

ORIGINAL ARTICLE

The Role of Education and Employment in Shaping Modern Contraceptive Practices among Married Women in Pakistan: A Focus on Employed vs. Unemployed Females

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Abstract

Background: This study examines the relationship between women's employment, education, and contraception use in Pakistan, a country with high rates of maternal mortality and population growth. The study emphasizes the need of providing women with economic and educational opportunities to improve family planning outcomes and reduce maternal mortality, poverty, and population growth.

Methods: The study used data from the Pakistan Demographic and Health Survey (PDHS 2017-2018). Three approaches were used in our study: Descriptive analysis was done to summarize sociodemographic characteristics and Chi square test and Logistic Regression was done to measure relationship between modern contraceptive usage and employment status of educated women, with the P values less than 0.05.

Results: The results show that the use of contraceptives is highly influenced by age and geographic factors. Significantly, older age groups have a higher probability of utilizing contraceptives. The significant Chi-Square value indicates that among educated married women in Pakistan, work position has a considerable impact on the chance of adopting modern contraceptive methods. There was no significant variation in the utilization of contraceptives between educated women with employment and educated women without employment.

Conclusion: Women's autonomy and contraceptive use were highly connected; our findings revealed a statistically significant difference in contraceptive usage between educated women who were employed and those who were not. In order to enhance maternal health outcomes, family planning behavior and advocates for policies that support women's autonomy and education.

Keywords: women empowerment, contraception, PDHS



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INTRODUCTION

High rates of fertility and population increase are two of the leading social and economic issues that the developing world faces. High rates of population expansion have been linked to lower life expectancy and higher rates of poverty [1, 2]. The established relationship between female education and contraception use is crucial to the creation of family planning laws in lower-income nations. Women must make their own decisions about reproductive health in order to improve outcomes for mother and child health [3].

Among young women worldwide, there were 21 million pregnancies in 2016, of which over half were unwanted [4]. Pakistan, the fifth-most populous nation in the world, is working to reach demographic balance. Regrettably, one in five Pakistani women have unintended births as a result of not taking contraception. Women continue to participate at relatively low levels in social, economic, and political spheres and to gain from them [5]. In Pakistan, 34% of people currently use contraception, compared to 62% in India and 56% in Bangladesh [6].

The maternal mortality rate in Pakistan dropped from 256 to 186 deaths per 100,000 live births. Unmet family planning needs declined from 20% (PDHS 2012-2013) to 17% (PDHS 2017-2018). Contraceptive prevalence grew from 30% in 2006 to 35% in 2012-2013 [7]. Regulating the size and timing of a family can also be crucial to securing chances for equality, prosperity in the workplace, and education [8]. The usage of contraceptives has also been found to be statistically substantially correlated with women's age, residency province, education level, household wealth status, number of children, time since last sex, and awareness of family planning services [5]. Among various socio-demographic characteristics that influence the usage of contraceptives, women's work position is one of the most important ones. Women who are literate are more independent and use contraceptives more frequently; wives who are educated also tend to produce fewer, better-educated children [9]. The most impacted households are those with poor incomes and literacy levels, which leads to high rates of maternal and infant mortality as well as high fertility [10].

The relationship between women's employment status and their use of contraception is a critical area of research, particularly in the context of socio-economic development and gender equality. Educated women are often in a better position to make informed choices regarding their reproductive health, but their employment status may influence these decisions. Education is important in empowering women and providing them with the knowledge of necessary health choices, including family planning. Educated women are more likely to understand the benefits of contraception and advocate for their reproductive rights. In Pakistan, despite being educated, women remain outside the formal workforce. This decision to not work may be voluntary, driven by personal or family preferences, or it may be the societal pressure to marry early and have a family that hinders women's participation in employment. Whether by will or by force, the decision to remain unemployed can have broader implications on various aspects of a woman's life, including her reproductive choices. While education plays a crucial role in enhancing knowledge about family planning and contraceptive methods, employment status can significantly influence the actual utilization of this knowledge. Given this context, it is important to explore how the employment status of educated women in Pakistan affects their contraceptive choices. Understanding this relationship can provide valuable insights into how factors beyond education, such as economic autonomy and social empowerment, shape women's reproductive behaviors. This study aims to fill the gap by comparing contraceptive use between educated employed and educated unemployed women, shedding light on the intersection of education, employment, and family planning in Pakistan.

