

Determinants of Never Users of Contraception – Results from Pakistan Demographic and Health Survey 2012-13

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Abstract—Introduction: There are multiple social, individual and cultural factors that influence an individual's decision to adopt family planning methods especially among non-users in patriarchal societies like Pakistan. Non-users, if targeted efficiently, can contribute significantly to country's CPR. A research study showed that non-users if convinced to adopt lactational amenorrhea method can shift to long term methods in future. Research shows that if non users are targeted efficiently a 59% reduction in unintended pregnancies in Saharan Africa and South-Central and South-East Asia is anticipated.

Methods: We did secondary data analysis on Pakistan Demographic Health Survey (2012-13) dataset. Use of contraception (never-use/ever-use) was the outcome variable. At univariate level Chi-square/Fisher Exact test was used to assess relationship of baseline covariates with contraception use. Then variables to be incorporated in the model were checked for multicollinearity, confounding and interaction. Then binary logistic regression (with an urban-rural stratification) was done to find relationship between contraception use and baseline demographic and social variables.

Results: The multivariate analyses of the study showed that younger women (≤ 29 years) were more prone to be never users as compared to those who were >30 years and this trend was seen in urban areas (AOR 1.92, CI 1.453-2.536) as well as rural areas (AOR 1.809, CI 1.421-2.303). While looking at regional variation, women from urban Sindh (AOR 1.548, CI 1.142-2.099) and urban Balochistan (AOR 2.403, CI 1.504-3.839) had more never users as compared to other urban regions. Women in the rich wealth quintile were more never users and this was seen both in urban and rural localities (urban (AOR 1.106 CI .753-1.624); rural areas (AOR 1.162, CI .887-1.524)) even though these were not statistically significant. Women idealizing more children (>4) are more never users as compared to those idealizing less children in both urban (AOR 1.854, CI 1.275-2.697) and rural areas (AOR 2.101, CI 1.514-2.916). Women who never lost a pregnancy were more inclined to be non-users in rural areas (AOR 1.394, CI 1.127-1.723). Women familiar with only traditional or no method had more never users in rural areas (AOR 1.717, CI 1.127-1.723) but in urban areas it wasn't significant. Women unaware of Lady Health Worker's presence in their area were more never users especially in rural areas (AOR 1.276, CI 1.014-1.607). Women who did not visit any care provider were more never users (urban (AOR 11.738, CI 9.112-15.121) rural areas (AOR 7.832, CI 6.243-9.826)).

Discussion/Conclusion: This study concluded that government, policy makers and private sector family planning programs should focus on the untapped pool of never users (younger women from

underserved provinces, in higher wealth quintiles, who desire more children.). We need to make sure to cover catchment areas where there are less LHWs and less providers as ignorance to modern methods and never been visited by an LHW are important determinants of never use. This all is in sync with previous literature from similar developing countries.

Keywords—Contraception, Demographic and Health Survey, Family Planning, Never users.

I. INTRODUCTION

WITH the substantial increase in contraceptive adoption in the last 50 years, the number of actual family size is significantly decreasing in middle and low-income countries [1]. Nevertheless, there is still a large pool of untapped non-users that acknowledge unmet need of modern contraceptive methods [2]. In 2014, it was recorded that around 225 million women have unmet need of family planning methods in low-income countries [3]. Adoption of family planning methods is less in Pakistan as compared to its neighboring countries: Iran, Bangladesh and India.

Pakistan's current CPR representing modern methods is 26%; whereas, the use of both modern and traditional methods account for 35% CPR. This is way less as compared to the other countries. Socio-cultural barriers [4], minimal awareness, knowledge absenteeism and fear of side-effects along with other diverse reasons serve as a rationale for users in Pakistan not adopting modern family planning methods [5].

Millennium Development Goals (MDG4 and MDG5) focuses specifically on decreasing child mortality and improving maternal health. Presently, Pakistan is off-track on achieving the aforesaid goals [6]. Pakistan currently acknowledges 55 neonatal deaths per 1,000 live births and 74 per 1,000 cases referring to infant mortality. In addition, maternal mortality rate in Pakistan, 276 per 100,000 live births, is also far from acceptable. One of the reasons for non-users to reject family planning methods is their desire for more children. The fertility rate acknowledged by lowest wealth quintile in Pakistan is 5.2; whereas, wanted pregnancy rate is 3.9 [7].

