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# INFLUENCE OF WOMEN HEALTH CARE ADOPTION ON CONTRACEPTIVE USE

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The effect of women heath seeking behaviour during pregnancy and post delivery period on contraceptive use and family size are important dimensions of female fertility. These determinants of female fertility have rarely been explored, particularly in developing countries confronting problems of rising population growth. A study was conducted in district Faisalabad, Pakistan to explore the influence of pre and postnatal care on contraceptive use. A random sample of 1051 married women was studied from the urban and rural areas of the district through formal survey. It was found that contraceptive use is associated with pre- and postnatal care. Minimum of 5-7 prenatal and at least 2 postnatal visits have been identified as effective to promote contraceptive use. Involvement of health professionals, motivation through mass media and improved access to health care services during the period of pregnancy and after childbirth are the measures suggested to enhance contraceptive use in the society to curtail family size.

**Keywords:** Prenatal care, postnatal care, contraceptives, ever use

## INTRODUCTION

Woman visit to physician or other health care providers for medical supervision of the pregnancy constitutes prenatal care (National Center for Health Statistics, 1987). It provides the opportunity for regular consultation from health personnel and laboratory examination during the period of pregnancy. The professionals consistently monitor health and nutritional status and extend timely advice to women who are preparing to give birth. Any complication is handled before it turns dangerous to the life of mother or fetus. The postnatal care on the other hand is essential for the health of mother and infant during post delivery period. Empirical evidences suggest that in addition to health benefits, pre- and postnatal cares are important for increasing awareness about the significance of modern birth control technology (Sai and Measham, 1992 and Palaniappan, 1995). During these specialized care, learning of woman from the fellow women visiting clinic and health experts broaden their vision and knowledge about safe motherhood practices (Zafar, 1993). These collectively strengthen their will to avoid unintended pregnancy through contraceptive practice. This ultimately influences the number of children in the family and even promotes birth control measures among relatives and peer group. Moreover, health professional advice regarding birth interval or termination of subsequent fertility further strengthens their will about family planning adoption (James, 1999). An institutional effort directed to explore the influence of hearth care on family planning use documented that increase in the use of modern contraceptive among currently married women by 24 percent, resulted 15 percent reduction in fertility in Ghana in a period of five years (Population Council, 2003). Similarly, a recent evidence in this regard revealed that women better health care adoption increased their knowledge about birth control methods and caused contraceptive prevalence rate to climb up from 10 to 40 percent (Huasi, 2006). The long period of abstinence from the sexual relation in the last period of pregnancy and after childbirth increases the risk of resumption soon after the postpartum amenorrhea. Awareness and knowledge about modern birth control technology obtained through prenatal care may prepare mothers for its adoption during postnatal care especially, when the potential risk is approaching very fast. However, the lower or lack of such specialized healthcare may limit awareness and use of contraceptives. It ultimately leads to increase the family size through unintended pregnancies and births (Abbasi, 2006). Though, research suggested the positive influence of healthcare on women contraceptive behaviour but the existing literature provides little evidence regarding the effect of prenatal and postnatal care on contraceptive use. Similarly, rare evidence identified the minimum required level of such specialized care to influence female fertility through family planning use. The current effort is to study the

influence of specialized healthcare (pre and postnatal) in regulating family planning behaviour as well as to identify the minimum level of pre and postnatal care required to influence contraceptive use in Pakistan.

## MATERIALS AND METHODS

The universe of the study was limited to district Faisalabad, Pakistan. It was randomly selected from seven districts of Punjab, the most populated province of Pakistan. Eighteen villages and eighteen urban localities were selected from four of the six tehsils (sub-divisions). Tehsil City of Faisalabad is a major sub-division entirely comprised of urban areas; hence nine localities were selected to draw the sample. A random sample of 1051 married women of age 20-45 years living with husbands and having at least one surviving child were studies through formal survey. In case a house had more than one eligible respondent, one was randomly selected for interview. However, during data analysis, one questionnaire from rural areas was not included due to incomplete information on major variables. Pre-designed questionnaire comprised of closed and open-ended questions was employed during formal survey. Chi-square, Lambda Statistics and Pearson's Correlation were used to examine the relationship between predictor and response variables. Similarly, logistic regression was applied to identify the relative significance of independent variables in predicting dependent variable.