We have used the PDHS dataset, which captures various aspects of women's health, employment, and contraceptive use. This data allows for a comprehensive analysis of the factors influencing contraceptive choices among educated women and employment statuses. By examining these relationships, the study aims to inform policymakers and stakeholders about the importance of integrating women's education and employment into family planning programs. Understanding these connections can lead to more effective interventions that support women's health and empowerment. We have looked at the relationship between women's employment status and contraception usage. And second we evaluated the influences between education and usage of contraceptives. Because the study is based on a secondary examination of an already-existing dataset, the characteristics of women's autonomy that could be chosen were limited to those that were included in the dataset. In this study, we compared Pakistani women who were working and those who were not in order to look at the socio-demographic factors affecting the usage of contraceptives among married women nowadays in Pakistan.

METHODOLOGY:

The Pakistan Demographic and Health Surveys (PDHS) datasets were used in this analysis. These surveys collect information from a representative sample of Pakistanis on their socioeconomic, demographic, and health conditions. For the current study, we examined the number of married women in Pakistan who used contraception between the ages of 15 and 49 by analysing secondary data from the DHS (2017-2018), a survey conducted in the country. In order to select 20-30 families at random from each Enumeration Block, provinces were first classified as urban or rural. This process was known as stratified cluster sampling. The usage of contemporary forms of contraception, such as the pill, intrauterine device, injectable, condom, female sterilisation, and implant, was the study's outcome variable. The study participants' current methods of contraception at the time of the interview were used to define the usage of contraception. Women who used any kind of modern birth control were categorised. During the PDHS interviews, information on contraceptive use was verbally obtained.

We used data of women with higher education only, filtering out and reached the sample of 2208 females, and then these women were grouped into educated employed group variable.

The following socioeconomic and demographic factors were employed: Years expressed in years with a 4-year gap. Regions were separated into Punjab, Sindh, KPK, Baluchistan, GB, ICT, AJK, FATA. There are five categories for the wealth index: poorest, poorer, middle, richer, and richest. Use of contraception can result in one of two things: 1. Not employing a modern technique of contraception. 2. Using modern methods of contraception. We further separated the categories of people who use and do not use modern contraceptive techniques based on their job situation and level of education. Specifically, we looked at those who are employed and educated who do not use modern contraceptive methods. 2. Using modern techniques of contraception as educated job seekers and employed individuals. We finished the analysis using SPSS version 24.

To summarise the sociodemographic traits of women, descriptive statistics were used. The chi square test was used to determine whether women's work level and their use of contraceptives were related. Logistic regression analysis was done to measure modern contraceptive usage.

RESULTS:

The data presents the distribution of modern contraceptive usage among women of reproductive age across various age groups, regions, wealth indices, and recent birth history. The overall prevalence of modern contraceptive use is reported at 28.1%, with 71.9% of women not using any modern contraceptive method.

The age distribution of women using modern contraceptives reveals a significant trend. The data suggests that modern contraceptive usage increases with age, peaking in the 25-29 age groups, which aligns with findings from other studies indicating that older women are more likely to use modern contraceptives as they seek to achieve their desired family size. The regional distribution indicates significant disparities in contraceptive usage: These figures highlight that Punjab has the highest prevalence of modern contraceptive usage, while Baluchistan and FATA show alarmingly low rates, indicating potential barriers to access and cultural factors influencing contraceptive use. The wealth index also demonstrates a strong correlation with contraceptive usage:

The data clearly indicates that wealthier households have significantly higher rates of modern contraceptive use, suggesting that economic status plays a crucial role in access to family planning resources. Women who have had no births recently are more likely to utilize modern contraceptives, potentially reflecting a desire to space pregnancies or limit future births.

A substantial correlation between employment level and the usage of contemporary contraceptives was found by the Pearson Chi-Square test ($\chi^2(1, N=2532)=2205.00$, $\chi^2(1, N=2532)=2205.00$, $p < 0.001$). According to the findings, educated working women had a higher likelihood of using modern contraceptive methods (468 out of 795, or 58.9%) than educated jobless women (478 out of 1737, or 27.5%). In contrast, compared to their employed counterparts (327 out of 795, or 41.1%), a greater percentage of educated jobless women (1259 out of 1737, or 72.5%) did not use modern contraceptive methods (Table 2). The significant Chi-Square value indicates that among educated married women in Pakistan, work position has a considerable impact on the chance of adopting modern contraceptive methods. Our findings highlight the importance of economic empowerment and employment in facilitating access to and utilization of modern contraceptive options.

