.2	38.8	158	71.2	28.8	348	69.1	30.9	437
18-20       75.2       24.8       339       83.7       16.3       949       81.0       19.0       1343         Number of children born       ***	15-17	74.8	25.2	537	79.4	20.6	1357	76.0	24.0	2051
21 and above       74.5       25.5       326.2       81.4       18.6       2167       79.7       20.3       841         Number of children horn       ***       *	18-20	75.2	24.8	339	83.7	16.3	949	81.0	19.0	1343
Number of children born         ***          ***          ***          ***             None         86.2         13.8         72         91.4         8.6         90.1         85.7         14.3         831           One         88.8         11.2         909         92.1         7.9         1125         87.0         13.0         1282           Two         84.4         15.6         847         86.5         13.5         1065         82.1         17.9         1132           Four         67.3         32.7         396         65.9         34.1         437         62.6         37.4         335         56.5         54.5         54.5           Four ornore         42.3         57.7         888         48.0         52.0         637         43.5         56.5         54.5         54.5         54.5         54.5         54.5         54.5         54.5         54.5         54.5         54.5         54.5         56.5         54.1         59.5         54.5         54.5         54.5         54.5         54.5         54.5         54.5         54.5         54.5         54.5         54.5         54.5         54.5	21 and above	74.5	25.5	3262	81.4	18.6	2167	79.7	20.3	841
None         86.2         13.8         7.29         91.4         8.6         901         85.7         14.3         83           One         88.8         11.2         909         92.1         7.9         1125         87.0         13.0         1282           Two         84.4         15.6         847         86.5         13.5         1065         82.1         17.9         1132           Three         74.3         25.7         529         77.6         22.4         667         71.3         28.7         645           Four more         42.3         57.7         888         48.0         52.0         637         43.5         55.5         451           Education         ****         ***         ***	Number of children born	***			***			***		
One         88.8         11.2         909         92.1         7.9         11.25         87.0         13.0         1282           Two         84.4         15.6         847         86.5         13.5         1066         82.1         17.9         1132           Three         74.3         25.7         529         77.6         22.4         667         71.3         28.7         645           Four more         42.3         57.7         888         48.0         52.0         637         43.5         55.5         54.5         54.1           No education         63.6         36.4         2592         68.2         31.8         2163         62.6         37.4         169           Scondary or above         93.7         6.3         940         92.3         7.7         1693         87.9         12.1         206           Religion         ***	None	86.2	13.8	729	91.4	8.6	901	85.7	14.3	831
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	One	88.8	11.2	909	92.1	7.9	1125	87.0	13.0	1282
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Two	84.4	15.6	847	86.5	13.5	1065	82.1	17.9	1132
Four         67.3         32.7         396         65.9         34.1         437         62.6         37.4         335           Five or more         42.3         57.7         888         48.0         52.0         637         43.5         56.5         451           Reducation         ****         ***         ***         **	Three	74.3	25.7	529	77.6	22.4	667	71.3	28.7	645
Five or more         42.3         57.7         888         48.0         52.0         637         43.5         56.5         451           Education         ***         ***         ***         ***         ***         ***         ***         ***         ***            No education         63.6         36.4         2592         68.2         31.8         2163         6.2.6         37.4         1662           Primary         85.9         14.1         766         87.7         12.3         977         80.6         19.4         1919           Secondary or above         93.7         6.3         940         92.3         7.7         1693         87.9         12.1         2006           Religion         *** <td>Four</td> <td>67.3</td> <td>32.7</td> <td>396</td> <td>65.9</td> <td>34.1</td> <td>437</td> <td>62.6</td> <td>37.4</td> <td>335</td>	Four	67.3	32.7	396	65.9	34.1	437	62.6	37.4	335
