



WESTERN NIGERIA JOURNAL OF MEDICAL SCIENCES (WNJMS)

**FACTORS ASSOCIATED WITH DIFFERENTIALS IN MODERN CONTRACEPTIVE USE
AMONG CURRENTLY MARRIED WOMEN IN NIGERIA: MUSLIM NORTH VERSUS
MUSLIM SOUTH**

FACTORS ASSOCIATED WITH DIFFERENTIALS IN MODERN CONTRACEPTIVE USE AMONG CURRENTLY MARRIED WOMEN IN NIGERIA: MUSLIM NORTH VERSUS MUSLIM SOUTH

Alabi MA¹, Fasasi MI², Ihimekpen G³, Hassan TA⁴, Oyinloye TP⁵, Adedibu DO⁴

¹Population Council, Abuja, Nigeria

²Department of Nursing, Fountain University Osogbo, Nigeria

³Medical and Dental Council of Nigeria, Victoria Island, Lagos, Nigeria

⁴College of Health Sciences, Obafemi Awolowo University, Ile-Ife, Nigeria

⁵College of Medicine and Health Sciences, Afe Babalola University, Ado Ekiti, Nigeria

Correspondence to: Alabi MA. Population Council, Abuja, Nigeria. Telephone: +234-806-536-74-21

E-mail: ayoalabi85@gmail.com

ABSTRACT

Introduction

Despite the federal government's modern contraceptive prevalence (mCPR) target of 27% by 2020, mCPR remained abysmally low. Recent data from the most recent Multiple Indicator Cluster Survey revealed mCPR of 18.3%, although with significant differentials along region and religious affiliations. This study examined factors associated with modern contraceptive use among currently married Muslim women in Northern and Southern regions of Nigeria

Methods

The study analysed secondary data pooled from the three most recent successive Nigeria Demographic and Health Survey data sets (2008, 2013, and 2018). Analysis was restricted to currently married Muslim women aged 20–40 years, who have given birth to at least a child and have at least two living children as at the time of the survey and were not currently pregnant. The weighted sample size for the study was 22,653 women: (2018=8,605; 2013=7,830 and 2008=6,217). The outcome variable was modern contraceptive use, defined as whether a woman is using any modern contraceptives coded as 1, or not, coded 0. Binary logistic regression was performed.

Results

Significant regional differentials in mCPR persist. At the multivariate level, education, wealth index, occupation, autonomy, joint decision on contraceptive use and knowledge of methods were significant predictors of mCPR among northern Muslim women. Among southern Muslim women, age, autonomy, joint decision on contraceptive use and knowledge of methods were factors that significantly predicted mCPR.

Conclusion

Within homogenous religion, regional differentials accounts for differences in modern contraceptive use in Nigeria, thereby providing useful information for programmes and policy.

Keywords: Modern Contraceptives, Religion, Region, Currently Married, Women, Nigeria

INTRODUCTION

The population of Nigeria is almost evenly distributed according to religion, with Islam religion predominantly practiced in the North, while Christianity is predominantly practiced in the South. Contraceptive use among women in Nigeria follows regional, religious, and socio-economic differentials.¹ The use of contraceptives has been particularly influenced by religious beliefs and practices. Substantial amount of literature have reported lower contraceptive

Date Submitted: 12 October, 2022

Date Accepted: 14 November, 2022

use among women affiliated to Islam religion relative to their Christian counterpart.²⁻⁵ However, even among Islam religion, regional variation is an important factor in discourse regarding use of contraceptives.

For instance, in a systematic review of factors influencing sexual and reproductive health (SRH) of Muslim women, the authors found SRH knowledge among Muslim women to be poor.² The women also exhibited negative attitude which influenced their access and use of SRH services. Factors that were associated with access and use of SRH services including contraceptives were: poor knowledge, misconception about contraception, negative attitude towards contraceptives, religious and cultural views, fear of stigmatization and opposition from partner and family members among others.

