RESEARCH ARTICLE

Predictors of postpartum family planning uptake in Sindh and Punjab provinces of Pakistan

Muhammad Ishaque,[1] Shaikh Ayub,[2] Zainab Feroz,[3] Tabinda Sarosh,[4] Yordanos Molla[5]

Abstract

Objective: Combination of beneficiary and supply side factors for determining what influences Postpartum family planning use in Sindh and Punjab provinces of Pakistan.

Methods: A facility-based survey was conducted among 1690 married women of reproductive age (MWRA - i.e. married women between the ages of 15 and 49 years) visiting public facilities in six districts across Sindh and Punjab provinces of Pakistan.

Results: Half (53%) of the interviewed women used postpartum contraceptives. Participants who used PPFP were: 55% more likely to be from Punjab than Sindh, 39% more likely to be between 25 to 34 year of age than under 25 years. After adjusting for all variables in the model, women who delivered in the private sector remained to have lower odds of PPFP use compared to those who delivered in public facilities. Women who had four or more sons were nearly 20 time more likely to use PPFP compared to women with no sons, and the PPFP use increases with the number of sons. On the contrary, women who had four or more daughters were 16 times less likely to use PPFP compared with women with no daughters.

Conclusion: Postpartum women are among those with the greatest unmet need as a result of a combination of beneficiary and supplier side factors. The health system's response to meet the contraceptive needs of postpartum women should work along the continuum of care from pregnancy to postpartum, with expanded method choice and alternative service delivery outlets.

Keywords: Family planning, Postpartum family planning, Healthy timing and spacing of birth, Contraceptive uptake, Gender, parity. (JPMA 71: S-57 [Suppl. 7]; 2021)

Introduction

Pakistan is the sixth most populous country in the world with an average annual growth rate of 2.40 and a population of 207.8 million.[1] With a 3.6 total fertility rate, a 25% modern contraceptive prevalence rate (CPR), and 17% of married women with unmet contraceptive needs,[2] Pakistan is projected to become the fifth most populous country by the end of the next decade. This has resulted in insufficient progress toward maternal and child health, Sustainable Development Goals, and meeting the country's FP2020 commitment to reach 6.7 million additional users of contraceptives and increase CPR to 50% by 2020.[3] Sindh and Punjab provinces in particular have committed to increase CPR to 45% and 55% by 2020 respectively and focus on providing family planning services to married youth. According to the 2018 national demographic and health survey of Pakistan, use of contraceptive methods hovered around 18% and 7% in young couples aged 20-24 and 15-19 respectively, which might indicate a failure to properly reach out to young people in a way that addresses their needs, concerns, misconceptions, and motivations toward the use of family planning services.[2,4]

Postpartum family planning (PPFP), the prevention of unintended pregnancy and pregnancies spaced closer than the first 24 months after childbirth, is a crucial component of FP.[5] Postpartum family planning is an area yet to be unpacked in most regions of Pakistan. While a sizable body of research exists on determinants of family planning uptake among the general population, little is known about what factors influence women's postpartum use of contraception in Pakistan.[6,7] The World Health Organization advises an interval of at least 24 months before mothers attempt to become pregnant in order to reduce the risk of adverse maternal, prenatal, and infant outcomes.[5] Evidences show that short inter-pregnancy intervals can result in negative health outcomes for the mother including complications of spontaneous abortion, postpartum bleeding, and anaemia, and can make the newborn prone to low birth weight, preterm birth or inadequate care and support which, thereafter, could increase vulnerability to disease and malnutrition.[8-10] Although most postpartum women indicate a desire to delay their next birth, contraceptive use by women during the postpartum period is low

[1-4]Pathfinder International, Pakistan, [5]Pathfinder International, United States.
Correspondence: Muhammad Ishaque. Email: Ishaque.sheikh@gmail.com

where nearly 70% of postpartum women globally have unmet needs.[10,11]