These statistics serve as core rationale for inclination of maternal and child mortality in Pakistan. A research study found that lowest education and poorest households are significant characteristics for the likelihood of a woman to be a non-user [8]. The conversion of contraceptive non-users into users especially in lower wealth quintiles can serve as a strong coping mechanism. However, despite the momentous efforts

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of public and private healthcare providers in achieving the MDGs [9], Pakistan is far behind in achieving the milestones.

Besides the religious and social reasons serving as the rationale for non-use, some couples reject contraceptive methods because of apprehension [10]. In India, lack of knowledge turned out to be one of the core reasons for non-use; nonetheless, non-users showed willingness to use contraceptives in near future [10]. Non-users can also reject a contraceptive method due to the lack of awareness or fear of side-effects.

A research study prescribed that improving the contraceptive technology – facilitating minimal side-effects can enable effective contraceptive use [11]. In this case, counseling is the key to raise awareness. It may be hard for contraceptive promoters to convince non-users to adopt modern contraceptive methods at once; however, counseling may facilitate conversion of non-users into traditional method adopters and eventually in modern users.

Despite the gravity of the concern, only a few research studies have been conducted so far to contrast the characteristics of contraceptive use and non-use [12]. There are divergent factors that might stimulate an individual's decision of not adopting the contraceptive methods. Thus, this study strives to explore determinants of never-users to facilitate policy makers and direct the future interventions to target this untapped pool.

II. METHODS

This study conducts secondary analyses on cross-sectional data from Pakistan Demographic and Health Survey 2012-13. The sample design used by National Institute of Population Studies (NIPS) for PDHS 2012-13 considered the population of Pakistan except military restricted or protected areas, FATA and Azad Jammu and Kashmir. Pakistan Bureau of Statistics (PBS) facilitated household listing and sampling point selection. With a random start, a total of 28 households were selected at each sampling point via systematic sampling which led to the selection of 14,000 households (urban localities = 6,944; rural localities = 7,056). An ever-married male or female in the age bracket of 15-49 years qualified the respondent inclusion criteria.

In this study, ever/never use of contraceptives was incorporated as an outcome variable. Other variables such as age, region, wealth, ideal number of children, place of delivery, number of pregnancies lost, knowledge about methods, knowledge about LHW's presence and visit to FP service provider were regarded as covariates.

A. Variable Coding

Before incorporating in univariate and multivariate models, a few variables were re-coded by creating, merging, including or excluding categories. There were 3 categories (25 or less, 25.1-29, 29.1 and above) formulated for the variable "Respondent's Age". Region, earlier coded in 6 categories (Punjab, Sindh, Khyber Pakhtunkhwa, Balochistan, Gilgit Baltistan and Islamabad) was re-coded in 5 categories by merging "Punjab" and "Islamabad". "Wealth Index", coded in

5 categories (Poorest, Poor, Middle, Rich and Richest) was reconditioned to have 3 categories by merging Poorest and Poor into 1 category (Poor) along with assimilation of Richest and Rich into a single category (Rich). Three categories were formed for "Ideal Number of Children" (3 or less, 4-5 and 6 or more).

For "Place of Delivery", despite using the names of all public and private institutions, names of sectors were used; hence, 3 categories were formed (Home, Government Facility and Private Facility). "Number of Pregnancies Lost" was coded to have two categories (Pregnancy Lost and No Pregnancy Lost). "Knowledge of any Method" having 4 categories earlier (Knows No Method, Knows Folkloric Method, Knows Traditional Method and Knows Modern Method) was recoded to have 2 categories (Knows any Method and Knows No Method). Other variables (Knowledge of LHW's Presence and Visit to FP Provider) were incorporated with original categories, without any recoding. Not only covariates but outcome variable was also recoded. Ever Use of any Method, earlier having 4 categories (Never Used, Used Folkloric Method, Used Traditional Method and Used Modern Method) was recoded in "Never Used" and "Ever Used". Respondent that used any method was considered "Ever User" and the one who did not use any method was labeled "Never User".

