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RESEARCH NOTE

Modern Contraception in Pakistan: A Cross-Sectional Study

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Abstract

Despite numerous family planning awareness campaigns, modern contraceptive prevalence remains low in Pakistan. This reality stimulates risky sexual behaviours and compromises reproductive rights. Our study has explored factors associated with modern contraceptive use among sexually active married women in Pakistan.

This study used data from the 2017-2018 Pakistan Demographic and Health Survey (PDHS). A total of 10,282 married women who were sexually active during the last 3 months prior to the survey were included in this study.

The prevalence of modern contraceptive use among sexually active married women in Pakistan equals to 27.7%. Furthermore, the results indicate that age, region, education level, wealth index, fieldworker visit, and number of children were significantly associated with modern contraceptive use among sexually active married women in Pakistan.

The group of sexually active married women in Pakistan is not homogeneous. In order to increase prevalence of modern contraception in this population, different groups of women should be targeted with family planning interventions specific to their needs.

Keywords

sexually active, married women, modern contraceptive use, factors, Demographic and Health survey, Pakistan

JEL codes: I18, J13

Background

Target 3.7 of Sustainable Development Goals (SDGs) 3 proclaims a universal access to sexual and reproductive health services by 2030 globally (WHO 2018). Modern contraceptive use is recognized as an important factor for achieving SDGs as potentially improving maternal, new-born and child health outcomes (Bongaarts and Sinding 2009; Cates et al. 2010; Starbird et al. 2016). The non-use of modern contraceptive methods leads to unintended, mistimed and high risk pregnancies increasing maternal and new-born mortality (UN Department… 2020). Modern contraceptive use prevented about 308 million unintended pregnancies in 2017 and an additional 67 million could have been averted if unmet needs had been satisfied (Sully et al. 2020). However, about 1.1 billion women of reproductive age have a need for contraception to postpone or limit childbearing, and only 44% of them were using modern methods of contraception worldwide in 2019 (United Nations Department of Economic and Social Affairs 2020). Modern methods are the most reliable form of contraception and their use among married women of reproductive age increased from 55% to 57% between 2000 and 2019 worldwide (UN Department… 2020).

Despite the increase in modern contraceptive use, there are differences between the developed, low and middle income countries (Nadeem et al. 2021). Previous pieces of research have suggested that socio-demographic characteristics (Letamo and Navaneetham 2015; Debebe et al. 2017), spousal communication and decision making (Letamo and Navaneetham 2015; Belda et al. 2017; Islam 2018), exposure to mass media (Debebe et al. 2017), knowledge of modern contraceptive methods (Eliason et al. 2014), parity (Debebe et al. 2017), religious and cultural beliefs and myths (Gueye et al. 2015; Wulifan et al. 2019), and fear of side effects (Ochako et al. 2015; Ataullahjan et al. 2020) are associated with modern contraceptive prevalence among married women.

The Pakistan annual population growth rate is 2.4% (WPP UN 2022); the total fertility rate (TFR) equals to 3.6 births per woman in Pakistan; it is 3.9 in rural areas versus 2.9 in urban areas. However, the desired fertility rate in Pakistan is 2.9 meaning that women want on average 0.7 children less than the current fertility rate. Moreover, the contraceptive prevalence rate (CPR) among married women is only 34%: 25% of them using modern and 9% - traditional methods of contraception. It is worth noting that the contraceptive use has stagnated over the last five years (PDHS 2012-13, 35% and PDHS 2018-19 - 34%). Similarly, within 5 years preceding the survey, out of all births, 5% were unwanted and 7% were mistimed at the time of conception, and the abortion rate reached 50 per 1000 women aged 15-49 (National Institute… and ICF 2019). Both the population growth rate and large size challenge Pakistan to all development indicators, particularly, maternal and child health (Aziz et al. 2020; Hanif et al. 2022). This indicates the need for a higher use of contraceptives, particularly modern contraceptive methods to control the burgeoning population and improve quality of life in Pakistan.

The above discussed context of population growth and contraceptive prevalence rate calls for an analysis of the factors associated with the use of modern contraceptive methods. This study, humble in its objective, attempts to identify the factors associated with modern contraceptive use among sexually active married women in Pakistan.