## RESULTS AND DISCUSSION

Table 1 shows the respondents and their husbands' socioeconomic characteristics such as current age, education, family income, age at rukhsati. The knowledge about these characteristics has vital importance in understanding and explaining the results.

The results revealed that 66 percent of the respondents and 87 percent of their husbands were more than 30 years at the time of interview (Table 1). Sixty two percent of the women and 65 percent of husbands spent most of their childhood in rural areas. As educational attainments, 52 percent women and 67 percent of their husbands were literate. Majority of both had more than 10 years of schooling. Thirty nine percent reported their family income in the range of Rs.5000-10000 and 27 percent fell in higher income band. Nineteen percent of women got married at less than 18 years and more than seven percent of them reported birth of first baby within this age group. However, majority (51%) married at 18-22 years of age as compared to 83 of husbands who entered into this relationship at more than 22 years age. The interval between marriage and first child is called as first birth interval. This is quite important variable, which marks the onset of childbearing and influences the subsequent birth interval as well as health of mother and child. Majority (about 65 percent) of the respondents indicated that there was an interval up to one year between their marriage and birth of first child, 23 percent stated two years.

Table 2 presents the status of specialized health care (prenatal) adoption by the respondents and its influence on ever use of contraceptive methods.

Table 2 indicates that the percentage of ever use of contraceptives after birth increased with the increase in the magnitude of prenatal care by the women during last pregnancy. Majority of the ever users were found in the higher category of prenatal care as compared to majority of never users with no prenatal care. The extent of ever use increased at higher rate when the respondents paid more than 7 prenatal visits to health professionals. Similarly, it identified that at least 5-7 visits proved effective for family planning adoption. The mean numbers of prenatal visits for all areas was 4.66 visits and for urban and rural areas 6.17 and 3.47 visits, respectively. The detailed study of the results shows that 25 percent of the women did not adopt any prenatal care during last pregnancy. It further reveals that 44, 56, and 70 percent of those who ever used contraceptives paid less than 5, 5-7 and above 7 prenatal visits to the health professionals, respectively. The percentage of ever use increased by 21 percent from no prenatal care to less than five visits, and further by 13 percent when the women paid 5-7 visits. It finally increased by 48 percent at more than 7 prenatal visits. Although, ever use increased with the increased level of prenatal care but maximum rate of increase was recorded at more than 7 prenatal visits. A reverse pattern was noticed between never used and prenatal care. This indicates a relationship between the levels of prenatal care and ever use of contraceptive methods. The apparent relationship was crosschecked through the application of Chi-square and Lambda statistics. A very high value of these statistics at one percent significance level verified the existence of such relationship between the predicting and response variables. In view of the tabulated responses and out come of statistical tests, the study hypothesis stating that "higher the number of prenatal visits to health professionals by the respondents during pregnancy, higher will be the ever use of contraceptive by them after birth" is confirmed. The analysis of the responses through control on the area of residence also established the significance of prenatal care on