B. Univariate Model

At univariate level the relationship between the outcome variable and the covariates was gauged through "Cross-tabulation" using "Chi-square/Fisher Exact" test. The variables to be incorporated in the multivariate model were also checked for collinearity. The multi-collinearity of the variables was tested via "Kendall's Tau" to explore statistical associations among the covariates, if any.

C. Multivariate Model

The multivariate analyses in this study were carried out using "Binary Logistic Regression". The method selected for multivariate analyses was "Enter". The probabilities presumed for entry and removal were 0.05 and 0.10 respectively. The adjusted odds ratio was extracted at 95% confidence interval; whereas, the variation in the model was explained by "Cox & Snell R Square". Using the multivariate analyses, two models were formed as per the stratification of locality (Urban and Rural) to explore the relationship between outcome variable and the covariates.

III. RESULTS

A. Univariate Model

From the results extracted from the univariate model, we found that there was a significant difference between young and older women with respect to contraceptive use. Younger women are more likely to be never-users of contraceptives as compared to older in urban and rural localities. We also found that there were more never-users of contraceptives in urban areas of Sindh and Balochistan as compared to other

provinces; whereas, in rural localities, Punjab and Balochistan surpassed other provinces in terms of never-users.

It was surprising to find that in urban localities, women representing rich wealth quintile had more never-users as compared to the ones representing poor or middle quintile. Ideal number of children significantly affected the decision to use or not to use a contraceptive method. It was found that women idealizing 4 to 5 children were more likely to be never-users as compared to the ones that idealized less. This trend was found to be the same in both rural and urban localities.

areas, women who were familiar with modern contraceptive methods represented more never-users as compared to the women who knew about traditional methods or no method at all. It was found in this study that women who never visited FP service provider comprised more never-users as compared to women that ever visited any provider in rural and urban localities. Counseling plays a vital role in addressing the queries and concerns of new adopters. Those who have never used any contraceptive method might seek answers for different questions about these methods and their after effects.

B. Multivariate Model

The results obtained from multivariate model state that in urban areas, younger women (≤ 25 years) comprised around 2 times more never-users as compared to the women who aged >30 years (AOR 1.92, CI 1.453-2.536). Similar trend was found in the rural localities, number of never-users representing younger women was twice the proportion older women who never used any contraceptive method (AOR 1.809, CI 1.421-2.303).

With respect to the urban localities, Sindh and Balochistan were found to be the areas requiring immediate attention of the policy makers. Never-users in Sindh (AOR 1.548, CI 1.142-2.099) were around 1.5 times more than Punjab; whereas, never-users in Balochistan (AOR 2.403, CI 1.504-3.839) exceeded even more. Not only urban but rural localities in Balochistan (AOR 1.558, CI 1.067-2.274) were found to be critical with respect to use of contraceptives as never-users in rural areas of Balochistan were greater than all other provinces.

In univariate analyses, it was also found that women who idealized more children were less likely to use a contraceptive method. Multivariate model further confirmed this phenomenon. The multivariate findings stated that women who idealized ≥ 6 children represented around twice the never-users as compared to women who idealized ≤ 3 in urban localities (AOR 1.854, CI 1.275-2.697) as well as in rural areas (AOR 2.101, CI 1.514-2.916).

Multivariate findings suggested that in rural areas, women who never acknowledged a miscarriage represented more never users as compared to women who ever lost a pregnancy (AOR 1.394, CI 1.127-1.723). With respect to the rural areas, it was found that women familiar with only traditional contraceptive methods or no method at all had more never-users as compared to women who were familiar with modern methods (AOR 1.717, CI 1.127-1.723). This proves that knowledge and awareness plays a great role in acceptability of contraceptive methods. Providing more information about the modern contraceptives to the potential users can significantly increase adoption of contraceptive methods and eventually the CPR.

