

## Research in Pharmacy and Health Sciences

### Research Article

### Study on Causes of Female Infertility at National Ayurveda Teaching Hospital, Borella, Sri Lanka: A Survey Based Study

Farzana MUZN\*<sup>1</sup>, Arshiya Sultana<sup>2</sup>

<sup>1</sup>Department of Gynecology, Obstetrics & Paediatrics (Unani), Institute of Indigenous Medicine, University of Colombo, Rajagiriya, Sri Lanka

<sup>2</sup>Department of Gynecology & Obstetrics (Unani), National Institute of Unani Medicine, Bengaluru, India

#### ABSTRACT

**Background:** Infertility is defined as the inability to conceive after at least one year of unprotected intercourse. It is a complex disorder with significant medical, psychosocial, and economic problems. In about one third of couples are infertile. Approximately 167 million married women aged 15-49 years in developing countries were infertility. The present study aimed to determine the most common causes of female infertility in patients who visiting the National Ayuvedic Teaching Hospital, Borella, Sri Lanka. **Methods:** In this study 635 infertile (primary and secondary) women were selected to determine the causes of infertility. The subjects were selected from the gynecology clinic, between the periods of February 2015 to March 2016. The data were gathered using a questionnaire; and after that proper statistical method was applied to analyze the data. **Results:** From the results age between 28-37 years (37.16%) are more prevalent to infertility and the causes of infertility are mainly due to anovulatory cycle (31.18%) and menstrual irregularities (19.21%). BMI also one of the significant cause for infertility. **Conclusion:** Therefore, identifying the risk factors and proper treatment on time along with policy makers providing facilities to resolve the infertility could possible diverse this alarming increasing trend of infertility.

**Received:** 11-10- 2016

**Revised:** 27-11-2016

**Accepted:** 4-12-2016

**\*Correspondence to:**

Dr. M.U.Z.N. Farzana

Email:

muznfarzana@gmail.com

**Funding:** Nil

**Competing Interests:** Nil

**Keywords:** infertility, primary infertility, secondary infertility, menstrual irregularities

#### INTRODUCTION:

Childbearing and rising of children are extremely important events in every human's life and are strongly associated with the ultimate goals of happiness and family integration. Infertility is defined by an unsuccessful waiting time to pregnancy of 12 months, despite frequent unprotected intercourse.<sup>[1]</sup>

One in six couple is subfertile<sup>[2]</sup> while only a proportion of them would seek medical treatment.<sup>[3]</sup> According to recent studies by the WHO approximately 8-10% of couples are facing some kind of infertility. Globally, this means that 50-80million people are facing the problem of getting an integrated family.<sup>[4,5,6]</sup> Infertility may have far-reaching consequences, including marital conflicts, violence, stigmatization, isolation and divorce.<sup>[7]</sup> Infertility mainly classifies in two types: primary infertility is the term used to describe a couple that has ever been ask to conceive a pregnancy, secondary infertility is the term used to describe couples who previously been pregnant at least one, but had not been ask to achieve another.<sup>[8]</sup>

Infertility could result from a wide spectrum of causes which found in either partial or sometimes in both<sup>[9]</sup>

There are lots of etiological factors in either partner, whereas ovulatory dysfunction is the most common cause of female factor, other factors are fallopian tube blockage, congenital abnormalities or acquired abnormalities and pelvic pathologies.<sup>[9]</sup> No abnormalities could be detected after investigations and it termed as "unexplained infertility."<sup>[10]</sup>

Knowing of the causes of infertility would be useful for the treatment to physicians to plan the management and take knowledgeable treatment. In Sri Lanka up to now lack of studies conducted to elucidate the risk factors of infertility. Therefore the aim of the study was to rule out the risk factors/causes of infertility at National Ayuvedic Teaching Hospital, Borella, Sri Lanka.

#### Materials and Methods :

This study was conducted at National Ayuvedic Teaching Hospital, Borella, Sri Lanka between the periods of February 2015 to March 2016. The inclusion criteria of the study are female age between 18-45 years, participants should be de-facto marriage with primary and secondary infertility. The exclusion criteria are

separate couples more than 6 months and divorced. The study was selected on 782 with the causes of infertility who visited the gynecology clinic, but after inclusion 635 participants are included the final study.

For data collection a specially designed questionnaire was used for the purpose of the research. The questionnaire included demographic data and the questions related to factors causing to infertility like; previous fertility problems, gynecological diseases, surgical history, life style, personal history, coital history etc. When necessary participants were assessed for ovulation (only TVS), hormonal (TSH, FSH, LH, prolactin and testosterone), further some selected causes tubal patency were recorded.

The study approved by the Director, National Ayurveda Teaching Hospital, Borella, Sri Lanka. All the participants were informed by the consent form that their participation is voluntary and their name and knowledge will be kept anonymous.

### Results:

Out of 782 participants, 147 (18.79%) were excluded from the study due to various reasons.