Education******************No education $63.6$ $63.6$ $2592$ $68.2$ $31.8$ $2163$ $62.6$ $37.4$ $1662$ Primary $85.9$ $14.1$ $766$ $87.7$ $12.3$ $977$ $80.6$ $19.4$ $919$ Secondary or above $93.7$ $6.3$ $940$ $92.3$ $7.7$ $1693$ $87.9$ $12.1$ $2096$ Religion***************************Hindu $77.3$ $22.7$ $3549$ $81.4$ $18.6$ $3989$ $79.2$ $20.8$ $3928$ Buddhist $666.5$ $33.5$ $363$ $76.4$ $23.6$ $418$ $79.8$ $20.2$ $243$ Muslim $444.4$ $55.6$ $268$ $73.4$ $266$ $57.3$ $322.7$ $155$ Place of residenceNs******************Urban $74.1$ $22.9$ $491$ $74.4$ $25.6$ $509$ $75.5$ $23.2$ $22.7$ Rural $74.2$ $22.8$ $3807$ $81.3$ $16.7$ $2145$ $79.8$ $20.2$ $222.7$ Yes $72.5$ $27.5$ $3020$ $78.3$ $21.7$ $268$ $75.4$ $24.6$ $2456$ Waral $74.4$ $25.6$ $888$ $84.0$ $16.0$ $1048$ $78.4$ $21.6$ $1051$ Model $74.4$ $25.6$ $888$ $84.0$ $16.0$ $1048$ <	Five or more	42.3	57.7	888	48.0	52.0	637	43.5	56.5	451
No education         63.6         36.4         2592         68.2         31.8         2163         62.6         37.4         1662           Primary         85.9         14.1         766         87.7         12.3         977         80.6         19.4         919           Secondary or above         93.7         6.3         940         92.3         7.7         1693         87.9         12.1         2096           Religion         ***         *	Education	**	*		**	*		**:	*	
Primary         85.9         14.1         766         87.7         12.3         977         80.6         19.4         919           Secondary or above         93.7         6.3         940         92.3         7.7         193         87.9         12.1         2096           Religion         #**          **          ***          ***          ***          200         87.9         12.1         2006           Buddhist         66.5         33.5         363         76.4         23.6         418         79.8         20.2         243           Muslim         44.4         55.6         268         73.4         26.6         272         56.0         44.0         351           Kirat/Christian         69.6         30.4         117         83.5         16.5         153         77.3         22.7         155           Pace of residence         Ns          ***          ***          ***          ***          ***          ***          ***          ***          ***          ***          ***	No education	63.6	36.4	2592	68.2	31.8	2163	62.6	37.4	1662
Secondary or above         93.7         6.3         940         92.3         7.7         1693         87.9         12.1         2096           Religion         ###         ##         ##         ###         ###         ###         ###         ###           Hindu         77.3         322.7         3549         81.4         18.6         3989         79.2         20.8         3928           Buddhist         66.5         33.5         363         76.4         23.6         418         79.8         20.2         243           Muslim         44.4         55.6         268         73.4         26.6         272         56.0         44.0         351           Pace of residence         Ns         ###	Primary	85.9	14.1	766	87.7	12.3	977	80.6	19.4	919
Religion         ***         ////         **         ///         //         ***         //	Secondary or above	93.7	6.3	940	92.3	7.7	1693	87.9	12.1	2096
Hindu       77.3       22.7       3549       81.4       18.6       3989       79.2       20.8       3928         Buddhist       66.5       33.5       363       76.4       23.6       418       79.8       20.2       243         Muslim       44.4       55.6       268       73.4       26.6       272       56.0       44.0       351         Kirat/Christian       69.6       30.4       117       83.5       16.5       153       77.3       22.7       155         Place of residence       Ns        ***        ***        ***        ***        ***        ***         ***        ***        ***        ***        ***        ***        ***        ***        ***         ***        ***         ***        ***         ***          ***          3.5       1.7       26.8       7.5       2.7.5       2.02       2.221       1.75       3.5       2.7.4	Religion	***			**			***		
Buddhist         66.5         33.5         363         76.4         23.6         418         79.8         20.2         243           Muslim         44.4         55.6         268         73.4         26.6         272         56.0         44.0         351           Kirat/Christian         69.6         30.4         117         83.5         16.5         153         77.3         22.7         155           Place of residence         Ns         ****         ***         ***         **	Hindu	77.3	22.7	3549	81.4	18.6	3989	79.2	20.8	3928
Muslim       44.4       55.6       268       73.4       26.6       272       56.0       44.0       351         Kirat/Christian       69.6       30.4       117       83.5       16.5       153       77.3       22.7       155         Place of residence       Ns       *** <t< td=""><td>Buddhist</td><td>66.5</td><td>33.5</td><td>363</td><td>76.4</td><td>23.6</td><td>418</td><td>79.8</td><td>20.2</td><td>243</td></t<>	Buddhist	66.5	33.5	363	76.4	23.6	418	79.8	20.2	243