**Table 1. Socioeconomic characteristics of the respondents and their husband**

| Variables | Number | Percentage |
|---|---|---|
| Current age of the respondents in completed years | | |
| i. Less than 25 | 102 | 9.7 |
| ii. 25 – 29 | 254 | 24.2 |
| iii. 30 – 34 | 241 | 22.9 |
| iv. 35 – 39 | 239 | 22.7 |
| v. Above 39 | 215 | 20.5 |
| Total | 1051 | 100.0 |
| Current age of the husbands in completed years | | |
| i. Less than 25 | 13 | 1.2 |
| ii. 25 – 29 | 128 | 12.2 |
| iii. 30 – 34 | 211 | 20.1 |
| iv. 35 – 39 | 247 | 23.5 |
| v. Above 39 | 452 | 43.9 |
| Total | 1051 | 100.0 |
| Education of the respondents (years of schooling) | | |
| i. No Schooling | 502 | 47.8 |
| ii. Less than 9 | 110 | 10.5 |
| iii. 9 – 10 | 178 | 16.9 |
| iv. Above 10 | 261 | 24.8 |
| Total | 1051 | 100.0 |
| Education of the husbands (years of schooling) | | |
| i. No Schooling | 348 | 33.1 |
| ii. Less than 9 | 101 | 9.6 |
| iii. 9 – 10 | 258 | 24.5 |
| iv. Above 10 | 344 | 32.7 |
| Total | 1051 | 100.0 |
| Family income from all sources (Rs. per month) | | |
| i. Less than 5000 | 367 | 34.9 |
| ii. 5000 – 10000 | 406 | 38.6 |
| iii. Above 10000 | 278 | 26.5 |
| Total | 1051 | 100.0 |
| Respondents age at ruksati (marriage) in completed years. | | |
| i. Less than 18 | 199 | 18.9 |
| ii. 18 – 22 | 534 | 50.8 |
| iii. Above 22 | 318 | 30.3 |
| Total | 1051 | 100.0 |
| Space between marriage and first birth (year) | | |
| i. One | 685 | 65.2 |
| ii. Two | 239 | 22.7 |
| iii. Three | 59 | 5.7 |
| iv. Above three | 67 | 6.4 |
| Total | 1051 | 100.0 |

contraceptive use at one percent level wherein the ever use increased with the increase in prenatal care among urban as well as rural respondents.

It was interesting to note that all the three types of analysis proved that minimum of 5-7 prenatal visits during pregnancy can promote the use of contraceptive among the women after birth, besides yielding other health benefits to mother and child. However, the influence of prenatal care on ever use of contraceptive was higher in urban areas as compared to the rural areas. During prenatal visits, women meet the fellow women at clinic. They exchange views about the new

**Table 2. Ever use of contraceptive by prenatal care during last pregnancy**

| Prenatal care during last pregnancy (No. of visits) | Ever use of contraceptives | | |
|---|---|---|---|
| | Yes % (Number) | No % (Number) | Total % (Number) |
| i. No. | 22.5 ( 59) | 77.5 (203) | 24.9 (262) |
| ii. Less than 5 | 43.5 ( 77) | 56.5 (100) | 16.8 (177) |
| iii. 5 – 7 | 56.1 (203) | 43.9 (159) | 34.4 (362) |
| iv. 8+ | 70.0 (175) | 31.0 ( 75) | 23.8 (250) |
| Total | 48.9 (514) | 51.1 (537) | 100.0 (1051) |

Chi-square: 127.039 DF: 3 Significance level (SL): 0.000
Lambda: 0.156 Standard error: 0.028 t- value: 5. SL: 0.000

experience of childbearing in case of first birth and about the family development in case of subsequent births. They discuss about number and sex in desired and actual family size, husband and in-laws behaviour towards family planning and preferred sex composition in their families. Moreover, health professionals discuss the implications of frequent pregnancies and births with patients and suggest remedial measures in this regard. It means during heath visit, learning of women from the fellow visitors and health experts broaden their knowledge and vision about modern birth control technology besides yielding other health benefits. It gradually strengthens their will to avoid unintended pregnancy through family planning practices for spacing or terminating the fertility. Similarly, women with past experience of modern contraceptives or those possessing positive attitude towards safe motherhood practices act as motivators for others. This ultimately influences the number of children in the family and even promotes contraceptive use among relatives and peer group. James (1999) suggested that women visits to health center increased the awareness and acceptance of birth control measures as they encountered many acceptors who acted as motivational force to postpone the next birth for reasonable length of time or to terminate the childbearing. Mahmood (1998); Hakim and Zafar (2001) especially focused on use of specialized health care that found that increased prenatal visits increased women knowledge base, influenced their subsequent fertility intention and promoted family planning adoption. It underscores the importance of health care for the well being of the pregnant and her fetus right from the conception to birth. Women can save themselves from many dangerous diseases and remain free from many birth complications through proper healthcare during pregnancy and after childbirth. They deliver healthy baby at proper time and enjoy the pride of motherhood. Such specialized health care (prenatal) is quite essential during the different stages of pregnancy as it helps the physician to closely monitor the changes that are taking place in woman health as well as development and movement of fetus besides enhancing her knowledge about multiple choices of modern birth control technology.

