

AWARENESS OF WOMEN INFERTILITY AMONG THE POSTGRADUATES OF SAVEETHA DENTAL COLLEGE - A QUESTIONNAIRE STUDY

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ABSTRACT

Objective: To acquire information on the level of awareness on women infertility among postgraduates of Saveetha dental college.

Method: A questionnaire was made online and its link was mailed to randomly selected postgraduate students attending Saveetha dental college. The questionnaire consisted of 17 questions based on infertility and its knowledge.

Result: The denouement was calculated in percentages and a comparative study was conducted. About 36.7% think that early puberty affects female infertility. 80% concludes that stress and food habits have an effect on infertility. Further details has been described in the article.

Conclusion: Young people are aware that the negative lifestyle factors reduce fertility but falsely believe in fertility myths and the benefits of healthy habits. Based on this survey, the knowledge of female infertility, its complications and treatment has been known by majority of the postgraduate students.

Keywords: Amyloidosis, Double uterus, Hysterosalpingograph, Infertility, ovarian hyper stimulating syndrome, Poly cystic ovarian disease,

INTRODUCTION

Infertility has been defined as an inability to conceive after having regular unprotected sex. Infertility can also refer to the biological inability of an individual to contribute to conception, or to a female who cannot carry a pregnancy to full term. It is a global public health problem that has been suffered by several individuals. In many countries infertility refers to a couple that has failed to conceive after 12 months of regular sexual intercourse without the use of contraception.

Female infertility may present as an ovulation defect, obstructed fallopian tubes, endometriosis or uterine abnormalities [1, 2]. Genetic abnormalities, hormonal imbalances and congenital/infectious malformations of the reproductive tract are some of the common causes of male and female infertility [3]. Lifestyle factors such as obesity, diet, smoking and alcohol use along with environmental chemical exposures have been increasingly examined as additional modifiers of fertility[4].

One of the most significant demographic trends over the past three decades has been the substantial decline in the fertility rate in many areas of the developed world. The world's total fertility rate has declined from 4.5 births per woman in 1970 – 1975 to 2.5 in 2005 – 2010 [5,6].

The drop in fertility rate has coincided with several societal trends, including improved education and increased workforce participation for women. The undeveloped countries have widespread presence of infertility with a lack of basic knowledge appertaining the causes of infertility and their treatment options. Additionally, there is a noteworthy differ among several countries about the beliefs and consequences of infertility. And currently education has been the foremost point of change. Due to the increase in improved education and workforce participation, there has been increased decline in the rate of marriage at the age of 20-29 years among females. Proportion of people aged 20 – 39 who have never married has increased from 47.4% in 1986 to 58.9% in 2012,

while the median age of first marriage has climbed from 23.9 in 1981 to 29.0 in 2012 for women. Although delaying childbearing and marriage allows women to pursue educational and career ambitions, advancing age in women is associated with decreased ovarian function and oocyte quality [7]. As a result, older women who want to have children may encounter infertility and resort to assisted reproductive technologies.

One of the most important factors for decrease in the incidences of infertility is its prevention. A major cause that leads to a drastic increase in the incidences of infertility are the increase in age and sexually transmitted infections. Certain lifestyle factors such as smoking, diet, and exercise has an adverse impact on fertility.

Knowledge of the causes of infertility also appears to be lacking among several adolescents and young adults living in other developing countries. In one such study conducted in a population of Iranian college students, it was found that these students had moderate to low levels of knowledge about reproductive health[8]. Similar findings were found in a study conducted with Pakistani students[9].

The aim of this paper is to present the results of a survey that was conducted to evaluate the knowledge and attitudes of the causes and treatment options for infertility among college-age (16-22 years) postgraduate students.