Table 1 Socio demographic Characteristics of Women

Age in Years		
15-19	29	1.3
20-24	314	14.2
25-29	581	26.3
30-34	526	23.8
35-39	377	17.1
40-44	240	10.9
45-49	139	6.3
Region		
Punjab	532	24.1
Sindh	411	18.6
KPK	289	13.1
Baluchistan	90	4.1
GB	179	8.1
ICT	337	15.3
AJK	345	15.6
FATA	23	1
Wealth Index		
Poorest	20	0.9
Poorer	106	4.8
Middle	250	11.3
Richer	509	23.1
Richest	1321	59.9
Birth in Last 5 Years		
No births	945	42.8
1	782	35.4
2	401	18.2
3	74	3.4
4	4	0.2
Modern Contraceptive Method		
Not Using Modern Contraceptive Method	1587	71.9
Using Modern Contraceptive Method	619	28.1

Table 2 Relationship between Modern Contraceptive usage and Employment Status

Not Using Modern Contraceptive Method	
Educated Employed	327
Educated Unemployed	1259
Using Modern Contraceptive Method	
Educated Employed	468
Educated Unemployed	478

Figure 1 : Flowchart of educated women's employment status and modern contraceptive use, moderated by age, region, wealth index, and recent births.

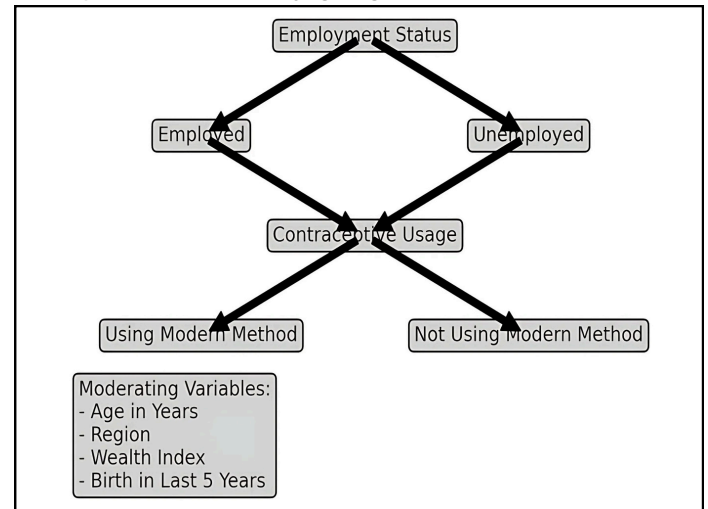


Table 3 Logistic Regression Analysis of Socio demographic Predictors of Modern Contraceptive.

Age	Ref	Mean	CI
15-19			
20-24	0.132	3.094	0.711-13.465
25-29	0.048	4.354	1.015-18.671
30-34	0.011	6.645	1.55-28.487
35-39	0.01	6.847	1.588-29.519
40-44	0.006	7.928	1.823-34.472
45-49	0.062	4.163	0.93-18.634
Educated and Unemployed	Ref		
Educated and Employed	0.232	1.152	0.913-1.45
Region			
Punjab	Ref		
Sindh	0.682	1.062	0.795-1.42
KPK	0.971	1.006	0.725-1.396
Balochistan	0.701	0.903	0.538-1.516
GB	0.529	0.874	0.574-1.331
ICT	0.21	1.213	0.897-1.638
AJK	0.025	0.685	0.492-0.954
FATA	0.742	0.85	0.322-2.241
Wealth Index			
Poorest	Ref		
Poorer	0.168	2.529	0.675-9.468
Middle	0.289	2.005	0.553-7.265
Richer	0.772	1.208	0.337-4.335
Richest	0.448	1.636	0.46-5.822

The analysis of modern contraceptive usage reveals significant associations with various demographic factors, including age, education, region, and income levels.

