Chattagram Maa-O-Shishu Hospital Medical College Journal
Volume 13, Issue 3, September 2014

Original Article

Determinants of Infertility Among Couples Seeking Treatment in A Selected Clinic in Dhaka City

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Abstract

Background: Infertility is a global health issue affecting approximately 8-10% of couples and has multidimensional problem with social, economic and cultural implications, which can take threatening proportions in countries with strong demographic problems. **Objective:** To investigate the determinants of infertility among couples seeking treatment. **Methodology:** A cross sectional study was conducted in selected private clinic of Dhaka city among 196 infertile couple by face to face interview using pretested semi structured questionnaire. **Results:** The sample studied consisted of 196 infertile couple. One third (38%) aged 26-30 years, majority Muslims (96%), housewives (72%) and one fourth (24%) had education level of secondary to higher secondary. Slightly more than half of their family income was taka 5361-21270. More than three fourth (66%) had primary infertility. Concerning the determinants of infertility polycystic ovary, hormonal imbalance, and fallopian tube blockage was 19%, 16% and 7% respectively but unexplained factors (28%) crossed the other factors. Only male factor was 10% and combined male and female factors were 10% among study subjects. Regarding the daily habits of the male participants, 18% were smokers. **Conclusions:** The determinants of female infertility are problems in the fallopian tubes and the uterus, disorders of menstruation, sexual disorders, age and ovarian failure. Female infertility is a complex problem that should be considered carefully by the government and stakeholders in each country in order to find effective interventions and solutions.

Key words: Infertility; Hormonal imbalance; Sexual disorders.

INTRODUCTION

WHO defines infertility as failure to conceive despite two years of cohabitation and exposure to pregnancy. If the couple has never conceived despite cohabitation and exposure to pregnancy for a period of two years, it is called primary infertility, primary infertility is also referred to as primary infertility. If a couple fails to conceive following a previous pregnancy, despite cohabitation and exposure to pregnancy (in the absence of contraception, breastfeeding or postpartum amenorrhea) for a period of two years, it is secondary infertility; this is also known as secondary infertility[1]. It has been established that primary infertility is more common than secondary infertility in resource-rich countries but that the reverse is true in resource-poor countries. Infertility is a global health issue, affecting approximately 8-10% of couples worldwide. It is a multidimensional problem with social, economic and cultural influences. A global review of infertility from the World Fertility Survey and other estimated similar rates of infertility in other settings in South Asia, such as 4% in Bangladesh, 6% in Nepal, 5% in Pakistan and 4% in Sri Lanka[2]. Ninety percent of a woman's eggs degrade at the end of her 37th year, by the time she decides to have a baby, her 'biological clock' often slows down. She then requires the help of an ART (assisted reproductive technique) specialist to conceive.

Although the infertility problems are increasing with time, the medical science has also increased the chances of giving solution to the problem by Assisted Reproduction[3]. There is greater awareness of the problem and also availability of more effective treatments like In-vitro Fertilization even in countries like Bangladesh. The average age of childbearing has increased over the past three decades as more women have pursued and careers and postponed marriages[4]. The determinants of infertility include, endocrine dysfunction which is a significant cause and leads to ovulatory infertility. For example, thyroid dysfuntion, hyperandrogenism, polycystic ovarian disease. Sexually transmitted diseases like gonorrhea and chlamydial infection may cause tubal infertility. Congenital anomalies of uterus and autoimmune disease have impact on conception and pregnancy loss. (pathophysiological determinants of human infertility) Furthermore, other indirect causal factors of infertility are worth mentioning here, like anaemia, malnutrition, poverty and tuberculosis. The potential risk factors of infertility are widely present in Bangladesh. According to Bangladesh Fertility Society, the causes of such a situation of infertility were menstrual regulation, delayed marriage and environmental pollution[3]. Studies show that in our sub-continent, reproductive health problems like sexually transmitted diseases (STD), urinary tract infections (UTI), reproductive tract infections (RTI), unhygienic delivery, post partum infection and unsafe obstetric and abortion procedures are linked to sepsis and pelvic infections, which can cause infertility[5]. Like many other health problems, certain type of infertility is preventable. As women age, the risk of infertility rises because of diminished egg quality and ovulatory function as well as in increase in disorders such as endometrioisis, leiomyomata and tubal disease[6]. Infertility among women of reproductive age is an emerging problem in Bangladesh. The effects of infertility for couples who are unable to conceive can be devastating in a society like ours and can cause psychological stress, anxiety and depression. This study therefore, aims to assess the risk factors of infertility among women of reproductive age and create awareness about the infertility problems.