Kirat/Christian         69.6         30.4         117         83.5         16.5         153         77.3         22.7         155           Place of residence         Ns         ***         ***         ***         ***         ***           Urban         74.1         25.9         491         74.4         25.6         509         76.5         23.5         2724           Rural         74.2         25.8         3807         81.3         18.7         4324         78.8         21.2         1952           Currently working         ***	Muslim	44.4	55.6	268	73.4	26.6	272	56.0	44.0	351
Place of residence         Ns         ***         ***         ***         ***           Urban         74.1         25.9         491         74.4         25.6         509         76.5         23.5         2724           Rural         74.2         25.8         3807         81.3         18.7         4324         78.8         21.2         1952           Currently working         *** <td>Kirat/Christian</td> <td>69.6</td> <td>30.4</td> <td>117</td> <td>83.5</td> <td>16.5</td> <td>153</td> <td>77.3</td> <td>22.7</td> <td>155</td>	Kirat/Christian	69.6	30.4	117	83.5	16.5	153	77.3	22.7	155
Urban       74.1       25.9       491       74.4       25.6       509       76.5       23.5       2724         Rural       74.2       25.8       3807       81.3       18.7       4324       78.8       21.2       1952         Currently working       *** </td <td>Place of residence</td> <td>Ns</td> <td></td> <td></td> <td>***</td> <td></td> <td></td> <td>***</td> <td></td> <td></td>	Place of residence	Ns			***			***		
Rural         74.2         25.8         3807         81.3         18.7         4324         78.8         21.2         1952           Currently working         ***         ***         ***         ***         ***         ***         ***           No         78.0         22.0         1277         83.3         16.7         2145         79.8         20.2         2221           Yes         72.5         27.5         3020         78.3         21.7         2688         75.4         24.6         2456           Wealth index         Ns         **         **         **         **         **         **         **           Poor         73.6         26.4         1974         78.9         21.1         1983         79.9         20.1         1763           Middle         74.4         25.6         888         84.0         16.0         1048         78.4         21.6         1051           Rich         74.8         25.2         1435         80.4         19.6         1803         74.6         25.4         1863           Moderate autonomy in household decision         ***         ***         ***         ***         ***         ***         <	Urban	74.1	25.9	491	74.4	25.6	509	76.5	23.5	2724
Currently working         ***         Data         22.2         12.3         30.0         78.3         21.1         1983         79.9         20.1         1763           Model         74.4         25.6         888         84.0         16.0         1048         78.4         21.6         1051           Rich         74.8         25.2         1435         80.4         19.6         1803         74.6         25.4         1863           Women's autonomy in household decision         ***         ***         ***         ***         ***         ***         ***         ***         ***         ***         ***         ***         *** <td>Rural</td> <td>74.2</td> <td>25.8</td> <td>3807</td> <td>81.3</td> <td>18.7</td> <td>4324</td> <td>78.8</td> <td>21.2</td> <td>1952</td>	Rural	74.2	25.8	3807	81.3	18.7	4324	78.8	21.2	1952
No         78.0         22.0         1277         83.3         16.7         2145         79.8         20.2         2221           Yes         72.5         27.5         3020         78.3         21.7         2688         75.4         24.6         2456           Wealth index         Ns         ***         ***         ***         20.1         1763           Middle         74.4         25.6         888         84.0         16.0         1048         78.4         21.6         1051           Middle         74.4         25.6         888         84.0         16.0         1048         78.4         21.6         1051           Women's autonomy in household decision         ***         ***         ***         ***          ***          1.61         1546           Moderate autonomy (involved in 1-2 issues)         70.2         29.8         948         81.9         18.1         1354         76.4         23.6         1404           High autonomy (involved in all 3 issues)         63.6         36.4         1493         73.3         26.7         1997         72.6         27.4         1728           Exposure to newspaper         ***         ***	Currently working	***			***		-	***		
Yes       72.5       27.5       3020       78.3       21.7       2688       75.4       24.6       2456         Wealth index       Ns       ***	No	78.0	22.0	1277	83.3	16.7	2145	79.8	20.2	2221