Likewise, substantial number of studies have linked contraceptive use with women's socio-economic attributes including: autonomy, maternal level of education, place of residence, religion, work status and number of children among others.⁶⁻⁹ Some studies found factors including age, education, employment status, number of living children among others to predict modern contraceptive use among women.^{5,10-15}

Also, most of these studies reported that older age groups especially the late 20s and 30s were associated with increased likelihood of modern contraceptive use, while others have reported education and employment status to be positively associated with modern contraceptive use.^{5,10,11,14} Similarly, some authors while assessing factors associated with unmet fertility desire and perception about ideal family size among women from Bangladesh using evidence from Demographic and Health survey, found the fertility outcome of the women was higher than their desired level, while several socio-economic factors were found to influence unmet fertility desires including place of residence, religion, employment status, experience of child mortality, wealth index, maternal age, education and partner's education.¹⁶

More so, a study which assessed differentials in contraceptive use among women from the North and South, found substantial differentials in modern contraceptive prevalence according to region.³ The contraceptive prevalence rate was more than three times higher among women in the southern region relative to their Northern counterpart. The authors found socio-demographic factors, religion and exposure to family planning messages were significant predictors of contraceptive prevalence rate

Several studies on contraceptives especially in Nigeria have included religion as one of its explanatory variables. However, there seems to be scarcity of studies that have focused on a particular religion, while examining regional variation and creating a model for religion, putting into consideration regional variation. Also, a study on contraceptive use according to religion and ethnicity among women of reproductive age found that current use of contraceptives was lower among women affiliated to Islam religion relative to their Christian counterpart.⁴ Even after controlling for other socio-demographic attributes, Muslim women demonstrated lower current contraceptive use.

However, there is scarcity of studies that have exclusively examined differentials in modern contraceptive use among Muslim women, putting into consideration regional differentials. This knowledge gap informed the conduct of this study. Hence, building a model with consideration to regional variation, this study examined modern contraceptive use among Muslim women in the Northern and Southern regions of Nigeria and the factors associated with differentials in modern contraceptive use between them.

METHODS

Data Source, population, sampling and sample size

The study involved analysis of secondary data pooled from three successive Nigeria Demographic and Health Surveys (NDHS) Dataset (2008, 2013 and 2018).¹ Specifically, the individual recoded dataset was analysed.

The NDHS is a nationally representative survey of women of reproductive age from 15-49 years who had given birth to at least a child five years preceding each survey and men aged 15-59 years. Detailed sampling technique used for the three surveys have been reported in the final report. Data for the study was collected using a questionnaire. The 2018 survey included a biomarker questionnaire. Information obtained using the questionnaire included birth history and child mortality, knowledge, use and source of family planning methods, antenatal, delivery and postnatal care among others. For this study, analysis was restricted to currently married women living with their partners, with at least two living children, not currently pregnant and in the age group 20-40 years. The choice of this age range is because of the assumption that contraceptive use among this age group should be relatively high when compared with adolescent mothers and older women above 40 years who are most likely to be approaching menopause. The weighted sample size was 26,616 women.

Measurement of Variables

The outcome variable for this study is modern contraceptive use. The original variable used asked a question regarding the type of contraceptive a woman was currently using. Women who reported using a modern method were categorized as 1 while those who were not were categorized as 0. Explanatory variables used included: age, age at first birth, place of residence (rural or urban), region of residence, educational attainment, employment status (working or not working), household wealth (based on NDHS classification), antenatal attendance, place of delivery as well as autonomy: measured using four variables which asked questions on person who decides on respondents healthcare need, person who decides how respondents earnings are spent, person who usually decides on large household purchase and person who usually decides on visit to family. Media exposure was measured from a composite of three variables namely: frequency of listening to radio, television and reading newspaper. It

was then dichotomised as either exposed to at least one media source, coded as 1, and not exposed to any media source, coded as 0. The explanatory variables used in this study were based on their significant association with the outcome variable at the bivariate analysis ($p < 0.001$) and based on findings from previous study.¹⁷

Data Analysis

Data analysis involved performing univariate, bivariate and multivariate analyses. The univariate level involved frequency count and percentages. The bivariate level involved the use of Chi-square test to check for association between variables. The multivariate level involved performing binary logistic regression. The use of binary regression was necessitated by the fact that the outcome variable was dichotomized, coded as 1 for use of modern contraceptive use and 0 for non-usage. The results were presented as adjusted odds ratio (AOR) and confidence intervals at 95% level of significance. Due to the complex nature of the DHS survey, the Stata “svy” command was applied at the bivariate and multivariate level.

Ethics

The protocol used for the survey was reviewed and approved by the National Health Research Ethics Committee of Nigeria (NHREC) and the ICF Institutional Review Board. All the questionnaires were finalized in English and translated into the three major languages of Hausa, Yoruba and Igbo.