History of Family Planning in Pakistan

A family planning program in Pakistan was initiated in the 1960s with a high political and financial commitment from both the government and donors (Corsa 1965; Adil et al. 1968;

Robinson 1978; Robinson et al. 1981). However, it failed to achieve even its initial targets (Khan 1967; Sirageldin et al. 1976; Robinson 1978; Robinson et al. 1981; Mahmood and Ali 1997) due to several design defects including improper mix of methods for the local context and particularly heavy reliance on intrauterine devices (IUDs) (Corsa 1965; Robinson 1978), its separation from the health services, lack of involvement of the private sector (NGOs) and low marketing and education campaigns (Sirageldin et al. 1976; Robinson 1978; Rukanuddin and Hardee-Cleaveland 1992). The programme was also disrupted by the war with India in 1965. However, in the following two decades political commitment was fading away, the Bhutto regime did not prioritise family planning as the program had been initiated by his political rival and General Zia ul Haq with his Islamization regime ignored family planning, thus, the program was almost halted (Sathar 1993; Sultan et al. 2002).

The political support was revived in the 1990s with the launch of the National Program for Family Planning and Community Health that comprised the workforce of Lady Health Workers (LHWs) and engaged private sector via social marketing (Sathar and Casterline 1998). The LHWs were spreading the family planning message in urban and rural areas, providing basic methods of contraception to the population on the doorstep. This led to a 24% increase in CPR in the 1990s and decline in fertility rate (Sathar and Casterline 1998). The non-involvement of religious leadership in the family planning program also hindered achievement of the desired CPR (Mir and Shaikh 2013) as the program faced backlash from the conservative circles (Wazir et al. 2021). The government only realised the importance of this aspect in 2007 and designed an intervention named FALAH aimed at birth spacing rather than birth control as a strategy (Sultan et al. 2002; Mahmood 2012; Mir and Shaikh 2013; Naz and Acharya 2021). The private sector including NGOs and health facilities has increased its services for family planning (Hennink and Clements 2005; Abdullah et al. 2023). Despite an ongoing political and donor support, the program keeps failing to achieve a significant increase in CPR (Zafar and Tasneem Shaikh 2014; Wazir et al. 2021).

The law in Pakistan allows for abortion in the first three months of pregnancy (Ahsan and Jafarey 2008; Sathar et al. 2014). The colonial period Penal Code of 1860 permitted abortions only to 'save the female life'. However, this was revised in the 1997 to bring it in accordance with the teachings of Islam. The law allows for abortion in the first trimester to save the woman's life or in order to provide "necessary treatment". Moreover, in the later stages of pregnancy when the organs of the foetus are developed, abortion is only permissible to save the female life (Ahsan and Jafarey 2008; Abortion in Pakistan 2009). In terms of family planning the public sector offers modern methods of contraception free of charge including implants, IUDs, injectables and female sterilisation and serve almost 44% of women (National Institute… and ICF 2019). However, the private sector including health facilities, NGOs and shops has provided contraceptives to roughly more than half of contraception users (Abdullah et al. 2023).

Data and methods

Located in South Asia, the Republic of Pakistan is the fifth most populous country in the world. According to United Nations, its population was estimated to be 240.5 million in 2023 for an area of 804 000 km^2, and 63% of them living in rural areas. Further, 49,5% of the Pakistan population is composed of women, 50% of them are of childbearing age

(UN Department… 2022). Pakistan's GDP equals to $346.3 billion (current US$) (World Bank and OECD 2022). The poverty headcount measured using the national poverty line decreased from 64.3% in 2001 to 21.9% in 2018 (World Bank 2022). Administratively, Pakistan is divided into the following four provinces: Punjab, Sindh, Khyber Pakhtunkhwa, and Balochistan. Punjab is the most populated province of Pakistan with the highest economic activities and best health and educational infrastructure (UNDP 2020).