Wealth index         Ns         **         **         ***         ***           Poor         73.6         26.4         1974         78.9         21.1         1983         79.9         20.1         1763           Middle         74.4         25.6         888         84.0         16.0         1048         78.4         21.6         1051           Rich         74.8         25.2         1435         80.4         19.6         1803         74.6         25.4         1863           Women's autonomy in household decision         *** <td>Yes</td> <td>72.5</td> <td>27.5</td> <td>3020</td> <td>78.3</td> <td>21.7</td> <td>2688</td> <td>75.4</td> <td>24.6</td> <td>2456</td>	Yes	72.5	27.5	3020	78.3	21.7	2688	75.4	24.6	2456
Poor         73.6         26.4         1974         78.9         21.1         1983         79.9         20.1         1763           Middle         74.4         25.6         888         84.0         16.0         1048         78.4         21.6         1051           Rich         74.8         25.2         1435         80.4         19.6         1803         74.6         25.4         1863           Women's autonomy in household decision         ***	Wealth index	Ns			**			***		
Middle         74.4         25.6         888         84.0         16.0         1048         78.4         21.6         1051           Rich         74.8         25.2         1435         80.4         19.6         1803         74.6         25.4         1863           Women's autonomy in household decision         ***         <	Poor	73.6	26.4	1974	78.9	21.1	1983	79.9	20.1	1763
Rich         74.8         25.2         1435         80.4         19.6         1803         74.6         25.4         1863           Women's autonomy in household decision         *** <td>Middle</td> <td>74.4</td> <td>25.6</td> <td>888</td> <td>84.0</td> <td>16.0</td> <td>1048</td> <td>78.4</td> <td>21.6</td> <td>1051</td>	Middle	74.4	25.6	888	84.0	16.0	1048	78.4	21.6	1051
Women's autonomy in household decision         ***	Rich	74.8	25.2	1435	80.4	19.6	1803	74.6	25.4	1863
No autonomy       84.7       15.3       1856       89.1       10.9       1481       83.9       16.1       1546         Moderate autonomy (involved in 1-2 issues)       70.2       29.8       948       81.9       18.1       1354       76.4       23.6       1404         High autonomy (involved in all 3 issues)       63.6       36.4       1493       73.3       26.7       1997       72.6       27.4       1728         Exposure to newspaper       *** <td>Women's autonomy in household decision</td> <td>***</td> <td></td> <td></td> <td>***</td> <td></td> <td></td> <td>***</td> <td></td> <td></td>	Women's autonomy in household decision	***			***			***		
Moderate autonomy (involved in 1-2 issues)       70.2       29.8       948       81.9       18.1       1354       76.4       23.6       1404         High autonomy (involved in all 3 issues)       63.6       36.4       1493       73.3       26.7       1997       72.6       27.4       1728         Exposure to newspaper       ***       ***       ***       ***       ***       ***        ***        ***        ***        ***        ***        ***         ***         ***        ***         ***         ***         ***         *** </td <td>No autonomy</td> <td>84.7</td> <td>15.3</td> <td>1856</td> <td>89.1</td> <td>10.9</td> <td>1481</td> <td>83.9</td> <td>16.1</td> <td>1546</td>	No autonomy	84.7	15.3	1856	89.1	10.9	1481	83.9	16.1	1546
High autonomy (involved in all 3 issues)       63.6       36.4       1493       73.3       26.7       1997       72.6       27.4       1728         Exposure to newspaper       ***	Moderate autonomy (involved in 1-2 issues)	70.2	29.8	948	81.9	18.1	1354	76.4	23.6	1404
Exposure to newspaper       ***       ***       ***       ***       ***       ***       ***       ***         No exposure       68.9       31.1       3264       76.9       23.1       3547       75.6       24.4       3585         Low exposure       90.9       9.1       785       92.0       8.0       925       86.4       13.6       844         High exposure       89.9       10.1       245       86.8       13.2       361       73.5       26.5       249         Exposure to Radio       *** <td< td=""><td>High autonomy (involved in all 3 issues)</td><td>63.6</td><td>36.4</td><td>1493</td><td>73.3</td><td>26.7</td><td>1997</td><td>72.6</td><td>27.4</td><td>1728</td></td<>	High autonomy (involved in all 3 issues)	63.6	36.4	1493	73.3	26.7	1997	72.6	27.4	1728
Imposure to newpaper       68.9       31.1       3264       76.9       23.1       3547       75.6       24.4       3585         Low exposure       90.9       9.1       785       92.0       8.0       925       86.4       13.6       844         High exposure       89.9       10.1       245       86.8       13.2       361       73.5       26.5       249         Exposure to Radio       ***	Exposure to newspaper	***	2011	1.70	***	2017	1///	***	27.1	1720