METHOD

The current study was conducted to assess the level of awareness on women infertility among postgraduates. Hundred postgraduate students consisting of both male and female were randomly selected from the postgraduate student body of Saveetha Dental College, Saveetha university. Students were contacted through social media like whatsapp, email and were asked to participate in the study by filling up an online survey on fertility awareness. The questionnaire consisted of 18 questions based on infertility and its knowledge (Appendix 1). Men and women were contacted through social media groups or separately or through emails that contained a URL link to the study questionnaire. Most student that were invited for the completion of questionnaire responded within a month of initial contact. A second follow-up e-mail which was sent after 4 weeks following the first contact yielded response from the other participants too. The final sample included 100 postgraduate students.

Appendix-1: questionnaire

- [1] Does age affect infertility?

Yes
No

- [2] At what age is there a marked decrease in women's ability to become pregnant?

25-34
35-39
40-45
45+

- [3] Does early puberty have an effect on infertility ?

Yes
No

- [4] Is stress and food habits affect infertility ?

Yes
No

- [5] Are you aware of Ovarian hyper-stimulating syndrome?

Yes
No

- [6] Are you aware of poly cystic ovarian disease?

Yes
No

- [7] If yes, which can be the major symptom for its diagnosis?

Severe stomach ache
Irregular periods
Don't know

- [8] What is the etiology for pcod?

Elevated level of androgen
Elevated level of estrogen
Both
Dont know

- [9] Can ovulation be induced to treat pcod?

Yes

No

Don't know

- [10] Are you aware of adenomyosis?

Yes

No

- [11] Is the only way to confirm the diagnosis is by examining the tissue of the uterus after a surgery to remove it?

Yes

No

Don't know

- [12] Which on provides a better result?

MRI

Ultrasound

- [13] Are you aware of double uterus ?

Yes

No

- [14] What is its etiology?

Congenital

Inherited

- [15] If yes, will the pregnancy be successful?

Yes

May be

No

Don't know

- [16] Can infertility be treated?

Yes

No

- [17] Are you aware of a diagnosis named Hysterosalpingograph?

Yes

No

- [18] In case of infertility which of the following options would you consider?

Adoption

Surgery IVF

Surrogate mother

None of the above

RESULT

A total of 100 students participated in this questionnaire based study conducted via social media like whatsapp and emails. The denouement was calculated in percentages and a comparative study was conducted. Postgraduate students of Saveetha dental college were very much aware of female infertility. According to the survey there is a marked decline in female fertility at an average age of 33-45 as mentioned in table 1. About 36.7% think that early puberty affects female infertility. 80% concluded that stress and food habits have an effect on infertility. Among the postgraduates 33.3% ,30%, 40% and 53% are not aware of the term ovarian hyperstimulating syndrome, poly cystic ovarian disease(PCOD), adenomyosis and double uterus respectively (fig1). The etiology,treatment and certain symptoms of poly cystic ovarian disease , adenomyosis and double uterus are graphed in fig2, fig3 and fig4 respectively. On the basis of the survey, 44% of the students know that tissue examination of the uterus is the only way to confirm diagnosis for adenomyosis. Majority of the students are aware of the etiology, symptoms and treatment of PCOD. Comparatively, 80% deem MRI as a better option than ultrasound. People's personal opinion about the alternative means in case of infertility has been tabulated in fig 5.

Table 1: Age at which there is decrease in women’s fertility

AGE	PERCENTAGE
25-45	30%
30-45	20%
35-45	25%
40-45	25%

Fig 1: Term awareness(in percentage)

