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Exploring the Persistent Challenges of Reproductive Health Management: Analyzing Use of Contraception Among Wives Across Four Provinces in Pakistan Utilizing MICS Data

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Abstract

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Keywords: Birth Control, Contraceptive Use, Demographic Factors, Socio-Cultural Influence, Rural-Urban Disparities

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Title

Exploring the Persistent Challenges of Reproductive Health Management: Analyzing Use of Contraception Among Wives Across Four Provinces in Pakistan Utilizing MICS Data

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Abstract

This study examines factors influencing contraceptive use among married women aged 15-49 in Pakistan using data from the Multiple Indicator Cluster Survey (MICS). This research aims to identify the demographic, economic, and sociocultural factors contributing to this disparity, focusing on the four provinces (Punjab, Sindh, KPK, and Balochistan). The study employs secondary analysis of data from over 103,000 women, exploring the association of CPR with variables such as age, education, economic status, fertility preference, and internalized patriarchy. Geographically, 40.9% of the sample was from Punjab, 23% from KPK, 18.8% from Balochistan, and 17.3% from Sindh, with 72.3% residing in rural areas and 27.3% in urban areas. Findings contribute to understanding provincial disparities and highlight the need for localized, culturally sensitive family planning strategies in Pakistan. The study calls for targeted interventions to improve birth control use among rural, less-educated, and poorer women, especially in Sindh and Balochistan.

Keywords:

Birth Control, Contraceptive Use, Demographic Factors, Socio-Cultural Influence, Rural-Urban Disparities

Contents

Introduction

Initiatives for population control through family planning sprouted roots in Pakistan in the early 1950s with the establishment of the Family Planning Association of Pakistan. By the mid-60s, Pakistan was arguably ahead of the curve as the premier country in Southern Asia to include the "Family Planning Scheme" into its third Five Year Development Plan (Rakanuddin& Hardee Cleaveland, 1992; Shah, Lee & Mir, 2021; Hoo& Lai, 2023). Today, Pakistan has the sixth-largest population in the world with a 2.4% population growth rate and a 3.6% fertility rate, both figures being well above the South Asian and global average (Ali, Ali & Begum, 2021; Abdullah, Bilal, Khan, Ahmed, Khawaja, Sultan & Khan, 2023; Hoo& Li Lai, 2023). Despite having family planning on its national policy agenda for almost 60 years, Contraception Prevalence Rate (CPR) in Pakistan has barely reached 34%, while neighboring countries like India and Bangladesh have achieved a CPR of 67% and 59%, respectively (Hossain, et al., 2024; Ministry

of Health and Welfare, 2022; Osborn et al., 2021; Shah et al., 2023). Clearly, the existing policies and strategies for increasing CPR in Pakistan have been ineffectual, and there is a vital need for research-driven policymaking that can identify major impediments and develop solutions that are attuned to local contexts.

A review of the literature shows that there is a dearth of national-level data on the use of contraception in Pakistan. Public health and demography research predominantly rely on the Pakistan Demographic Health Survey (PDHS) (National Institute of Population Studies [NIPS] & ICF, 2019), as a primary source that provides nationwide statistics on contraceptive use, reproductive choices, and unmet needs for birth control devices, among Pakistani wives (15 years to 49 years old). Recent studies (that analyzed the PDHS, 2017-2018 data) have found that decision-making about contraceptive use by married women is associated with several factors related to demography (age and residence in rural/urban areas), economic status, empowerment status (education and job status), level of awareness, marital and reproductive history, fertility preference and internalized patriarchy (Ali, Ali & Begum, 2021; Abdullah et al., 2023; Hoo& Li Lai, 2023; Meherali, Ali, Khaliq, &Lassi, 2021). This research examines factors associated with the use of birth control methods by Pakistani wives (15 years to 49 years of old), utilizing Multiple Indicator Cluster Survey (MICS) data. The study also compares the influence of these factors on contraception use in Pakistan's four provinces.