Interposition       Interposition<	No exposure	68.9	31.1	3264	76.9	23.1	3547	75.6	24.4	3585
High exposure       89.9       10.1       245       86.8       13.2       361       73.5       26.5       249         Exposure to Radio       ***       ***       ***       ***       ***       26.8       21.0       73.5       26.5       249         No exposure       60.8       39.2       501       79.1       20.9       1075       73.2       26.8       2216         Low exposure       70.4       29.6       1466       78.0       22.0       1825       81.2       18.8       1300         High exposure       79.4       20.6       2330       83.8       16.2       1933       81.6       18.4       1161         Exposure to TV       ***       **       ***        ***        1461         Exposure to TV       ***       **        ***        1610         No exposure       68.6       31.4       1493       78.0       22.0       1588       73.8       26.2       1610         Low exposure       75.3       24.7       1556       80.0       20.0       1315       80.2       19.8       942         High exposure       70.2       20.8       1248	Low exposure	90.9	91	785	92.0	8.0	925	86.4	13.6	844
Ingle exposure       00.0       10.1       24.0       00.0       10.1       10.1       24.0       00.0       10.1       10.1       20.0       10.1<	High exposure	89.9	10.1	245	86.8	13.2	361	73.5	26.5	249
No exposure       60.8       39.2       501       79.1       20.9       1075       73.2       26.8       2216         Low exposure       70.4       29.6       1466       78.0       22.0       1825       81.2       18.8       1300         High exposure       79.4       20.6       2330       83.8       16.2       1933       81.6       18.4       1161         Exposure to TV       ***       ***         No exposure       68.6       31.4       1493       78.0       22.0       1588       73.8       26.2       1610         Low exposure       75.3       24.7       1556       80.0       20.0       1315       80.2       19.8       942         High exposure       70.2       20.8       1248       83.0       17.0       1020       70.1       20.0       2125	Exposure to Radio	***	10.1	275	***	13.2	501	***	20.5	277
Low exposure       70.4       29.6       1466       78.0       22.0       1825       81.2       18.8       1300         High exposure       79.4       20.6       2330       83.8       16.2       1933       81.6       18.4       1161         Exposure to TV       ***       **       **       **       **       **         No exposure       68.6       31.4       1493       78.0       22.0       1588       73.8       26.2       1610         Low exposure       75.3       24.7       1556       80.0       20.0       1315       80.2       19.8       942         High exposure       70.2       20.8       1248       83.0       17.0       1020       70.1       20.0       2135	No exposure	60.8	39.2	501	79.1	20.9	1075	73.2	26.8	2216
High exposure       79.4       20.6       2330       83.8       16.2       1933       81.6       18.4       1161         Exposure to TV       ***       **       **       **       **       **       **         No exposure       68.6       31.4       1493       78.0       22.0       1588       73.8       26.2       1610         Low exposure       75.3       24.7       1556       80.0       20.0       1315       80.2       19.8       942         High exposure       70.2       20.8       1248       83.0       17.0       1020       70.1       20.0       2125	Low exposure	70.4	29.6	1466	78.0	22.0	1825	81.2	18.8	1300
Exposure to TV     ***     20.0     20.0     20.0     10.2     1755     10.1     10.4     1101       Exposure to TV     ***     *     *     **     **     *     *     *	High exposure	79.4	29.6	2330	83.8	16.2	1933	81.6	18.4	1161
No exposure         68.6         31.4         1493         78.0         22.0         1588         73.8         26.2         1610           Low exposure         75.3         24.7         1556         80.0         20.0         1315         80.2         19.8         942           High exposure         70.2         20.8         1248         83.0         17.0         1020         70.1         20.0         2125	Exposure to TV	***	20.0	2350	**	10.2	1755	***	10.4	1101
Low exposure         75.3         24.7         1556         80.0         20.0         1315         80.2         19.8         942           High exposure         70.2         20.8         1248         83.0         17.0         1020         70.1         20.0         2135	No exposure	68.6	31.4	1493	78.0	22.0	1588	73.8	26.2	1610
Dom exposure         75.5         24.7         1550         60.0         20.0         1515         60.2         17.0         742           High exposure         70.2         20.8         1249         92.0         17.0         1020         70.1         20.0         2125	I ow exposure	75.3	24.7	1556	80.0	22.0	1315	80.2	19.8	942
	High exposure	79.2	20.8	1248	83.0	17.0	1929	79.1	20.9	2125