Younger women (ages 15-19) serve as the reference group for modern contraceptive usage. The results indicate a clear trend of increasing usage with age. Women aged 20-24 exhibit an odds ratio of 3.094 (95% CI: 0.711-13.465), suggesting a substantial increase in the likelihood of using modern contraceptives compared to the reference group. This trend continues for women aged 25-29, who have an odds ratio of 4.354 (95% CI: 1.015-18.671). For women aged 30-34, the odds ratio rises to 6.645 (95% CI: 1.55-28.487), and those

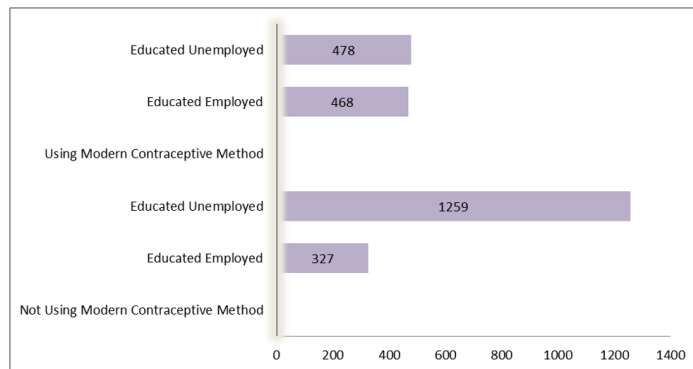


Figure 2 : Distribution of Modern Contraceptive use among educated employed and unemployed Women

aged 35-39 show an even higher odds ratio of 6.847 (95% CI: 1.588-29.519). The odds further increase for women aged 40-44, with an odds ratio of 7.928 (95% CI: 1.823-34.472), and for those aged 45-49, the odds ratio is 4.163 (95% CI: 0.93-18.634). These findings underscore the positive correlation between age and modern contraceptive usage.

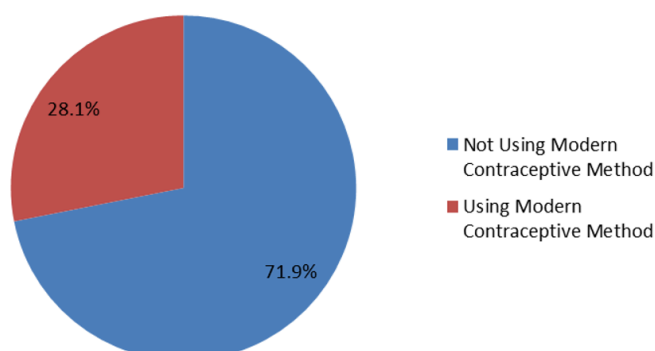
In terms of education, educated and unemployed women are used as the reference group. The analysis indicates that educated and employed women have an odds ratio of 1.152 (95% CI: 0.913-1.45), suggesting that employment status may positively influence modern contraceptive usage.

When examining regional differences, Punjab serves as the reference region. Women in Sindh have an odds ratio of 1.062 (95% CI: 0.795-1.42), indicating a slightly higher likelihood of using modern contraceptives compared to those in Punjab. In KPK, the odds ratio is 1.006 (95% CI: 0.725-1.396), suggesting stable usage rates. Conversely, Baluchistan shows an odds ratio of 0.903 (95% CI: 0.538-1.516), indicating lower usage relative to Punjab, while women in GB have an odds ratio of 0.874 (95% CI: 0.574-1.331). In ICT, the odds ratio is 1.213 (95% CI: 0.897-1.638), whereas AJK presents a significant reduction with an odds ratio of 0.685 (95% CI: 0.492-0.954). Finally, FATA has an odds ratio of 0.85 (95% CI: 0.322-2.241), reflecting lower rates of modern contraceptive usage.

Regarding income levels, the poorest group serves as the reference category. The poorer category shows an odds ratio of 2.529 (95% CI: 0.675-9.468), indicating a higher likelihood of modern contraceptive use compared to the poorest group. The middle-income group has an odds ratio of 2.005 (95% CI: 0.553-7.265), while the richer category shows an odds ratio of 1.208 (95% CI: 0.337-4.335). Lastly, the richest group presents an odds ratio of 1.636 (95% CI: 0.46-5.822).

These findings highlight significant disparities in modern contraceptive usage based on age, education, region, and income levels, suggesting that targeted interventions are necessary to enhance access and acceptance among underrepresented groups, particularly younger women and those in lower socioeconomic brackets.