Data source

We used data from the most recent Pakistan Demographic and Health Survey (PDHS), which was conducted from November 2017 to April 2018. The 2017-2018 PDHS is a nationally representative survey implemented by the National Institute of Population Studies (NIPS) in collaboration with the Ministry of National Health Services, Regulations and Coordination (NHSRC), ICF International, and Department for International Development (DFID) of the United Nations Population Fund (UNFPA) (National Institute… and ICF 2019). The survey collected data on a wide range of public health-related issues including demographics characteristics, socioeconomic status, sexual activity, contraceptive use, maternal and child health, women's empowerment, domestic violence, etc. The women's data file, which contains information on demographic characteristics of women of childbearing age as well as the use of contraceptive methods, was used in this study. Further information about the 2017-2018 PDHS is provided in the full report (National Institute… and ICF 2019).

Sample design

A two-stage stratified sample design was employed to select study participants and estimate the key indicators at the national level, as well as in urban and rural areas. In the first stage, 580 enumeration blocks (EBs) were selected from a list of clusters based on the 2017 Pakistan Population and Housing Census sample frame. For the Pakistan Bureau of Statistics (PBS), an EB is a geographical area that covers on average 200 to 250 households (Pakistan Bureau of Statistics 2020). These EBs were chosen independently basing on the probability proportional to size. The second stage involved a systematic sampling of 16,240 households within each cluster from which all ever-married women of childbearing age (15–49 years), who were either permanent residents of the household or visitors who stayed over in the household the night before the survey were eligible to be interviewed. A total of 15,930 women were eligible to participate and 15,068 were successfully interviewed with a 94.6% response rate National Institute… and ICF 2019).

Target population

The study sample was limited to married women of childbearing age (n=10,282), who were sexually active during the last 3 months prior to the survey. This limitation was due to the fact that during the 2017-2018 PDHS only married women were interviewed (National Institute… and ICF 2019). Married women who were not sexually active during this period were excluded from the final analysis. Figure 1 shows the derivation of the study sample.

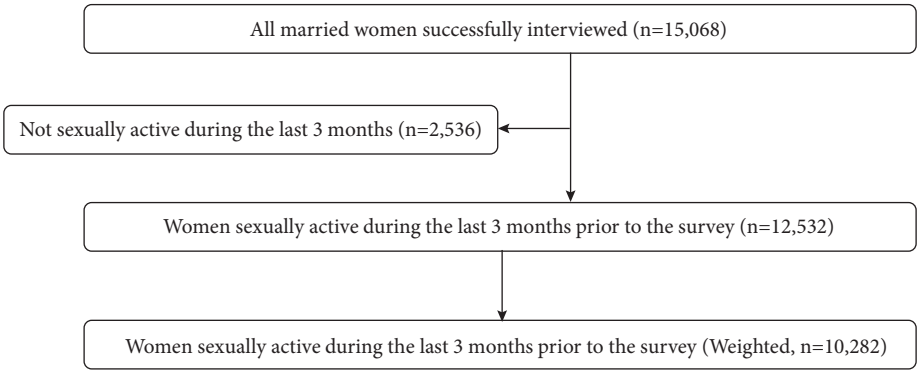

Figure 1. Sample selection procedure. *Source*: Pakistan Demographic and Health Survey 2017-2018, Women's data file

Study variables and measurements

Modern contraceptive use was the main outcome variable. To derive this variable, all married women were asked of the current use by method type. It was measured as a binary variable with the response categories of 1 = Yes (If the participants reported using modern contraceptives) and 0 = No (If the participants reported using traditional/folkloric/no method) during the last three months prior to the survey.

Several individual and community-level explanatory variables presented in Table 1 were chosen based on prior studies (Osmani et al. 2015; Gebre and Edossa 2020; Kumar et al. 2021; Pokhrel et al. 2021; Abdelaziz et al. 2022; Boadu 2022; Bolarinwa et al. 2022; Ekholuenetale et al. 2022; Kirana and Idris 2022; Meselu et al. 2022; Tesfa et al. 2022).