Total	74.1	25.9	4297	80.6	19.4	4833	77.5	22.5	4677
Note *** Significant in chi-square test at p<0.001; **=p<0.01 and *=p<0.05									

Table 2: Currently married women who were not using any Family Planning methods by their intention to use FP in future

#### **Multivariate Analysis:**

Multivariate analysis was done to find the predictors of intention to not use any FP methods in the future among women who were currently not using any FP. First of all, the unadjusted effect of time of the survey was calculated on intention not to use FP. In this regard, women were 31 percent (OR=0.69, CI=0.692-0.764) and 17 percent (OR=0.83, CI=0.757-0.919) less likely to intend not to use FP in the future in the survey of 2011 and 2016 respectively than in the survey of 2006. After adjusting all other variables, the time of the survey remained a significant predictor of intention not to use FP as women in 2011 and 2016 were 45 percent and 37 percent respectively less likely to intend for not using FP. Hence, the likelihood of intending not to use FP increased after controlling the other socio-demographic variables.

Overall, the significant socio-demographic predictors of intention to not use FP methods were the age of women, age at marriage, education of women, religion, residence, and wealth index. Women aged 25-34 years and 35 or above years were 2 and 32 times respectively more likely not to intend to use FP in the future than women aged less than 25 years. Regarding age at marriage, women married at an age less than 15 years (aOR=1.65, CI=1.34-2.04) and 15-17 years (aOR=1.37, CI=1.19-1.58) were significantly more likely to have the intention to not use FP in the future than women married at age 21 or above. Education was also a significant predictor of intention to not use FP. Uneducated women and women with only primary education were 83 percent (aOR=1.84, CI=1.52-2.22) and 17 percent (aOR=1.17, CI=0.97-1.43) respectively more likely not to intend to use FP than women with secondary or above education, and the relation was significant among uneducated women.

