ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 4, Issue, 12, pp.180-186, December, 2012

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

CONTRACEPTIVE CHOICES AMONG INDIAN WOMEN: IS THE ROLE OF WOMEN'S EDUCATION OVEREMPHASIZED?

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ARTICLE INFO

Article History:
Received 13th September, 2012
Received in revised form
27th October, 2012
Accepted 14th November, 2012
Published online 18th December, 2012

Key words:
Contraception usage,
Education, Primary,
Secondary,
Higher,
Motivation, India.

ABSTRACT

Education is considered an important tool in the relationship between fertility and contraception use. It is believed that with higher education the use of modern contraceptives among women increases, as they are better informed and make responsible choices in fertility. This paper examines the contraceptive use and knowledge in over 6 lakh Indian women, thorough DLHS-3 (2007-08) data. We find that with increasing education, use of contraceptives is positively related. Not only modern, but also traditional methods are practiced more frequently. Her husband's education also is a strong parameter in contraceptive decision making. This paper also finds that more education provides a women with greater autonomy to make decisions to use and also bring about differences in the facility where women obtain contraception. The decision to not use contraception is also affected by the education level of the spouse's education, but not in a significant way. In the Regression analysis, we find that socio-economic variable significantly impact the use of contraception is we control for the education level of the woman.

INTRODUCTION

With a population of over a billion, India certainly needs a comprehensive family planning program and a contraceptive culture in place. With a rising incidence of HIV/AIDS the usage of condoms-both as a contraceptive and protection from sexually transmitted diseases (STD) is vital. With increasing number of women concentrating on their careers and delaying their marriages and pregnancy, the practice of contraception assumes even more significance. Contraception is effective when one has the knowledge of various forms of contraceptives and their usages. Lack of knowledge and the belief in the myths around contraception result in unwanted pregnancies and sometimes unsafe abortions. It is important to educate ourselves and remove any doubts on contraception to lead a healthy and balanced family life. There are various types of contraceptives used as birth control methods. However, not all are equally effective. Depending on their convenience, it is for the couple to decide on the type of contraception. Importantly, the pregnancy or failure rate is the primary consideration for choosing a contraceptive. Education is considered to be the most important growth determinant in countries, as well as a major influence on fertility rates. It has been one of the most employed factors by economists and demographers in their analyses to evaluate households' socio-economic status as well as development growth in countries. Fertility is a choice commonly made by the mother, the father, or both. This decision is done based on the amount of satisfaction, productivity, and financial returns each child will provide them. As women become better educated, they become more conscious of how many children they are able to sustain and are able to better evaluate their decision of having another child. Therefore, women with fewer children are more likely maximize each of their child's lives. This is accomplished through the better allocation of the available resources among their children.

Literature Review

There is a large theoretical literature on the relationships between female education, fertility, and contraceptive use. Generally, the results are consistent with predictions of utility theory, showing that women with more schooling behaved rationally when considering their family sizes by having fewer children. However, there is little empirical study tying together women's schooling, fertility, and contraceptive use. While advancing the understanding of the determinants of fertility and contraceptive use, previous studies have focused on only a few variables. For example, they have neglected to examine the role of other important factors such as cultural traits in fertility and contraceptive use decisions. According to a study by Castro and Juarez (1994), education can influence women's reproduction in several ways: by increasing knowledge of fertility, increasing socioeconomic status, and changing attitudes about fertility control. Education may also affect the distribution of authority within households, whereby women may increase their authority with husbands, and affect fertility and use of family planning (Bertrand *et al*., 1993). This may lead to a demand for fewer children, and consequently, the use of contraceptives to prevent or to space childbirth. Education is closely linked to the use of contraception: more educated women are more likely to use family planning (Kasarda *et al*., 1986, Robey *et al*., 1992). Data from the countries where the Demographic and Health Surveys (DHS) have been conducted demonstrate the relationship between education and the use of family planning (Robey *et al*., 1992).

