Contraceptive Methods and Factors Associated with Modern Contraceptive In Use

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Abstract

Background: The world population will likely increase by 2.5 billion over the next 43 years, passing from the current 6.7 billion to 9.2 billion in 2050. Only limited information about the contraceptive practices especially modern contraceptive use is available. The aim of this study is to determine the prevalence of contraceptive methods and factors associated with modern contraceptive in use

Materials and Methods: A cross sectional study of 288 females selected through consecutive sampling was conducted in Jinnah Post graduate Medical Center family reproductive health care center Karachi, Pakistan from November 2008 to January 2009. Females of reproductive age 16–50 years using any contraceptive measures and giving informed consent were included. Those who with severe debilitating disease, having any physical and mental disability were excluded. Two trained co researchers interviewed the participants for socio demographic reasons. The main outcome variables of the study were comparing modern and traditional contraceptive methods and factors associated with modern contraceptive in use.

Results: The results showed mean age of contraceptive users was 29.49 (±6.42) years. Modern contraceptive method was used by 216 (75%) and traditional method by 72 (25%). Final multiple logistic regression showed that a few factors have influence on usage rate including: age>30 years [AOR, 0.426 95% CI0.209–0.865], addiction [AOR, 0.381 95% CI0.173–0.839], and means of information like family planning worker (FPW) [AOR, 6.315 95% CI 3.057–13.046], Television (TV) [AOR, 0.402 95% CI 0.165–0.979] and billboard (BB) [AOR, 0.207 95% CI 0.066–0.447].

Conclusion: Modern contraceptive method use is very common in our region (75%). The important means of information for modern contraceptive in use were GPs and family planning workers.

Key words: Contraceptive, Modern contraceptive use, Means of information, Traditional contraceptive

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Introduction

The world population will likely increase by 2.5 billion over the next 43 years, passing from the current 6.7 billion to 9.2 billion in 2050 (1). In contrast, the population of the more developed regions is expected to remain largely unchanged at 1.2 billion. The United

Nation World Population report 2006 version has suggested decline in most Asian countries including the current giants India, Pakistan and Bangladesh (1.46, 1.84 and 1.67 in 2005–2010) to (1.31, 1.90 and 1.56 in 2010–2015) (1).

The inter–censual growth rate of Pakistan varied between 2.45%–3.66% from 1951–1998. However recently, the growth rate has declined to 1.9% in 2004 and 1.80 % in 2008 (2, 3). In 2002, the Ministry of Population Welfare developed a program to reduce the country's growth rate to 1.3 percent by 2020 (2). This includes promoting concepts of small family norms along with modern methods of family planning with the help of public private partnership and the NGO sector (2). This target was set after alarming projections made by WHO which projected population of about 249.7 million in 2025 with total fertility rate of 4.8% (4).

One of the main methods of family planning involves use of contraceptives. It may be classified into modern and traditional methods (5). Traditional methods include withdrawal, breast–feeding and rhythm method. Whereas modern methods include condoms, hormonal contraceptives, Intra uterine contraceptive device (IUD), implants and contraceptive surgery.

These methods can again be classified into temporary methods of contraception including condoms; hormonal contraceptives; intrauterine contraceptive device; and implants. The permanent methods of contraception include contraceptive surgery**,** which consist of tubal ligation for women; and vasectomy for men (5). Previous studies have showed prevalence of modern contraceptive method use as 7%, 26.5% and 27.9% (6, 7).

For traditional methods in use studies have shown early withdrawal (12%), periodic abstinence 73% and indigenous method 15% were significantly associated with secondary education, living in the central village and the partner's approval (8).

Another study have shown traditional factors like abstinence use in 10.3% and 11.3%, withdrawal 7.5% and 5.0%, douche 2% and 1.3%, rhythm 1% and 3.7%, combination of methods 13.4% and 6.1% in female and males respectively (9).

A study in Iran has showed that age, the level of education and number of sons and daughters were significantly associated with contraceptive use (10). Studies have shown decrease in odds (0.7) as the mean number of births per women increase (11). Another study showed contraceptive method in use was not associated with preference for gender of children either male or female (12). Study by Gakidou found that income and education of women do not seem to be significantly associated with levels of contraceptive in use (13). Study conducted in Pakistan found that women having 3 or more children were more likely to use family planning methods compared to those who had 2 or less children (14). Health workers are the significant source of information in studies conducted in Pakistan (15).