Table 1. Selected individual and community-level explanatory variables

Independent variables	Name	Categories	Variable type
Individual level	Women's age	Less than 25, 25-29, 30-34, 35-39, 40 and above	Ordinal
	Women's education level	No formal education, Primary, Secondary, Higher	Ordinal
	Partner's education level	No formal education, Primary, Secondary, Higher	Ordinal
	Currently employed	Yes, No	Nominal
	Knowledge of contraceptive methods	Doesn't know any method, Knows only traditional methods, Knows modern methods	Nominal
	Number of living children	Less than 3, 3-4, 5 and above	Ordinal
Community level	Region	Punjab, Sindh, Khyber Pakhtunkhwa, Balochistan, ICT Islamabad, FATA	Nominal
	Fieldworker visit	Yes, No	Nominal
	Health facility visit	Yes, No	Nominal
	Wealth index	Poorest, Poorer, Middle, Richer, Richest	Ordinal
	Exposure to mass media family planning messages	Yes, No	Nominal

Source: composed by the authors based on the PDHS 2017-2018

Statistical analysis

Univariate descriptive statistics (frequency, percentage, mean, and standard deviation) were used to describe socio-demographic profiles of the respondents. Then, bivariate analyses were carried out to assess the prevalence of modern contraceptive use by socio-demographic parameter, and to explore independent associations (Pearson's chi-square test) between the outcome variable and each covariate. Further, binary logistic regression model was estimated to identify significant factors associated with modern contraceptive use among married women in Pakistan. Model fitness was checked with Hosmer–Lemeshow goodness of fit test (p=0.12 >0.05). To detect potential multicollinearity, we used the variance inflation factor (VIF) at a cut-off point of 10 (O'Brien 2007; Alin 2010; Vatcheva et al. 2016). None of the variables displayed multicollinearity problems (all VIF < 10; Mean VIF=2.48). The results of the binary logistic regression were reported as crude odds ratios (cOR) and adjusted odds ratios (aOR) with the corresponding 95% confidence intervals (CIs). All frequency distribution analyses were weighted (HV005/1,000,000) and the "*svyset*" command was applied to correct for under- and over-sampling (Currie 2008; Elkasabi 2015). All the analyses were performed in STATA software version 14.0, and the p-value < 0.05 was considered as a significant statistical level.

Ethics statement

Permission to utilize the 2017-2018 PHDHS was obtained from the demographic health survey program (https://dhsprogram.com/data/available-datasets.cfm). The survey protocol was retrieved and approved by the Ministry of National Health Services, Regulations and Coordination (NHSRC), and Institutional Review Board (IRB) of ICF Macro. Informed consent was obtained at the beginning of each interview by the PDHS data collectors (National Institute… and ICF 2019).

Results

Socio-demographic profiles of the study participants

Slightly more than 20% of the respondents were under 25 years, while 21.3% were aged 40 years and above (Appendix Table A1). The mean age of the participants equalled to 32.1 years (SD ± 8.3). About two-thirds of them lived in rural areas (62.5%) and 52.1% came from the Punjab region. Almost half of the women had no formal education and 13.1% had higher education levels compared to 30.2% and 19.9% of their partners, respectively. Around 40% were in the poor (poorest and poorer) wealth index category, and less than 20% were employed. Also, almost all participants reported having knowledge of modern contraceptive methods, 24.1% were exposed to mass media family planning (FP) messages during the last few months preceding the survey, 53.8% were visited by a fieldworker, less than 30% visited a health facility, and nearly a quarter (24.1%) had 5 or more children.

Association between socio-demographic characteristics and modern contraceptive use

Figure 2 depicts the prevalence of contraceptive use by method type among married women in Pakistan. 27.7% (95% CI: 26.8 – 28.6) of the respondents reported using modern contraceptives, 10.3% used traditional methods, while 62.0% didn't use any method at all.

