Original Article

OPEN ACCESS

Impact of MCH Service Utilization on the Uptake of Modern Contraceptives in Pakistan: Evidence from PDHS 2017-18

Amna Noor[1], Aysha Sheraz[2], Samina Naeem Khalid[3], Areeba Memon[4], Muhammad Mohsin[5] Javaid, Juneda Sarfraz[6], Muhammad Rashid Ahmed[7], Afsheen Mansoor[8]

[1]Researcher at National Institute of Population Studies, Islamabad, [2]Consultant, Health Services Academy, Islamabad
[3]Professor & Head of RMNCH Department, Health Services Academy, Islamabad
[4]Internal Medicine Resident, SUNY Upstate Medical University, New York
[5]Demonstrator, School of Dentistry, Community and Preventive Dentistry Dept, Shaheed Zulfiqar Ali Bhutto Medical University, Islamabad
[6]Department of Public Health, Shaheed Zulfiqar Ali Bhutto Medical University,
[7]Professor, Department of Anatomy, Baqai Medical University, Karachi
[8]Associate Professor, Department of Science of Dental Materials, School of Dentistry, SZABMU, Islamabad

Author`s Contribution

[1,3,5]Substantial contributions to the conception or design of the work; or the acquisition, [2,4]Drafting the work or revising it critically for important intellectual content, [6]analysis, or interpretation of data for the work,, [7,8]Active participation in active methodology,

Funding Source: None
Conflict of Interest: None

Received: Nov 13, 2024
Accepted: Jan 12, 2025

Address of Correspondent
Dr Amna Noor
Researcher at National Institute of Population Studies, Islamabad
nooramnaasim@gmail.com

ABSTRACT

Objective: To examine whether the use of MCH service increases women's early adoption of contraceptives or not.

Methodology: The current study uses data from the fourth round of the Pakistan Demographic and Health Survey (PDHS), which was carried out in 2017-18. The PDHS is a survey of 12,815 nationally representative sample households. It is a collaborative effort of the DHS Program, ICF funded by USAID, and the National Institute of Population Studies (NIPS), Pakistan.

Results: The survey covered 13,118 ever-married women in the reproductive age group of 15-49 years. Among the participants, 79% did not use any contraceptive method within 12 months following birth 16 % used a modern method and the rest of 5% were using the traditional method. The results of the multinomial logistic model show that the utilization of MCH services has a positive association with contraceptive uptake. An increase in 1 unit of media exposure would significantly raise 0.36 units of use of modern contraception methods. Women with secondary or higher education levels have used modern contraceptives, that is with each 1 unit rise in educational level to secondary and higher there would be a 0.3 and 0.44 unit rise in the likelihood of using modern contraceptive methods as compared to never-users.

Conclusion: An increase in the usage of contraceptives in Pakistan may result from the need for more assistance in improving the use of maternal healthcare. To overcome persistent discrepancies in healthcare utilization, it is advised that resources be allocated to rural communities that are poorer and have lower levels of education.

Keywords: Contraceptive, Family planning, Methods, Pakistan Demographic and Health Survey

Cite this article as: Noor A, Sheraz A, Khalid SN, Memon A, Javaid MM, Sarfraz J, Ahmed MR, Mansoor A Impact of MCH Service Utilization on the Uptake of Modern Contraceptives in Pakistan: Evidence from PDHS 2017-18. Ann Pak Inst Med Sci. 2024; 21(1):120-126. doi. 10.48036/apims.v21i1.1255.

Introduction

Initiation of postpartum contraception is crucial for the health of mother and their children. To encourage and assist women in adopting the initial contraceptive use, Maternal and Child Health care (MCH) services must be supported.[1] The MCH has received considerable attention in demographic and public health literature. An improvement in MCH reflects a nation's overall socioeconomic progress. Hence, improved access to and utilization of high-quality reproductive health treatments are essential for decreasing maternal and child mortality and morbidity.

In September 2015, all UN Member States gave the Sustainable Development Goals (SDGs) 2030 agenda. These seventeen Goals were called to end poverty, gender equity, and a peaceful and prosperous world. Goal 3 among these goals is for the "Good Health and Well-being of Women and Children". The United Nations has established worldwide goals to lower the maternal mortality ratio (MMR) to 70 per 100,000 live births for Target 3.1. Hence, by adopting modern contraception methods for family planning and birth spacing one can achieve Goal 3 of Agenda 2030.