Only limited information about the prevalence and factors associated with modern contraceptive use in females especially in developing South Asian countries like Pakistan, India and Bangladesh is available. Our aim of study is to determine the prevalence and factors associated with use of modern contraceptive methods in an urban area, Karachi.

Methods and Materials

A cross sectional study of 288 females selected through consecutive sampling was conducted in Jinnah Post graduate Medical Center (JPMC) Family reproductive health care center Karachi, Pakistan from December 2008 to March 2009.

Females of reproductive age 16–50 years using any contraceptive method presenting to family reproductive health care center Karachi giving informed consent were included. Those with severe debilitating disease, mentally retarded, minors, having any physical disability were excluded.

Two trained co–researchers registered medical practitioners with Pakistan Medical and Dental Council (PMDC) went to the family care center and administered the questionnaires. The questionnaire reliability and validity was tested in one of the pilot studies conducted on 50 women in the same setting where the ICC (Intraclass correlation coefficient) value of overall test –retest reliability was 0.9. Briefly fifty selected participants filled the same questionnaires in an interval period of three weeks.

The three weeks period was selected as we think it to be appropriate where the participants would not remember what they have answered in their last questionnaire (Recall bias). More over the selected time period did not include any questions which could have bring change in the measuring variable in due course. However all those women who have currently (within last three weeks) changed their means of contraceptive method were excluded. We experience no such cases in our pilot study. The validity of the questionnaire was based on face and content validity was assessed by the experienced family care researchers and con-

sultants working in different reproductive units in our setting.

The participants were explained the purpose and objectives of the study and asked for written informed consent before administering the questionnaire. The self administered questionnaires were available in both Urdu and English versions. For those who were uneducated the questionnaires were simply read out by the co–researchers. This controlled the possibility of interviewer bias. The questions gathered information on demographics, socio economic and use of modern contraceptive methods along with associated factors.

The questionnaire includes age (categorized into <30 and 30> years), education (literate and illiterate), occupation (house wife and service), addiction, socio economic status (participants with family income <10,000 PKR were categorized as poor), family income (10,000–25000 PKR as lower middle class, family income 25000–50000 PKR were labeled as upper middle class and any income above 50,000 PKR were categorized as upper class), number of children (<3 and >3), age of last child (<1 years, 1–5 years and >5 years), methods of contraceptive use (modern and traditional). These were further categorized into condoms, hormonal, IUD, contraceptive surgery, withdrawal, breast feeding and rhythm method) and means of information (General practitioner (GP), Family planning worker (FPW), TV, Radio, Print Media (PM) and Billboard (BB). Other variables were duration of contraceptive use, reasons for using contraceptive method, side effects and reasons for using inject able contraceptives.

The data were analyzed using the Statistical Package for Social Sciences (SPSS) version 13. Descriptive statistics of socio–demographic and other variables of the sampled population were computed.

Means and standard deviations (SD) were calculated for quantitative variables and proportions for categorical variables. Logistic regression analysis was performed to measure the association between dependent and independent variables. Odds ratios (OR) and 95% confidence intervals (CI) were calculated from β coefficients and their standard errors.

Associations between independent variables were assessed using chi square and only those with signifycant association were entered to perform multivariate analysis. A multivariate logistic regression model was employed with modern contraceptive method as dependent variable. P values < 0.05 were considered to be statistically significant.

Table 1. Demographic characters

		n (%)
Age	16–20 years	28 (9.7%)
	21–25 years	58 (20.2%)
	26–30 years	98 (34%)
	31–35 years	60 (20.9%)
	36–40 years	30 (10.5%)
	41–45 years	10 (3.5%)
	46–50 years	4 (1.4%)
Education	Illiterate	124 (43.1%)
	Primary	100 (34.72%)
	Middle	54 (13.38)
	Graduate	10 (3.47%)
Occupation	Housewives	246 (85.4%)
Addiction	Pan	44 (15.6%)
	Tobacco	28 (9.9%)
	Cigarette	4 (1.4%)
Socio economic	Poor	200 (69.4%)
	Lower middle	66 (22.9%)
	Upper middle	22 (7.6%)
	Upper	1 (0.34%)
Duration of Marriage	1–5 years	74 (25.5%)
	5–10 years	104 (35.8%)
	11–15 years	72 (24.8%)
	16–20 years	26 (9.1%)
	> 20 years	14 (4.9%)
Age of last child	<1 year	162 (56.3%)
	1–5 years	98 (34%)
	> 5 years	8 (9.7%)

Results

The descriptive results showed the mean age of females was 29.49 (±6.42) years with minimum and maximum values of 17 and 47. The descriptive statistics of each variable is shown in (Table 1). Modern contraceptive method was used by 216 (75%) & traditional by 72 (25%) participants.

