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RESEARCH ARTICLE

TUBECTOMY PREFERENCE FOR FERTILE AGE COUPLES WITH SECOND CHILD: A CROSS SECTIONAL STUDY IN THE URBAN AREA OF TANGERANG

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ABSTRACT

Background: Tubectomy is becoming the choice for fertile age couples at the time of delivery with cesarean section. This is because it has proven to be effective and does not require multiple procedures. **Objective:** To determine the tendency for the preference of tubectomy by fertile age couples with second child and other related factors. **Methods:** This study uses a cross sectional design. The population is all women who delivered through cesarean section with tubectomy in 2016-2018. The sample size is 62 respondents, which is obtained using two-proportion formula and simple random sampling. Statistical tests were carried out using chi square test. **Results:** Majority of respondents that chose tubectomy were between the age group of 20-35 years (53.2%), had 3 or more children (61.3%), high educational level (79%), housewives (71%) and the last labor interval > 2 years (67.7%). The chi square test proved that the choice of using tubectomy after the second child was more in the age group of 20-35 years (39.4%), high educational level (46.9%), professional jobs (61.1%) and the last labor interval > 2 years (45.2%). Furthermore, results of the statistical analysis using the chi square test proved that educational (p value = 0.035 $\alpha < 0.05$) and occupational factors (p value = 0.021 $\alpha < 0.05$) were related to the choice of tubectomy after the second child. **Conclusion:** Educational and occupational factors were associated with tubectomy choices after the second child. Adequate counseling on health education and family planning is required during pregnancy in order to improve the understanding and interest of the mother and partner to choose tubectomy.

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INTRODUCTION

Indonesia is the fourth most populous country in the world after China, India and the United States (Bkkbn, 2012). This fact requires governmental effort through the National Population and Family Planning Agency to control the ever increasing population. This agency functions to control the population growth rate through Family Planning (FP) program, which is also used in other developing countries around the world (Upadhye, 2017). The uncontrolled rate of population growth increases social problems that hinder development in various countries, which includes; finance development, population problems, labor, health, etc. Although family planning program started since the beginning of the country's development, the success of the program is still not as expected, especially that of the Long Term Contraception Method (LTCM) (Ojah *et al*., 2014; Sheeha, 2010). In Indonesia, there are more FP acceptors who prefer the hormonal methods to LTCM, such as tubectomy. The percentage of people who choose the tubectomy method is as low as 3.2% compared to the 32% of people that choose the injection method (Bkkbn, 2012). The rate of tubectomy acceptors in Indonesia is less than that of India with 12.5%. However, hormonal methods have major health side effects such as cervical cancer and breast cancer (Upadhye, 2017; Paramita *et al*., 2010; WHO, 2011; Kongnyyuuy *et al*., 2008; Anothaisintawee *et al*., 2013). Various studies show that there are many factors that affect a woman's choice of tubectomy. Studies conducted by Fahim (2017) in Raichur, India reported that the number of boys and high economic status influenced the choice of laparoscopic tubectomy method. Another factors are that tubectomy decisions are predominantly made by husbands, husband's health, financial problems and motivation from health workers (Fahim, 2017).

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Khedkar *et al*. (2016) also reported that the number of boys significantly affects tubectomy acception (Khedkar *et al*., 2016). Another qualitative study that was conducted in Kiarapedes, West Java stated that fear of tubectomy surgery, and the wrong understanding of the similarity of tubectomy to hysterectomy made mothers more reluctant to choose tubectomy.Whereas counseling from health workers and shared experiences of women who have undergone tubectomy, help mothers feel confident to choose tubectomy (Djami, 2017). A similar finding was reported by Kalra *et al* (2015) that fear of the side effects of tubectomy caused the respondents to choose other contraceptive methods (Kalra, 2015). Other factors that influences tubectomy decision includes; the time to choose tubectomy after having a second child, education level, socioeconomic status (income), parity, maternal age > 30 years, and mothers' inability to make the decision (Sheeha, 2010; Khedkar *et al*., 2016; HajiraSaba, 2014; Lakshmi *et al*., 2015; Chawla *et al*., 2015). Another study in India reported an increasing tendency for tubectomy choices by fertile age couples, with the average age of the mothers ranged from 25 years to 27.5 years (Bharadwaj, 2017). Various studies have proven that tubectomy should be the main choice for FP acceptors especially in developing countries, and it should also become the choice for fertile age couples in countries with large populations. The purpose of this study is to determine the tubectomy preference by fertile age couples with second child and other related factors.