High maternal and infant mortality rates result from the fact that many developing nations still lag in providing universal coverage for the most crucial reproductive, maternal, and child health interventions. [2-4] Most women in developing countries do not initiate contraception, which causes unintended pregnancy.[5] According to recent research, women who receive MCH treatments are more likely to accept using contraceptives early in life. [6,7] Hence, numerous studies have been conducted that highlight the significance of the use of MCH service for the early adoption of contraception. [2,8]

There are two ways in which family planning programs that encourage the use of modern contraceptives, can lower the number of maternal mortalities. The decrease in the number of pregnancies that happens when contraceptive use rises is the more obvious effect. However, the second approach is stopping risky abortions. Reducing the number of pregnancies lowers the risk of maternal death for women and reduces the overall number of fatalities [8,9]. Rising contraceptive use lowers the average risk of mortality associated with each pregnancy and delivery by preventing high-risk newborns.[10] Utilization of a postpartum contraception method is one of the most critical factors for MCH outcomes as it prevents unintended pregnancies in the year of childbirth [11]. Contraceptive non-users may have a twofold increased risk of maternal death compared to users.[8]

In the last 20 years, Pakistan has achieved remarkable progress in MCH. This progress may be attributed to international, national, and regional level initiatives for the underprivileged and marginalized population. In the past ten years, the MMR has declined from 276 deaths to an average of 186 deaths per 100,000 live births in Pakistan. While U5MR declined from 87.1 deaths per 1000 live births to 65.2 deaths per 1000 live births in the last ten years. [12] However, NMR has declined from 50 deaths per 1000 live births to 40.4 deaths per 1000 live births in the last five years. Therefore, postpartum contraceptive uptake plays a vital role in lowering the NMR.

The study's goal was to determine whether or not using MCH services affects using contraception within a year after the child is born. This study also aims to analyze other socio-demographic factors (as control variables) associated with the utilization of MCH services among married women in Pakistan

Methodology

The study used descriptive and regression analyses to measure the association of dependent and independent variables and examine the significant level. Cross-tabulations were computed as part of the bivariate analysis to display the frequencies and percentages of key socioeconomic and demographic characteristics, and MCH indicators, in connection to the usage of contraceptives. Furthermore, multivariate logistic regression was used to evaluate the relationship between Pakistani contraceptive use and mother and child healthcare utilization.

The current study uses the data from the fourth round of the Pakistan Demographic and Health Survey (PDHS) carried out in 2017-18. The PDHS is a survey of 12,815 nationally representative sample households. It is the collaborative effort of the DHS Program, ICF funded by USAID, and the National Institute of Population Studies (NIPS), Pakistan. The survey covered 13,118 ever-married women in the reproductive age group of 15-49 years. The outcome variable is the type of contraceptive method used within the 12 months after the delivery of the recent child. Therefore, the analysis is based on 5,990 women who gave birth within the five years before the last survey.

The main independent variable is the use of MCH services, the study uses several control variables like a place of residence, region, wealth index, women's age at the time of the survey, educational status, media exposure, own mobile phone, use of the internet, and desire for another child, Some other studies also used control variables for the ethnicity of their results that is, in the present of socio-economic and demographic indicators MCH service has still expected to have a significant and positive impact on the uptake of modern contraception. The current study also uses indicators of Information Communication and Technology (ICT) to incorporate the impact of technology.

doi. 10.48036/apims.v20i2.1255

Table I: Percentage of contraceptives with reference to MCH and other factors.

