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An empirical investigation of the relationship between the education status and adoption of reproductive health services among married women in Punjab, Pakistan

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Abstract--Background: The reproductive and sexual health of woman is a primary determinant of women's well-being. The women's reproductive and sexual health is largely influenced by their education status. Objective: Therefore, this study was initiated with aim to investigate the relationship between the education status and adoption of reproductive health services among married women in Punjab. Methods: Nationally representative household sample data of women aged 15-49 years from Punjab collected by PDHS in 2012-13 and 2017-18 was used in the present research. The sample was 3800 married women in PDHS 2012-13 and 10825 in PDHS 2017-18. The participants of the present study were ever married women age 15-49 years living in Punjab, Pakistan. Simple frequencies against each question were used for descriptive purpose to find out the basic patterns in the data. To estimate the net effect of education status on

adoption of reproductive health services, binary logistic regression was employed. Results: The analysis provides a strong relationship between educational status of the respondent and adoption of contraceptives in 2012-13 ($p < 0.007$) and in 2017-2018 ($p < 0.007$). The findings figured out that women with higher education had higher adoption of reproductive health services in Punjab, Pakistan. Conclusion: The results yield that education status of women is directly influence their reproductive and sexual health. Therefore, it is high time to educate the women about their reproductive and sexual health.

Keywords--Education Status, Reproductive Health, Sexual Health, Contraception.

1. Introduction

The reproductive and sexual health is one of the essential interventions considered around the world for improved maternal and child health. It is a recognized fact that reproduction and contraception are considered the only business of women.¹ Most importantly, the family planning policies, programs, and available contraceptive methods are women-centered.² The involvement and representation of men are invisible and policies are blind in this regard. Even, man has a decisive role in deciding the numbering and spacing of children. The women cannot utilize family planning services without the permission of their husbands.³

It is an alarming fact that Pakistan is the 5th most populated country in the world with an average annual population growth rate of 2.55%. Surprisingly, the population of Pakistan increased from 207 million to 241 million from 2017 to 2023. In the same way, the total population of the Punjab sparked from 109.98 million to 127.68 million with the average annual growth rate of 2.53%.⁴

The statistics yield that the increasing total fertility rate has unleashed the unprecedented average annual growth rate of the population in Punjab. The unrestrained population growth has impacted the socio-economic development of Pakistan by over-exploiting natural resources, augmenting land fragmentation, increasing environmental degradation, and over-burdening education and health infrastructure. The fertility Patterns are highly influenced and shaped by the education status of the women.⁵

The background characteristics such as education status and working status of the women shape their reproductive health. Most significantly, the education status of the women strengthens their independent decision-making to decide the spacing and numbering of the children. It was also found that women with higher levels of education had fewer children as compared to the women with less education and no education in South Korea.⁶ The previous research literature also indicated that education is a decisive ingredient which directly influence the fertility patterns of the couples.⁷ A research study explore the relationship between the women background characteristics and the family decision-making.

It was found that educated women delay their marriage and it shapes their fertility behavior.⁸The higher education status among the women lead to the employment of the women. And, it proves that employed women had higher age at first marriage, age at first birth and subsequent birth.⁹

Unfortunately, the education status of women in Pakistan is dismal and disappointing. For example, less than 50% of the women are literate and more than 50% are illiterate. It is estimated that only 27% of the married women were using any modern contraceptive in the Punjab and 11% of the married women were using any traditional methods in 2017-18. On inquiring, 24% of the married women also revealed that they want to use contraception for an appropriate birth space and healthy birth of the subsequent child. Few research studies have been conducted to investigate the relationship between education status and the adoption of reproductive health services in Pakistan. Reference is made to a research study conducted in the province of Sindh, it was indicated that 70% of the population inhabitants of the rural areas and 53.9% of the population were illiterate.¹⁰