RESULTS

Socio-demographics

Table 1 presents the distribution of study participants according to socio-demographic characteristics. Women in age group 20-30 years constituted nearly two thirds 62% of the total sample. Exactly half were in the low fertility regime (60%). Nearly three quarters (72.1%) of the study participants had their first birth as adolescents, followed by (27.3%) in the age group 20-29 years. Majority of the study participants, 69.4%,

had no formal education, while 13% had secondary education and 3% had tertiary education. More than half (58%) of the women were from the poor household and about three quarters (71%) resided in rural areas. Majority of the women were from the Northern region (88.8%), working (79.3%) and had between 1-4 children (64%).

Table 1: Socio-demographics Characteristics

Socio-demographic characteristics	Frequency N=25, 616	%
Age groups		
20-30	15798	61.7
31-40	9818	38.3
Fertility regime		
Low (1-4 children)	12,850	50.2
High (5+)	12,766	49.8
Age at first birth		
< 20 years	18,469	72.1
20-29 years	6,988	27.3
30+ years	159	0.6
Education		
No formal education	17,781	69.4
Primary	3,838	15.0
Secondary	3,273	12.8
Tertiary	723	2.8
Wealth quintile		
Poorest	8,140	31.8
Poorer	6,669	26.0
Middle	4,627	18.1
Rich	3,635	14.1
Richest	2,545	10.0
Residence		
Urban	7,393	28.9
Rural	18,223	71.1
Region		
North	22,745	88.8
South	2,871	11.2
Work status		
Not working	5,305	20.7
Working	20,311	79.3
Number of living children		
1-4	16,441	64.0
5-8	8,704	34.0
At least 8	470	2.0
Media exposure		
No	12,495	48.8
Yes	13,121	51.2
Autonomy		
No autonomy	16,442	64.2
Has autonomy	9,174	35.8
Decision on contraceptives		
Joint decision	1,198	4.7
Individual decision	24,418	95.3

Nearly two thirds (64%) had autonomy, while only (5%) jointly decides contraceptive use with their partner (Table 1).

Bivariate Result

The trend in modern contraceptive use among the women is presented in table 2. The result revealed that modern contraceptive use among Muslim women in the North and Muslim women in the South was (3.5% vs. 19.2%) in 2008, in the year 2013, (2.5% vs. 23.6%) and in 2018 (6.5% vs. 25.3%). The regional differentials were statistically significant ($p < 0.05$). For the total sample (Muslim north and south combined), modern contraceptive use ranged from 6% in 2008, to 5% in 2013 and 9% in 2018. Also, the pattern of association between socio-demographic characteristics and modern contraceptive use among the women was quite different for the ten-year (2008-2018) period (Table 3)

Among Muslim women from the north, age, fertility regime, age at first birth, education, household wealth, place of residence, work status, exposure to mass media, autonomy and knowledge of contraceptives were all significantly associated with current use of modern contraceptives. The use of modern contraceptives was higher among women in the younger age group 20-29 years, low fertility regime, age at first birth less than 20 years, women from the rich household, working women as well as those exposed to mass media and those who had knowledge of modern contraceptives. On the other hand, among Muslim women from the South, age, age at first birth, education, household wealth, place of residence, work status, number of living children, exposure to mass media and knowledge of contraceptives were all significantly associated with modern contraceptive use. The use of modern contraceptives was higher among women in the older age group, those whose age at first birth was between 20-29 years, those that had secondary education as well as those from rich household, residing in urban area, working, with between 1-4 living children, exposed to mass media and had knowledge of modern contraceptives (Table 3).

Table 2: Trends in modern contraceptive use

Socio-demographic characteristics	Modern contraceptive use by region			
	2008	2013	2018	Total
Region	n (%)	n (%)	n (%)	n (%)
Northern Islam	206(3.5)	202(2.5)	587(6.7)	995(4.4)
Southern Islam	189(19.2)	243(26.3)	243(25.3)	675(23.5)
Both	395(5.7)	445(4.9)	830(8.6)	1670(6.5)
<i>Chi square (p-value)</i>	<i>156.47 (0.001)</i>	<i>362.06 (0.001)</i>	<i>137.56 (0.001)</i>	<i>545.09(0.001)</i>