The demographic and anthropometric characters of the study participants are presented in table 1. The mean  $\pm$  SD of age of women was  $36.2 \pm 7.1$  years. Approximately half of the population had upper grade level of education (53.85%) and 3.46% of women were illiterate. BMI between 25-29 Kg/m<sup>2</sup> was observed 49.13% population and overweight was observed in 29.76% population.

**Table 1: Demographic data of the participants (n=635)**

Character	Number	Percentage
<b>Age (in years)</b>		
18-27	202	31.81
28-37	236	37.16
38-45	197	31.02
<b>Education</b>		
Illiterate	22	3.46
Lower grade	80	12.59
Middle grade	147	23.14
Upper grade	342	53.85
university	44	6.92
<b>BMI (Kg/m<sup>2</sup>)</b>		
<24	134	21.10
25-29	312	49.13
>30	189	29.76
<b>Types of Infertility</b>		
Primary infertility	432	68.03
Secondary infertility	203	31.96

**Table 2: Causes of Infertility (n=635)**

Causes	Number	Percentage
Menstrual irregularities	122	19.21
Uterine abnormalities	72	11.33
Cervical abnormalities	23	3.62
Fallopian tube blockage	47	7.40
Anovulatory/Oligoanovulation	198	31.18
Sexual abnormalities	92	14.48
Idiopathic	81	12.75

The result of the present study showed that the most common cause of female infertility was anovulatory cycle as 31.18%, while the second most common cause was the infertility by menstrual irregularities (19.21) and the third most common was sexual abnormalities as 14.48%. then idiopathic (12.74%), uterine abnormalities (11.33%), fallopian tube blockage (7.40%) and finally cervical abnormalities was 3.62%.

### Discussion :

Infertility is a widely emerging problem with much prevalent condition that has profound socio-economic and health consequences on couples as well as the society. The incidence of infertility varies greatly in different countries and regions. Approximately 167 million married women aged 15-49 years in developing countries were infertility.<sup>[11]</sup> In this study the most common cause of infertility was anovulatory cycle (31.18%). This could be due to high prevalence of polycystic ovarian syndrome as modern life and dietary factors. This observation accordance with Nestle JE *et al.*<sup>[12]</sup>

Further in this study we found that infertility was more common in upper grade (53.85%) this may affect the increasing age, which finally depleted the production of ovulation. Menstrual irregularities were the second most cause. The reason behind that, the function of the thyroid gland was directly affected the function of the hypothalamic-pituitary gland and ovarian hormones which leads to amenorrhoea. This findings can be correlated with Speroff L *et al* and Sepaniak S *et al.*<sup>[13,154]</sup>

The curiosity area of this study was the assessment of sexual function among couples, commonly this was

neglected in both research and clinical management during infertility. Abnormalities in sexual function were seen in 14.48 % of our findings. There are several reasons for abnormal sexual abnormalities were infrequent coitus due to temporary absence of either partner due to occupation, work load, late sleep due to watching TV programmes till late night. The other causes of sexual dysfunction were some other male factors like erectile dysfunction, ejaculatory problems etc.

According to WHO the categories of BMI suggested for Asian are; < 18.5Kg/m<sup>2</sup> (underweight), 18.5-23.0Kg/m<sup>2</sup> (Normal), 23-27.5 Kg/m<sup>2</sup> (overweight) and > 27.5Kg/m<sup>2</sup> (obesity).<sup>[15]</sup> In our study the BMI between 25-29Kg/m<sup>2</sup>percentage was 49.13%, which indicates overweight, and also BMI < 30 was 29.76% which indicates obesity. So BMI was a significant factor affecting the incidence of infertility. Therefore, infertility prevalence of overweight and obesity women were up to 2- 3 times greater than moderate BMI. Esmaeilzadeh *et al* concluded that, infertile women had a 4-8 fold increased risk of obesity and 3-8 fold increased risk of being overweight compared to fertile women.<sup>[16]</sup> Obesity can cause ovarian dysfunction resulting in ovulatory dysfunction, ultimately caused to increase the incidence of infertility. Further, Dechanet *et al* reported obesity associated with decreased fertility by causing delay in conception and decreased IVF results.<sup>[17]</sup> Therefore; proper exercise, diet control and weight reduction in over weight and obesity female are the vital factors to reduce the increase prevalence of infertility.<sup>[18]</sup>

Infertility incidence is increase with age.<sup>[19]</sup> In our study age between 38-45 years was (31.02%) One of the main reasons for infertility is increasing the age which affect the probability of conceiving without medical intervention in cases of unexplained infertility. This finding confirms with Szafarowski and Jerzake.<sup>[20]</sup> Further infertility increases with woman's age on fertility is well recognized in this study. Therefore, women aged 20-40 years took part in a program of assisted reproduction also more. As the age increases the reproductive capacity is decreased, ovarian function decreased, less desire to sexual act which leads to miscarriage.

From this study primary infertility is more (68.03%) than secondary infertility (31.96%). The reason for primary infertility due to marriage in late ages, the reason for late conception may be due to seeking higher education, carrier as well as engaging both motherhood and employment rates could affect the infertility incidence. The reason for secondary infertility due to mismanaged of previous pregnancy like; unprotected abortions, long term rupture of amniotic bag, postpartum sepsis and retained placenta, which affect the expectations of pregnancy.

