Factors Promoting Tubal Ligation in Females Presenting to Tertiary Care Centers

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Received October2009; Revised and accepted November 2009

Abstract

Objective: Despite development of new contraceptive methods, sterilization remained the most widely used method. Our objective was to determine the factors contributing to decision making for tubal ligation in females.

Materials and methods: A cross sectional study was conducted in Jinnah Post graduate Medical Centre (JPMC) between March - November 2008. About 505 Females using contraceptive measures were consecutively included. Those having any severe debilitating disease and unfamiliar with "urdu" language were excluded. Three trained co researchers conducted structured interviews to determine the frequency and factors associated with tubal ligation.

Results: The final multiple logistic regression showed illiteracy [AOR 2.91 95% CI 1.53-5.53], number of children < 3 [AOR 6.15 95% CI 2.61-14.50], age of women < 30 [AOR 0.12 95% CI 0.06-0.22] years and information gained through health worker [AOR 3.04 95% CI 1.60-5.80] to be statistically significant.

Conclusion: This highlights tubal ligation was more common in uneducated women of age > 35 years having <3 children. The most common means of promoting tubal ligation was information gained through health workers.

Key words: Tubal ligation, Sterilization, Contraceptive method

Introduction

Although there has been considerable development and implementation of new contraceptive methods in the recent past (1), but sterilization has remained the most widely used method around the world (1). Ideal contraceptive should be safe, have a high efficacy, be readily accessible, and be personally and culturally acceptable (1). Studies have shown the association of tubal ligation with factors like age of women and number of children. Tubal ligation is recommendable for women over 35 years of age with completed family planning and especially if contraindications for the use of oral contraceptive or Intra uterine device exist (1). Although descriptive cross sectional surveys have been conducted across the world including Pakistan but very few have focused on determining the factors associated with this procedure.

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This is important in the light of recent findings as few studies have evaluated effects of regret in different population of females after undergoing sterilization. As this is a permanent procedure, expressions of regret and requests for reversal are not uncommon and are much more likely in young women (3). It is thus important to develop guidelines and recommendations in which irreversible procedures like tubal ligation should be approved. Although studies have shown the recommendations for female sterilization but the results but the results remain inconclusive.

Among women older than 30 years especially black women are associated with more significant desire of sterilization reversal compared with white women (adjusted odds ratio: 2.6 ; 95% confidence interval, 1.2, 5.8) (4).

Among the commonest reasons for seeking sterilization reversal was death of male child, age between 25 and 30 years and two or less parities (5). Study results also showed that the younger the women at the time of sterilization, the more likely they were to report regretting that decision (6). Few have concluded that death of children, partners without children and partner change after tubal sterilization were associated with request for reversal of tubal sterilization (7). These studies have also concluded that more strict criteria are suggested for the indication of tubal sterilization, including an in-depth profile of the woman requesting tubal sterilization and identification of risk factors for future regret (7).

However very limited studies have explored this topic and hardly conducted any prospective study to the best of our knowledge after a thorough literature search. This study would therefore determine the factors that are contributing to the decision for tubal ligation. The results of our study would be utilized by family planning agencies in assessing, improving and maintaining their policies. So that more efficient, effective and target group could be approached.

Materials and Methods

A prospective cross sectional study was conducted in Jinnah Post graduate Medical Centre (JPMC), Family reproductive health care unit Karachi, Pakistan from March 2008 to November 2008. Jinnah Post graduate Medical Centre is a government based tertiary care centre that is providing services not only to city but also to adjoining suburbs. In addition many patients from the other parts of provinces like Sindh and Baluchistan are being referred to this centre.

All females of any age, presenting to family health care centre irrespective of complaint, giving informed consent were consecutively included. Those having any severe debilitating disease, mental and physically handicapped, not able to understand "urdu" language were excluded. The sample size of the study was 505 females.

Three trained co researchers conducted the structured interview on the weekly basis as pre defined schedule, each researcher visited the centre and conducted interviews on every third week. The questionnaire included information on age (categorized into <35 years and > 35 years), duration of marriage (<10 years and >10 years), education (literate and illiterate), total number of children (<3 and >3), age of last child (<1 years and >1 year), monthly income (<10000 PKR and > 10000 PKR) *[80 PKR=1US$]*, tubal ligation information gained through health workers, electronic media and print media.

The data was 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 age, duration of marriage and monthly income and proportions for categorical variables age (categorized into <35 years and > 35 years), duration of marriage (<10 years and >10 years), education (literate and illiterate), total number of children (<3 and >3), age of last child (<1 years and >1 years), monthly income (<10000 PKR and > 10000 PKR) and tubal ligation. 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 significant 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.