Previous studies have identified several factors that may potentially have proscriptive or facilitative effects on women's use of birth control methods. Contraceptive use is found to be more prevalent among urban populations as compared to rural populations(Abdullah et al., 2023; Meharali et al., 2021). According to the diffusion of innovation theory contraception use grows via social networks and connections, and the celerity of its spread is influenced by the perceived advantage, agreement with shared values, ease of use, and observed success (Murphy, 2004). Women residing in urban areas are exposed to modern perspectives on reproductive health, understand the benefits of small families, and can observe successful examples within kinship and communal networks (Hoo& Li Lai, 2023; Ali et. al. 2021; Meherali et al., 2021; Murphy, 2004). Conversely, pervasive conservative norms and values in rural areas may be discordant with the ethos of reproductive health, resulting in limited access to modern birth control methods for women living in a rural setting (Anwar, 2023; Hoo et. al 2023; Ali et. al. 2021; Meharali, 2021; Murphy, 2004). Moreover, their social networks often lack successful examples of contraception use, further reducing their chances of using birth control methods (Anwar, Anwar & Khan, 2023; Hoo& Li Lai, 2023; Murphy, 2004). Findings from Pakistan consistently show more common contraception use in urban settings compared to village areas(Hoo& Li Lai, 2023; Meharali, 2021; Anwar, Anwar & Khan, 2023; Shah, Lee, &Nisa Mir, 2021). Lack of knowledge and awareness about usage, misconceptions about the hazards involved with usage, and misconceptions about long-term effects of usage and traditional religious beliefs are identified determinants of low contraception usage among rural women (Hoo& Li Lai, 2023; NIPS,2019; Kanwal, Zaheer, Qureshi, Aslam &Shafique, 2016). Albeit, a few studies found that among the women using contraception in Pakistan, a greater number of women in rural areas were using modern methods of contraception while traditional birth control methods were more common among urban women (Hoo& Li Lai, 2023; Shah, 2021; Kanwal, 2016). This was possibly due to the Lady Health Worker (LHW) program (Kamran & Mir, 2024) which required LHWs (Kamran & Mir, 2024) to proactively offer reproductive health-related advice and services at the women's doorsteps (Kamran & Mir, 2024; Hoo& Li Lai, 2023).

The decision theory (Obilor&Osita-Njoku, 2021) posits that individuals' decisions(in this case the decisions to use birth control) are influenced by their religious, cultural, and socioeconomic values. Affluent and educated individuals are more likely to value socioeconomic achievement, career development, and the economic advantage of having fewer children (Obilor&Osita-Njoku, 2021). Therefore they are

more likely to adopt modern birth control methods (Obilor&Osita-Njoku, 2021). Specifically, education may not only teach women about the functionality and utility of contraception use but also the ethos of family planning (Obilor&Osita-Njoku, 2021).

Similarly, social cognitive theory (also called the social awareness theory) proposes self-efficacy, and having the opportunity to observe and learn from positive examples of contraceptive use has a positive influence on the use of birth control methods among women (Kartika et al., 1017). Therefore, factors like household wealth, education, and access to mass media and information technology are positively related to contraception use (Kartika et al., 1017).

Several studies have highlighted that household wealth is positively related to family planning, and contraception use is lower among poor families in Pakistan (Hoo& Li Lai, 2023; Ali, 2021; Shah et al., 2021; Meharali, 2021; Kantorová et al, 2020; Azmat, 2015; Khan & Ali Khan, 2010). The positive influence of women's education on contraception use among married women has been consistently verified by a number of empirical studies (Hoo& Li Lai, 2023; Ali, 2021; Shah et al., 2021; Meharali, 2021; Miller, 2016; Saleem&Bobak, 2005). There is some evidence that suggests contraception use is higher among women with greater access to media, especially TV (Meharali, 2021). Further exploration of the relationship is necessary, especially in consideration of the fact that dissemination of persuasive messages through the mass media and the internet is a consistent feature among all family planning campaigns and programs.

The Health Belief Model proposes that adoption of family planning methods is a rational decision influenced by the perceived threat of pregnancy, and cost/benefit analysis associated with contraceptive use (Kelli, 2012). Studies in Pakistan show that women who have recently given birth or have three or more children have higher chances of using birth control (Nausheen et al., 2021; Abbas et al., 2013). However, the birthing intervals of nulliparous, primiparous, and multiparous women without male children tend to be shorter (Nausheen et al., 2021; Abbas et al., 2013). Similarly, older married women in Pakistan have higher chances of using contraception compared to their younger counterparts (Hoo & Li Lai, 2023; Shah, 2021; Ali, 2023; Meharali, 2021).

Feminist analysis of contraceptive use in patriarchal societies suggests that women's agency in making decisions about their reproductive health is constrained both structurally and psychologically (DePadilla, 2011). Growing up in male-dominated societies, women internalize patriarchal values and gender roles, which can lead to psychological tendencies that push them toward risky reproductive decision-making (DePadilla, 2011). For instance, there is less utilization of methods of contraception among married women holding patriarchal beliefs or without male children in Pakistan (Hoo& Li Lai, 2023; Meharali, 2021; Anwar, Anwar & Khan, 2023; Shah, Lee &Nisa Mir, 2021; Nausheen, Bhura, Hackett, Hussain, Shaikh, Rizvi, Ansari, Canning, Shah, &Soofi, 2021; Abbas, Shaikh, & Bari, 2013). Similarly, girls who are married under 20 years of age (indicating that their families hold conservative values) are less likely to use contraception (Hoo & Lai, 2023; Meharali, 2021; Anwar, Anwar & Khan, 2023; Abbas, Shaikh, & Bari, 2013).