Table 3: Socio-demographics Characteristics and modern contraceptive use

Socio-demographic characteristics	Modern contraceptive use by socio-demographic characteristics					
	Northern Islam n(%)	Chi-Square Test (χ^2 /p-value)	Southern Islam n(%)	Chi-Square Test (χ^2 /p-value)	Total (N=25,616) n(%)	Chi-Square Test (χ^2 /p-value)
Age groups						
20 – 30 years	574(57.7)	6.87	263(38.9)	30.27	837(50.1)	55.25
31 – 40 years	421(42.3)	0.009	412(61.1)	0.001	833(49.9)	p=0.001
Fertility regime						
Low (1-4 children)	509(51.2)	3.83	464(68.8)	1.71	973(58.3)	29.30
High (5+)	486(48.8)	0.051	211(31.2)	0.191	697(41.7)	p=0.001
Age at first birth						
< 20 years	655(65.8)	24.65	217(32.2)	7.29	872(52.2)	105.42
20-29 years	334(33.6)	0.001	437(64.7)	0.001	771(46.2)	p=0.001
30+ years	6(0.6)		21(3.1)		27(1.6)	
Education						
No formal education	396(39.9)	261.27	62(9.2)	8.45	459(27.5)	387.16
Primary	201(20.2)	0.001	195(28.9)	0.001	396(23.7)	p=0.001
Secondary	275(27.6)		347(51.4)		622(37.3)	
Tertiary	123(12.3)		71(10.5)		193(11.6)	
Wealth quintile						
Poorest	112(11.3)	198.86	17(2.6)	13.71	129(7.8)	334.22
Poorer	120(12.0)	0.001	28(4.0)	0.001	147(8.8)	p=0.001
Middle	219(22.0)		58(8.6)		277(16.5)	
Rich	264(26.5)		204(30.2)		467(28.0)	
Richest	281(28.2)		369(54.6)		650(38.9)	
Residence						
Urban	550(55.2)	191.42	531(78.7)	21.82	1081(64.7)	386.43
Rural	445(44.8)	0.001	144(21.3)	0.001	589(35.3)	p=0.001
Work status						
Not working	94(9.5)	56.31	24(3.6)	5.55	118(7.1)	112.01
Working	901(90.5)	0.001	651(96.4)	0.019	1552(92.9)	p=0.001
Number of living children						
1-4	596(59.9)	1.08	504(74.6)	5.16	1100(65.9)	1.91
5-8	379(38.1)	0.338	170(25.2)	0.007	549(32.9)	p=0.151
At least 8	20(2.0)		1(0.2)		21(1.2)	
Exposure to mass media						
No	301(30.3)	107.91	99(14.7)	7.90	401(24.0)	220.25
Yes	694(69.7)	0.001	576(85.3)	0.005	1270(76.0)	p=0.001
Autonomy						
No autonomy	507(50.9)	77.18	228(33.8)	0.10	735(44.0)	159.24
Has autonomy	488(49.1)	0.001	447(66.2)	0.757	935(56.0)	p=0.001

Overall, for the ten-year period, 2008-2018, higher proportion of women who were using modern contraceptives were in the low fertility regime, had age at first birth less than 20 years, had secondary education and were from rich households as well as resident in the urban areas, working, had between 1-4 living children, exposed to mass media, had autonomy, and had knowledge of modern contraceptives (Table 3).

Multivariate Analysis Results

Table 4 presents the result of the binary logistic regression. Among Muslim women from the north, factors that significantly predicted modern contraceptive use were education, household wealth, work status, autonomy, and decision on contraceptive use. Increasing level of education and household wealth were associated with higher odds of using modern contraceptives.