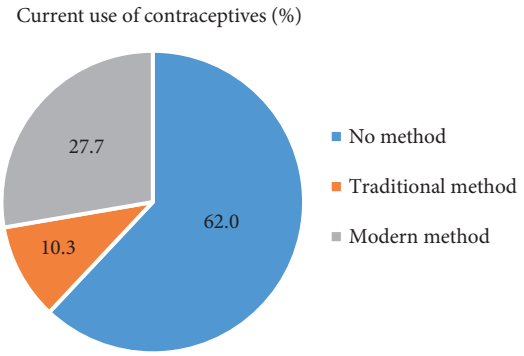

Figure 2. Prevalence of contraceptive use by method type. *Source*: Pakistan Demographic and Health Survey 2017-2018, Women's data file

Although prevalence of modern contraceptive use remains very low within this population, it varies significantly depending on socio-demographic characteristics of the respondents (all p-values < 0.05) (Appendix Table A2). Less than 15% of young women used modern contraceptive methods, while this proportion was over 30% among those aged 30 and above. The results underscore the major regional disparities: modern contraceptive use was most common in urban areas (31.4%) and in the Punjab region (30.4%). Women and partners who had no formal education had a prevalence of modern contraceptive use of 23.6%, while a 30 % prevalence was registered in those with higher education levels. Further, prevalence of modern contraceptive methods was higher among women from rich households (richer: 31.0%; the richest: 32.9%) and currently employed (31.4%). Similarly, the use of modern contraceptives was most common among women who were exposed to mass media family planning (FP) messages (32.8%), who were visited by a fieldworker (31.2%), who visited a health care facility (28.6%), and with 5 or more children (41.8%).

Factors associated with modern contraceptive use among married women in Pakistan

In binary logistic regression, women's age, region, women's education level, wealth index, fieldworker visit, and number of children were significantly associated with modern contraceptive use among married women in Pakistan (Appendix Table A3).

Women in the 25-29, 30-34, and 35-39 age groups had 1.3 higher odds (aOR = 1.30, 1.31 and 1.26, respectively) of using modern contraceptives than those aged 40 and above. The odds of using modern contraceptives decreased by 50% (aOR = 0.50) among women from Balochistan compared to those from Punjab. Also, the results show that the odds of using modern contraceptives were lower among women without any formal education (aOR = 0.49), primary education (aOR = 0.67), secondary education (aOR = 0.74) compared to their peers with the highest education levels. Similarly, the odds of using modern contraceptives were lower among women from the poorest households (aOR = 0.54) than those from the richest ones. Being exposed to mass media family planning (FP) messages was associated with the increased odds (aOR = 1.33) of using modern contraceptives. In addition, the odds of using modern contraceptives decreased by 85% (aOR = 0.15) and 39% (aOR = 0.61) among women who had less than 3 children and 3-4 children, respectively compared to their peers with 5 or more children.

Discussion

The study has investigated the factors associated with the modern contraceptive use among sexually active married women in Pakistan using the latest data from the PDHS 2017-18. The estimated prevalence of modern contraceptive use equals to 27.7% (95% CI: 26.8-28.6). However, there are differences between South Asian countries like Afghanistan, Bangladesh, India, Nepal, Maldives and Pakistan (Sreeramareddy et al. 2022). The differences may be due to variation in the implementation of sexual and reproductive health policies in these countries.

The results also show that the respondent's age, region, education level, wealth index, social fieldworker visit, and number of children were identified as determinants of modern contraceptive use. Women with higher education levels are more likely to use modern contraceptive methods. This result corroborates those of previous studies in India (Kumar et al. 2021), Ethiopia (Gebre and Edossa 2020; Meselu et al. 2022), Nigeria (Akinyemi et al. 2022), Bangladesh (Islam et al. 2016) and Afghanistan (Osmani et al. 2015). Education influences women's behaviour towards using modern contraceptives via information on family planning. Moreover, educated women are more likely to be in better position to negotiate and bargain on modern contraceptive use with their partners (Bashir and Guzzo 2021; Adde et al. 2022; MacQuarrie and Aziz 2022).

The odds of using modern contraceptives among women in the 25-29, 30-34, and 35-39 age groups increased compared with those in the 40+ age group. In line with previous pieces of research in Iran (Tehrani et al. 2001) and Bangladesh (Islam et al. 2016), this may be due to the fact that younger women are better educated and have more access to modern contraceptive methods than those aged 40 or older. Further, it should be noted that the use of modern contraceptives increases along with reproductive age (30-34 years) and then decreases. Indeed, women in the 30-34 age groups are more likely to choose to space births or limit the number of children when the desired family size was reached (Tehrani et al. 2001; Islam et al. 2016).