Lastly, the use of birth control methods is not evenly distributed across the four provinces in Pakistan. According to recent studies, contraception use is most common in Pakistan followed by Sindh, KPK, and Balochistan, respectively (Meharali, 2021).

Methodology

Data collected in the sixth round of the Multiple Indicator Cluster Survey (MICS6) from Punjab(2017-18), Sindh (2018-19), KPK (2019), and Balochistan (2019-20) was analyzed (UNICEF MICS, n.d.). All four datasets were retrieved from the United Nations Children's Emergency Fund (UNICEF) MICS website (UNICEF MICS, n.d.).

In Punjab, a total of 53,840 households were originally selected, of which 52,756 were found occupied, and out of these 51,660 were interviewed (the response rate was 97.9%). Within each of the selected households, women (n=74,010; between 15-49 years), men (n=27,094; 15 - 49 years), children

under the age of 5 (n=39,799; caretakers or mothers were interviewed), and children between 5 - 17 years of age (n=35,482), were interviewed. In Sindh, a multistage stratified cluster sample of 20,540 households was selected, 20,212 were found occupied and of these respondents from 20,030 households (response rate of 99.1%) were interviewed. Overall, a total of 30,293 women (15 - 49 years), 14,790 men (15 - 45 years), 17,978 children under 5 years (mothers and caretakers were interviewed), and 17,978 children between 5 and 17 years, were interviewed from the selected households. A sample of 23740 households was selected in KPK, of which 23,583 were occupied and out of these data was collected from 23,501 households (response rate of 99.7%). Overall, from the selected households, 40,261 women (15 - 49 years), 18,232 men (15 - 49 years), 24,143 children under 5 (caretakers and mothers were interviewed), and 19,144 children between 5 and 17 years, were interviewed. Lastly, 21,380 households in Baluchistan were selected, of which 21,127 were occupied, and this data was collected from 20,947 households (response rate of 99.7%). A total of 36,726 women (15 - 49 years), 20,057 men (15 - 49 years), 25,442 respondents under the age of 5 years, and 17,369 respondents between the ages of 5 years and 17 years were interviewed from the selected households.

From each of the four datasets, the files containing data for women (labeled as 'wm') were selected and merged. The resulting file had a total of 188,474 cases(including 79,510 from Punjab, 31,043 from Sindh, 40,767 from KPK, and 37154 from Balochistan). Out of the 188,474 women included in the dataset, a total of 103,196 non-pregnant women were asked the question "Are you currently using a (birth control) method to avoid pregnancy?" All these cases were selected and saved as a separate file. The resulting dataset which contained information of 103,196 women from all four provinces was analyzed for this study. The dichotomous 'Are you currently using method to avoid pregnancy' variable was the dependent variable for the study. Guided by an extensive review of the literature, various variables representing demographic, economic, empowerment, reproductive history, fertility preference, and internalized patriarchy-related factors were selected as independent variables.

Table 1

Descriptive statistics (N=103196)

Independent Variables	N	%age	Independent Variables	N	%age
Province			Want to have another child		
Punjab	42181	40.9	Yes, want another child	34263	33.2
Sindh	17832	17.3	No, don't want another child	35424	34.3
KPK	23785	23.0	*Missed cases*	33509	32.5
Balochistan	19398	18.8	Live births in the last 2 years		
Residential Area			No live births	57579	55.8
City area	28170	27.3	One or more live births	34599	33.5
Village area	75026	72.7	*Missed cases*	11018	10.7
Wealth Ranking			Reads Newspaper		
Lowest	23817	23.1	Once weekly <	98784	95.7
Low	22288	21.6	Once weekly ≥	4344	4.20
Mid	20804	20.2	*Missed cases*	68	0.10
High	19261	18.7	Listens to Radio		
Highest	17026	16.5	Once weekly <	100068	97.0
Age of Married Women (years)			Once weekly ≥	3071	3.00