	%	n	%	n	%	n	%	n
	Non-users		**Traditional**		**Modern**		**Total**	
MCH Services								
No	79	1688	6	122	16	340	100	2150
Yes	60	2318	11	425	29	1104	100	3847
Media								
No	76	5171	6	436	18	1242	100	6849
Yes	63	5 135	10	853	27	2219	100	8207
Wanted Last Child								
Wanted	68	4912	9	633	23	1636	100	7181
Not Wanted	47	524	13	148	39	434	100	1106
Respondent Currently Working								
No	69	8979	9	1112	22	2904	100	12995
Yes	64	1334	9	178	27	559	100	2071
Wealth Index								
Poorest	82	2377	3	91	14	418	100	2886
Poorer	74	2384	6	201	20	655	100	3240
Middle	66	1948	9	276	25	742	100	2966
Richer	63	1820	11	314	26	744	100	2878
Richest	58	1786	13	408	29	904	100	3098
Age In 5-Year Groups								
15-19	91	665	3	19	6	44	100	728
20-24	82	1827	5	110	13	283	100	2220
25-29	73	2308	7	219	20	619	100	3146
30-34	62	1765	1	307	27	781	100	2853
35-39	60	1630	1	291	30	817	100	2738
40-44	58	1059	11	205	31	557	100	1821
45-49	68	1061	9	139	23	362	100	1562
	%	**n**	**%**	**n**	**%**	**n**	**%**	**n**
	Non-users		**Traditional**		**Modern**		**Total**	
Educational level								
Zero	74	5675	6	490	19	1462	100	7627
Primary	65	1357	9	199	26	547	100	2103
Secondary	63	1960	11	337	27	835	100	3132
Higher	60	1323	12	264	28	619	100	2206
Region								
Punjab	63	2150	11	361	26	889	100	3400
Sindh	69	1897	6	176	24	666	100	2739
KPK	67	1588	10	227	24	563	100	2378
Baluchistan	83	1433	4	73	13	218	100	1724
Others	67	3247	9	453	23	1127	100	4827
Residence								
Urban	63	4579	11	812	26	1863	100	7254
Rural	73	5736	6	478	20	1600	100	7814
Owns a mobile								
No	73	6199	7	612	20	1735	100	8546
Yes	63	4115	10	678	26	1728	100	6521
Use of Internet								
Never	69	9102	8	1063	23	2954	100	13119
Yes	62	1212	12	227	26	509	100	1948

Results

Table I, shows that among women who did not use MCH services, 79% did not use any contraceptive method within 12 months following birth 16 % used a modern method and the rest of 5% are using the traditional

method. While 60% of women who used MCH service did not use any method, 29% of them were using modern and 11% traditional contraceptive methods, their significance is shown in Table II. From Table I, it has been noticed that women who utilized MCH services are more aware of using modern contraceptive methods. More women with media exposure (listening to the radio, watching TV, and reading newspapers) used modern contraceptives (27%) compared to those without media exposure (18%) as through media they can watch listen, and read about family planning programs and ads. Women who wanted a last child used less frequently the contraception methods (23%) than those who wanted later a child (39%). Working women and women with higher wealth quantiles used the modern contraceptive methods at higher percentages (27% and 29%) than those of non-working and lower wealth quantiles. Women who owned a mobile phone or used the internet are more likely to use modern contraceptives (26%) compared to those who do not own a mobile phone (20%) or never used the internet (23%).

The outcome variable, use of the contraceptive is ordinal and takes values from 0 to 2, with 0 referring to not using any method; 1 for using a traditional and 2 for using a modern method. Non-use of contraceptive methods is taken as the reference category. Colum 1 in Table I represents the odds of using a traditional method while Column 2 measures the odds for modern contraceptive method use, compared to the reference category of non-user. The multinomial logit estimates for a one-unit increase in MCH services for modern contraception in comparison to never-user, assuming the other model variables are kept constant. While keeping all other variables constant, if women use the MCH services, the odds would favour the modern contraception method over no use of the method would increase by 0.41 units. Therefore, women who utilize maternal and child healthcare services are more likely to avail of the contraceptive method and show a positive and highly significant association with the uptake of modern contraception methods. Women who use healthcare services are more likely to interact with healthcare practitioners, increasing their exposure to information regarding family planning methods. This could be one explanation for the link seen. They might be inspired and empowered to use various forms of contraception as a result of this exposure.

The results of the study also revealed that the use of modern contraception has a positive and significant relation with the desire for another child. If a mother wanted a child later then women would use contraception to meet their desire. The second and above categories have a positive and significant association with the use of contraceptive methods as compared to the poorest category of wealth quantile. From Table I it has been observed that 1 unit increase in media exposure would significantly raise 0.36 units of use of modern contraception methods. At the provincial level, the use of contraceptives is less likely in Sindh, Khyber Pakhtunkhwa, and Baluchistan than in Punjab.