Table 3 shows the women use of specialized health care after last delivery and its influence on ever use of contraceptive.

Table 3 indicates that 52 percent of the respondents adopted postnatal care during the last pregnancy. The ever use increased with the increased level of postnatal care. At least two postnatal health visits have been proved successful for promoting safe motherhood practices among the respondents. The mean number of postnatal visits on overall basis and among adopters was calculated at 1.10 and 2.12, respectively. Mean visits in case of women from urban areas were 1.60 and 2.33 and for those from rural areas were 0.70 and 1.94, respectively. The results also show that 30, 62, and 75 percent who ever used contraceptive to avoid unplanned pregnancy reported no postnatal care, paid less than three and more than three postnatal visits to health professions/clinics, respectively. The ever use increased by more than 32 percent from no postnatal care to less than three visits and 45 percent from no to more than three visits. It will be appropriate to mention that a very small number of respondents paid only one postnatal visit after last delivery. This indicates the presence of an association between the postnatal care and ever use. It was verified through the application of Chi-square and Lambda statistics. The higher value of both at one percent significance level confirmed the existence of such association between the predicting and response variables and confirm the study hypothesis that “higher the number of postnatal visits to health professionals by the women, higher will be the ever use of contraceptive among them.” A direct relationship between the independent and dependent variables was found when analysis was carried out through control on the area of residence. Higher effect

**Table 3. Ever use of contraceptive by postnatal care after last delivery**

| Prenatal care during last pregnancy (No. of visits) | Ever use of contraceptives | | |
|---|---|---|---|
| | Yes<br>% (Number) | No<br>% (Number) | Total<br>% (Number) |
| Postnatal care after last pregnancy (No. of visits) | | | |
| i. No | 30.1 (152) | 69.9 (353) | 48.0 (505) |
| ii. Less than three | 62.4 (234) | 37.6 (141) | 35.7 (375) |
| iii. Three & above | 74.9 (128) | 25.1 ( 43) | 16.3 (171) |
| Total | 48.9 (514) | 51.1 (537) | 100.0(1051) |
| Chi-square: 144.883 df: 2 | Significance level (SL): 0.000 | | |
| Lambda: 0.245 Standard error: 0.031 | Approx. T: 7.114 SL: 0.000 | | |
| Postnatal care 7-8 week after last delivery (No. of Visits) | | | |
| i. No | 38.1 (273) | 61.9 (444) | 68.2 (717) |
| ii. Less than three | 72.2 (239) | 27.8 ( 92) | 31.5 (331) |
| iii. Three and above | 66.7 ( 2) | 33.3 ( 1) | 0.3 ( 3) |
| Total | 48.9 (514) | 51.1 (537) | 100.0 1051) |
| Chi-square: 106.636 df: 2 | Significance level (SL): 0.000 | | |
| Lambda: 0.175 Standard error: 0.018 | t value: 8.363 SL: 0.001 | | |

of post delivery health visits was noticed in the respondents living in urban areas as compared to their rural counterparts. Again, this may be due to the limited access and availability of health services as well as lack of affordability due to poor economic condition in rural areas.

It is pertinent to mention that in the first 40 days after birth, the sexual intercourse is prohibited ethically as well as medically. Due to this, the probability to become pregnant is also limited (infecundable period) and need for contraceptive use does not arise. From the seventh week, the frequency and intensity of intercourse may increase. The decreasing trend of breastfeeding further adds to this risk.