Independent Variables	N	%age	Independent Variables	N	%age
Between 15 & 19	3744	3.60	*Missed cases*	57	0.10
Between 20 & 24	12965	12.6	Watches TV		
Between 25 & 29	20555	19.9	Once weekly <	58217	56.4
Between 30 & 34	20451	19.8	Once weekly ≥	44852	43.5
Between 35 & 39	19339	18.7	*Missed cases*	127	0.10
Between 40 & 44	14483	14.0	Mobile Phone usage		
Between 45 & 49	11657	11.3	Once weekly <	43090	41.8
Education of Married Women			Once weekly ≥	59927	58.1
No ed./Preschool	64362	62.4	*Missed cases*	179	0.20
Elementary/Primary	13373	13.0	Physically hitting the wife is Justified:		
Middle	6614	6.40	If the wife without informing her husband goes out of the house		
Secondary	9496	9.20	No	70222	68.0
Higher or above	9348	9.10	Yes	31535	30.6
Missed cases	3	0.00	*Missed cases*	1439	1.40
Age at 1st Marriage			If a wife neglects her children		
15 years or less	15280	14.8	No	67976	65.9
16 - 25 year	75357	73.0	Yes	33273	32.2
26 - 35 years	11867	11.5	*Missed cases*	1947	1.90
More than 35 years	691	0.70	If the wife quarrels with her spouse		
Spouse's Age (years)			No	65698	63.7
20 or less	1998	1.9	Yes	35672	34.6
Between 21 & 30	24991	24.2	*Missed cases*	1826	1.80
Between 31 & 40	37864	36.7	If a wife refuses sex with her husband		
Between 41&- 50	27378	26.5	No	72279	70.0
50 ≥	10128	9.80	Yes	27892	27.0
Missed cases	837	0.80	*Missed cases*	3025	2.90
Spouse has more than one wife			If the wife burns the food		
Has one wife	98517	95.5	No	79290	76.8
Has more than one wife	4479	4.30	Yes	22129	21.4
Missed cases	200	0.20	*Missed cases*	1777	1.70
Any son/sons living with Mother			Dependent Variable	N	%age
No	11911	11.5	Currently utilizing any contraception method		
Yes	79498	77.0	No	71476	69.3
Missed cases	11787	11.4	Yes	31720	30.7

Independent Variables	N	%age	Independent Variables	N	%age
Number of surviving children					
2 children or less	41873	40.6			
3 - 4 Children	34274	33.2			
5 children or more	27048	26.2			

Results

Cumulatively, the merged data contained information on 103196 individuals. 40.9% of the total sample was from Punjab, followed by 23% from KPK, 18.8% from Balochistan and 17.3% from Sindh. Almost three-quarters (72.3%) of the sample were from rural areas and 27.3% were from urban areas. Almost half (23.1+21.6=44.7%) were from lowest or low-income households, 20.2% were from mid-income households and 35.2% (18.7+16.5=35.2) were from high and highest income households. Wedded women below 20 years represented only 3.6% of the sample, while women between 20 and 24 represented 12.6%. Almost 60 of the women in the data were between the ages of 25 and 39 years (19.9+19.8+18.7=58.4%) while a quarter (14.0+11.3=25.3) of the sample was 40 years of age or older. A sizable majority (62.4%) of the women were uneducated. 13% of the women had primary-level education, while 15.6% (6.4+9.2) had middle or secondary-level education. Only 9.1% of the women had completed a higher level of education or above. Almost, three-quarters (73%) of the women got married at a young age (between 16 and 25 years).

Only 1.9% of the respondents had husbands who were 20 years of age or less. 60.9% (24.2+36.7) of the respondents had husbands between the ages of 21 and 40 years. The husbands of almost a quarter (26.5%) of the married women were between 41 and 50 years of age and only 9.8% had husbands who were older than 50 years. Less than five percent (4.3%) had polygamous husbands.

More than three-quarters (77%) of the women had male children who were living with them. 40.6% of the women had 2 or fewer children, while 33.2% had between 3-4 children, and 26.2% had five or more children. One-third (33.2%) of the women wanted another child, while almost the same percentage of women (34.3%) did not want another child (while 32.5% of the cases in this variable were missing). 33.5% or one-third of the respondents had birthed a child within the last couple of years.

The majority of respondents did not regularly read newspapers or listen to the radio. 43.5% of respondents watched TV once a week or more, while 58.1% used a mobile phone once a week or more. Women's belief in patriarchal values was found to be alarmingly high. The percentage of wedded females that believed that the husband's hitting the wife was acceptable: a) if she went out without informing her husband was 30.6%; neglects her kids was 32.2%; quarrels with spouse was 34.6%; denies spouse sex was 27%; and cooks burnt food was 21.4%.

The descriptive statistics on the use of birth control methods in Pakistan warrant attention. Out of a total of 103196 women, only 30.7% practiced contraception. Contraception use was highest in Punjab (37.3%) followed by KPK (33.6%), Sindh (23.8%), and Balochistan (19.4%), respectively.

Five logistic regression models were tested in the study. The first two columns of Table 2 show relationships between the dependent variable, birth control use, and the independent variables in Pakistan. Subsequent columns show the relationships between the contraception and the included IVs across each of the four provinces, separately.

Results showed that there was more than a 99% likelihood that married females in Sindh and Balochistan had lesser odds of contraception usage compared to women in Punjab. Whereas, respondents in KPK had 1.26 times greater odds of using birth prevention methods than Punjab. Hence, even though the overall use of contraceptives was greater in Punjab (37.3%) than in KPK (33.6%), the per capita rate of contraception usage was higher in KPK.