It is the responsibility of health professionals to ascertain that each person who obtains a family planning method has sufficient information on the proposed method and that this person is competent to make a choice. Educated and working women are presumed to have closer conjugal ties with their husbands compared to non-educated and unemployed women. The educated woman is therefore, expected to have similar reproductive attitudes as their husbands. Besides education, a large number of variables can affect fertility and contraceptive use. For example, Bongaarts, Frank, and Lesthaeghe (1984) consider two groups of variables: socioeconomic variables and proximate variables. Socioeconomic variables include education, social, cultural, economic, and health variables whereas proximate variables include biological and behavioral variables such as contraception and age of a woman. Davis and Blake (1956) and Bongaarts and Potter (1983) hypothesize that in order for the socioeconomic variables to affect fertility, they must operate through proximate determinants.

DATA SOURCE AND METHODS

The information collected by District Level Household Survey (DLHS-3) is the third in the series preceded by DLHS -1 in 1998-99 and DLHS-2 in 2002-04. DLHS-3, like two earlier rounds, is designed to provide estimates on maternal and child health, family planning and other reproductive health services. District Level Health Survey (DLHS-RCH III: 2007-08) round third survey is used to examine the level of knowledge and use of contraception among 643944 ever-married women in India aged 15-49 years. The analysis was carried out with help of SPSS statistical package and results are presented in univariate and bi-variate Tables. The logistic regression analysis is used to study the significance of variation in use of modern contraception by background characteristics of ever-married women, controlling for the education variable. In the Data, women were categorized separately according to each class they had completed. In this study, we clubbed together the various classes to form four basic categories.

An individual who hasn't completed even a year worth of schooling or has taken only a few days or months of schooling has been classed as uneducated or under the category "No Education". Children who have completed 1-5 years of schooling were categorized under "Primary" Education, those who have completed 6-10 years of schooling were put under "Secondary schooling" and lastly, those who had received more than 10 years of schooling were given the tag "Higher". According to this grouping, there are 2,99,368 women considered illiterate, 1,04,293 women in the second, 1,76,643 in the third and around 63,629 in the category of "Higher" education. This paper begins with an appraisal of a women's current use of each contraceptive method that was defined within the DLHS-III, given her education level and then moves on to the ever use patterns. Moving on, we graph the effects of education on the knowledge of the modern and traditional methods of contraception. We also examine the source were from contraception is obtained and how these are affected with a rise in the education level. Additionally we look at the influence of several socio-economic factors on modern contraceptive use, controlling for education level via the regression analysis. Lastly, within the paper, we also study the different reasons women affirm as pertinent in their contraceptive use decisions.

RESULTS

In keeping with the basic finding of this paper, we examine the current use of contraceptive among women depending on the education level of the woman and their husband. In each row we can observe the effect education has on the use of a certain contraceptive method. We have tabulated the same given the control variable is women's education and the husbands education. It is clear from the first column that for an uneducated woman, sterilization is a highly frequent method adopted compared to other modern methods which are used in much lesser frequency. Even the traditional method of Rhythm has an overall use percentage of 7.8%. But it is clearly visible that as the education level increases, there is fall in the use of sterilization and more women adopt temporary methods of modern contraception. Only 38% higher educated women, compared to the previous figure of nearly 3/4th of the population, used this method. On the other hand, condom is found to be used much more frequently as the percentage of current use rises from 4.3 to 26.7. Methods like IUD and Pills also nearly quintuple and double respectively. If we notice along the row, the use of sterilization decreases very sharply for women who have received higher education compared to women who have received secondary education even. We can see that the use of traditional methods like rhythm and withdrawal also increases with the use of education and is highest for women who have pursued higher education. At a careful glance, it can be noticed that having higher education significantly impacts not only the use of contraception, but also the method adopted. However, these numbers were examined using current use data. If we look at the ever use data, we find that most of the trends are similar, except for higher use percentages.