The important means of information were GP 194 (67.4%), FPW 124 (43.1%), TV 224 (77.8%), Radio 220 (76.4%), PM 260 (90.3%) and BB 256 (88.9%).

The means of contraceptive includes condoms 68 (23.65%), hormonal pills 32 (11.1%), hormonal injecttions 116 (40.3%), hormone norplant 52 (18.1%), IUD 86 (29.9%), tubal ligation 30 (10.4%), withdrawal 68 (23.6%), breast feeding 70 (24.3%), rhythm 4 (1.4%). The mean duration of marriage was 9.812 (±5.352) years, minimum and maximum values of 1 year and 23 years. The average monthly family income was RS 11,300 (± RS 2190) [1USD=80 PKR] with minimum income of RS 3,000 and maximum of RS 200000.

The univariate analysis showed age, socio economic condition, age of last child, GP, FPW, TV, radio, PM

Table 2. Univariate Analysis

	OR	95% CI
age >=30	0.288	0.165–0.500
GP	3.060	1.553–6.027
FPW	9.416	4.908–18.063
TV	0.217	0.120–0.395
Radio	0.209	0.116–0.377
Print Media	0.206	0.092–0.460
Billboard	0.077	0.033–0.182
Poor	4.51	1.83–11.17
Lower middle	3.20	1.18–8.69
Upper middle	1.00	–
Age of last child:		
<1 year	7.67	3.23–18.21
1–5 year	2.75	1.16–6.49
>5 year	1.00	

Table 3. Multivariate Analysis

Risk Factors	AOR	95% CI
Age ≥30	0.426	0.209–0.865
Addiction	0.381	0.173–0.839
Family planning worker	6.315	3.057–13.046
TV	0.402	0.165–0.977
Billboard	0.207	0.066–0.647

and BB (Table 2) were significantly associated with modern contraceptive in use. Final multiple logistic regression showed variables like age, addiction, FPW, TV and billboard to be significantly associated with modern contraceptive in use (Table 3).

Discussion

Studies have shown the incidence modern contraceptive methods in use to be 7%–26.5% and traditional methods as 34.1% (6,7). Our study showed a signifycantly higher incidence of use of for modern contraceptive method (75%) vs traditional (25%). This was partly because women using modern contraceptives more frequently visit the tertiary care family reproductive centers comparatively to those relying on traditional. Studies have shown that among modern methods condoms appear to be the highly variable method ranging from 9.5% – 74.3% (6, 16) while in our study it was some way lower around 23.65%.

The reason for such variability in previous studies may be because few of the studies were conducted far back and also because of socio demographic area and culture where these studies were conducted.

However our results have shown that people here are changing their practices in favor of using more modern methods.

Use of injectables were also varied significantly i.e. 7.5%, 14.2%, and 63.2% (16– 18). In our study injections use was (40.3%), which was in line with previous studies, demonstrating females using injecttables are very common in our population. The contraceptive pills in use was comparatively stable 21.2%, 23.5%, 28% and 47.7% (6, 16– 18). In our study harmonal pills was used by 11.1% of participants again providing evidence of shifting population perspectives and attitudes from older modern contraceptive methods like pills to slightly newer methods of injecttions.

Studies have shown IUD varied between 8%, 10.2%, 26.1% and 74.6% (6, 16– 19). However it was not the commonest in our study (29.9%). Others like implants were used by 4.9% and 6.1%, spermicidal foam by 2% and the diaphragm was cited by <2% women (6, 16, 17). As these methods are among the least common in use in previous studies, our study participants also did not report their use at all. Studies have also shown that irreversible methods were used in 21.8% of participants including tubal ligation (16). A study by Qazi et al in 2008 in the same setting and on a sample almost comparable has reported the prevalence of tubal ligation was 14% (20). Our study also showed similar results of tubal ligation in 10.4% of participants.