Region is significantly associated with modern contraceptive use among sexually active married women in Pakistan. Women in Balochistan province are less likely to use modern contraceptives compared to their counterparts from Punjab province. Balochistan is the least developed province in Pakistan with poor health and education infrastructure (UNDP 2020). This means that women from this region are much underserved by both information and family planning services. Balochistan is a very traditional province where large families are highly valued, preventing women from using modern contraceptive methods (Nadeem et al. 2021; MacQuarrie and Aziz 2022). The regional socio-economic disparities can influence the use of contraceptives and this result is supported by evidence from Bangladesh (Khan et al. 2022), Iraq (Abdelaziz et al. 2022), Nigeria (Bolarinwa et al. 2022), Ethiopia (Gebre and Edossa 2020; Meselu et al. 2022) and Sub-Saharan Africa (Tesfa et al. 2022).

Similarly, the study has revealed that wealth index is a significant predictor of modern contraceptive use. Women from poor households are less likely to use modern contraceptive methods compared to those from rich households. Consistent with research from Afghanistan (Osmani et al. 2015), India (Kumar et al. 2021; Das et al. 2022), Bangladesh (Islam et al. 2016), Sub-Saharan Africa (Ahinkorah 2020; Boadu 2022), Ethiopia (Gebre and Edossa 2020; Meselu et al. 2022), Nigeria (Bolarinwa et al. 2022), this finding is partly due to the fact that some women from poor households cannot access contraceptive services (even if

they want to) because of the lack of financial resources and economic dependence (Wulifan et al. 2019). The public sector provides free of charge contraceptives via the family planning division and public health facilities to nearly 44% of women (National Institute… and ICF 2019). However, the insufficient number of health facilities and inefficiencies in the system lead to inconsistent and poor-quality services even if they are available. This situation has made more users turn to private sector as a source of contraceptive commodities and service provider (Abdullah et al. 2023).

Another important factor associated with the use of modern contraceptives by women identified by this study is a fieldworker visit. The odds of using modern contraceptives among women who were visited by a fieldworker increased compared to those who were not visited by a fieldworker. The plausible reason is that fieldworkers are a source of information for women in urban slums, small towns and villages (Upvall et al. 2002; Mumtaz et al. 2003; Bhutta et al. 2011; Memon et al. 2015; Azmat et al. 2016; Soofi et al. 2017; Bechange et al. 2021; Omer et al. 2021). Similarly, the odds of using modern contraceptives among women decreased with having less than 5 children compared to their counterparts with 5 or more children. This finding is consistent with previous evidence from Bangladesh (Islam et al. 2016). There is also evidence that women opt for tubal ligation (female sterilization) after 5 or more children (Khan et al. 2013).

Study strengths and limitations

The study has several strengths. It presents evidence that supports the importance of understanding modern contraceptive use among sexually active married women in Pakistan, which could have important implications for sexual and reproductive health policy in Pakistan. Furthermore, the study involved a large sample size, and information on contraceptive use was collected using the standard tools.

However, the study's findings are limited in some way. First, due to the nature of the study design, it was not possible to establish a cause-effect relationship. Second, the study focused on married women only, and excluded all women who were single/separated/divorced during the data collection. Third, the study may be affected by recall bias. At last, the definition of "sexually active" used in this study is not universal. In fact, this concept varies from one study to another (Adde et al. 2022; Bolarinwa et al. 2022).

Conclusion

Prevalence of modern contraceptive use is low among sexually active married women in Pakistan. Women from Balochistan province, young age groups, less educated, poorest, those not visited by a fieldworker and having less than 5 children are less likely to use modern contraceptive methods. The findings suggest that the family planning outreach and modern contraceptive services should be expanded in Balochistan province and to the poorest and less educated women. The information campaigns about modern contraceptive methods should be increased and men should also be included in such campaigns. Integrating family planning in public health programs and services could cover a large share of population. Also, including family planning services in universal health coverage will reduce the out-of-pocket cost burden on the general population and particularly on poor couples.