The likelihood of rural residents utilizing contraception methods was 9% less than urban residents, with a p-value of less than 0.01. This trend was consistent throughout the provinces with the exception of Balochistan. Females in rural Punjab had 8% less likelihood ($p < 0.05$); in Sindh had 24% less likelihood ($p < 0.01$); and in KPK had 17% less likelihood ($p < 0.01$), of using some form of contraception compared to urban women. Conversely, wedded females residing in rural Balochistan had 1.13 times greater odds ($p < 0.1$) of using birth control methods as compared to married women in urban areas. This finding needs further corroboration as previous studies consistently show that the use of birth control methods is higher in urban areas across Pakistan.

The wealth ranking of the households was significantly positively associated with the utilization of a method for contraception in Pakistan. Compared to the lowest income households in Pakistan, women in low (aOR=1.22), mid(aOR=1.32), high(aOR=1.22), and higher (aOR=1.37)income households had greater odds of using contraceptives. All relationships were significant at 99%. Similarly, in KPK and Balochistan, compared to lowest-income households, women from low, mid, high, and highest-income households had a significantly higher probability of utilizing some birth prevention methods. In Sindh, women from lowest-income households had a significantly lesser probability of utilizing some contraception method compared to women from mid-, high--, or higher-income households. These relationships were significant at 95,90 and 95 percent, respectively. There was a cyclical relationship between contraception usage and household income in Punjab. In comparison to lowest-income households, women from low and mid-income households had significantly greater odds, while females from high-income households had significantly lesser odds, of using birth prevention methods. Interestingly, there was no significant difference in contraception usage between the lowest and highest-income households in Punjab.

Overall, use of birth control methods decreased with age of women. Albeit, in Pakistan, 20 to 24-year-old females had 1.15 times greater odds of contraception use than 15 to 19-year-old girls. This relationship was significant at 90%. However, this trend was reversed as the age of women increased. In comparison with 15 to 19 years old girls, 35 to 39 years,40 to 44 years, and 45 to 49 years old women were 24% ($p < 0.01$), 42% ($p < 0.01$), and 62% ($p < 0.01$), respectively, less likely to use birth control methods. Similarly in Punjab, in comparison to 15 to 19 years old girls, of 35 to 39 years old women had24% ($p <0.05$), 40 and 44 years old women had 42% ($p < 0.01$), and 45 to 49 years old women had 64% ($p < 0.01$)lesser probability of using birth control methods. In Sindh,40 to 44-year-old women had 47% ($p < 0.01$) and 45 to 49-year-old women had 69% ($p < 0.01$) lesser chances of using contraceptive methods than 15 to 19-year-old girls. The trend of diminished contraception use among older women was most prevalent in KPK. In KPK, compared to girls between 15 to 19 years of age, 20 to 24 years old women were 25% ($p < 0.05$), 25 to 29 years old women were 33% ($p < 0.01$), 30 to 34 years old women were 40% ($p < 0.01$), 40 to 44 years old women were 54% ($p < 0.01$), and 45 to 49 years old women were 69% ($p < 0.01$), less likely to use birth control methods. Lastly, the age of married women was not related to the probability of birth control methods in Balochistan.

Women's education was positively related to contraception use. In Pakistan, women with primary, middle, secondary, or higher level education had significantly greater odds of using pregnancy prevention methods than uneducated women. Similarly, in Punjab, KPK, and Sindh, women with primary, middle, secondary, or higher level education had a significantly greater probability of using contraception than uneducated women. In Balochistan, in comparison to uneducated women, wives with primary and secondary level education had a greater probability of using some method of pregnancy prevention.

The relationship between the age of women at the time of their first marriage and birth control method

usage presents a disquieting trend. In Pakistan, women who were 15 years old or younger at the time they got married had significantly lower odds of using pregnancy prevention methods than women who were married at ages of 16 to 25 years, 26 to 35 years, or above 35 years. Therefore, adolescent brides were less likely to use contraception in Pakistan, increasing their chances of giving birth before reaching adulthood. A similar trend was observed in Sindh, where adolescent brides were less likely to use contraception methods compared to women who got married at the age of 16 years or above. In Punjab and KPK, adolescent brides were at a greater risk of not using any pregnancy prevention method compared to women who got married between 16 to 35 years, while no significant difference existed between adolescent brides and women more than 35 years old at the time of marriage.

At the provincial level, in Punjab and KPK, compared to women who were married during their adolescence (15 years or less), women who were married between 16-25 years of age (Punjab: aOR=1.25; $p < 0.01$; and KPK: aOR=1.19; $p < 0.01$) and women who got married between the ages of 26 and 35 years (Punjab: aOR=1.36; $p < 0.01$; and KPK: aOR=1.50; $p < 0.01$) were significantly more likely to use birth control. In both provinces, no significant difference was found between the use of birth control among the women married during their adolescence and women who were married at more than 35 years of age. In Balochistan, only women married between the ages of 16 to 25 years had 1.47 times greater odds of using some contraception method as compared to adolescent brides.