The results also show that women adopted more prenatal care as compared to postnatal. These findings are quite in line with the evidences provided by Hakim and Zafar (2001) and Mirza *et al.,* (2004) where higher percentage of women adopted prenatal care than those who received postnatal care. A recent study by in the rural areas of district of Thatta of Sindh found that 57 percent received no postnatal care, 21 percent women never got any prenatal care, and from those who adopted such healthcare, 56 percent reported only 1-2 prenatal visits.

Table 4 indicates the results of correlations analysis wherein contraceptive use was used as dependent or response variable.

As discussed in the preceding paragraphs, that during cross tabulation in bivariate analysis Chi-square, and Lambda statistics were introduced to check whether the association between predicting and response variables has occurred by chance or it really exists. Now Pearson correlation has been used to further study the degree of association among the major predicting variables and outcome variable (Table 4). The result lead to confirm the relationship obtained through the other statistics. The value of correlation coefficient indicates that women education and age at rukhsati extend more influence on ever use of contraception as compared to husband education and age at rukhsati. Similarly, child mortality has relatively higher negative influence on contraceptive use than infant mortality. As regards the influence of health care services, the higher beta value of prenatal care (0.363) than postnatal care (0.330) shows that former exerted relatively more influence on contraceptive use than later. All the predictors except husband age at rukhsati of his wife are significant at one percent level.

Table 5 presents the results of multivariate analysis wherein logistic regression was used. This regression is used when dependent variable is binary in nature and is considered a better choice for demographic research aim to explore the contraceptive use and breastfeeding practice (Rindfuss *et al.,* 1987).

Table 5 indicates that women's education, age at rukhsati (marriage), area of residence, infant mortality, pre- and postnatal care appeared to be the significant variables at varying degree of influence. The study of beta coefficients shows that variables bearing positive sign indicate their positive influence on the response variable. Women higher educational attainments, higher age at rukhsati, higher pre and postnatal visits to health professional resulted in the increase of ever use of contraception. However, infant mortality, child mortality and rural place of residence promoted never

**Table 4. Pearson correlation coefficients showing association between predictive and response variable**

| Sr. No. | Variables | Beta |
|---|---|---|
| 1. | Women education | 0.379** |
| 2. | Husband education | 0.293** |
| 3. | Women age at rukhsati | 0.152** |
| 4. | Husband age at rukhsati | 0.052* |
| 5. | Husband profession | -0.230** |
| 6. | Area of residence (urban-rural) | -0.293** |
| 7. | Infant morality | -0.077** |
| 8. | Child mortality | -0.088** |
| 9. | Prenatal care during last pregnancy | 0.363** |
| 10. | Postnatal care during last pregnancy | 0.330** |

N = 051 Level of significance = 1% ** – 5% *

**Table 5. Logistic regression model**

| Sr. No. | Variables | Beta | Standard Error | Wald Statistics | Exp (B) |
|---|---|---|---|---|---|
| 1. | Respondent education | 0.102** | 0.017 | 36.916 | 1.107 |
| 2. | Husband education | 0.004 ns | 0.017 | 0.054 | 0.996 |
| 3. | Respondent age at rukhsati | 0.048* | 0.023 | 4.379 | 0.953 |
| 4. | Husband profession | 0.090** | 0.064 | 13.979 | 1.102 |
| 5. | Area of residence (urban-rural) | -0.593** | 0.148 | 16.00 | 0.552 |
| 6. | Infant mortality | -0.232ns | 0.141 | 2.731 | 1.231 |
| 7. | Child mortality | -0.472 ns | 0.334 | 2.006 | 1.604 |
| 8. | Prenatal care during last pregnancy | 0.110** | 0.030 | 10.527 | 1.102 |
| 9. | Postnatal care during last pregnancy | 0.140** | 0.074 | 3.573 | 1.150 |

N = 1051 Level of Significance = 1 % ** 5 % *

use of family planning methods. Women education exerted more influence for the adoption of family planning as compared to the husband education. It was interesting to note that when women education was introduced in the presence of husband education, the influence of later disappeared and turned non-significant. Similarly, the logistic regression revealed that improvement in husband profession is required to promote family planning use as the lower profession contributed towards never use. When separate analysis was conducted through control on the areas of residence, both pre and postnatal care exerted positive influence on ever use of contraception among women living in urban areas. However, the influence of postnatal care disappeared in case of those who were from rural area. The low utilization of postnatal care in rural areas as compared to prenatal care indicates women's limited access to health services after childbirth. The nursing of child, her engagement in home management and family care possibly leave little space for her to move outside home for postnatal care. Moreover, limited or lack of permission to move outside home without male member further contributes towards low use of postnatal care and adverse influence on family planning adoption.