Previous studies in different countries that explored determinants for PPFP use have indicated social and demographic characteristics of a woman such as age, economic conditions, level of education and place of residence are some of the factors affecting PPFP use.[12-14] These factors were also observed to influence PPFP use in Pakistan.[6,7] Similarities across countries where such sociodemographic factors determine modern PPFP use indicate pervasive inequity.[15] Moreover, factors that span beyond individual characteristics can determine PPFP use. An analysis of postpartum fertility and contraception in 17 countries including Pakistan showed that previous use of maternal health services for prenatal care or delivery services is correlated with use of family planning services in the extended postpartum period, while controlling for sociodemographic factors.[16] Similarly, quality of health service was observed to influence PPFP in Sindh province of Pakistan where women who received quality antenatal care were more likely to use PPFP than women who did not.[7]

Apart from sociodemographic characteristics and health care quality, the desire to use contraception can be driven by preferred or actual number of children as well as the gender of children.[13,17-21] In Pakistan it was noted that with increasing number of children the use of PPFP increased.[7] In this document, we explored combination of beneficiary and supply side factors to determine what influences PPFP use in Sindh and Punjab provinces of Pakistan. Sociodemographic characteristics of women, number of children, gender of previous births, place of delivery, health facility ownership, and type of service provider who delivered the last child were some of the factors included in the assessment.

Methodology

This study was a quantitative, facility-based, cross-sectional survey based on client exit interviews that used a structured individual interview tool. The study was conducted among married women of reproductive age (MWRA - i.e. married women between the ages of 15 and 49 years) visiting a public or private health facility in six districts across Sindh and Punjab provinces of Pakistan for any service including family planning, adult care, child health, and immunization. Three districts from Sindh (Larkana, Shaheed Benazirabad and Karachi) and three from Punjab (Vehari, Okara and Rawalpindi) were included in the study.

The two provinces and six districts were purposely selected for the study based on a plan to introduce interventions that will improve contraceptive uptake with focus on PPFP service uptake in these six districts of Sindh and Punjab provinces. The study calculated a sample size of 1662 women of reproductive age in total based on the assumption that a 30% relative increase in modern contraceptive prevalence rate (mCPR) from beginning to end of the intervention would show a statistically significant programme impact in the studied provinces. The basis for sample size calculation was Pakistan's DHS 2018 report where mCPR was at 25%. The study used two dependent population proportion formulas with a degree of freedom of 1.482, a significance level of 0.05, power of 0.80, and non-response rate of 0.15. The sample size was spread across each of the six districts in proportion to the number of health facilities to be reached by the interventions. Women exiting the intervention health facilities who were of reproductive age and who consented to participate were randomly included until the designated number of participants were reached.

The research team cleaned and analyzed data in Stata version 14.2 applying descriptive statistics such as frequencies and proportions. The team also applied cross tabulations to assess the relationship between the two groups for the study variables and multivariate logistic regression analysis to assess the likelihood of acquiring PPFP services during the last childbirth. The probability among predictors of PPFP was quantified using crude and adjusted odds ratio.

The study obtained ethical clearance from the National Bioethics Committee (NBC) and participants were informed of the objectives of the discussions and were reassured that the information they provide during the discussions will remain confidential and none of the information provided by the participants will be linked with their names. Based on literacy level, oral and/or written consent of the participants was sought before they took part in the discussions. They were also informed of their right to withdraw from the discussions at any stage without any penalty. No monetary benefit was provided to the participants.

Results

A total of 1662 MWRA were included in the study, nearly half from each province (Table-1). Similarly, of the total women included in the study, 840 (51%) were from public facilities, 485 (29%) from private and 337 (20%) were Community Midwives (CMWs). In both provinces the majority of women 1137(68%) were between the ages of 25 and 34 and had four or more children, 795(48%) with three living sons 441(27%), and 557(34%) had two living

Table-1: Characteristics of woman 15-49 years by province, N=1662.