Table 4: Predictors of modern contraceptive use among women

Outcome: Modern contraceptive use.	Northern Islam (N=22,745)		Southern Islam (N=2,871)		Total (N=25,616)	
Variables	OR	95% C.I	OR	95% C.I	OR	95% C.I
Age groups						
20 – 30 years	1.000		1.00		1.000	
31 – 40 years	1.017	0.82-1.28	1.281	0.93-1.76	1.099	0.90-1.34
Age at first birth						
< 20 years	1.000		1.000		1.000	
20-29 years	0.993	0.77-1.29	1.434*	1.05-1.95	1.206	0.98-1.48
30+ years	1.424	0.40-5.04	1.708	0.67-4.37	1.475	0.58-3.73
Residence						
Urban	1.000		1.000		1.000	
Rural	0.927	0.68-1.26	0.874	0.61-1.25	0.892	0.71-1.13
Education						
No formal education	1.000		1.000		1.000	
Primary	1.435*	1.11-1.84	1.191	0.74-1.92	1.518**	1.24-1.86
Secondary	1.482*	1.07-2.04	1.224	0.79-1.89	1.610**	1.27-2.04
Tertiary	1.717*	1.01-2.91	0.821	0.44-1.54	1.405	0.93-2.11
Wealth quintile						
Poorest	1.000		1.000		1.000	
Poorer	1.212	0.86-1.71	0.764	0.32-1.79	1.177	0.88-1.57
Middle	2.279**	1.58-3.28	0.779	0.33-1.82	2.034**	1.50-2.76
Rich	3.550**	2.31-5.45	1.349	0.58-3.13	3.159**	2.23-4.48
Richest	5.965**	3.60-9.89	1.808	0.76-4.28	4.708**	3.14-7.06
Media exposure						
No	1.000		1.000		1.000	
Yes	1.012	0.80-1.28	1.399	0.98-1.99	1.150	0.95-1.39
Work status						
Not working	1.000		1.000		1.000	
Working	2.140**	1.58-2.89	1.801	0.96-3.36	2.202**	1.70-2.85
Autonomy						
No autonomy	1.000		1.000		1.000	
Has autonomy	1.428***	1.15-1.77	0.681*	0.50-0.93	1.132	0.94-1.36
Decision on contraceptives						
Individual	1.000		1.000		1.000	
Joint	170.81**	121.5-240	14.104**	10.1-19.6	51.817**	40.2-66.8
Fertility regime						
Low (1-4 children)	1.000		1.000		1.000	
High (5+)	1.060	0.80-1.41	1.252	0.75-2.09	1.130	0.88-1.45
Number of living children						
1-4	1.000		1.000		1.000	
At least 5	1.224	0.91-1.64	1.403	0.81-2.43	1.193	0.93-1.53

*=statistically significant at 0.05, **=statistically significant at 0.001

Women who were working and had autonomy were more likely to use modern contraceptive relative to those not working and lack autonomy. Muslim women who jointly decide on contraceptive use with their partners were more likely to use modern contraceptives relative to those who individually decide on contraceptive use.

On the other hand, among Muslim women from the South, only age at first birth, autonomy and decision on contraceptive use significantly predicted use of modern contraceptive use. Women whose age at first birth was between the age range 20-29 years and jointly decides contraceptive use with partner demonstrated higher odds of using modern contraceptives relative to those in the younger age group and those who decides on contraceptive use individually. Unlike Muslim women from the North, Muslim women from the South who had autonomy were less likely to use modern contraceptive when compared with those who lack autonomy (Table 4).

DISCUSSION

The study assessed factors associated with differentials in modern contraceptive use among Muslim women in the North and their Southern counterparts. Muslim women in the North and South differ conspicuously in socio-economic status. These differentials in socio-economic status, no doubt reflected in the differences in modern contraceptive use observed between the two regions. For instance, the proportion of women with no formal education, no autonomy, residence in rural area and belonging to the poor household status were higher in the north relative to their southern counterpart. All these factors have been well documented in previous studies to be significantly associated with modern contraceptive use among women.⁵⁻⁸ Throughout the ten-year period considered (2008-2018), modern contraceptive use was higher among Muslim

women from the south relative to the North despite the slight decline observed among women in the south in the year 2018. Regardless of the study period, modern contraceptive use was more than five times higher among Muslim women from the South than in the North (23.5% vs. 4.4%).

At the multivariate level, factors explaining modern contraceptive use differ substantially between the regions. Among Muslim women from the North, education, household wealth, work status, autonomy and decision on contraceptive use significantly predicted modern contraceptive use. On the other hand, among Muslim women from the South, age at first birth, autonomy and decision on contraceptive use were the only factors that significantly predicted modern contraceptive use. In addition to the poor socioeconomic status of the Muslim women from the north, a recent study also associated low modern contraceptive use among Muslim women to other factors which included lack of basic sexual and reproductive health knowledge, misconceptions and negative attitude, religious and cultural beliefs and husband opposition to the use of contraceptives.² Another associated factor is poor discussion on sexual and reproductive health.^{18,19}

This study provides important findings with implication for policy and programmes for family planning and contraceptive use in Nigeria, particularly if the country will achieve its modern contraceptive prevalence rate target. Addressing the huge socioeconomic gap, especially girl's education in the north must be pursued holistically. Overall, interventions must seek to correct and address the huge socio-economic imbalance between the North and South as this will go a long way in bridging the identified gap. The substantial contribution of decision-making power on contraceptive use among Muslim women in the North gives a direction for intervention and indicates that health communication

strategies must put into consideration regional differentials while addressing modern contraceptive use among Muslim women from the North and their Southern counterparts.