Figure 3: Distribution of Modern Contraceptive Usage among Respondents



DISCUSSION:

By delving deep into data we are able to construct this information which is based on numerous health and demographic variables, offering fascinating perspectives into the lives of the participants. The age distribution reveals that the bulk of respondents (581) are between the ages of 25 and 29, with the 30-34 age group (526) coming in second. This suggests that younger persons are more concerned with family planning and reproductive health. Regional differences are clear; Balochistan (90) and FATA (23) have substantially fewer respondents than Punjab (532), which is followed by Sindh (411) and AJK (345). The distribution of the wealth index shows a sharp contrast: the richest group comprises the majority of respondents (1321), while the poorest and poorer categories have comparatively fewer respondents (20 and 106, respectively). A considerable percentage of respondents (945) had no births in the previous five years, compared to 782 who had one birth and fewer who had several births. Interestingly, the data shows that only a small portion of respondents (619) used contemporary methods of contraception, while a sizable majority (1587) did not. Additionally, work and education are significant factors, as those with jobs and education are more likely to use contemporary forms of contraception. In order to address inequities and enhance health outcomes, the data collectively paint a complex picture of demographic and health trends, highlighting the necessity for focused interventions and resource allocation.

The logistic regression analysis reveals significant associations between age and contraceptive use, with higher rates of contraceptive use observed in older age groups (25-29, 30-34, 35-39, and 40-44 years old). AJK is a highly reliable indicator of the use of contraceptives, especially in the area. On the other hand, no obvious relationships exist between wealth index categories, employment status, and education. These findings suggest that age and place of residence have a big influence on contraceptive use. The lack of a relationship between education-employment status and the wealth index raises the possibility that there are other factors influencing the population's use of contraceptives. Further research on these topics is needed in order to effectively affect family planning policies and services.

Based on our analysis we observed that in 2024 the frequency of modern contraceptives used by females is 46.8 while in a similar study in 2020 it was 49.7. The educated and upper socioeconomic classes were more likely to use contraceptives than the general population. The number of children and knowledge about contraceptives were identified as potential predictors for the use of contraceptives [11].

The average age of the participants in this study was 30.73±5.9. The majority of respondents 65% were educated, and 61% were from lower socioeconomic classes. 65 ± 26 was the mean awareness score. 260 (65%) of the 400 respondents said they were using contraception. Merely 13% of women were employed in the year preceding the study, according to data on women's employment [12]. The use of contemporary contraceptive technologies can effectively manage fertility and lower the number of unintended pregnancies. However, in the majority of the world's developing nations, the unmet need for modern contraception (UNMC) is still rather high [13]. Pregnancy and delivery are the major causes of death for women in poor nations. In this situation, lowering the morbidity and mortality associated with pregnancy depends heavily on family planning and access to contraception [14]. Women who are fertile and sexually active who do not use any type of contraception and not wanting any more children or delayed having children are regarded to have an unmet need for contraception [15]. Contraception is used to both stop childbearing and space out periods. The number of living children and the use of contraception are directly correlated, and the use of contraception rises linearly as both the number of live boys and the number of living children rise [16]. Contraception is very affordable and has a surprising number of benefits. Unfortunately, health care institutions frequently fall short of providing access to information and an educated choice, and women lack the knowledge.

capacity, and opportunity to make reproductive decisions on a global scale [17].

It is vital to research the connections between women's employment and educational attainment and their use of contraceptives for a number of reasons. First of all, by helping women understand how their work and education affect their use of contraceptives, it can enable them to make knowledgeable decisions regarding their reproductive health. Furthermore, work and education can increase women's agency in reproductive matters, resulting in financial gains and better health outcomes for moms and kids. Research on this connection can also help gender equality in reproductive decision-making by informing family planning policies and services. It can also clarify the ways in which socio-cultural elements affecting the use of contraceptives interact with work and education. Policies promoting women's employment, education, and reproductive health can be informed by the findings.

A primary limitation of the present study is the utilization of Demographic and Health Survey (PDHS) data from 2018, which constitutes the most recent dataset available at the time of this research. However, this data may not accurately reflect contemporary trends or developments that have transpired since 2018. Notably, the PDHS survey is conducted at five-year intervals, with the subsequent survey scheduled for 2025. Consequently, our analysis may not capture the most current information, potentially impacting the accuracy and generalizability of our finding. On-response bias may occur as some respondents may not answer questions about contraceptive use due to sensitivity or stigma. Additionally, social desirability bias may lead to over reporting or underreporting of contraceptive use due to social norms or expectations.

Conclusion:

Our study explains the socioeconomic factors, such as women's education and employment, in influencing contraceptive use in Pakistan. While women's autonomy and contraceptive use were strongly associated, this study highlights the complex interplay of various socioeconomic factors in shaping family planning behavior and calls for policies that promote women's education and autonomy to improve maternal health outcomes.

Conflict of Interest:

There is no conflict of interest.

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