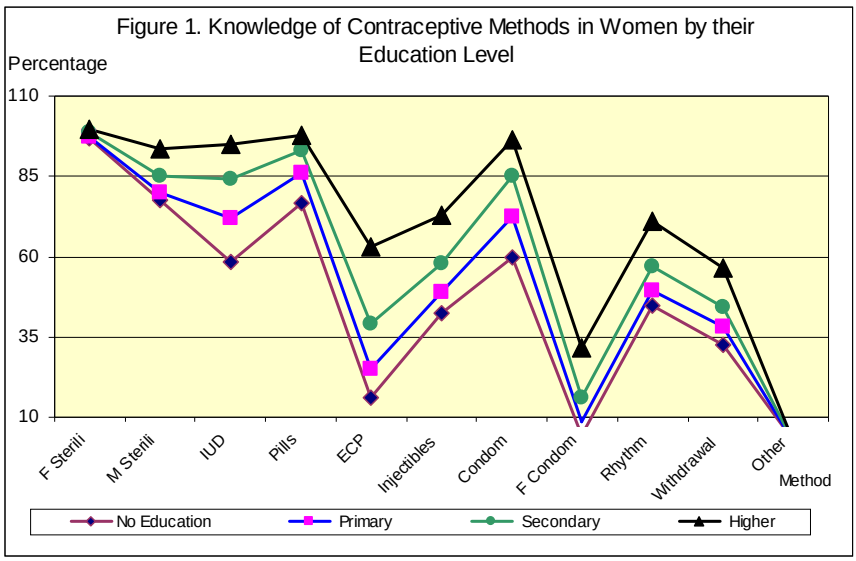
In Table 2, we have the categorized all the methods of contraception according to them being modern or traditional. So the first column considers knowledge of any one of the modern methods, the second column is about any one of the traditional methods and the last column is knowledge about any one method- traditional or modern. As can be seen, the knowledge of traditional methods and modern methods both rises with education. However, the singular impact a woman's education has on contraception use in contrast to her husband's education is visible through this table. Overall, the husband's level of education affects the use of contraception more significantly compared to the woman's education level. While overall usage rises from 57.3% to 68.2% for a rise in the woman's education level, for the husband, this rise is from 54.6% to 67.1%, nearly 2.5% higher. Whether this is an indication of the mindset of the women regarding contraception despite her elevated education, or the final decision making about when and which contraception to use being governed by the husband, is unsure. It may be that a woman, despite education may not have the autonomy or may just defer the say of the matter in the hands of the husband. This patriarchal mindset is still very much a part of rural and most urban households in India, which may have a significant impact on use of contraception. Otherwise, equipped with greater knowledge, it may also happen that women are conversant with contraception techniques and their adverse effects- thus choosing to put off using them. This is clearly visible if we notice that the rise in percentage use of traditional methods is nearly 8.6% with rise in women's education. This

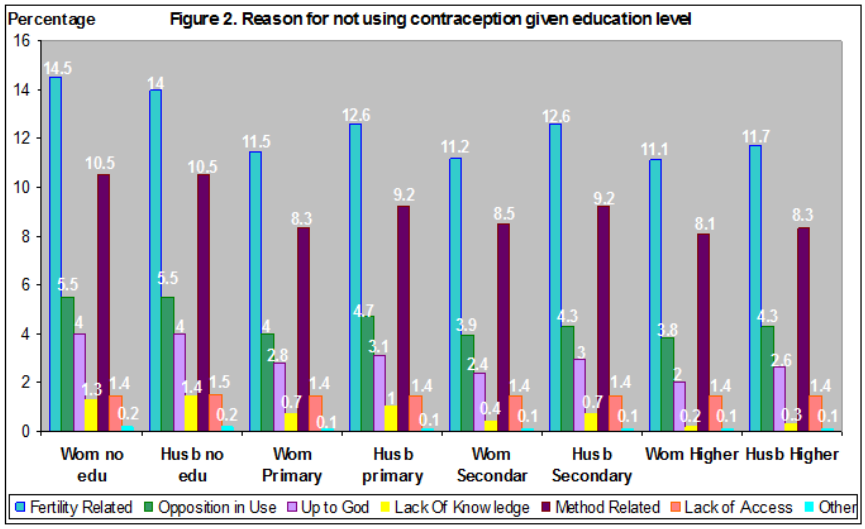
Table 1. Current Use of Contraceptives by Education Level (%)

