REASONS FOR PRIMARY SUB-FERTILITY AMONG COUPLES ATTENDING SUB-FERTILITY CLINICS AT TWO GOVERNMENT HOSPITALS

P. N. Hewabatage[1*], L. K. M. P. Gunawardhana[2], M. K. N. S. Gunarathna[3], E. M. S. Bandara[4] and B. S. S. De Silva[5]

[1, 2]National Hospital of Sri Lanka, Colombo. [3]Base Hospital, Balangoda.
[4]Department of Medical Laboratory Sciences, the Open University of Sri Lanka
[5] Department of Nursing, the Open University of Sri Lanka

INTRODUCTION

Sub-fertility is defined as a failure to conceive after one year of unprotected regular sexual intercourse (Taylor, 2003). It can be classified as primary and secondary sub-fertility (Greenhall & Vessey, 2009). Primary sub-fertility occurs when a couple has never been conceived (World Health Organization [WHO], 2013). Challenges to having a child are found to arise from one or more reasons in either or both partners. Worldwide; ovarian, tubal, uterine, hormone related causes and poor fertility awareness are found to be the reasons for female sub-fertility (Mital et al., 2012; Hamton, Mazza, & Newton, 2012). Male related reasons are mainly problems with sperm production, transport or sexual dysfunction (Karavolos et al., 2013). There are reasons common to both genders such as age, obesity, diet, and exercise (Hassan & Killick, 2003). Primary sub-fertility is a prevalent problem and has significant consequences for both individuals and the wider community such as social, financial, psychological and family problems (Jajoo & Chandak, 2013). Fortunately, many couples have a chance of conception by modifying lifestyle factors (Anderson et al., 2010). However, reasons related to sub-fertility are not clearly identified in Sri Lanka (Ministry of Health, 2014). The findings of this study will provide baseline data regarding the reasons for primary sub-fertility in a Sri Lankan context. Therefore, the purpose of the study was to describe reasons for primary sub-fertility. The specific objectives were to determine the reasons for primary sub-fertility among males, females and both.

METHODOLOGY

A quantitative approach with a descriptive design was employed in this study. A purposive sample of 150 couples within the age 20 – 45 years with primary sub-fertility was recruited for this study. Data were collected using a structured questionnaire which consisted of self administered questions related to social, demographic, occupational, food, exercise, and sexual history of the couple and menstrual history of female. Secondary data and physiologic measurements were collected separately by the investigators. Prior research findings and opinions of experts were sought to achieve content validity of the questionnaire. It was pre-tested with randomly selected 25 couples to test the readability and understandability. Data were analyzed by descriptive statistics using Statistical Package for the Social Sciences (SPSS) 20. Study was conducted at the sub-fertility clinics of two government hospitals; the De Soysa Hospital for Woman (DSHW) and Castle Street Hospital for Woman (CSHW). Ethical approval was obtained from the Ethics Review Committee of National Hospital of Sri Lanka and permissions to conduct the study were obtained from the directors of above hospitals. Voluntary participation was encouraged and written informed consent was taken prior to data collection.

RESULTS AND DISCUSSION

The response rate of the study was 80.6%. Among the participants, 48% of men and 59.5% of women were more than 30 years of age. When considering the distribution of primary sub-

[*] *Corresponding author: Email -* ***pavithra.nadeeshani@yahoo.com***

fertility among men and women, 26.4% corresponded to male related reasons while 22.3% cases were due to female related reasons. A combination of both male and female related reasons was found in 28.9% of couples. The rate of unexplained sub-fertility among them was 22.3%.

Sperm count and quality problems which were identified through semen analysis were the most commonly depicted reason among male sub-fertility causes (33%). Post testicular causes such as sexual dysfunction (23.1%), testicular causes like varicocele (18.2%), and pre testicular causes like hormonal (8.3%) were the other commonly identified reasons. Karavolos et al., (2013) also discovered similar findings. In the current study, progressive motility and sperm concentration of male were relatively less than other sperm parameters such as volume and motility. Further, in 17.3% of male, reason for primary sub-fertility was unknown.