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Availability of data and materials

The dataset used in this study is available from:
https://dhsprogram.com/data/dataset/Pakistan_Standard-DHS_2017.cfm?flag=0

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Appendix

Table A1. Socio-demographic characteristics of the study population

Socio-demographic characteristics	Married women sexually active	
	N	Percentage
Age		
Less than 25	2105	20.5
25-29	2128	20.7
30-34	2037	19.8
35-39	1822	17.7
40 and above	2189	21.3
Place of residence		
Urban	3856	37.5
Rural	6426	62.5
Region		
Punjab	5357	52.1
Sindh	2480	24.1
KPK	1577	15.3
Balochistan	588	5.7
ICT/FATA	280	2.7

Socio-demographic characteristics	Married women sexually active	
	N	Percentage
Education level		
No formal education	5042	49.0
Primary	1699	16.5
Secondary	2199	21.4
Higher	1343	13.1
Partner's education level[a]		
No formal education	3102	30.2
Primary	1571	15.3
Secondary	3535	34.4
Higher	2044	19.9
Don't know	30	0.3
Wealth Index		
Poorest	1907	18.5
Poorer	2019	19.6
Middle	2100	20.4
Richer	2078	20.2
Richest	2177	21.2
Currently employed		
Yes	1716	16.7
No	8563	83.3
Knowledge of contraceptive methods		
Doesn't know any method	180	1.8
Knows only traditional methods	15	0.1
Knows modern methods	10087	98.1
Exposure to FP messages (medias)		
Yes	2482	24.1
No	7800	75.9
Fieldworker visit		
Yes	5529	53.8
No	4753	46.2
Health facility visit		
Yes	7609	26.0
No	2670	74.0
Number of children		
Less than 3	4620	44.9
3-4	3182	31.0
5 and above	2480	24.1
Total	10282	100.0

Source: Pakistan Demographic and Health Survey 2017-2018, Women's data file

[a] Missing data: partner's education level (n = 1); currently employed (n = 3); health facility visit (n = 3)

Table A2. Bivariable association between modern contraceptive use and socio-demographic characteristics of the study population

Socio-demographic characteristics	Modern contraceptive use		P-value
	Yes (N/%)	No (N/%)	
Age			0.000
Less than 25	278 (13.2)	1827 (86.8)	
25-29	512 (24.1)	1616 (75.9)	
30-34	679 (33.3)	1358 (66.7)	
35-39	644 (35.3)	1178 (64.7)	
40 and above	732 (33.4)	1457 (66.6)	
Place of residence			0.000
Urban	1209 (31.4)	2647 (68.6)	
Rural	1636 (25.5)	4790 (74.5)	
Region			0.000
Punjab	1626 (30.4)	3731 (69.6)	
Sindh	648 (26.1)	1832 (73.9)	
KPK	421 (26.7)	1156 (73.3)	
Balochistan	87 (14.8)	501 (85.2)	
ICT/FATA	64 (22.9)	216 (77.1)	
Education level			0.000
No formal education	1190 (23.6)	3851 (76.4)	
Primary	528 (31.1)	1170 (68.9)	
Secondary	670 (30.5)	1529 (69.5)	
Higher	457 (34.0)	886 (66.0)	
Partner's education level			0.000
No formal education	733 (23.6)	2369 (76.4)	
Primary	479 (30.5)	1092 (69.5)	
Secondary	972 (27.5)	2563 (72.5)	
Higher	651 (31.8)	1393 (68.2)	
Don't know	10 (33.3)	20 (66.7)	
Wealth Index			0.000
Poorest	358 (18.8)	1549 (81.2)	
Poorer	501 (24.8)	1519 (75.2)	
Middle	626 (29.8)	1474 (70.2)	
Richer	644 (31.0)	1434 (69.0)	
Richest	716 (32.9)	1461 (67.1)	
Currently employed			0.000
Yes	538 (31.4)	1178 (68.6)	
No	2307 (26.9)	6256 (73.1)	
Exposure to FP messages (medias)			0.000
Yes	813 (32.8)	1668 (67.2)	
No	2032 (26.1)	5768 (73.9)	