The limitation of the study was that, all medical records did not use to identify the causes of infertility, but only rely the statements of participants.

### Conclusion :

Infertility is a very big issue now a day. Delaying the pregnancy, uterine problems, tubal blockage, ovulatory problems were more vulnerable causes for infertility. Avoid late marriage; healthy life, avoidance of junk food and proper sexual intercourse are important factors to prevent infertility. Further, understanding the causes the reproductive health care providers and policy makers provide and implement the proper treatment plan and proper investigations methods on time to prevent this infertility trend. Further women should make an aware about consequences of postponed childbearing to their late reproductive years, which being a risk of infertility with aging.

### References :

1. ESHRE Capri workshop, Guidelines to the prevalence, diagnosis, treatment and management of infertility, Hum Reprod 1996; 11: 1775-807
2. Hull MGR, Glazener CMA, Kelly NJ, Conway DI, Foster PA, Hinton R.A, et al., Population study of causes, treatment and outcome of infertility. BMJ 1985; 291: 1693-7
3. Iammarrone E, Balet R, Lower AM, Gillott C, Grudzinskas JG. Male infertility. Best Practice and Research in Clinical Obstetrics and Gynaecology 2003; 17: 211-29.
4. Boivin J, Bunting L, Collins JA, Nygren KG. International estimates of infertility prevalence and treatment-seeking: potential need and demand for infertility medical care. Hum Reprod 2007; 22(6):1506-12.
5. Ombelet W, Cooke I, Dyer S, Serour G, Devroey P. Infertility and the provision of infertility medical services in developing countries. Hum Reprod Update 2008; 14(6):605-21.
6. The CDC, American Society for Reproductive Medicine, and Society for Assisted Reproductive Technology. 2001 assisted reproductive technology success rates. Atlanta, GA: US Department of Health and Human Services, CDC, 2003.
7. Habbema JD, Collins J, Leridon H, Evers JL, Lunenfeld B, Velde ER. Towards less confusing terminology in reproductive medicine: a proposal. Hum Reprod 2004; 19(7):1497-501.
8. Jain D, Patel B, Phanse N, Vyas, Rathore P. Prevalence of Different Factors Responsible for

- Infertility. *Research Journal of Recent Sciences* 2012; 1 :207-211
9. National Institute for Health and Clinical Excellence. Investigation of fertility problems and management strategies. *Fertility: Assessment and Treatment for People With Fertility Problems*. London, RCOG Press 2004' 39-51.
  10. Fernando DMS. The prevalence of antisperm antibodies, their effects on infertile couples and a possible treatment intervention for autoimmune infertility (Thesis). Colombo:University of Colombo 2001.
  11. Rutstein SO, Shah IH. Infecundity, infertility, and childlessness in developing countries. In, *DHS comparative reports*, Calverton, MD, ORC Macro and the world health Organization:2004
  12. Nestler JE, Clore JN, Blackard WG, The central role of obesity in the pathogenesis of polycystic ovary syndrome. *Am J ObstetGynecol*1989;161: 1095-7
  13. Speroff L, Glass R, Kase N. *Clinical Gynecological Endocrinology and Infertility*. Lippincott Williams and Wilkins,U.S.A,1999, 1035-1036, 1038-1043
  14. Sépaniak S, Forges T, Monnier-Barbarino P. Cigarette smoking and fertility in women and men. *Gynecol ObstetFertil*. 2006;34(10):945-9.
  15. BMI classification, World Health Organization (WHO), Available from: [http://apps.who.int/bmi/index.jsp?introPage=intro\\_3.html](http://apps.who.int/bmi/index.jsp?introPage=intro_3.html)
  16. Esmaeilzadeh S, Delavar MA, Basirat Z, Shafi H. Physical activity and body mass index among women who have experienced infertility. *Arch Med Sci*. 2013; 9(3): 499–505.
  17. Dechanet C, Belaisch-Allart J, Hedon B. Definition and causes of infertility. *Reprod Biomed*. 2001;2(1):173-185.
  18. Clark AM, Thornley B, Tomlinson L, Galletley C, Norman RJ. Weight loss in obese infertile women results in improvement in reproductive outcome for all forms of fertility treatment. *Hum Reprod*.1998;13(6):1502–5.
  19. Menken J, Trussell J, Larsen U, Age and infertility. *Science*.1986; 233:1389-94.
  20. Behboudi-Gandevani S, Ziaei, Khalajabadi-Farahani, Jasper F. Iranian primigravid women's awareness of the risks associated with delayed childbearing. *European J Cont Rep Healt Care*. 2013;18(6), 460-467.

**Cite this article as:** Farzana MUZN, Sultana A. Study on Causes of Female Infertility at National Ayurveda Teaching Hospital, Borella, Sri Lanka: A Survey Based Study. *Res Pharm Healt Sci*. 2017;3(1):249-252.