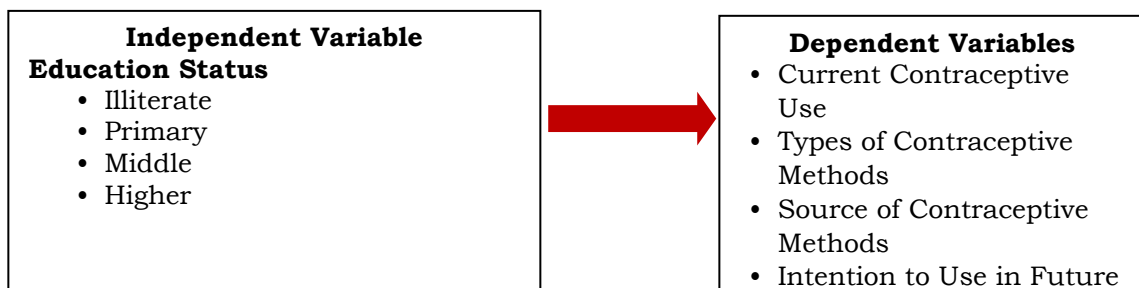
Foregoing in view, it was the need of the time to examine how the education status of the women shapes their reproductive health and adoption of reproductive health services in the largest province of Pakistan. This research study highlights the importance of education and improved reproductive health of married women. On the one hand, educated women commence their journey of economic empowerment and independent decision-making. On the other hand, empowered women take contraception to limit their childbearing role.

According to the Pakistan Demographic and Health Survey 2017-18, contraceptive use was higher among women with higher education as contraceptive use among women with no education was 28.6% and women with higher education was 44% in Pakistan.¹¹

Research Objective

This study was initiated with aim to investigate the relationship between the education status and adoption of reproductive health services among married women in Punjab.

2. Conceptual Framework



3. Material and Methods

The nature of the data was based on a nationally recognized survey which held after every five years. For this research paper, the data was extracted from the Pakistan Demographic and Health Surveys 2012-13 and 2017-18 for making a comparative analysis and assessing variations among these two waves. Pakistan Demographic and Health Survey (PDHS) is conducted by the National Institute of Population Studies, Islamabad. This was a secondary data analysis of the Pakistan Demographic and Health Survey (PDHS) 2012-13 and 2017-18. The target population was the married women of the reproductive age (15-49). The PDHS 2012-13 and 2017-18 consisted of 3800 and 10825 married women aged 15-49 years respectively, belonging to the province of Punjab, Pakistan. Descriptive frequencies, Chi-Square, and Binary logistic regression were performed to assess the net effect of education status on the adoption of reproductive health services in Punjab.

4. Results

4.1 Descriptive Analysis

Table 1. Education Status of Married Women Aged 15-49 in Punjab

Education Status	PDHS 2012-13		PDHS 2017-18	
	Percentage	N	Percentage	N
Illiterate	47.8	1828	48.3	5227
Primary	19.3	733	20.9	2265
Secondary	22.5	855	20.5	2217
Higher	10.4	394	10.3	1116

According to PDHS 2012-13, 47.8 percent of the respondents were illiterate and 52.8 percent of the respondents were literate. Furthermore, literate respondents were categorized as 19.3 percent of literate respondents had primary level education, 22.5 percent of literate respondents had secondary level education and 10.4 percent of the literate respondents had higher level education. According to PDHS 2017-18, 48.3 percent of the respondents were illiterate and 51.7 percent of the respondents were literate. Furthermore, literate respondents were categorized as 20.9 percent of literate respondents had primary level education, 20.5 percent of literate respondents had secondary level education and 10.3 percent of the literate respondents had higher level education. The above table reveals that the percentage of literate respondents is greater than illiterate respondents in PDHS 2012-13 and 2017-18.

Table 2. Distribution of Respondents by Contraceptive Use

Contraceptive Use	PDHS 2012-13		PDHS 2017-18	
	Percentage	N	Percentage	N
Yes	39.3	1494	48.5	5254
No	60.7	2306	51.5	5571

According to PDHS 2012-13, 39.3 percent of the respondents were using different contraceptive methods and 60.7 percent of the respondents were not using contraceptive methods. According to PDHS 2017-18, 48.5 percent of the respondents were using contraceptive methods and 51.5 percent of the respondents were not using contraceptive methods. Comparatively, the uptake of contraceptive use is more in PDHS 2017-18 as compared to PDHS 2012-13.

Table 3. Distribution of Respondents by Source-Getting Contraceptive Methods

Source of Contraceptive Methods	PDHS 2012-13		PDHS 2017-18	
	Percentage	N	Percentage	N
Government	39.3	1494	48.5	5254
Private	60.7	2306	51.5	5571

According to PDHS 2012-13, 77.4 percent of the users get contraceptive methods from government sources and 22.6 percent of the users get contraceptive methods from non-government sources. According to PDHS 2017-18, 52.2 percent of the users get contraceptive methods from government sources and 47.8 percent of the users get from non-government sources. Comparatively, users who get contraceptive methods from government sources are more in PDHS 2012-13 as compared to PDHS 2017-18.