MATERIALS AND METHODS

This study uses a cross sectional design using secondary data taken from maternal medical records at Bethsaida Hospital in 2016-2018. The study population is all mothers who choose tubectomy during cesarean section. The sample size is 62 respondents from the calculation of the formula of two proportions (Lemeshow). The sampling technique used is simple random sampling and statistical tests using the chi square test. Variables measured include age, parity, education, occupation and the interval of the last delivery.

RESULTS

The results of the study can be described in the following tables. Out of the 62 respondents in this study, the highest tubectomy choice was in respondents within the healthy reproductive age with 53.2%, followed by the age group > 35 years with a value of 46.8%. In the parity factor, families with ≥ 3 children preferred tubectomy and the value was 61.3% and families with 2 children value was 38.7%. In the educational factor, respondents with higher educational levels preferred tubectomy and had a value of 79.0% followed by middle education level with a value of 19.4% and low education was 1.6%. According to employment factors, more respondents who were housewives, which was 71% chose tubectomy

Table 1. Tubectomy Preferences by Age, Parity, Education and Occupation Factors

Variable	∑	%
Age		
-< 20 years	0	0
-20-35 years	33	53.2
-> 35 years	29	46.8
Parity		
-1 child	0	0
-2 children	24	38.7
-≥ 3 children	38	61.3
Education		
-Low (Primary and Junior High School)	1	1.6
-Middle (Senior High School)	12	19.4
-High (Graduate)	49	79.0
Occupation		
-Housewife	44	71.0
-Professional Workers	18	29.0
Interval between parity		
-2 years	20	32.3
-> 2 years	42	67.7

Table 2. Tubectomy Preferences on Fertile Age Couples with Second Children by Age, Education and Occupation Factors

Variable	Para 2		Para ≥3		Total	%	p value
	∑	%	∑	%			
Age							
-< 20 year							
-20-35 year	13	39.4	20	60.6	33	100	0.906
-> 35 year	11	37.9	18	62.1	29	100	
Education							
-Low	0	0	1	100	1	100	0.035*
-Middle	1	8.3	11	91.7	12	100	
-High	23	46.9	26	53.1	49	100	
Occupation							
-Housewife	13	29.5	31	70.5	44	100	0.021*
-Professional	11	61.1	7	38.9	18	100	
Last delivery interval							
-≤ 2 years	5	25.0	15	75.0	20	100	0.126
->2 years	19	45.2	23	54.8	42	100	

compared to mothers with professional jobs, which was 29%. More mothers with the interval of the last child > 2 years chose tubectomy. Table 2 above showed that tubectomy choices after the second child were more in mothers between the age 20-35 years (39.4%), mothers with higher levels of education (46.9%), mothers with professional jobs (61.1%), and the delivery distance > 2 years (45.2%). Whereas, the results of the statistical analysis using the chi square test proved that educational (p value = 0.035 α< 0.05) and occupational factors (p value = 0.021 α < 0.05) were both associated with tubectomy choices after the second child.