The effect of polygamy on adopting birth prevention measures was in the expected direction. In the national sample, women with polygamous husbands lower odds of using contraception (aOR=0.83; $p < 0.01$). Within provinces, the effect of polygamy on birth control was similar. Women with polygamous husbands had lower odds of utilizing any birth prevention methods in Punjab, Sindh, and KPK. In Balochistan, the relationship between polygamy and contraception use was also negative but non-significant.

Mothers with male children had a significantly higher probability of adopting contraception methods both nationally and across the provinces. In the present analysis, the following question from the MICS survey was used as a proxy for determining whether a respondent had a male child/children or not: "Do any son/sons live with you (the mother)?" Since the women included in the data were between the ages of 15 and 49 years, it can be reasonably assumed that the children of most of the women were not old enough to be independently living on their own. However, this possibility cannot be precluded especially in the case of older women (40 years or above) who got married at an early age. Furthermore, it is also possible that the parents may have separated and the son may be living with the father (or any other relation). The interpretation of the relationship between mothers having male child/children and the use of birth control methods will be made keeping the above-mentioned limitations in mind. In Pakistan, the odds of using birth control by women who are living with their son/sons were 1.36 times greater ($p < 0.01$) than women who were not living with son/sons. Similarly, across the provinces, the odds of using birth control methods by women living with sons/sons were significantly higher in Punjab, Sindh, KPK, and Balochistan, when compared to women who did not live with a son/sons.

Women with more children had higher odds of using birth prevention measures. In Pakistan, compared to women with 2 or fewer children, the odds for women with 3-4 children (aOR1.68) and more than 4 children (aOR=2.10) of using birth control methods were significantly higher. Similarly, women with 3-4 children or more than 4 children had significantly higher odds of adopting pregnancy prevention methods in Punjab, Sindh, KPK, and Balochistan, compared to mothers with less than 3 children.

Across Pakistan and specifically in KPK, Punjab, and Sindh, primiparous and multiparous women, who did not want more children, had greater odds of using birth control methods. Overall, parous women who did not want another child had 1.56 times ($p < 0.01$) greater odds of using birth control methods compared

to women desirous of another child, in Pakistan. This finding indicates that parous women may have more control over decisions related to reproductive health. Results from Punjab, Sindh, and KPK corroborated this trend. Contrariwise, women not wanting children in Balochistan were 16% less likely to utilize pregnancy prevention methods than women wanting children, indicating that parous women may have less control over birthing choices in Balochistan.

Across Pakistan, and especially in Punjab and Sindh, having given birth within the last 2 years did not significantly increase or decrease mothers' odds of using some form of contraception. In Balochistan, birthing a child within the last two years significantly increased the mother's odds (1.15 times) of using some pregnancy control methods, compared to women who had not given birth. In Sindh however, having given birth in the last two years significantly decreased the odds (aOR=0.74; $p < 0.01$) of using birth control by 24%, when compared to women who had not given birth. These findings indicate that having appropriate birth intervals between pregnancies may not be a significant factor in the decision to use birth control among married women in Pakistan.

Women who read newspapers more than once a week were significantly more likely to adopt pregnancy control methods across Pakistan and in the provinces of Sindh and KPK. In Punjab frequency of newspaper reading was not related to the use of birth control among married women. Lastly, married women who read newspapers once a week or more in Balochistan were at a 49% ($p < 0.01$) higher risk of not adopting birth prevention measures, in comparison to women not reading newspapers. Overall, married women who regularly used TV and mobile phones had significantly higher odds of being more likely to adopt birth control measures in Pakistan and across the four provinces.

Wives holding patriarchal beliefs did not have a unidirectional relationship with the adoption of birth prevention methods. In Pakistan, KPK, and Sindh, women believing that physical abuse was acceptable wife left the house without their husbands' permission were 1.20, 1.40, and 1.20 times more likely, to utilize birth prevention measures than women who believed to the contrary. These findings are anomalous, as an inverse relationship was predicted between beliefs in patriarchy and the use of birth control. Similarly, wives believing physical abuse to be acceptable if they neglected their children in Sindh, had significantly greater odds (aOR=1.32; $p < 0.01$) of using birth control methods, compared to women who did not believe that beating a wife was justified. Furthermore, married women in Pakistan and Punjab, who believed that beating was justified if the wife argued with her husband had 1.07 and 1.13 times higher odds of using birth control than women who disagreed with this proposition. Women who believed that wife beating was justified if a woman refused to have sex with her husband in Sindh, had a higher probability of using birth control than women who did not believe that beating a wife was justified. Conversely, in Balochistan, this relationship was found to be in the predicted direction. In Balochistan, women believed physical abuse to be acceptable if the wife refused sex to the husband and had 26% less likelihood of using pregnancy prevention methods.