4.2 Bi-Variate Analysis

Table 4. Percentage of women by educational status and current contraceptive use PDHS 2012- 13 & 2017-18

Education Status	PDHS 2012-13 Current Contraceptive use				PDHS 2017-18 Current Contraceptive use			
	Using (%)	Not Using (%)	N	p-Value	Using (%)	Not Using (%)	N	p-Value
Illiterate	36.5	63.5	1818	0.007	42.3	57.7	5227	0.000
Primary	42.3	57.7	733		52.0	48.0	2265	
Secondary	40.9	59.1	855		54.0	46.0	2217	
Higher	43.1	56.9	394		59.1	40.9	1116	

The above table shows that literate respondents use more contraceptive methods than illiterate in PDHS 2012-13 and 2017-18. The respondents with primary (42.3%) and higher (43.1%) educational levels uses more contraceptive methods than secondary (40.9%) educational level in PDHS 2012-13. According to PDHS 2017-18, Respondents with higher (59.1%) and secondary (54%) educational levels uptake more contraceptive methods than primary (52%) educational levels. As indicated in the above table, the selected educational status is statistically significantly associated with current contraceptive use at $p < 0.007$ in PDHS 2012-13 and $p < 0.000$ in PDHS 2017-18. Comparatively, contraceptive use increased in PDHS 2017-18 as compared to PDHS 2012-13.

Table 5. Percentage of women by educational status and their current contraceptive methods PDHS 2012-13 & 2017-18

Education Status	PDHS 2012-13 Current Contraceptive Methods				PDHS 2017-18 Current Contraceptive Methods			
	Traditional (%)	Modern (%)	N	p-Value	Traditional (%)	Modern (%)	N	p-Value
Illiterate	25.3	74.7	664	0.060	27.3	72.7	2220	0.017
Primary	31.9	68.1	310					
Secondary	31.1	68.9	350					
Higher	32.4	67.6	170					

According to PDHS 2012-13, illiterate respondents had more (74.7%) uptake of modern contraceptive methods as compared to respondents who had primary (68.1%), secondary (68.9%), and higher (67.6%) educational status. The above table shows that there is no significant relationship between educational level and current contraceptive methods at $p > 0.060$. According to PDHS 2017-18, literate respondents had more uptake of modern contraceptive methods as compared to illiterate respondents. The respondents with secondary level education (75.2%) had greater uptake of modern uptake as compared to primary (73.5%) and higher (68.3%) educational levels. Here, it is observed that educational level and uptake of modern contraceptive level have a strong association at $p < 0.017$.

Table 6. Percentage of women by education and their intention to use contraceptive methods in future PDHS 2012-13 & 2017-18

Education Status	PDHS 2012-13 Intention to Use Contraceptive Methods					PDHS 2017-18 Intention to Use Contraceptive Methods				
	Use Later %	Unsure about Use %	No Intention %	N	p-Value	Use Later %	Unsure about Use %	No Intention %	N	p-Value
Illiterate	32.2	17.1	50.7	1153	0.000	28.5	8.1	63.4	3007	0.000
Primary	43.0	16.5	40.4	423						
Secondary	50.2	13.1	36.7	505						
Higher	48.4	14.8	36.8	223						

The table shows that educational level and intention to use contraceptive methods have strong association at $p < 0.000$ in PDHS 2012-13 and 2017-18. According to PDHS 2012-13, respondents with no education background had uncovered that they had no intention (50.7%) as compared to use later (32.2%). Respondents with secondary education (50.2%) revealed that they had a strong intention to use later as compared to higher (48.4%) and primary (43%) educational levels in PDHS 2012-13. Similarly, respondents with secondary education (47.2%) had more intention to use later as compared to higher (43%) and primary (35.4%) educational levels in 2017-18.