Background Characteristics	Categories	Province		Total, N=1662 (%)
		Punjab, n=771 (%)	Sindh, n= 891(%)	
Districts	Okara	278 (36%)		278 (17%)
	PakPatan	179 (23%)		179 (11%)
	Rawalpindi	314 (41%)		314 (19%)
	Karachi		281 (32%)	281 (17%)
	Larkana		311 (35%)	311 (19%)
	Shaheed Benazirabad		299 (34%)	299 (18%)
Age (Years)	15-19	2 (0.3%)	17 (2%)	19 (1%)
	20-24	114 (15%)	156 (18%)	270 (16%)
	25-29	344 (45%)	336 (38%)	680 (41%)
	30-34	219 (28%)	238 (27%)	457 (28%)
	35 and above	92 (12%)	144 (16%)	236 (14%)
Number of children	None	1 (0.1%)	0 (0%)	1 (0.1%)
	One	21 (3%)	60 (7%)	81 (5%)
	Two	203 (26%)	275 (31%)	478 (29%)
	Three	158 (21%)	149 (17%)	307 (19%)
	Four or more	388 (50%)	407 (46%)	795 (48%)
Number of sons	None	124 (16%)	159 (18%)	283 (17%)
	One	181 (24%)	221 (25%)	402 (24%)
	Two	199 (26%)	198 (22%)	397 (24%)
	Three	220 (29%)	221 (25%)	441 (27%)
	Four or more	47 (6%)	92 (10%)	139 (8%)
Number of daughters	None	32 (4%)	66 (7%)	98 (6%)
	One	200 (26%)	295 (33%)	495 (30%)
	Two	301 (39%)	256 (29%)	557 (34%)
	Three	147 (19%)	139 (16%)	286 (17%)
	Four or more	91 (12%)	135 (15%)	226 (14%)
	Total	771 (100%)	891 (100%)	1162 (100%)

Table-2: Factors associated with Postpartum Family Planning use following the last childbirth.

Variables	PPFP Users		OR (95% CI), p-value	AOR (95% CI), p-value
	n	%		
Province				
Sindh	406	47%	1	1
Punjab	455	53%	1.55 (1.27-1.88), p<0.001***	1.84 (1.46-2.31), p<0.001***
Age groups				
15 - 24	128	15%	1	
25-34	588	68%	1.39 (1.07 - 1.80), p<0.001***	1.62 (1.20 - 2.19), p=0.002**
35 +	145	17%	2.06 (1.45 - 2.93), p=0.007**	2.90 (1.93 - 4.37), p<0.001***
Facility of Delivery				
Public facility	556	65%	1	1
Community	102	12%	0.22(0.17-0.29), p<0.001***	0.40 (0.28 - 0.57), p<0.001***
Private facility	203	23%	0.40 (0.31-0.50), p<0.001***	0.11 (0.0.8-0.16), p<0.001***
Personnel who assisted in childbirth				
Unskilled workers	74	9%	1	1
Other health workers	212	25%	0.77 (0.54-1.09), p=0.139	0.87 (0.57 - 1.31), p=0.517
Doctors	575	67%	1.99(1.43-2.77), p<0.001***	3.75 (2.42 - 5.80), p<0.001***
Living Sons				
No son	137	16%	1	1
One or two sons	467	54%	1.50 (1.14 - 1.96), p=0.004**	2.9 (2.06 - 4.05), p<0.001***
Three or more sons	257	30%	0.85 (0.63 - 1.12), p=0.257	1.43 (0.98 - 2.09), p=0.063
Living Daughters				
No daughter	65	8%	1	1
One or two daughters	577	67%	0.62 (0.39 - 0.95), p=0.030**	0.51 (0.31 - 0.84), p=0.009**
Three or more daughters	219	25%	0.37 (0.24 - 0.59), p<0.001***	0.33(0.19 - 0.57), p<0.001***

P<0.001= ***, P=0.001- <0.05**. PPFP: Postpartum Family Planning

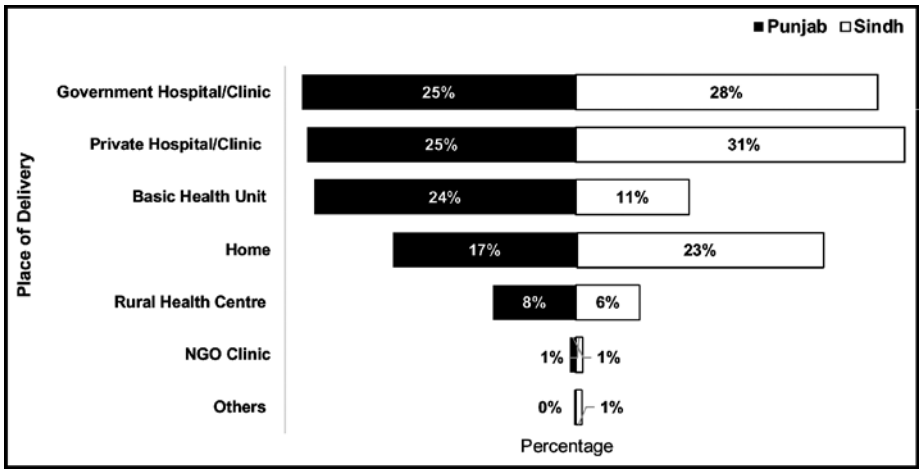

Figure-1: Places for the last childbirth, by province.