Only one indicator out of the patriarchal belief scale was observed to be negatively related to the utilization of birth control methods. Across Pakistan, and within KPK and Balochistan, women believing physical abuse to be justifiable for women who cook burnt food were at a significantly greater risk of not adopting birth prevention methods.

Table 2

Variables	Pakistan		Punjab		Sindh		KPK		Balochistan	
	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI
Province										
Punjab										
Sindh	0.51***	0.48-0.53								
KPK	1.26***	1.19-1.33								

Variables	Pakistan		Punjab		Sindh		KPK		Balochistan	
Balochistan	0.66***	0.62-0.71								
Residential Area										
City area										
Village area	0.91***	0.87-0.96	0.92**	0.87-0.99	0.76***	0.67-0.86	0.83***	0.74-0.93	1.13*	0.98-1.31
Wealth Ranking										
Lowest										
Low	1.22***	1.15-1.29	1.12***	1.03-1.22	1.07	0.90-1.26	1.34***	1.21-1.50	1.39***	1.18-1.64
Mid	1.32***	1.25-1.40	1.09*	1.00-1.20	1.23**	1.03-1.48	1.51***	1.35-1.69	1.79***	1.50-2.14
High	1.22***	1.14-1.30	0.91*	0.82-1.01	1.23*	0.99-1.52	1.56***	1.39-1.76	1.64***	1.35-2.00
Highest	1.37***	1.27-1.48	0.94	0.84-1.06	1.35**	1.07-1.70	1.49***	1.29-1.71	3.09***	2.50-3.81
Age of Married Women (years)										
Between 15 & 19										
Between 20 & 24	1.15*	0.98-1.35	1.23	0.95-1.59	1.15	0.75-1.75	0.98	0.75-1.28	1.51	0.91-2.50
Between 25 & 29	0.99	0.85-1.16	1.11	0.86-1.43	1.04	0.68-1.60	0.75**	0.58-0.99	1.15	0.69-1.91
Between 30 & 34	0.88	0.75-1.04	0.93	0.71-1.21	0.88	0.57-1.37	0.67***	0.50-0.90	1.21	0.70-2.07
Between 35 & 39	0.76***	0.64-0.90	0.76**	0.58-1.00	0.71	0.45-1.12	0.60***	0.44-0.81	1.24	0.71-2.16
Between 40 & 44	0.58***	0.49-0.70	0.58***	0.43-0.76	0.53***	0.33-0.85	0.46***	0.33-0.63	1.14	0.63-2.04
Between 45 & 49	0.38***	0.32-0.46	0.36***	0.27-0.48	0.31***	0.19-0.52	0.31***	0.22-0.43	1.12	0.61-2.05
Education of Married Women										
No ed./Preschool										
Elementary/Primary	1.29***	1.22-1.36	1.28***	1.18-1.37	1.21**	1.04-1.42	1.36***	1.20-1.55	1.68***	1.30-2.18
Middle	1.25***	1.16-1.34	1.28***	1.16-1.41	1.36***	1.10-1.68	1.36***	1.14-1.62	1.24	0.88-1.76
Secondary	1.43***	1.33-1.53	1.56***	1.42-1.71	1.29***	1.08-1.54	1.50***	1.28-1.75	1.53***	1.19-1.95
Higher or above	1.50***	1.39-1.62	1.70***	1.53-1.89	1.27**	1.06-1.52	1.81***	1.53-2.14	1.11	0.82-1.51
Age at 1st Marriage										
15 years or less										
16 - 25 year	1.25***	1.19-1.32	1.25***	1.14-1.36	1.24***	1.08-1.42	1.19***	1.08-1.32	1.47***	1.25-1.74
26 - 35 years	1.36***	1.26-1.48	1.50***	1.33-1.69	1.50***	1.22-1.85	1.28***	1.08-1.53	0.99	0.77-1.29
More than 35 years	1.32*	0.98-1.80	1.45	0.88-2.38	2.36**	1.18-4.73	1.41	0.68-2.91	0.83	0.43-1.61
Spouse's Age (years)										
20 or less										
Between 21 & 30	1.13	0.92-1.38	0.99	0.71-1.38	1.37	0.85-2.21	1.10	0.71-1.71	1.16	0.70-1.94
Between 31 & 40	1.12	0.91-1.38	0.96	0.68-1.34	1.51	0.93-2.46	1.20	0.77-1.88	0.99	0.58-1.68
Between 41&- 50	1.09	0.87-1.35	0.89	0.63-1.26	1.37	0.82-2.27	1.36	0.86-2.15	0.82	0.47-1.43
50 ≥	0.95	0.76-1.19	0.72*	0.51-1.03	0.87	0.50-1.50	1.46	0.91-2.35	0.81	0.45-1.47
The spouse has more than one wife.										
The husband has one wife.										
Husband has more than one wife	0.83***	0.75-0.91	0.87*	0.74-1.02	0.72**	0.54-0.94	0.79**	0.65-0.96	0.90	0.69-1.17
Any son/sons living with Mother										
No										
Yes	1.36***	1.28-1.44	1.34***	1.23-1.45	1.34***	1.15-1.56	1.32***	1.17-1.50	1.41***	1.16-1.70
Number of surviving children										
2 children or less										
3 - 4 Children	1.68***	1.59-1.77	1.78***	1.65-1.92	1.45***	1.27-1.65	1.70***	1.51-1.90	1.42***	1.21-1.66
5 children or more	2.10***	1.96-2.24	2.10***	1.90-2.31	2.13***	1.81-2.51	2.14***	1.87-2.46	1.71***	1.42-2.06
Want to have another child										
Yes, want another child.										
No, don't want another child	1.54***	1.47-1.61	1.84***	1.71-1.98	1.43***	1.27-1.61	1.64***	1.49-1.81	0.84***	0.74-0.95
Live births in the last 2 years										
No live births										
One or more live births	0.99	0.95-1.03	1.00	0.94-1.07	0.74***	0.66-0.83	1.02	0.93-1.11	1.15**	1.01-1.30
Reads Newspaper										
Once weekly <										
Once weekly ≥	1.10**	1.01-1.20	1.10	0.98-1.25	1.67***	1.38-2.02	1.27**	1.02-1.59	0.51***	0.35-0.73
Listens to Radio										
Once weekly <										
Once weekly ≥	1.05	0.95-1.17	1.16	0.95-1.41	1.14	0.88-1.48	1.24**	1.04-1.47	1.13	0.81-1.56
Watches TV										
Once weekly <										
Once weekly ≥	1.30***	1.25-1.36	1.22***	1.15-1.30	1.44***	1.28-1.62	1.30***	1.16-1.44	1.61***	1.39-1.85