Method Used	No Education		Primary		Secondary		Higher	
	Woman	Husband	Woman	Husband	Woman	Husband	Woman	Husband
Female Sterilization	75.4	75.3	70.7	72.8	59.1	65.0	38.1	51.6
Male Sterilization	2.5	2.7	2.1	2.3	1.5	1.7	1.3	1.6
IUD	1.5	1.5	2.2	1.8	4.2	3.3	7.6	5.4
Daily Pills	4.4	5.0	7.2	6.9	9.5	7.3	8.0	7.2
Weekly Pills	.3	.3	.5	.4	.7	.5	.9	.8
Injectibles	.2	.2	.2	.2	.3	.3	.3	.3
Condom	4.3	3.7	5.9	4.5	11.2	9.0	26.7	18.2
Female Condom	.0	.0	.0	.0	.0	.0	.1	.1
Rhythm	7.8	7.6	7.4	7.4	8.6	8.4	10.8	9.6
Withdrawal	2.7	2.7	3.4	3.1	4.7	4.0	6.0	4.8
Other	.8	1.0	.4	.6	.2	.4	.2	.3

Table 2. Ever-Use of Contraceptive Methods by Education Level (%)

Education Level	Modern Method Used	Traditional Method Used	Any Method Used
		WOMAN	
No Education	48.6	17.0	57.3
Primary	55.7	19.6	63.9
Secondary	56.1	21.4	64.6
Higher	58.6	25.6	68.2
		HUSBAND	
No Education	46.2	15.9	54.6
Primary	53.9	18.9	62.4
Secondary	54.1	20.4	62.8
Higher	58.0	22.9	67.1





could be an indication of how women may perceive modern methods of contraception as adversely affecting health compared to traditional methods, which are more convenient and have lesser or no side-effects. But how prevalent is the knowledge of these contraceptive methods in India. And is lower knowledge actually what is holding women back from usage itself? We examined the awareness of contraceptives among Indian women given various methods and graphed them in Figure1. It depicts the knowledge level of all four categories of educated women- illiterate, primary level, secondary level and those having higher education. It is clearly visible that Female Sterilization is a method which is not only widely practiced, but is also known to most women, despite differentials in education. No other method has such wide and nearly universal awareness as this method. Among women who have received higher education, there is a markedly high knowledge in modern methods like Pills, Condom, IUD and Male Sterilization while for lesser educated women, the awareness level is further below. Barely 70% of the women having received primary and 60% women with no education having knowledge of methods like Condom and IUD. Familiarity with Male Sterilization is still prevalent among women of all levels.

Knowledge of Female condoms is dismally low, even in the highest level of education, which may explain why a lot of women do not use it. In other modern methods like ECP and Injectibles, there is ample difference that exists within individual levels of education received about the knowledge of these methods. For ECP, less than 20% of the women with low levels of education can claim know-how of this method. This Figure clearly speaks of the need to popularize modern methods within women and men that they may accordingly use a method which suits their needs and wants best. In the figure, even the knowledge of traditional methods is low, with the women having higher levels of education claiming to have greater awareness. It is strange that even with such levels of awareness, these methods are practiced quite frequently.

With awareness lower than methods like Male Sterilization, IUD, Pills and nearly identical to Injectibles, the traditional method of withdrawal is used by nearly 11% of the women, much higher than other methods. This fact indicates that even though knowledge may be a strong influence on the use of certain methods, there are other factors like cost, convenience and effects to health that determine the overall usage. Often people around you are pertinent to the contraceptive decisions you make. They are a major influence in your decisions to use and which method of contraception to use. The next Table describes the different individuals that have motivated women to adopt contraception. With changes in the education, we can observe that there are differences in the individuals who influence your decision most.