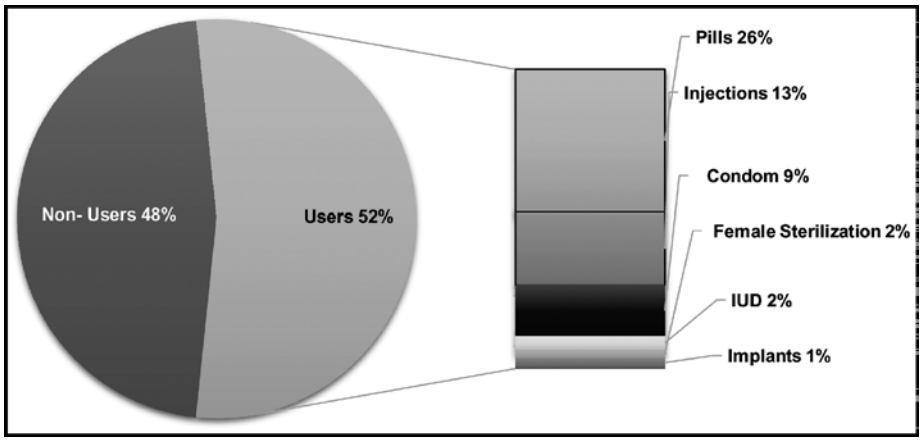

Figure-2: Postpartum modern contraceptives use and contraceptive method mix. IUD: Intra-uterine death

daughters.

Overall public and private hospitals or clinics were the most common place for the last childbirth, while deliveries in private facilities and at home were more common in Sindh than Punjab (Figure-1). Other public facilities such as Basic Health Units and Rural Health Centers were also used for childbirth services. More than half of the last deliveries, 938(56%) were assisted by doctors. The remaining women had their deliveries assisted either by other trained health care workers such as nurses, community midwives, and Lady Health Workers (LHW), 557 (34%) or unskilled workers, 167 (10%) such as Traditional Birth Attendants (TBA). Nurses, midwives and LHW attended some of the home deliveries.

Almost half of participants, 861(52%) acquired PPFP services. Short-term contraceptive methods dominated the acquired postpartum contraceptives where pills followed by injectables and condoms were the most commonly used method (see Figure-2). Thirty three (4%) women who recalled the timing for acquiring PPFP reported that they had received it within 6 hours of delivery, 29(3%) had it after 6 hours but within 30 days of delivery, 487(57%) after 30 days but within 6 weeks of delivery and 308(36%) after 6 weeks but within a year from their last delivery.

Predictors of Postpartum Family Planning Uptake: This study assessed selected variables as potential predictors of PPFP uptake in the two provinces of Pakistan. Participants' province of residence, age, number of children, gender composition of previous live births, place of delivery, health facility ownership (public vs. private) where the last child birth was attended, and type of service provider who delivered the last child were the variables of interest. In addition to location, age was an important factor in the likelihood of acquiring PPFP following the last childbirth. Participants who used PPFP were: 55% more likely to be from Punjab than Sindh (OR= 1.55, CI:1.27-1.88, p<0.001), and 39% more likely to be between 25 to 34 year of age than under 25 years (OR= 1.39, CI:1.07 - 1.80, P<0.001). After adjusting for all other predictor variables, age remained a determinant for PPFP use among youth under the age of 25 years.

Women who delivered in public health facilities had better odds of using PPFP, compared to those who delivered at private facilities or in the community (including at home). After adjusting for all variables in the model, women who delivered in the private sector remained to have lower odds of PPFP use compared to those who delivered in public facilities (AOR= 0.11, 95% CI= 0.08-0.16, p<0.001). Similarly, women whose last child birth was attended by medical doctors had more than three times the odds of using PPFP than those whose births were attended by unskilled workers (AOR= 3.75, 95% CI= 2.42-5.80, p<0.001).