DISCUSSION

The results of this study proved that according to age factors, there were more respondents in the healthy reproductive age group (20-35 years) who chose tubectomy as a contraceptive method (53.2%), compared to the age group > 35 years (46.8%). This proves that fertile age couples are no longer hesitant to choose tubectomy as a method of contraception. The result of this study was similar to the previous studies reported by Bharadwaj *et al* (2017) in India that stated that the average age of mothers who chose tubectomy was28 years old, which was within the healthy reproductive age.[16] The same information was conveyed by Ojah *et al* (2014) which was much as 94.3%, Mahadevappa *et al* (2016) 77.93% and Lakshmi *et al* (2015) 86%. Nagapurkan reported that the average mother in India married at the age of 19 years and decided to use tubectomy at a very young age (Ojah *et al*., 2014; Lakshmi *et al*., 2015; Nagapurkar, 2016; Mahadevapa *et al*., 2016). Tubectomy is practical, logical and beneficial for respondents within the age of 20-35 years who are sexually active, and choose to use it as a contraceptive. Tubectomy is done during one-time cesarean section, making it more profitable financially and psychologically. The respondent no longer worried about the possibility of pregnant, especially couples with three children born with cesarean section.

The parity factor in this study showed that the group of mothers with 3 children who chose tubectomy were more (61.3%), but the number of mothers with 2 children who chose tubectomy were also quite high (38.7%). This shows that there is a tendency for couples with two children to consider choosing tubectomy as a contraceptive method. The same research was conveyed previously by Bharadwaj *et al* (80.63%) (Bharadwaj *et al*., 2017), Minhas and Sekhon (65.38%) (Minhas, 2014), and Nagapurkar *et al* (55.7%), which reported one of the factors that made couples chose tubectomy wasafter having two or more children. This study also showed that mothers with higher education were more likely to choose tubectomy (79%). Of this group, there were more who chose tubectomy after having their second child (46.9%). The result of this study is in accordance with Sheeha's (2010) study that stated that 57% of mothers with higher education preferred tubectomy. However, in contrast to several studies in India, mothers with primary or non-education levels were more likely to choose tubectomy including Nagapurkar 3.83%, Fahim *et al* (2017) 8.52% and Lakshmi *et al* 48% (Fahim *et al*., 2017; Lakshmi *et al*., 2015; Nagapurkar, 2016). Mothers with higher education are more opportune to g*et al*ong widely and also have better careers. This makes mothers more active outside the home. Therefore, the choice of tubectomy as a contraceptive is very helpful for them because it prevents pregnancy effectively and psychologically makes them calm when carrying out their activities, including sexual activity. This study found that a majority of professional working mothers chose tubectomy after having their second child (61.1%) and statistically proved to be significantly associated with parity (p value = 0.021). Sheeha reported the same in a study in Saudi Arabia with a value of 43.5%, and Fahim *et al* (2017) in India with a value of 47.53% (Sheeha, 2010; Fahim *et al*., 2017). Not much different from Lakshmi *et al*. (2015) in India that a majority of working mothers chose tubectomy (unskilled workers, engineering, professionals) 64.5% while housewife mothers was 35.5% (Lakshmi, 2015).

Mother's work outside her home takes up a lot of her time. Therefore, an effective family planning is to be put in place. Furthermore, tubectomy is a permanent contraception where the procedure is carried out once; the cost is very economical and this helps the family financially. Therefore the funds can be channeled into other use. The lastdelivery interval factor in this study reported that more mothers chose tubectomy with the last delivery distance > 2 years (67.7%). Likewise mothers with a delivery distance of the first child > 2 years chose tubectomy after giving birth to their second child (45.2%). The lastdelivery interval factor was not statistically related. Mahadevapa *et al*. (2016) reported that mothers immediately thought about choosing tubectomy after the second child was born during the cesarean section.[18] The tendency to choose tubectomy in mothers with the interval of more than 2 years is because mothers and partners want some time to focus more on caring for their family and other parameters. A deeper study related to this needs to be conducted.

Conclusion

Educational and occupational factors were associated with tubectomy choices after the second child, where more mothers with high education levels and professional jobs chose tubectomy after having their second child. Adequate counseling on health education and family planning is required during pregnancy in order to improve the understanding and interest of the mother and partner to choose tubectomy. Therefore, health workers can support the government in successing the Long Term Contraception Method program.

Conflict of Interest: None of the authors have affiliations with or involvement in any organization or entity with any financialinterest or nonfinancial interest in the subject matter ormaterials discussed in this study.

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