From Table 3, we can see that regardless of the level of education the husband and self motivation are the biggest contributors in the decision to use contraception. If you look at the Table, nearly 30% of uneducated women said that it was either their husbands, themselves or both the husband and self who were the individuals responsible for their decision to use contraception. This figures increases drastically with the education levels as 39% of secondary school educated women and 43% of higher educated women claim the same. It is mostly the increase in the share of women who were motivated by their husbands and those who decided to use contraception based on the decision of both themselves and the husbands that significantly changes with education. The share of women who were self-motivated to use contraception stays nearly constant at 10%. These figures can be explained if we take into account the patriarchal nature of our society, where women often choose to refer to their husbands on the important decisions of the household. As far as education is concerned, it can be seen that, in higher educated women the decision to use contraception rises significantly if both them and their partner were involved in the decision. This may attest to a higher compatibility and understanding between the couple as well as the greater ability of a woman to make such decisions on her

Table 3. The Main Source of Motivation for Women at Different Levels of Education

Motivated by	No Education	Primary	Secondary	Higher
Doctor	1.5	2.0	2.4	3.1
ANM	3.6	3.2	2.2	1.3
Health Worker	.7	.8	.5	.2
AWW	1.6	1.2	.7	.2
ASHA	.4	.3	.2	.1
NGO/CBO	.1	.1	.1	.1
Husband	5.7	6.6	7.5	8.9
Mother-in-law	1.0	1.1	1.0	.7
Mother	.9	1.1	1.0	.8
Relatives/Friends	6.1	6.3	5.3	4.3
Dai/TBA	.4	.4	.3	.2
Self	10.0	10.4	10.0	9.8
Self and Husband	14.7	18.6	20.8	24.2
Other	.4	.4	.3	.3

Table 4. The Percentage Source of Contraception at each Level of Education

Source	No Education	Primary	Secondary	Higher
		WOMAN		
Public	33.1	29.2	24.7	15.5
Private	40.6	45.5	48.9	52.8
Shops and Vending Machines	14.2	14.6	15.8	20.3
Other	12.1	10.7	10.6	11.4
		HUSBAND		
Public	34.3	31.6	26.5	17.9
Private	42.8	45.8	46.7	50.4
Shops and Vending Machines	12.4	12.8	15.7	19.7
Other	10.5	9.7	11.1	11.9

own and deliver that to her husband frankly. Another interesting pattern that we can see is that as the education of the women increases, a lower percentage of them are motivated by relatives and friends to adopt family planning. Also, individuals like ANM, AWW, ASHA and other such government appointed health workers, who are less likely to visit higher educated women compared to illiterate and primary educated women, hold a decreasing share in motivation as education increases. A deceptively simple explanation for this may be that women who have received lower education tend to accept information and advice from people they consider more educated or skilled, far more readily than women who are more educated and often make decisions due to better information and understanding themselves. If we look at Table 4, we determine the source of procuring contraceptives that are taken by women. If we determine the major contraceptives used by women as in Table 1, we can see that as the education level decreases, women tend to go in less and less for Sterilization, and choose modern methods like condoms, IUD and Pills or even traditional methods. This trend is substantiated visible if we examine Table 4. Though overall there is a preference to procure their contraception from private sources, as the education level increases, there is a decrease in the percentage of women who go to public sources and prefer to go to private sources like doctors, clinics and hospitals. Another trend that we can see is that with increased education, women tend to have higher confidence and get their contraceptive from shops and vending machines. The lower half of the Table is the same variable however, we have controlled for husbands education. It can be seen that approximately the same precedent is set as for women's education. However, the leaps here are higher with the husband's education making a significant difference in the percentage of women who go to the various sources for contraception.