CONCLUSION

Significant differentials in the use of modern contraceptive exist between Muslim women from the North and their Southern counterparts. Also, the observed differentials were mainly attributed to the socio-economic inequalities existing in the two regions. Findings from this study provides important information for planners, government and other relevant stakeholders working towards increasing modern contraceptive prevalence rate and eliminating the huge regional differentials in modern contraceptive use and provides direction for intervention.

REFERENCES

1. National Population Commission (NPC) [Nigeria] and ICF. 2019. Nigeria Demographic and Health Survey 2018. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF. 2019 <https://www.dhsprogram.com/pubs/pdf/FR359/FR359.pdf> (Accessed: November 5, 2022)
2. Alomair N, Alageel S, Davies N, Bailey JV. Alomair N, Alageel S, et al. Factors influencing sexual and reproductive health of Muslim women: a systematic review. *Reproductive health*. 2020; 17(1):1–5
3. Babalola S, Oyenubi O. Factors explaining the North–South differentials in contraceptive use in Nigeria: A nonlinear decomposition analysis. *Demographic Research*. 2018; 1(38):287–308
4. Obasohan PE. Religion, Ethnicity and Contraceptive Use among Reproductive age Women in Nigeria. *Int J MCH AIDS*. 2015; 3(1):63–73
5. Al Sheeha M. Awareness and use of contraceptives among saudi women attending primary care centers in Al-qassim, Saudi Arabia. *Int J Health Sci (Qassim)*. 2010; 4(1):11–21
6. Bamiwuye SO, De Wet N, Adedini SA. Linkages between autonomy, poverty and contraceptive use in two sub-Saharan African countries. *APS*. 2013; 27(2):164
7. Bogale B, Wondafrash M, Tilahun T, Girma E. Married women’s decision making power on modern contraceptive use in urban and rural southern Ethiopia. *BMC Public Health*. 2011; 11(1):342
8. Stephenson R, Baschieri A, Clements S, Hennink M, Madise N. Contextual Influences on Modern Contraceptive Use in Sub-Saharan Africa. *Am J Public Health*. 2007; 97(7):1233–40
9. Stephenson R, Andy B, Delphin T. Community and Health Facility Influences on Contraceptive Method Choice in the Eastern Cape, South Africa. *International Family Planning Perspectives*. 2008; 34(2):62–70
10. Ali AAA, Okud A. Factors affecting unmet need for family planning in Eastern Sudan. *BMC Public Health*. 2013; 13(1):102
11. Hayat H, Khan PS, Imtiyaz B, Hayat G, Hayat R. Knowledge, Attitude and Practice of Contraception in Rural Kashmir. *J Obstet Gynecol India*. 2013; 63(6):410–4
12. Motlaq ME, Eslami M, Yazdanpanah M, Nakhaee N. Contraceptive use and unmet need for family planning in Iran. *International Journal of Gynecology & Obstetrics*. 2013; 121(2):157–61
13. Arbab AA, Bener A, Abdulmalik M. Prevalence, awareness and determinants of contraceptive use in

- Qatari women. *East Mediterr Health J.* 2011; 17(1):11-8
14. Bal MD, Şahin NH. The usage and discontinuation of contraceptive methods. *Arch Gynecol Obstet.* 2011; 284(1):151–5
15. Altay MM, Haberal A. Factors affecting poor contraceptive awareness of Turkish adolescent pregnant women followed up in a tertiary maternity hospital. *Turkiye Klinikleri Journal of Medical Sciences.* 2009; 29(6):1556–62
16. Akram R, Sarker AR, Sheikh N, Ali N, Mozumder M, Sultana M. Factors associated with unmet fertility desire and perceptions of ideal family size among women in Bangladesh: Insights from a nationwide Demographic and Health Survey. *PLoS ONE.* 2020; 15(5):e0233634
17. Nketiah-Amponsah E, Ampaw S, Twumasi Baffour P. Socioeconomic determinants of use and choice of modern contraceptive methods in Ghana. *Trop Med Health.* 2022; 50(1):33
18. Shirpak KR, Chinichian M, Maticka-Tyndale E, Ardebili HE, Pourreza A, Ramenzankhani A. A Qualitative Assessment of the Sex Education Needs of Married Iranian Women. *Sexuality & Culture.* 2008; 12(3):133–50
19. DeJong J, Jawad R, Mortagy I, Shepard B. The Sexual and Reproductive Health of Young People in the Arab Countries and Iran. *Reproductive Health Matters.* 2005; 13(25):49–59