MATERIALS & METHODS

A cross sectional study was conducted among 196 couples (n=392) selected purposively who were seeking help for their infertility problem in a private infertility care center named Bangladesh Infertility Management Center (BIMC). This center was selected purposively for data collection. The study subjects were included couples that came with infertility problem, and has been trying for at least 6 months to conceive and couples who can show all the medical reports of their investigation and treatment and who were willing to participate and provide required information. Before data collection, permission had taken from the Head of the Infertility Management Center (BIMC). All the study subjects were informed about the study. After collection, data were checked thoroughly for consistency and completeness. All analysis was done by appropriate statistical methods using Statistical package for Social Sciences (SPSS) software for Windows version 11.5.

RESULT

Table 1 shows that age range of female respondents were 20-25 years 20%, 26-30 years 38%, 31-35 years 23%, 36-40 years 15% and 41-45 years only 4%. The minimum age groups of female respondents were 20 and maximum age groups of female were 45 with mean age 30.36 and standard deviation 5.752. It also shows that majority 96% respondent were Muslim and rest 4% were Hindu. Among all the respondents 54% were lower middle income group (5361-21270), 38% were upper middle income group (21270-65761) and only 8% were low income group according to 2006 Gross National Income (GNI) per capita and using the calculation of World Bank. Most of the female respondents (72%) were housewife followed by service (15%), business (4%), and teacher (7%) and most of the female respondents had secondary to graduate level of education. The table also shows that male participants were doing business and service. Regarding overweight, normal and obese female were 45%, 41% and 13% respectively.

Table 2 shows that overweight; normal and obese female was 45%, 41% and 13% respectively.

Figure 1 In figure 1 it is shows that primary infertility was quite double (66%) than secondary infertility (34%).

Figure 2 shows that polycystic ovary, hormonal imbalance, tube blockage was 19%, 16%, 7% respectively but unexplained factors (28%) crossed the others. Only male factor was 10% and combined male and female factors were 10% among study subjects.

Table 3 shows that 78% of male had no habit only 18% smoked

Figure 3 pie chart shows that 80% male had normal semen and 19% were suffering from oligospermia and azospermia was only 1%.

Table 1: Distribution of female respondents by age (n=196)

Age of female respondents	Frequency	Percentage
20-25	39	20
26-30	75	38
31-35	45	23
36-40	30	15
41-45	7	4
Mean	**30.36±5.752**	
Religion		
Muslim	188	96
Hindu	8	4
Monthly family income		
<5360	15	8
5361-21270	106	54
21271-65761	75	38
>65761	0	0
Occupation of wife		
Housewife	142	72
Service	29	15
Business	7	4
Teacher	11	7
Others	7	4
Education		
Illiterate	4	2
Primary	18	9
Secondary	46	24
Higher-secondary	46	24
Graduation or more	82	41
Occupation of husband		
Business	86	44
Service	89	45
Others	21	11
Total	**196**	**100**

Table 2 : Distribution of female respondents by BMI (n=196)

BMI	Frequency	Percentage
Underweight	1	1
Normal	81	41
Overweight	89	45
Obese	25	13
Total	196	100

Table1 3 : Distribution of male respondents by habit (n=196)

Habit of husband	Frequency	Percentage
No habit	154	78
Smoking	36	18
Alcohol	3	2
Others	3	2
Total	196	100

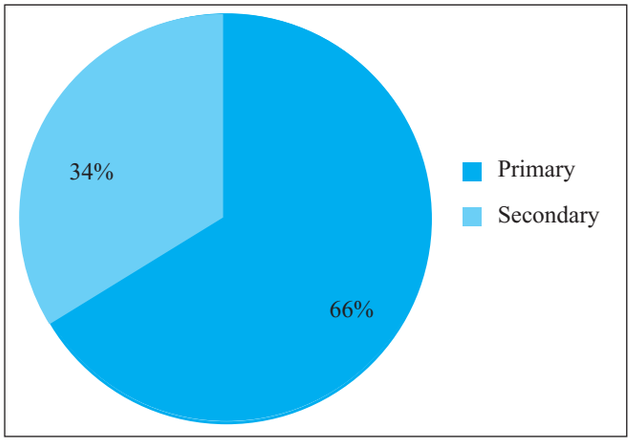

Figure 1: Types of infertility (n=196)

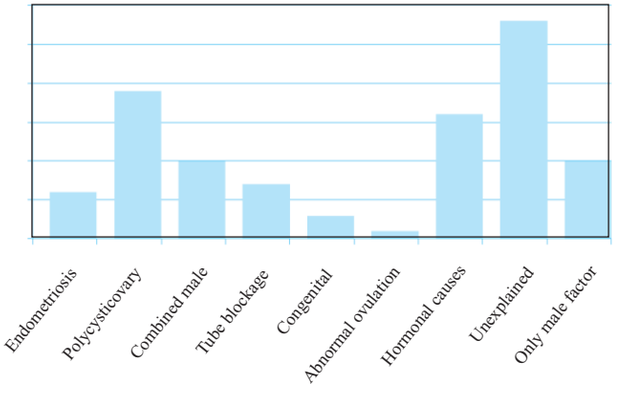

Figure 2 : Distribution of determinants of infertility among respondents (n=196)