Multivariate Analysis

The logistic regression analysis shows that a woman's age in India is a significant predictor of contraceptive use in education level. In comparison with women aged from 20 to 24 years, women aged between 25 and 29, and 30 and 35 were less likely to use contraception in primary level of education, while in higher education of level, women aged from 30 to 35 were slightly more likely to practice contraception, however, this is significant. Women aged from 35 to 49 were significantly less likely to use contraception than those aged between 20 and 24 during the period. Women aged from 30 to 39 and 40 to 49 were also significantly less likely to use a modern method than those who were aged between 20 and 24. This finding may reflect a decreasing need for modern contraception among the oldest group of women. This could be explained, perhaps, because they were less fertile, they believed themselves to be infecund, or they were beginning to enter menopause. However, older women were significantly more likely to use a long-term methods than younger women.

R= Reference category **=<0.001, *=<0.01 Urban women were slightly more likely to use contraception than their rural counterparts in primary level. However this was significant. In higher, urban women were less likely to use contraception than rural women. Furthermore, urban women were less likely to use a modern method than those who were residing in rural areas during the period. Interestingly, in primary level, women with three children or more were less likely to practice contraception than women with two children or less, whereas in primary level of education, women with three children or more were less likely to practice contraception than women with two children or less. This result is surprising because the use of contraception usually increases with parity. This finding may reflect the relaxation of the family planning program after decentralization.

Table 6. Logistic Regression Analysis of the Educated Women using Contraception

Independent variable	Modern methods vs. Non use (Odd ratio)		
	Primary	Secondary	Higher
Age Group			
15-19®			
20-24	1.666**	1.516**	1.339**
25-29	2.422**	2.012**	1.534**
30-35	2.504**	2.094**	1.445**
35-49	1.988**	1.593**	1.172**
Place of Residence			
Urban®			
Rural	1.032**	1.044**	1.231**
Surviving Children			
0®			
1	4.667**	5.094**	5.133**
2	20.096**	18.544**	15.479**
3+	21.994**	21.258**	16.836**
Religion			
Hindu®			
Muslim	1.259**	.965*	.984*
Other	.569**	.539*	.633*
Caste			
SC®			
ST	.935*	.930*	.855*
OBC	.593*	.668*	.684*
Other	.830*	.881*	.825
Wealth Index			
Lowest®			
Middle	1.507**	1.329**	1.223**
Highest	2.067**	1.948**	2.037**
Awareness of RTI/STI			
NO®			
YES	.798**	.785**	1.305**
Mass Media			
No®			
Yes	1.296**	1.281**	.075*

R= Reference category **=<0.001, *=<0.01

Moreover, the odds of modern method use were lower among women with three children or more than among those with two children or less, even though the odds of higher education level use were slightly higher among women with three children or more than those with two children or less. The household wealth index bore a positive relation to the use of contraceptive methods. Compared with poor women, better-off women were more likely to adopt a method, modern method, and long-term method of contraception. Furthermore, women's education had a significant effect in promoting a positive relationship with contraceptive use. More educated women were more likely to use contraceptives than were those without education. Nevertheless, more educated women were less likely to use modern methods than those with no education. However, women with higher education were more likely to use long-term methods than those who were uneducated. Meanwhile, there was no significant difference in the use of contraception brought about by the husband's education during the period under analysis. However, wives whose husbands had primary schooling or secondary or higher education were only slightly more likely to use contraception than those whose husbands had no education.

In addition, the odds of modern method use among wives whose husbands had primary education or higher were lower than they were among wives with uneducated husbands in each of the years. Muslim women were less likely to use contraception than women of other religious persuasions between primary and higher level of education. This might indicate that birth control or family planning was still a sensitive issue in Islam at this time. However this was significant. Meanwhile, during the same period, desire for more children had a significant affect on the current use of contraception. Women who desired additional children were less likely to use a method of contraception than those who did not want more children. Women who were fully exposed to family planning messages were less likely to use contraception than those who were not exposed in both primary and higher level of education. However this was significant. In the contrary, those who were only partially exposed to family planning messages were more likely to use contraception in primary, but this was not the case in higher.