Middle-aged women have uptake the modern contraception method than young women. Women with secondary or higher education levels have used modern contraceptives, that is with a 1 unit rise in educational level to secondary and higher there would be a 0.3 and 0.44 unit rise in the use of modern contraceptive methods as compared to never-users. Educated women might have better abilities in expressing their fertility desires or might have received proper health education and services from providers. From Table II, it has been observed that working women have used contraceptive methods as compared to non-working women.

Table II: Results of Contraceptive Methods by Using Multinomial Logistic Technique

Variables	Traditional Method	Modern Method
MCH	0.347***	0.412***
	(0.120)	(0.0790)
Wanted child	0.316***	0.413***
	(0.0852)	(0.0591)
Wealth Index		
Poorer	0.739***	0.363***
	(0.203)	(0.114)
Middle	1.258***	0.557***
	(0.204)	(0.120)
Richer	1.419***	0.575***
	(0.213)	(0.129)
Richest	1.654***	0.794***
	(0.228)	(0.141)
Media	0.234**	0.363***
	(0.113)	(0.0769)
Own Mobile	-0.119	0.0364
Yes	(0.111)	(0.0770)
Use Internet	-0.0536	-0.203*
Yes	(0.153)	(0.113)
Telephone	-0.481***	-0.411***
Yes	(0.164)	(0.114)
Region		
Sindh	-0.309**	0.0347
	(0.155)	(0.103)
KPK	-0.100	0.293***
	(0.154)	(0.104)
Baluchistan	-0.626***	-0.535***
	(0.216)	(0.143)

rural	-0.335***	-0.0565
Age		
20-24	-0.007	0.193
	(0.274)	(0.192)
25-29	0.251	0.463**
	(0.266)	(0.187)
30-34	0.570**	0.722***
	(0.269)	(0.189)
35-39	0.609**	0 .602***
	(0.281)	(0.199)
40-44	0.463	0.926***
	(0.370)	(0.242)
45-49	0.131	0.249
	(0.665)	(0.422)
Education		
Primary	0.141	0.195*
	(0.156)	(0.105)
Secondary	0.279**	0.312***
	(0.142)	(0.0988)
Higher	0.282	0.447***
	(0.172)	(0.121)
Employment	0.213	0.246**
Yes	(0.154)	(0.104)
Constant	-4.074***	-3.082***
	(0.331)	(0.221)
Observations	5,990	5,990

Discussion

Sexual and reproductive health (SRH) is a severe public health concern and pregnancy is a critical time in women's life.[13,14] Among medical interventions, contraception is unique due to its effectiveness and consequences, as a technique of fertility control & family planning promoting the health of both the mother and the child[15]. Self-care is obligatory to deal with physical and mental changes effectively.[16]

Sociodemographic characteristics like residence, education level, age, religion, level of income, employment, obstetric history associated variables for instance no of living children, parity, number of ante-natal visits, husband involvement, and knowledge of methods, have been also reported as determinants of the contraceptive utilization. [17] The capacity of an individual to access health care is interceded by his/her socio-economic status. [18-20]

According to a study, if all pregnant adolescents & their newborns had high-quality healthcare and access to contemporary contraception, unplanned pregnancies would decline by 73%, abortions by 74% annually, and the high maternal death rates among adolescents would decrease by 76% to 110/100000. [21]

Based on a sample of married women aged 15 to 49 who gave birth in the five years before the survey, the study examines the effects of maternal healthcare consumption on contraceptive usage within the 12-month postpartum period in Pakistan. In Pakistan, the proportion of married women who use contraception is still far lower than in the neighboring nations. The adoption of contemporary contraceptive methods is positively and significantly impacted by the utilization of MCH services. In Pakistan, women who used modern contraceptive methods were favorably correlated with age, education level, coming from wealthier quantiles, and employment position. It turns out that older women (35–39) in Pakistan are more likely to take contraceptives than younger women (15–29), consistent with previous findings. [22,23]

Women who gave birth in the five years before the survey were asked if they desired their most recent child at the time of delivery, later on, or not at all. Because an unanticipated pregnancy increases a woman's awareness, early initiation of contraceptive methods was found to be significantly positively impacted in all three models among women who reported having an unplanned delivery.