Similarly, Muslim women were three times (aOR=3.28, CI=2.66-4.02) more likely to intend not to use contraceptives than Hindu women. Likewise, women residing in rural areas were significantly more likely (aOR=1.15, CI=1.02-1.34) to not intend to use FP than urban women. Similarly, working women were less likely to intend not to use FP than non-working women. Wealth is also a significant predictor for intention to not use FP in which richer women were 41 percent (aOR=1.4, CI=1.2-1.65) more likely to have the intention not to use the FP method than poorer women. Likewise, women with no autonomy and moderate autonomy were more likely not to use any FP methods than women with high autonomy. Similarly, although not significant, women with no exposure to mass media like newspapers, radio, and television were more likely to intend not to use FP than women having high exposure to these mass media.

		Model I		Model II			
Selected predictors	OD	959	% CI	- OD	95% CI		
	OR	Lower	Upper	aOK	Lower	Upper	
Year							
2006 (ref.)	1.00			1.00			
2011	.692***	.627	.764	.552***	.476	.641	
2016	.834***	.757	.919	.630***	.524	.757	
Age group							
Less than 25 years (ref.)				1.00			
25-34				2.465***	2.070	2.937	
35 or above				32.10***	26.802	38.447	
Age at marriage/cohabitation							
Less than 15				1.650***	1.336	2.037	
15-17				1.372***	1.191	1.580	
18-20				.974	.831	1.141	
21 and above (ref.)				1.00			
Education							
No education				1.837***	1.519	2.221	
Primary				1.175	.966	1.429	
Secondary or above (ref.)				1.00			
Religion							
Hindu (ref.)				1.00			
Buddhist				1.151	.934	1.419	
Muslim				3.275***	2.663	4.028	
Kirat/Christian				1.061	.771	1.460	
Place of residence							
Urban (ref.)				1.00			
Rural				1.151*	1.021	1.344	
Currently working							
No (ref.)				1.00			
Yes				.890	.787	1.007	
Wealth index							
Poor (ref.)				1.00			
Middle				1.138	.976	1.327	
Rich				1.408***	1.201	1.651	

Women's autonomy in household decision						
No autonomy			1.032	.894	1.191	
Moderate autonomy (involved in 1-2 issues)			1.109	.973	1.263	
High autonomy (involved in all 3 issues) (ref.)			1.00			
Exposure to newspaper						
No exposure			1.058	.802	1.396	
Low exposure			.795	.602	1.050	
High exposure (ref.)			1.00			
Exposure to Radio						
No exposure			1.060	.910	1.234	
Low exposure			1.055	.924	1.204	
High exposure (ref.)			1.00			
Exposure to TV						
No exposure			1.044	.890	1.226	
Low exposure			.919	.787	1.073	
High exposure (ref.)			1.00			
Constant	.349***		.031***			
Cox & Snell R Square	.004		.306			
-2 Log likelihood	146	55.0	8829.89			

Note \* significant at p<0.05, \*\* P<0.01, \*\*\*P<0.001, ref= reference category

 Table 3: Adjusted Odd Ratio (OR) and 95% Confidence Interval (CI) for intention to not use FP methods among women currently not using any FP methods

#### **Discussion:**

This study investigated the trend of intention not to use contraceptives among married women in Nepal. The finding showed that more than a fourth (26%) women who were currently not using any FP methods had no intention to use FP in 2006, which decreased to 19% in 2011 and slightly increased to 23% in 2016. The bivariate analysis showed that variables such as survey year, age group of women, age at first marriage, number of children ever born, education of women, religion, place of residence, currently working status, wealth status, women's autonomy in the household decision, and exposure to mass media (Newspaper, radio, and TV) are important determinants of intention to nonuse of contraception in future. The multivariate analysis supported many of the findings of bivariate analysis. In the multivariate analysis, survey year, age group, age at marriage, education, religion, place of residence, and wealth status were statistically significant influences on intention to nonuse contraception.