Perhaps, one of the significant facilitators of this information is lady health worker (LHW). The study findings revealed that in rural areas, women who did not know about the presence of LHW in area represented more never-users (AOR 1.276, CI 1.014-1.607). Nevertheless, the most significant source of information and facilitator of

TABLE I
 UNIVARIATE ANALYSES TO FIND ASSOCIATION OF NEVER-USERS WITH
 BASELINE DEMOGRAPHICS

	Urban			Rural		
	Ever User	Never User	p-value	Ever User	Never User	p-value
Age						
25 or less	281	848		396	940	
25.1-29	277	582	0.000	373	501	0.000
29.1 and above	506	961		709	1102	
Region						
Punjab	389	417		551	649	
Sindh	259	830		172	493	
Khyber Pakhtunkhwa	187	318	0.000	477	532	0.000
Balochistan	105	601		199	582	
Gilgit Baltistan	124	225		79	287	
Wealth						
Poor	91	295		844	1513	
Middle	191	371	0.002	361	574	0.295
Rich	782	1725		273	456	
Ideal no. of Children						
3 or less	342	418		420	462	
4-5	502	1117	0.000	688	1168	0.000
6 or more	198	814		289	775	
Place Of Delivery						
Home	448	1504		742	1536	
Government Facility	249	294	0.000	274	345	0.000
Private Facility	364	585		461	655	
No. of Pregnancies Lost						
No	686	1693		884	1783	
Yes	378	698	0.000	594	760	0.000
Knowledge of any Method						
Knows Traditional or No Method	12	33		30	105	
Knows Modern Method	1052	2358	0.546	1448	2438	0.000
Knows about LHW's Presence						
No	285	1108		425	1130	
Yes	779	1281	0.000	1053	1411	0.000
Visited FP Provider						
No	306	1018		458	1023	
Yes	468	121	0.000	579	185	0.000

We also found that women who never lost a pregnancy were more likely to be never-users in urban and rural areas. Another shocking finding was about knowledge of contraceptive methods. It was peculiar to find that in rural

contraceptive adoption is FP service provider. The results extracted from multivariate model revealed that women who did not visit any FP service provider represented substantially greater number of never-users as compared to women who ever visited any FP service provider in urban (AOR 11.738, CI 9.112-15.121) as well as in rural areas (AOR 7.832, CI 6.243-9.826).

TABLE II
 MULTIVARIATE ANALYSES TO FIND PREDICTORS OF NEVER-USERS

Variables in Equation	Urban			Rural		
	OR	CI (L)	CI (U)	OR	CI (L)	CI (U)
Age (29.1 and above)						
25 or less	1.92	1.45	2.53	1.80	1.42	2.30
25.1-29	1.39	1.04	1.85	.96	.74	1.24
Region (Punjab)						
Sindh	1.54	1.14	2.09	1.20	.88	1.63
Khyber Pakhtunkhwa	.58	.40	.84	.44	.33	.58
Balochistan	2.40	1.50	3.83	1.55	1.06	2.27
Gilgit Baltistan	.86	.58	1.28	1.31	.89	1.92
Wealth (Poor)						
Middle	.79	.49	1.25	1.00	.78	1.28
Rich	1.10	.75	1.62	1.16	.88	1.52
Ideal no. of Children (3 or less)						
4 to 5	1.68	1.27	2.22	1.84	1.44	2.35
6 or more	1.85	1.27	2.69	2.10	1.51	2.91
Place of delivery (Private)						
Home	1.13	.87	1.48	1.05	.83	1.33
Government Facility	.91	.66	1.27	.81	.60	1.09
No Pregnancies Lost	1.23	.96	1.57	1.39	1.12	1.72
Knows Traditional/ No Method	1.23	.42	3.59	1.71	.88	3.34
Don't Know about LHW's Presence	1.19	.90	1.57	1.27	1.01	1.60
Haven't Visited FP Provider (Ever)	11.73	9.11	15.12	7.83	6.24	9.82
Constant	.09			.12		
Cox & Snell R Square	0.30			0.24		

IV. DISCUSSION

In our study, we strived to explore the characteristics of contraceptive never-users. This is the pool of potential users that have never used any contraceptive method, neither modern nor traditional. Seeing the facet of global economy, it may seem hard to believe that couples want more children even though their income is insufficient for the basic necessities of life. Nevertheless, a proportion of never-users have not adopted any contraceptive method due to lack of access – one of the reasons for inclination in unmet need of FP. Lack of knowledge and awareness of the contraceptive methods also govern the decisions of never-users. Moreover, in developing countries such as Pakistan, family planning methods are labeled taboo. Thus, family planning methods, especially modern, are exposed to diverse socio-cultural barriers restraining their acceptance. The findings of our study aim to highlight some of the factors facilitating never-use of contraceptives.