Socio-demographic characteristics	Modern contraceptive use		P-value
	Yes (N/%)	No (N/%)	
Fieldworker visit			0.000
Yes	1723 (31.2)	3806 (68.8)	
No	1122 (23.6)	3631 (76.4)	
Health facility visit			0.000
Yes	2179 (28.6)	5430 (71.4)	
No	665 (24.9)	2005 (75.1)	
Number of children			
Less than 3	611 (13.2)	4009 (86.8)	0.000
3-4	1196 (37.6)	1986 (62.4)	
5 and above	1037 (41.8)	1442 (58.2)	
Total	2845 (27.7)	7437 (72.3)	

Source: Pakistan Demographic and Health Survey 2017-2018, Women's data file

Table A3. Binary logistic regression of modern contraceptive use among Pakistan married women by socio-demographic parameters

Socio-demographic characteristics	Unadjusted Odds Ratio cOR (95% CI)	Adjusted Odds Ratio aOR (95% CI)
Age		
Less than 25	0.30*** (0.25 - 0.37)	1.12 (0.87 - 1.46)
25-29	0.63*** (0.53 - 0.76)	1.30* (1.05 - 1.60)
30-34	0.99 (0.84 - 1.19)	1.31** (1.07 - 1.59)
35-39	1.09 (0.91 - 1.30)	1.26* (1.05 - 1.53)
Ref = 40 and above		
Place of residence		
Urban	1.34*** (1.19 - 1.50)	1.04 (0.89 - 1.22)
Ref = Rural		
Region		
Sindh	0.81** (0.71 - 0.93)	0.95 (0.81 - 1.12)
KPK	0.84* (0.72 - 0.98)	0.98 (0.82 - 1.16)
Balochistan	0.40*** (0.32 - 0.50)	0.50*** (0.39 - 0.65)
ICT/FATA	0.67*** (0.56 - 0.81)	0.86 (0.70 - 1.07)
Ref = Punjab		

Socio-demographic characteristics	Unadjusted Odds Ratio cOR (95% CI)	Adjusted Odds Ratio aOR (95% CI)
Education level		
No formal education	0.60*** (0.50 - 0.71)	0.49*** (0.38 - 0.64)
Primary	0.88 (0.71 - 1.08)	0.67** (0.52 - 0.88)
Secondary	0.85 (0.70 - 1.04)	0.74** (0.59 - 0.93)
Ref = Higher		
Partner's education level		
No formal education	0.66*** (0.56 - 0.78)	0.95 (0.77 - 1.18)
Primary	0.94 (0.77 - 1.14)	1.07 (0.85 - 1.35)
Secondary	0.81** (0.69 - 0.95)	0.89 (0.74 - 1.07)
Don't know	1.09 (0.36 - 3.28)	1.23 (0.43 - 3.54)
Ref = Higher		
Wealth Index		
Poorest	0.47*** (0.39 - 0.57)	0.54*** (0.40 - 0.72)
Poorer	0.67*** (0.56 - 0.81)	0.80 (0.62 - 1.04)
Middle	0.87 (0.73 - 1.03)	0.95 (0.76 - 1.18)
Richer	0.92 (0.77 - 1.09)	1.02 (0.83 - 1.24)
Ref = Richest		
Currently employed		
Yes	1.18* (1.01 - 1.38)	1.12 (0.95 - 1.32)
Ref = No		
Exposure to FP messages (medias)		
Yes	1.38*** (1.21 - 1.58)	1.11 (0.95 - 1.29)
Ref = No		
Fieldworker visit		
Yes	1.46*** (1.30 - 1.65)	1.33*** (1.17 - 1.52)
Ref = No		
Health facility visit		
Yes	1.20** (1.06 - 1.36)	1.03 (0.90 - 1.18)
Ref = No		
Number of children		
Less than 3	0.21*** (0.18 - 0.25)	0.15*** (0.12 - 0.18)
3-4	0.84* (0.72 - 0.97)	0.61*** (0.52 - 0.72)
Ref = 5 and above		

Source: Pakistan Demographic and Health Survey 2017-2018, Women's data file

*$p < .05$. **$p < .01$. ***$p < .001$.

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