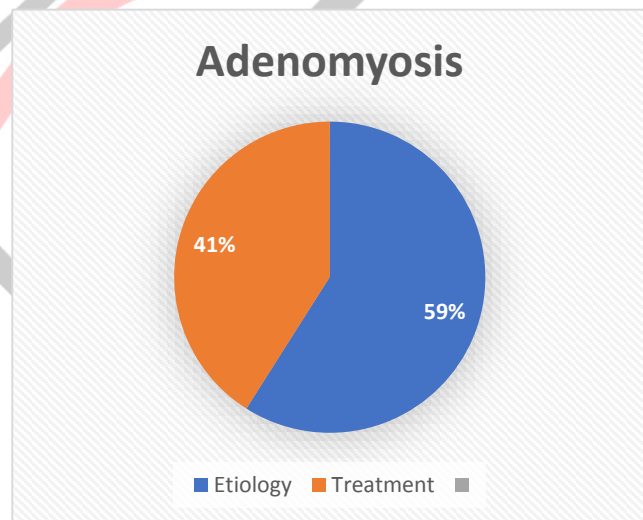
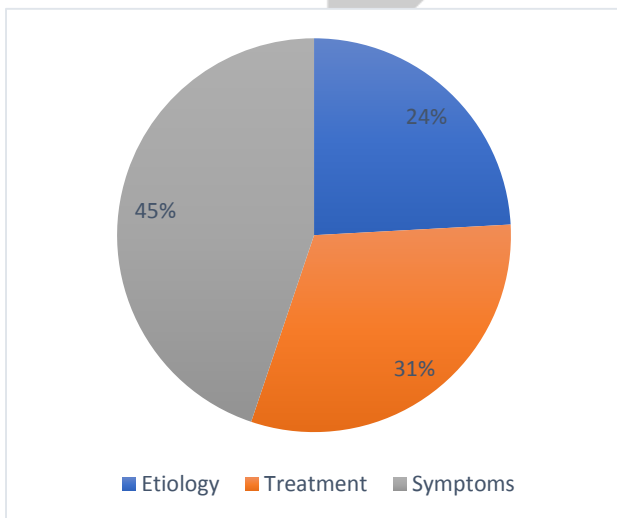
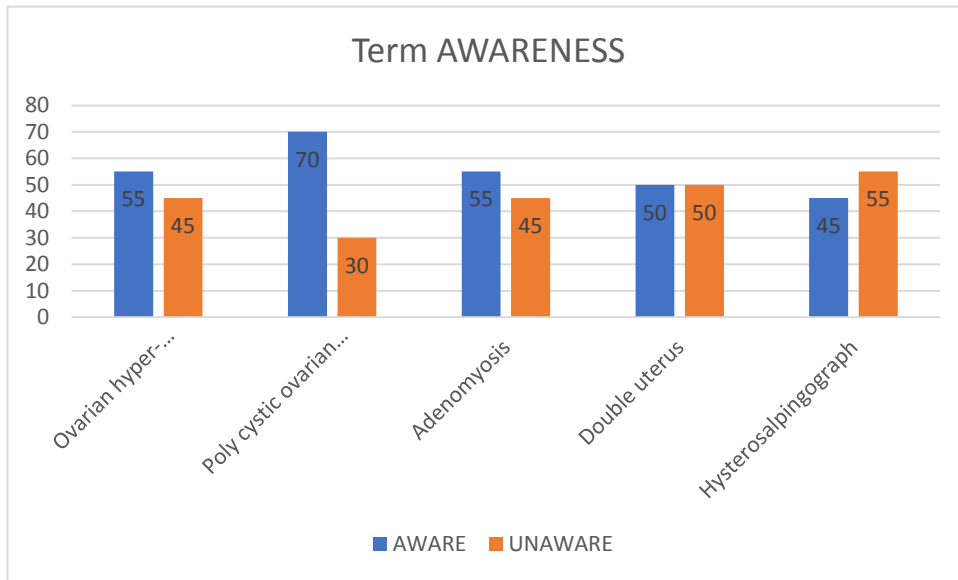