The logistic regression equation attempts to model probabilities for the two values of Y (0 or 1) and judges the performance of model by determining the number of observations classified correctly. Classification table (Table 6) shows the level of correct classification of users and nonusers when logit model was fitted on the data.

**Table 6. Classification table**

| Percentage correct prediction | | | |
|---|---|---|---|
| Ever use of contraceptive | | | |
| | Non-user | User | |
| Non-user | 397 | 140 | 73.9 |
| User | 182 | 332 | 64.6 |
| Overall percentage | | | 69.4 |

Table 6 indicates that among 514 ever users of contraceptive, 64.6 percent (332) were correctly classified as users. The remaining 35.4 percent (182) were classified as non-users indicating that they had the tendency to discontinue contraceptive use. It is

likely that they started using contraceptive after having large family. On the other hand, among 537 non-users, 73.9 (397) were correctly classified as non-users which means they had really the characteristics of never users - e.g. low education, lower age at marriage, low healthcare adoption, poor inter-spousal communication on family matter etc. The rest of the non-users i.e. 26.1 percent (140) were classified as users by the regression model. These might be the women having better socioeconomic and cultural characteristics and were at the early stage of childbearing.

While showing the level of correct classification among users and nonuser also indicates the fitness of the model with 69 percent overall prediction level. It emerged from the model that 64 percent of the ever users were correctly classified indicating that they had the characteristics of contraceptive users while 36 of the users who were ever user of contraceptive but had the characteristics of non-users of family planning methods. It is likely that they started using contraceptive after having large family. Similarly, 74 percent of the non-users were correctly identified which means they had really the characteristics of never users - e.g. low education, lower age at marriage, low healthcare adoption, poor inter-spousal communication on family matter etc. while the remaining 26 percent who were basically non-users but had the characteristics of users. These might be the women at the early stage of childbearing with fewer children. The –2 log likelihood and Chi-square value for the model are 1235.858 and 220.797, respectively significant at 0.01.

## CONCLUSION

The vitality of prenatal and postnatal cares in improving women control on their contraceptive behaviour emerged in the study. The adoption of at least 5-7 prenatal visits during pregnancy and a minimum of 2 postnatal visits after birth to health professionals for seeking timely health advice and laboratory examinations are required. This may yield twin benefits of healthy living and promotion and adoption of family planning programme. The absence of such care increase family expenditures on health in case of complications and also raise public expenditures on these services. The social stress to other family members and cost and time involved during complication constitute additional burden. Medical research also recommends that two postnatal visits are appropriate for seeking medical advice from health professional if the patient does not encounter any complication after birth. The reason behind this minimum level of recommendation is to minimize the burden on women in the critical stage after delivery. Mass media can be effectively used to create awareness about the beneficial aspects of the use of prenatal and postnatal care at proper time for the health of mother and child as well their socioeconomic and demographic advantage on family. Similarly, the adequate involvement of health professionals and women representatives at union council level in promoting the use of such specialized health services may help to achieve population objectives of healthy living and promoting small family norms in the society. A mobile service unit comprising a team of health professional for the provision of pre and postal care on weekly or fortnightly basis may further aid to achieve these objectives. This indirect strategy through the promotion of pre and postnatal care health serves seems to be very effective for the promotion of family planning programme in the country, particularly in traditional societies like Pakistan where cultural traditions, husband opposition, limited women autonomy, shorter women horizon of mobility and misconception of Islamic doctrine about contraception are acting as opposing forces.

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