Women who had one or two sons were nearly 3 times more likely to use PPFP compared to women with no sons (OR= 2.9, 95% CI=2.06-4.05, p<0.001). On the contrary, women who had three or more daughters were 67% less

likely to use PPFP compared with women with no daughters (OR= 0.33, 95% CI= 0.19 - 0.57, p<0.001), and PPFP use decreases with increasing number of daughters (Table-3).

Discussion

This study showed that determinants of postpartum family planning service use are multifaceted. We found that a combination of beneficiary factors such as sociodemographic characteristics of women, number of children, gender of previous births as well as the supply side factors such as place of delivery, health facility ownership, and type of service provider who delivered the last child, influence the use of contraceptives after childbirth. Residents of Punjab, older women, women who already had four or more sons, women who delivered in public facilities, and women whose last child birth was attended by doctors had a higher likelihood to use postpartum contraceptives.

As documented in Pakistan's national health and demographic survey and similar studies, we found young mothers under the age of 25 years use postpartum contraceptives less than older age women.[2,4] Although data on unmet need for unmarried youth in Pakistan is limited, married youth between 20-24 years of age make up the largest proportion of unmet needs among all women of reproductive age.[22] This persistent difference in contraceptive use by age requires interventions that are tailored to address the unique characteristics and needs of young women.

Our findings show that postpartum contraceptive use is determined by the number and gender composition of children, with a higher inclination to use postpartum contraceptives among women who have four or more sons in contrast with those who have daughters. The desire to have multiple children and preference for sons over daughters and influence of such preferences on contraceptive use has been established in Pakistan and multiple countries in Africa and Asia.[13,17-21,23] Therefore, postpartum counselling sessions and messages can be communicated considering social constructs of fertility intentions such as desired number and gender of children and power dynamics with significant others influencing the women's agency to choose and use contraception.

Unmet need among postpartum women is higher than any other MWRA,[16,24,25] and women who give birth at facilities have a higher probability to use postpartum contraceptive.[26] We found women who delivered in public facilities had a higher likelihood to use postpartum family planning than those who delivered at home or in private facilities. This can be due to postpartum contraceptives services provided free of charge in public facilities and by community midwives. The difference between Punjab and Sindh provinces in postpartum contraceptive use can also be a result of higher proportion of private facility and home births in Sindh province.

There was significantly higher likelihood of a woman receiving PPFP services from trained health workers including CMW and Lady Health Volunteers than from unskilled workers like TBA or dais. This supports the proven role that trained community health workers have to take family planning services closer to where people live.[27] There were a few cases where unskilled workers were able to provide postpartum contraceptives for deliveries, implying the potential to use unskilled workers for promotion of and referral for postpartum contraceptives in Pakistan. This strategy has shown promising results in other countries.[28,29]

The contraceptive choices by postpartum women in our study was skewed towards higher usage of short acting than long acting reversable contraceptive (LARC) methods. This calls for expanding the postpartum contraceptive method choices and promoting LARC use among postpartum women. LARC methods can be more effective to provide long-term protection with low discontinuation rate since the probability for incorrect use, user nonadherence, frequent visit to facility and repeated partner approval will be minimized.[30,31]

This analysis highlighted important findings to identify factors related with postpartum family planning use in two provinces of Pakistan but was not without limitations. A strong conclusion could not be drawn with respect to the root causes of postpartum contraceptive use because of the cross-sectional design of the survey; causality could not be established prospectively. Furthermore, the individual and social drivers of observed variation in contraceptive use and fertility intentions such as son preference needs further qualitative exploration, which was not the objective of this study.

Conclusion

In summary, postpartum women are among those with the greatest unmet need and a combination of beneficiary and supplier side factors contribute to this persistent gap. Interventions should be tailored to address inherent as well as extrinsic differences among postpartum women such as their age, fertility intentions, and their agency to choose and use contraceptives. Moreover, health system's response to meet the

contraceptive needs of postpartum women should work along the continuum of care to make sure pregnant mothers are informed about availability and accessibility of postpartum contraceptive methods of their choice, delivering mothers are prepared to adopt a method of their choice immediately after birth, and postpartum women are reached timely through alternative service delivery outlets.

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Conflict of Interest: None to declare.

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