Among traditional methods breastfeeding was used by around 33%. Rhythm and withdrawal were more often used by urban women (22.2% and 8.6% respecttively) than rural women (16.1% and 3.6% respectively) (18). Another study has shown that traditional methods like early withdrawal (12%), periodic abstinence (73%) and indigenous method (15%) were significantly associated with secondary education, living in the central village and the partner's approval (9). The preference of using traditional method in our study was withdrawal (23.6%), breast feeding (24.3%) and rhythm method in only 4 (1.4%) participants.

The above contrasting results between previous studies are because of diversity in socio demographic culture where each of these studies was conducted. However our results were in line with similar study conducted by D'Souza in 2003 in Pakistan that showed traditional methods like abstinence were use in 10.3%, withdrawal in 7.5% and rhythm in 1% (8) strengthening our point regarding socio demographic cultural context.

Previous studies have showed only 11.6% of clients first heard of family planning through the radio or television (21). While our study showed these two means of communication as very common; TV in 224 (77.8%)

and radio in 220 (76.4%) participants showing the positive role of media in promoting the modern contraceptive measures. However they were not significant with other means of information as evident by our multi–variate regression, suggesting room for improvement.

Studies have shown decrease in odds (0.7) as the mean number of births per women increase (12). Study conducted in Pakistan found that women having 3 or more children were more likely to use family planning methods compared to those who had 2 or less children. However in our study there was no such difference on univariate and multivariate regression (14). Probably our study was conducted in urban setting where socio economic status comparatively is better than rural areas and where people do not practice family planning because of this mere reason but for other reasons.

Studies have also showed modern (effective) contraception was 28.5% among women of high socioeconomic status) (7). Contrastingly studies have also shown that income and education of women do not seem to be significantly associated with levels of contraceptive in use (14). While poor [OR 4.51 95% CI 1.83–11.17] and lower middle class [OR 3.20 95%CI 1.18–8.69] have great odds of using modern contraceptives in our study. Although showing that modern contraceptives are used more frequently in poor or lower middle class, but our results were affected by having only 8% of participants with either upper middle class or upper class. This may be the major reason for the inconclusive results in previous literature.

Modern methods were used more frequently in women of middle age (12), while age >30 years was negatively associated with modern contraceptive used in our study, meaning modern contraceptive methods are more popular in young women. Another study in Iran has showed that age and level of education were significantly associated with contraceptive use (10). Sexual education obtained from literature (OR = 1.8) were associated with preference to use modern contraceptives (22).

While our results showed modern con-traceptive in use to be slightly common in educated ones (57%). This may be explained because of electronic media roles of promoting family planning methods. However age > 30 years is less associated with modern contraceptive in use. We were unable to find reason for such conflicting results.

Studies have also showed none of the service environment factors was independently associated with current use of a modern method in rural areas (23). By contrast, in urban areas, the proximity of a private health facility (which likely reflects an increased availability of methods) was positively associated with current use (odds ratio, 2.1) (24).

LHW are the significant source of information in studies conducted in Pakistan (445) and (53%) (16). Our study conducted in an urban setting showed the same results information by GP (OR 3.060) and FPW significantly increases the odds (AOR, 6.801) of using modern contraceptive. It was expected as these areas have more reproductive and family planning services and units and therefore delivering more information to the participants.

There are few limitations of the present study. First the selection of a cross sectional study design limited the biologic plausibility and temporal relationship between modern contraceptive method and factors identified. Second the prevalence of modern contraceptive and factors associated was determined among those presented to female reproductive health care center. There might be every possibility that it could be different in the general population. The study was also not able to explore the reason for relationship between addiction and modern contraceptive use as shown by multivariate logistic regression. However this was the interesting finding as no previous study has shown any relationship.

Conclusion

Modern contraceptive method use is very common in our region (75%). The factors positively associated with modern contraceptive use include age of last child (<1 years) and socio economic status.

While factors like age>30 years and addiction are negatively associated with modern contraceptive use. The important means of information for modern contraceptive in use were GP and FPW. Our study results were comparable to what international and national studies have found with few exceptions and justifications.

The study highlights the efficient and effective roles played by GP and FPW in the promotion of modern contraceptive in use in our region, with still room for further studies.

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