Results

The total number of participants was (n=505) out of which 71 (14%) females have undergone tubal ligation. The mean age of the sample was 31.23 ±

Table 1: The univariate analysis

Risk Factor	Adjusted Odds Ratio	95 % CI
Illiteracy	2.91	1.53-5.53
Number of child <3	6.15	2.61-14.50
Age of women < 35 years	0.12	0.06-0.22
Information gained through health worker	0.33	0.17-0.63

5.32 years with minimum and maximum values of 20 and 44 years. The mean family income was 10000 ± 1.972 with minimum and maximum values of PKR 3000-PKR 100000.

The univariate analysis showed age <30 years, illiteracy, duration of marriage <10 years, age of last child > 1 year, number of children < 3 and means of information like health worker and electronic media to be statistically significant (Table 1). The final multiple logistic regression showed illiteracy [AOR 2.91 95% CI 1.53-5.53], number of children < 3 [AOR 6.15 95% CI 2.61-14.50], age of women < 30 [AOR 0.12 95% CI 0.06-0.22] years and information gained through health worker [AOR 3.04 95% CI 1.60-5.80] to be statistically significant (Table 2).

Discussion

About 40% of Brazilian married women from 15 to 49 years of age have undergone surgical sterilization (8) and about 30% of women with completed family planning in Switzerland choose tubal ligation as a method of contraception (2). However our study showed only14% women have used tubal ligation but even this seems to be very high in light of our daily experience in our settings.

Our study showed that the factors like illiteracy, less than three children and last child age greater than one year increase the odds of having tubal ligation in contrast to studies which have showed tubal sterilization to be more common in those who have 6 or more children (9). Other studies have also showed women with four or more children were more likely to undergo sterilization than those with fewer children (OR = 3.1; 95%CI: 1.1-8.5) (8).

Maternal age less than 35 years, and duration of marriage less than 10 years decrease the odds of tubal ligation. Similar to other studies which showed women aged 35-44 are more familiar with and likely to choose sterilization than younger women and especially if they had been married for 14.84±4.22 years (9, 10).

These findings were interesting as tubal ligation should be more common in educated women as they have more social contacts and have frequent meetings with health workers. It should also be more common in women who have at least three children i-e with complete family. Similarly means of information that increases the odds of having tubal ligation were electronic and print media and not the health care workers. It is interesting as most of information about this irreversible sterilization process should come from family health care providers not the case here.

These might be the reasons why so many women after having tubal sterilization take consultation for its reversal. Illiterate women not having their own decisions are more succumbed to peer pressure and pressure by their husbands. Similarly accidental loss of child especially in an incomplete family with less than three children, have no other option than to opt for its reversal. The results of previous studies have

Table 2: The final multiple logistic regression

Risk Factors	Adjusted Odds Ratio	95 % CI
Illiterate	2.82	1.68-4.76
Number of children <3	13.71	6.16-30.53
Age of last child >1 year	3.70	2.14-6.34
Age of mother < 35 years	0.7	0.4-0.12
Duration of marriage <10 years	0.13	0.7-0.24
Health worker	0.17	0.10-0.30
Electronic media	1.79	1.05-3.06
Printed media	2.16	1.16-4.00

also shown that death of children, were associated with the request for or submittal to reversal of tubal sterilization (7). Another study highlights the commonest reason for seeking sterilization reversal was death of male child in 53.51% and 86.84% of women with parity of two or less(5).

This clearly denotes our deficiency and inadequate knowledge of female sterilization counseling that is who should be educated and who should not. This random promotion of female sterilization without approaching targeted females cannot be useful in longer run and even have drastic consequences in the shape of reversal cost, mental and physical complications, etc.

A limitation in our study is the high proportion of tubal ligation in our sample. This could be as females using traditional methods of contraception or using contraceptives like condom do not visit the family health care centre frequently. Thus there is every possibility that our sample would not have represented the general population. A community survey was not possible at this time as the rate of tubal ligation is very low in the general population and odds would not have been calculated. Secondly, the use of consecutive sampling best among the non probability ones reduces the chances of sampling bias. Thirdly, use of cross sectional study limited our ability to determine the biologic plausibility and causative association between these factors and tubal ligation.

In conclusion, the study highlights the factors associated with tubal ligation in developing country like Pakistan. It also highlights that use of tubal ligation was more common in uneducated women of age > 35 years. However; surprisingly it was more common in women with <3 children. The most influential means of promotion of tubal ligation was information gained through health workers.

Acknowledgement

We are very thankful for Jinnah Post Graduate Medical Staff for providing their support.

Funding: None

Conflict of interest: None

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