There is a notable distinction in the early uptake of contraceptives between the women from the wealthiest and the poorest homes. Poor women were unable to adopt sterilization, which was linked to government incentive programs, or pay for the expense of modern spacing techniques once they reached the required family size. The findings of one study provide evidence supporting the use of the mass media to increase and promote awareness of voluntary contraceptive use. [24]

The study found a notable difference in the usage of contraceptive techniques between rural and urban areas, which likely indicates that women living in rural areas are still not receiving enough information and services about contraception. The multinomial logistic model's findings show that the usage of maternal health care, age, place of residence, region, and wealth quintile were the most important factors in predicting whether or not Pakistani women will use contraception. However, women who received appropriate maternity health care had a greater prevalence of using contraceptives, indicating that the use of maternal health care is a significant predictor. Evidence-based approaches for promoting retention of the youth users & encouraging new users should be used.[25]

Conclusion

Based on the results, the study recommended that the government should overcome the structural barriers

through programs strengthening coverage and quality of maternal and child healthcare. In addition, MCH services need to be sensitized about the pivotal role that contraceptive use plays in maternal and child health, especially in low-resource settings. The possible reason behind the low adoption of contraceptives in Pakistan could be because lack of women's literacy, low uptake of MCH services, and more desire for children.

The results of the study suggest the necessity of stepping up outreach initiatives to support female education, expand female career prospects, and stop unwanted pregnancies. By taking these steps, women would gain the ability to make knowledgeable decisions about their health and reproductive options. An increase in the usage of contraceptives in Pakistan may result from the need for more assistance in improving the use of maternal healthcare. Thus, the main focus should be to guarantee that married women in the present have access to maternal health services, irrespective of their financial status. The results also indicate that wealth, along with other factors like education and living in a rural area, is a major contributor to this discrepancy. To overcome these persistent discrepancies in healthcare utilization, it is advised that resources be allocated to rural communities that are poorer and have lower levels of education.

Expanding immunization services, especially for vulnerable families, is also essential if progress toward universal health coverage under the SDG 2030 Agenda is to be achieved. The country should effectively implement equity-oriented resource allocation strategies. Moreover, efforts should be directed toward home visits for health campaigns to raise awareness about the importance of modern contraceptive use.

References

1. Yemane TT, Bogale GG, Egata G, Tefera TK. Postpartum family planning use and its determinants among women of the reproductive age group in low-income countries of sub-Saharan Africa: A systematic review and meta-analysis. Int J Reprod Med. 2021;2021:5580490. doi:10.1155/2021/5580490.
2. Seiber EE, Hotchkiss DR, Rous JJ, Berruti AA. Maternal and child health and family planning service utilization in Guatemala: implications for service integration. Soc Sci Med. 2005;61(2):279-91. doi:10.1016/j.socscimed.2004.11.068.
3. Dutamo Z, Assefa N, Egata G. Maternal health care use among married women in Hossaina, Ethiopia. BMC Health Serv Res. 2015;15:1047. doi:10.1186/s12913-015-1047-1.
4. Owusu SA, Owusu RA, Hampshire K. Maternal and non-maternal caregivers' practices in drug administration to children during illness. Child Care Pract. 2021;27(3):295-309. doi:10.1080/13575279.2019.1664986.
5. Bellizzi S, Palestra F, Pichierri G. Adolescent women with unintended pregnancy in low- and middle-income countries: reasons for discontinuation of contraception. J Pediatr Adolesc Gynecol. 2020;33(2):144-8. doi:10.1016/j.jpag.2019.11.004.
6. Kumar P, Sharma H, Mawkhlieng DR. Do family planning advice and maternal health care utilization change contraceptive use? A study based on Bihar, India. Clin Epidemiol Glob Health. 2020;8(3):693-7. doi:10.1016/j.cegh.2020.01.004.
7. Kumar G, Reshmi RS. Availability of public health facilities and utilization of maternal and child health services in districts of India. Clin Epidemiol Glob Health. 2022;15:101070. doi:10.1016/j.cegh.2022.101070.
8. Bansal A, Shirisha P, Mahapatra B, Dwivedi LK. Role of maternal and child health services on the uptake of contraceptive use in India: A reproductive calendar approach. PLoS One. 2022;17(6):e0269170. doi:10.1371/journal.pone.0269170.
9. Kundu S, Kundu S, Rahman MA, Kabir H, Al Banna MH, Basu S, et al. Prevalence and determinants of contraceptive method use among Bangladeshi women of reproductive age: a multilevel multinomial analysis. BMC Public Health. 2022;22(1):2357. doi:10.1186/s12889-022-14857-4.
10. Chandra-Mouli V, Parameshwar PS, Parry M, Lane C, Hainsworth G, Wong S, et al. A never-before opportunity to strengthen investment and action on adolescent contraception, and what we must do to make full use of it. Reprod Health. 2017;14(1):47. doi:10.1186/s12978-017-0347-9.
11. Blazer C, Prata N. Postpartum family planning: current evidence on successful interventions. Open Access J Contracept. 2016;7:53-67. doi:10.2147/OAJC.S98817.
12. United Nations Children's Fund (UNICEF). Annual Report 2021.
13. Nguyen TT, Neal S. Contraceptive prevalence and factors influencing utilization among women in Pakistan: a focus on gender-based violence. Fulbright Rev Econ Policy. 2021;1(1):119-34. doi:10.1108/FREP-05-2021-0032.
14. Javaid MM, Farooq F, Khalid SN, Ullah A, Langrial RZ, Junaid M, et al. Assessment of periodontal status and oral health-related quality of life among pregnant women. J Soc Obstet Gynaecol Pak. 2024;14(2):96-100.
15. Rahman M, Haque SE, Zahan S, Islam J, Rahman M, Asaduzzaman MD, et al. Maternal high-risk fertility behavior and association with chronic undernutrition among children under age 5 years in India, Bangladesh, and Nepal: do poor children have a higher risk? Nutrition. 2018;49:32-40. doi:10.1016/j.nut.2017.10.001.
16. Khalid SN, Khalid SN, Memon A, Javaid MM, Bairam S, Mahmood R. Assessment of puberty changes knowledge scale and challenges faced by university students of Islamabad, Pakistan: A cross-sectional survey. J Soc Obstet Gynaecol Pak. 2024;14(3):355-61.
17. Tesema ZT, Tesema GA, Boke MM, Akalu TY. Determinants of modern contraceptive utilization among married women in sub-Saharan Africa: multilevel analysis