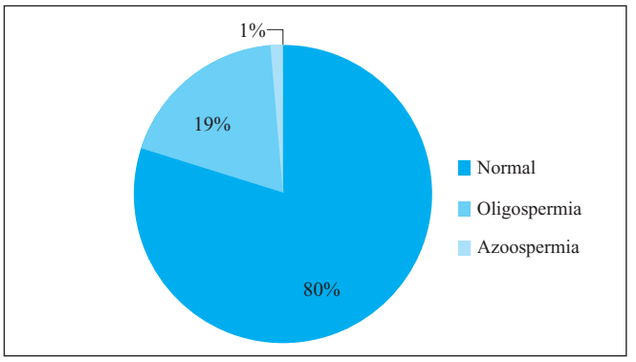

Figure 3 : Distribution of infertility due to male factors on the basis of semen analysis (n=196)

DISCUSSION

Of t A cross sectional study was done in a private infertility care center named Bangladesh Infertility Management Center (BIMC) situated in Dhanmondi, Dhaka. It is well-known among people, and it is run by highly qualified and skilled doctors. Number of clients per day is around 40-50. Middle to high-class people can afford their treatment in this place. This place is well-equipped and provides good patient- compliance.

Table 1 shows that age range of female respondents were 20-25 years 20%, 26-30 years 38%, 31-35 years 23%, 36-40 years 15% and 41-45 years only 4%. The minimum age groups of female respondents were 20 and maximum age groups of female were 45 with mean age 30.36 and standard deviation 5.752. One study in Pakistan showed that a strong association exists between sub fertility and increasing female age[7]. The reduction in fertility is greatest in women in their late 30s and early 40s which is similar with this study. A classic report on the effect of female age on fertility found that the percentage of women not using contraception that remained childless rose steadily according to their age at marriage: 6% at age 20 to 24, 9% at age 25 to 29, 15% at age 30 to 34, 30% at age 35 to 39 and 64% at age 40 to 44[8]. Similarly, a sharp decline in pregnancy rate with advancing female age is noted with donor insemination studies (which control for fertility of the male partner and coital frequency) and with assisted technologies including in vitro fertilization[9]. The risk of spontaneous abortion increases with female age[10]. It also shows that majority 96% respondent were Muslim and rest 4% were Hindu. According to the religion 96% respondent were Muslim and rest 4% were Hindu. Religion is seen to play a role in the desire for children, in the aetiology of infertility, in negotiating infertility and in attitudes to assisted conception technologies[11].

Table 2 shows that overweight, normal and obese female was 45%, 41% and 13% respectively. Lifestyle factors that influence fertility include weight problems and smoking. The American Society for Reproductive Medicine reports that 12% of infertility cases are the result of women weighing either too much or too little[12]. Maintaining a healthy weight can help increase the chances of getting pregnant.

Figure 1 In figure 1 it is shows that primary infertility was quite double (66%) than secondary infertility (34%). Another study was done in Mongolia showed that 43.7% of women had secondary infertility[13].

Figure 2 shows that in case of determinants of infertility this study found that polycystic ovary, hormonal imbalance, tube blockage was 19%, 16%, 7% respectively but unexplained factors (28%) crossed others. In Mongolian study found that 32.8% of women had a tubal factor[13]. Only male factor was 10% and combined male and female factors were 10% among this study subjects. In 45.8% of couples, infertility was due to a female factor and in 25.6% of cases, infertility was due to a male factor. 9.8% of couples had no demonstrable cause in either partner and 18.8% of couples had an infertility diagnosis in both partners[13].

While smoking is one of the main causes of infertility and most of the population in Greece is aware that has many negative consequences, about half of the female population smokes regularly, and only 20% of these consider to quit smoking[14-18]. But this study in table 3 found that 78% male had no habit and only 18% smoked.

Figure 3 pie chart shows that 80% male had normal semen and 19% were suffering from oligospermia and azospermia was only 1%. In Mongolian study found that 45.8% of couples, infertility was due to a female factor and in 25.6% of cases; infertility was due to a male factor. 9.8% of couples had no demonstrable cause in either partner and 18.8% of couples had an infertility diagnosis in both partners[13].

CONCLUSION

Childbearing and family are considered a right of every human being. Infertility is a health problem that requires appropriate diagnosis and determinants. The main determinants of female infertility were polycystic ovary, endometriosis, hormonal imbalance, fallopian tube blockage, congenital malformation and other unknown causes. The study concluded that though the female respondents were more evaluated than male; the number of female factors contributing in infertility was found to be quite large.

DISCLOSURE

All the authors declared no competing interest.

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