When considering female related reasons, ovarian causes (21.5%) was the commonest reason observed which was compatible with the findings of Jajoo and Chandak (2013) in Sri Lanka. Premature ovarian failure, fallopian tube problems, endometriosis, and Poly Cystic Ovarian Syndrome (PCOS) were next mostly common reasons in present study (Table 1). This is consistent with the findings of Mital et al., (2012). However, some women were reported to have more than one reason for sub-fertility. Only 16.6% could accurately identify the fertile window of the menstrual cycle in their attempts at conception although 53.7% of women believed they had timed intercourse mainly within this window. Thus, a prominent reason among females of this study was the poor fertility awareness. A survey of Hamton, Mazza, and Newton (2012) in Australia also confirmed similar findings that, most women seeking fertility assistance cannot accurately identify the fertile window.

Table 1. Reasons for primary sub-fertility among female

Reason	Percentage
Unknown	26.4
Ovulation disorders	21.5
Premature ovarian failure	13.2
Fallopian tube problems	9.1
Endometriosis	7.4
PCOS	5.8
Ability to identify fertile window	16.6

Table 2. Reasons for primary sub-fertility among both male and female

Reason	Male %	Female %
Overall obesity	66.9	33.1
Central obesity	53.7	37.2
No regular exercise	47.9	86.8
Smoking > 9 times/week	16.4	Nil
Alcohol > 7 drinks/week	29.4	Nil
Caffeine > 500mg/week	0.8	Nil
Daily fruit consumption	10.7	13.2
Daily leave consumption	11.6	20.7
Folic acid supplements	8.3	73.6
Duration of sub-fertility > 3years	38	38

There were reasons common to both men and women for primary sub-fertility. Wise et al., (2013) highlighted that, there is a strong association between sub-fertility and high Body Mass Index (BMI). Apart from that, fertility treatment is also found to be less successful in overweight men and women in some other studies (Pasquali et al., 2003; Wise et al., 2013). As expected, one third of women (33.1%) and two third of men (66.9%) were either overweight or obese in this study. Exercise has been shown to increase fertility (Rich-Edwards et al., 2002). However, 86.8% of women and 47.9% men did not engage in a sport activity or exercise regularly (Table 2).

Baird et al., (2005) pointed out that, ageing leads to a decline in reproductive functions in both partners after 30 years of age. Majority of both the males and females were more than 30 years of age at the time of present study also. According to (Taylor, 2003), if the duration of sub-fertility is more than three years, the couples' chance of spontaneous conception remarkably reduces. Among the participated couples, 38% of couples had sub-fertility for more than three years. This may either be due to the late presentation to fertility assistance or not getting appropriate treatments for sub-fertility.

In United Kingdom, Hassan and Killick (2004) discovered that harmful substances such as alcohol, smoking, and caffeine consumption increases sub-fertility. Conversely, harmful substance consumption was within safe limits among subjects in this study. This contrast may be due to the cultural differences between countries.

When dietary habits are concerned, around one third of both men (28.1%) and women (29.8%) were vegetarians in the current study. Although, vitamin intake either from food or supplements was low in the couple in current study, these micronutrients are found to be of paramount importance in oocyte and sperm production (Ebisch, 2007)

CONCLUSIONS AND RECOMMENDATIONS

According to the results, commonest identified reasons of primary sub-fertility among men in this study were sperm quality problems, post testicular causes such as sexual dysfunction, and testicular causes such as varicocele. When considering females, ovulatory problems, premature ovarian failure, fallopian tube problems, endometriosis, PCOS and poor fertility awareness were the commonly identified reasons. In general, negative life style such as obesity, lack of exercise, and unexplained sub-fertility were the reasons common in both male and female.

Many females were unable to identify the fertile window. However, a prolonged duration of sub-fertility without properly addressing relevant problem may put couples at more risk of childlessness. Therefore, greater emphasis should be placed on educating couples when they first report trouble conceiving. At the community level, this may be a potential role for nurses to embrace in primary health care services.

Overall, to protect future fertility in young males and females is a public health issue. The problem of primary sub-fertility may be reduced to some extent by getting appropriate fertility assistance, to have a baby at right time, to maintain healthy life, and to have good and healthy food. It may be facilitated by aiming to have a BMI between 20 and 25 kg⁄m2, consuming a balanced diet, focusing on regularly engaging in exercises, and by fertility awareness programs for sub-fertile couples. Therefore, it is recommended that measures should be taken at the community level and national level to promote behaviors that maintain fertility, remove risk conditions, and to identify primary sub-fertility as early as possible

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