Variables	Pakistan		Punjab		Sindh		KPK		Balochistan	
Mobile Phone usage										
Once weekly <	1.28***	1.23-1.34	1.21***	1.13-1.29	1.34***	1.20-1.49	1.20***	1.11-1.29	1.46***	1.28-1.66
Once weekly ≥										
Hitting Wife is Justified:										
If the wife without informing her husband goes out of the house										
No										
Yes	1.20***	1.13-1.28	1.08	0.97-1.20	1.18	0.99-1.41	1.40***	1.25-1.58	1.20*	1.00-1.44
If a wife neglects her children										
No										
Yes	1.03	0.96-1.10	1.06	0.95-1.19	1.32**	1.09-1.60	0.91	0.80-1.03	0.96	0.79-1.17
If the wife quarrels with her spouse										
No										
Yes	1.07**	1.00-1.15	1.13**	1.01-1.26	0.98	0.81-1.19	1.11	0.99-1.24	0.96	0.79-1.15
If a wife refuses sex with her husband										
No										
Yes	0.98	0.92-1.05	0.97	0.87-1.08	0.92	0.77-1.09	1.12**	1.01-1.23	0.74***	0.62-0.87
If the wife burns the food										
No										
Yes	0.90***	0.84-0.95	0.96	0.86-1.06	0.95	0.79-1.14	0.85***	0.77-0.94	0.83**	0.70-0.98

Conclusion

The study's findings underscore the complex interplay of factors influencing contraceptive use among married women in Pakistan. Though family planning initiatives have been there for a longer time now still disparities persist both in terms of regional and demographic factors. Urban women stand out from rural women when it comes to the use of birth control and this is especially true in the case of the wealthier households which reflects the impact of education, socioeconomic status, and exposure to modern health viewpoints. Conversely, rural women in Balochistan experience barriers because of the cultural norms that are conservative in nature and also because of a lack of access to family planning resources. This highlights how these disparities need region-specific strategies to combat the unique challenges that these women experience in different areas of the country.

Apart from the above-mentioned factors the study also highlights the crucial role of education and media exposure in shaping the use of contraceptives. The higher the level of education among women and greater the access to media the higher the chances that they'll adopt modern birth control methods, underscoring the importance of awareness and empowerment in reproductive health decision-making. Additionally, as internalized gender norms frequently restrict women's autonomy in family planning, the impact of patriarchal attitudes on women's reproductive choices cannot be understated. Overall, these findings call for a more refined and context-sensitive approach to family planning policies in Pakistan, one that considers the diverse needs and challenges of its population.

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