Our study showed that the age group of women was also associated with using contraception. The increase in non-intention to use among older women may be related to the fact that they had reduced their coital frequency, and some were near menopause (Tiruneh et al., 2015). This finding was consistent with studies conducted in Malawi (Palamuleni 2013) and Ethiopia (Tiruneh et al., 2015). The lower intention to use contraception among women who married early may be due to a lack of access to information and related services (Raj et al., 2009).

Similarly, age at first marriage/cohabitation was a significant predictor for non-intention to use contraception. Marriage in early ages/child marriages frequently occurs in Nepal (Adhikari, 2018). Previous studies suggested that women's decisions to have children and use contraceptive services mainly depend on their husbands (Adhikari et al., 2019, Alemu 2008).

The education of women was one of the critical factors associated with to use of contraceptives. Education usually improves the knowledge of women regarding contraceptive use; thus, it was positively associated with contraceptive intention. Illiteracy was negatively associated with contraception intention. This result was consistently reported in previous studies (Alriyami et al., 2004; Tiruneh et al., 2015, Meskele & Mekonnen (2014)). In contrast to our study in the USA (Esber 2014) study in which age and education had no significant association with the intention of women to use FP in the future.

Similarly, in regards to religion, like our findings, the study was conducted in Ethiopia (Tiruneh 2015), in which Muslim women were less likely to intend to use FP methods than their counterparts. It could be due to the norms and principles of the Muslim religion, which encourages large families (Manjeera 2013; Najafi-Sharjabad et al. 2013).

Likewise, our study showed that rural women were more likely not to intend to use contraception. The finding is similar to the study in Ethiopia that rural women were less likely to have the intention to use contraception. Similarly, our study found that richer women were more likely not to intend to use contraception in the future. This finding is the opposite of the findings of the study conducted in Ethiopia (Tiruneh 2015).

# **Conclusion:**

There was a slight fluctuation in the trend of nonuse intention of contraceptives among women currently not using any FP methods from 2006 to 2016. Time of the survey, age of women, age at marriage, women's education, religion, place of residence, and wealth index were significant predictors of intention not to use FP methods.

Although small, there was an increment in the proportion of women not intending to use FP in 2016 than in 2011. So, this finding highlights the necessity of different program modalities for family planning interventions in the country. Similarly, this study also depicts that FP interventions should emphasize mainly the uneducated women residing in the rural area and belonging to the Muslim religion to increase contraceptive use.

## **Abbreviations:**

- CI : Confidence Interval
- EA : Enumeration Areas
- FP : Family Planning
- MMR : Maternal Mortality Ratio
- MoHP: Ministry of Health and Population

- NDHS : Nepal Demographic and Health Survey
- OR : Odds Ratio
- PSU : Population Sampling Unit
- SPSS : Statistical Package for Social Sciences
- WHO : World Health Organization

### **Declaration:**

#### Ethics approval and consent to participate:

This study used secondary data. The survey protocol was reviewed and approved by the Nepal Health Research Council (NHRC) and the ICF Institutional Review Board.

## **Consent for publication:**

Not applicable.

## Availability of data and materials:

The datasets generated and/or analyzed during the current study are available in the [DHS PROGRAM] repository, [https://dhsprogram.com/data/Using-DataSets-for-Analysis.cfm]

#### **Competing interests:**

The authors declare that they have no competing interests.

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Not applicable.

#### Authors' contributions

RA and AW analyzed, interpreted the data, and drafted the manuscript. Both authors read and approved the final version of the manuscript.

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