Table 7. The net effect of education status on current contraceptive use (Binary logistic regression)

Education Status	PDHS 2012-13 Current Contraceptive Use			PDHS 2017-18 Current Contraceptive Use		
	O. R	95 C. I		O. R	95 C. I	
		Lower	Upper		Lower	Upper
Illiterate (Ref)						
Primary	1.274***	1.069	1.517	1.465***	1.327	1.618
Secondary	1.205***	1.020	1.423	1.590***	1.438	1.757
Higher	1.319***	1.057	1.645	1.760***	1.719	1.960

The above table of bi-variate analysis shows that the probability of using contraception methods was significantly higher for respondents who had higher education (O. R= 1.319) relative to those with secondary education (O. R=1.205) and primary education (OR=1.274) in PDHS 2012-13. Similarly, the probability of using contraception methods was significantly higher for respondents who had higher education (O. R= 1.760) relative to those with secondary education (O. R=1.590) and primary education (O. R=1.465) in PDHS 2017-18. The relationship has emerged strong between educational level and current contraceptive use in PDHS 2017-18 as compared to PDHS 2012-13.

Table 8. The net effect of education status on contraceptive methods (Binary logistic regression)

Education Status	Model PDHS 2012-13 Contraceptive methods (Traditional & Modern)			Model PDHS 2017-18 Contraceptive Methods (Traditional & Modern)		
	O. R	95 C. I		O. R	95 C. I	
		Lower	Upper		Lower	Upper
Illiterate (Ref)						
Primary	.722***	.537	.971	.522***	.470	.741
Secondary	.749***	.563	.987	.627***	.577	.803
Higher	.788***	.591	.998	.812***	.672	.981

The findings from above table show that the odd ratio of using modern contraceptive methods was higher for those women who had higher level education (O. R= .788) relative to secondary (O. R= .749) and primary level (O. R= .722) in PDHS 2012-13. According to the PDHS 2017-18, the odds ratio of using modern contraceptive methods was higher for those women who had higher level education (O. R= .812) relative to secondary (O. R= .627) and primary level (O. R= .522). The use of modern contraceptives is improved in PDHS 2017-18 as compared to PDHS 2012-13.

5. Discussion

The findings reveal that the use of reproductive health services in terms of contraceptive use was lower among women with no education and higher among women with higher education contraceptive use was higher among the women

with higher education (43.1%) as compared with secondary educated (40.9%), primary educated (42.3%) and women with no education (35.5%) in the PDHS 2012-13. In the PDHS 2017-18, the adoption of reproductive health services also increased with increasing levels of education. For example, women with higher education (59.1%), women with secondary education (54%), women with primary education (52%) and women with no education (42.3%).

In our study, results of binary logistic regression also indicate that in the PDHS 2012–13, women with higher levels of education (O. R=.788) used modern contraceptive methods at higher rates than those with secondary (O. R=.749) and primary (O. R=.722) education levels. In the PDHS 2017–18, it was found that women with higher levels of education had an odd ratio of utilizing modern contraceptive methods (O. R=.812) compared to those with secondary (O. R=.627) and primary (O. R=.522) education status. Compared to PDHS 2012–13, the usage of modern contraceptives has increased in PDHS 2017–18. Similarly, the researchers in their study found that contraceptive use was higher among highly educated women as compared to women with low education status (p-value <0.001). The findings of the multinomial logistic regression also indicate the same results that more educated women are likely to use more contraceptive methods than women who had no education (OR: 2.202, p-value <0.010).¹² A research study figured out that odd ratios yield that women with higher education had higher levels of ever-use of contraceptive methods 3.6 (2.5-5) and 2.4 (1.8-3.3) for current use.¹³ Reference is made to the research study conducted in the urban settlement of Karachi also revealed the same that women with higher education status use more contraception as compared to the women with no education (Odds ratio=1.7).¹⁴ Another research study concerning Pakistan aligns with our results that contraceptive use was higher among the higher education status of women and contraceptive use was lower among the lower education status of women (95% C.I 1.00 to 1.116).¹⁵ Another highly significant study also strengthened the results of our research study by revealing that uneducated married women had lesser odds (O. R= 0.746, 95 C. I= 0.568-0.980) for the adoption of reproductive health services as compared to educated married women of reproductive age.¹⁶

6. Conclusion

The study concludes that education status of women was found to be significantly related to their use and practices of different family planning methods. There is no denying the findings that education is an instrumental and vital tool to improve the socio-economic and health status of married women by strengthening their decision-making for the adoption of reproductive health services in Punjab, Pakistan. It has become the need of the hour to put resources and policies into action for the improvement of reproductive health status. It proves that education level has a positive influence on the uptake and continuation of contraceptive methods. Therefore, there is a need to educate the people and disseminate awareness in the urban-rural areas of Punjab.

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