using recent demographic and health survey. BMC Womens Health. 2022;22(1):181. doi:10.1186/s12905-022-01769-z.

18. Javaid MM, Tariq MA, Sajid M, Uraneb S, Zia Q, Umer MF, et al. Impact of socioeconomic status and duration of HIV/AIDS on scarcity of vitamin D among HIV-infected patients. Pak J Public Health. 2023;13(2):84-7. doi:10.32413/pjph.v13i2.1184.
19. Mansoor A, Mansoor E, Sana A, Javaid MM, Hussain K. Vaccination status of hepatitis B among dental patients visiting a public health sector of Islamabad. Ann Pak Inst Med Sci. 2023;19(3):356-60. doi:10.48036/apims.v19i3.929.
20. Mansoor A, Mansoor E, Sana A, Javaid MM, Khan AS, Hussain K. Physiological and socio-economic satisfaction level of patients for acrylic and cast alloy dentures. Pak J Physiol. 2023;19(4):6-10. doi:10.69656/pjp.v19i4.1584.
21. Guttmacher Institute. Adding it up: investing in contraception and maternal and newborn health for adolescents in Kenya, 2018. Guttmacher Institute. 2019.
22. Jejeebhoy SJ, Santhya KG, Zavier AF. Demand for contraception to delay first pregnancy among young married women in India. Stud Fam Plann. 2014;45(2):183-201. doi:10.1111/j.1728-4465.2014.00384.x.
23. Kumar P, Sharma H, Mawkhlieng DR. Do family planning advice and maternal health care utilization change contraceptive use? A study based on Bihar, India. Clin Epidemiol Glob Health. 2020;8(3):693-7. doi:10.1016/j.cegh.2020.01.004.
24. Ghosh R, Mozumdar A, Chattopadhyay A, Acharya R. Mass media exposure and use of reversible modern contraceptives among married women in India: an analysis of the NFHS 2015-16 data. PLoS One. 2021;16(7):e0254400. doi:10.1371/journal.pone.0254400.
25. Kungu W. Family planning use and discontinuation among women aged 15-24 years in Kenya. Policy Brief. 2022;1-4. doi:10.3389/frph.2023.1192193