In our study, we found that age is one of the key enforcer in contraceptive decision-making. Using the data of PDHS 2012-13, we found that a young woman is more likely to be a never-

user as compared to the old. We found that women that aged ≤ 25 years were more prone to never-use as compared to women that aged ≥ 30 . However, a study conducted in Spain by Carme Saurina, Laura Vall-lloera and Marc Saez contradicts this finding. Their study states that the use of contraceptives is acknowledged more among the younger women as compared to older [13]. We also found that financially opulent women were more never-users as compared to the ones that represented poor wealth quintile; though, the finding was not statistically significant. This trend was found eminent in both rural and urban localities. Another study conducted by Creanga, Gillespie, Karklins, and Tsui stated that women representing poor wealth quintile were less likely to be contraceptive users as compared to the rich [14]; moreover, the study stated that poor wealth quintiles acknowledged more unmet need of family planning as compared to rich.

This begs the question as in why the rich wealth quintile has more never-users as compared to the poor in Pakistan. Is it because the poor are more readily adopting contraceptive methods due to their free provision? Or maybe it is because of how the wealth quintiles are perceived in developing countries. It is usually perceived that women living a lavish lifestyle are more aware about the contraceptives and accept the methods irrespective of the socio-cultural barriers. This phenomenon stresses an intervention targeting specifically the rich wealth quintiles to deduce why such a huge pool of never-users still remains untapped.

Our study also found that ideal number of children wanted by married women stimulated their decision of not using any contraceptive method. It was acknowledged that women that idealized more children represented significant proportion of never-users as compared to the ones idealizing less. A study by Rahman et al. found that desire for children was one of the major reasons for not using contraceptives [15]. Another study stated that women with children ≥ 3 were more likely to use contraceptive methods especially long-term such as sterilization [16]. Aforementioned findings are in harmony with the results of this study. It means that women who idealize more children are more likely to be never-users. Yet, the need of spacing cannot be ruled out of the equation. According to PDHS 2012-13, out of 18% women with need for spacing, Pakistan acknowledges 8.8% unmet need for spacing [7]. Even if women idealize more children, they acknowledge the need for spacing. This concern can be catered by improving the access and raising awareness about the contraceptive methods along with their efficient use.

We also discovered that women who never lost a pregnancy were comprised more never-users and represented rural locality. Our study findings state that women who are familiar with only traditional method or no method at all are more never-users as compared to the ones who know about modern methods. This finding was found to be statistically significant in rural localities. A study carried out in Ghana found that women significantly lack knowledge about contraceptives especially modern methods [17]; similar study prescribed that modern contraceptive prevalence rate in Ghana was as low as 16.6% in 2008. Lack of knowledge is one of the significant

barriers that prohibit adoption of contraceptive methods in developing countries [18]. It not only hinders acceptability of contraceptive methods but also diminishes effectiveness of their use.

Lady health workers are the facilitators of healthcare in rural localities [19]. Our study findings state that the presence of lady health worker significantly influences women's decision to adopt or reject a family planning method. It has been found that women that are not aware of the presence of lady health worker in their area, especially rural localities, are more prone to be never-users. It was also found that women that have never visited any FP service provider were more never users as compared to the ones that ever visited a provider. The fear of side effects is one of the major barriers hindering the acceptability of modern contraceptive methods [17]. In addition, due to the significant pressure generated by so-called socio-cultural norms; adoption of modern FP methods is not easy. Counseling plays a major role here. A visit to FP service provider can resolve all the concerns and answer all queries of a non-user – facilitating transformation of a never-user in user.

The findings of this study have helped formulation of a never-user profile which is still untapped. It is recommended to public and private stakeholders to consider the characteristics of never-users for designing contemporary interventions. The interventions must target young MWRA representing rich wealth quintile – idealizing more children and are aware of traditional methods only. The areas selected for interventions must correspond to localities where LHWs' presence is minimal. The core objective of these programs must be to facilitate transformation of never-users in users. Moreover, these programs must also motivate never-users to visit FP service providers as counseling plays a major role in addressing the queries of never-users which hinder their acceptability of a contraceptive method. As our findings state, urban localities of Sindh and Balochistan can serve as the catchment areas for these interventions as they have more never users as compared to other regions.

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