Those who were partially or fully exposed to family planning messages were more likely to use either modern methods or long-term methods of contraception than those who were not exposed between primary and higher level of education. In this study we also decided to examine the reasons women gave for not using contraception, and especially how these reasons change with a change in the education level. The same data is depicted in the next figure. Figure 2 is a bar diagram description of the various reasons women give for not using contraception with the women's and her husband's education shown on the X axis. In all the cases, we can see that fertility related reasons i.e. wanting to have a child come up as the foremost reason why women are not using contraception The next highest reason given was method related reasons, where the methods may be considered inconvenient, have adverse health effects, and other perceived or felt problems with the method itself. This is corroborated by the data we have for use, where the women who have knowledge of methods like Pills, ECP and IUD, still choose to use Traditional methods. Reasons like Up to God and Lack of Knowledge, which are arbitrary and related to education respectively, are seen to reduce as the education level of the husband and the women increases. As far as Opposition to Use is concerned, fewer women tend to state that as a reason as the education level increases. In this diagram we can see that with increased education of the woman, compared to the husband, there is a difference in the reasons behind a woman's decision not to use.

DISCUSSION

Knowledge of family planning methods was found to have a substantial impact on contraceptive decision. Respondents possessing higher knowledge of family planning methods were more likely to acquire correct knowledge. This would enable them to try different temporary methods. In addition, the tendency to acquire more knowledge is expected to be associated with the desire to space children and small family size preferences. For both these reasons, women with higher knowledge about family planning methods tend to use contraceptives earlier than those who have less knowledge. Women's education was found to have a strong association with the decision of contraception. The higher the level of education, the earlier was the adoption of contraception. Education facilitates rational thinking of individuals in terms of a planned family. Hence, more educated people make appropriate fertility decisions well in advance in the course of their marital life and tend to go for early contraceptive adoption. With increases in the level of education, we can find a positive relation in the use of contraception in women. Indian society, with its son preference, displays such an inclination when it comes to schooling as well.

It is evident in the much higher percentage of women with no education compared to men as well as the higher proportion of men receiving higher education, compared to women. Better education enables an individual to make sound decisions regarding contraceptive behaviors. In India, these decisions are often however, taken by the husband alone. It thus stands to reason that men should clearly be involved and aware of the need and importance of contraception. A significantly lower proportion of men can claim comprehension of modern and traditional methods of contraception, compared to even lower educated women. Therefore, for a cohort of men and another cohort of women having the same level of education, there is higher usage and knowledge of contraception amongst the second cohort. The schooling of men in the contraceptive culture, especially the uneducated men can have a considerable impact on the use of contraceptives in India. Comparing the women residing in a rural setting to those living in urban households, we perceive a clear distinction in the individuals who motive them for contraceptive use. Health professionals like the AWW, ANM etc. play a significant role in motivating rural and uneducated women compared to urban or educated women. It lies in the interest of the Government to ensure that these Health Workers are trained well enough to provide vital knowledge to women as well as men, since they are a critical, and sometimes the lone, source of information about contraception for them.

Summary

This study was conducted with the aim of understanding the impact education has on the use of contraceptive among women in India. We also wanted to analyze the impact of education on aspects related to contraceptive usage, like the

source as well as the factors that motivate women to use. We can conclude that education significantly influences the choices women make in contraceptive usage. For a woman having received her higher education, the impact is even more pronounced. Educated women choose to go in for modern methods which are temporary in nature rather than sterilization. They also choose to use traditional methods more, though this increase is not as substantial. With further education, women are more informed and independent in making choices. They also have greater compatibility and understanding with their partners, and can take active part in the decision making. It explains why many more educated women are motivated by husband and by mutual consent to go in for family planning, than uneducated ones. On the contrary, lesser educated women rely also on other professionals like AWW, ANM, ASHA and other health workers to adopt contraception. This greater confidence is also reflected in an increasing number of women who go to shops and vending machines to get their contraceptives. It is important to understand this impact, which educating not only the women, but also the husband has on contraceptive decisions. For the Government this is key lesson in the decision to undertake contraceptive education in schools. A better informed individual, not one who is just better educated, can not only make correct contraceptive choices, but also motivate people around her to make the right decisions.

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