Fig 2: Etiology, treatment and symptoms of PCOD

Fig 3: Etiology and treatment of adenomyosis

Fig 4: Etiology and treatment of double uterus

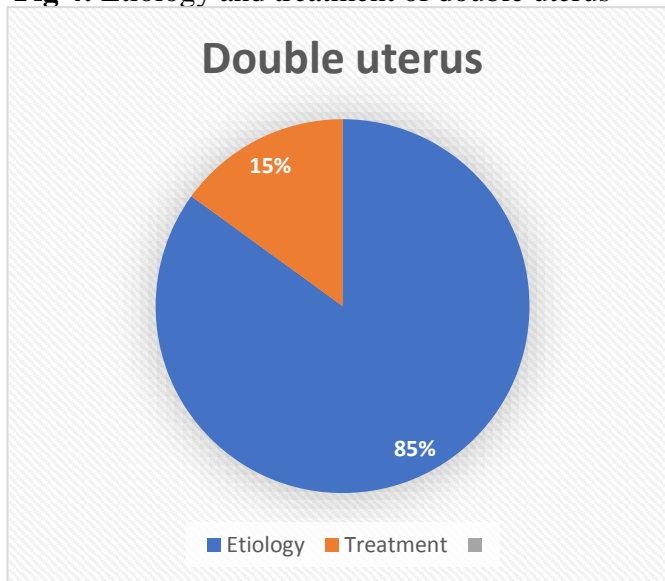
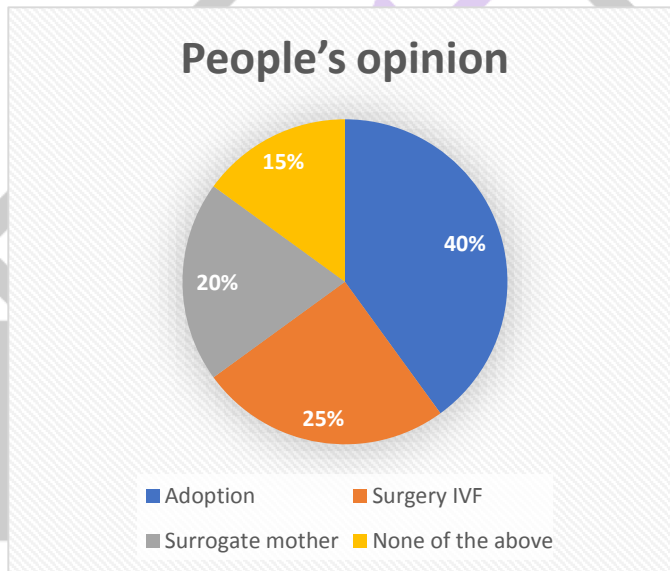


Fig 5: People’s opinion



DISCUSSION

A series of open response questions focalising their awareness of fertility issues were asked to all the randomly selected postgraduates. Thirty five percent of women and men believe that women experience a slight decline in their fertility at an average age of 33-45 as mentioned in table1. It is well documented that a female’s fertility rate declines as her age increases, especially after the age of 35. According to the American Society for Reproductive Medicine, there is 20% chance for a fertile women of an average age of 30 to get pregnant each month and this probability decreases as she ages. Ovulation is one of the major issue that is related to age because as a women ages she experiences irregular, infrequent and more shorter term periods which is a sign of not ovulating on a regular basis. Due to this a female loses her chance of getting pregnant. Eventually, she undergoes menopause approximately at the age of 51[10,11,12].

The problem is not only due to difficulties in ovulation over time but there will a decline in the quality of the eggs released during ovulation. This can occur due to atresia which is a natural degenerative process and in addition to atresia, eggs of an older female would suffer from aneuploidy, which is a chromosomal irregularities that is the eggs in the ovary will contain either too many or too less chromosomes. Certain strategies might increase the chances of pregnancy if an individual is afraid of age related infertility: don’t smoke ,as they tend to experience menopause a year earlier than non-smokers; don’t fret too early and don’t wait too long to take actions in case of any doubts. Though age related fertility issues are inevitable, they need not be a source of panic or anxiety for a women.

Eighty percent regard lifestyle to be a factor in women's infertility. Lifestyle factors like age, nutrition, weight, exercise, psychological stress, cigarette smoking, recreational and prescription drugs use, alcohol and caffeine consumption, environmental and occupational exposures, preventative care, and other behaviours are modifiable and may impact fertility. It is important to understand the ways in which lifestyle behaviors may benefit or harm fertility in order to minimize complications and to maximize fertility outcomes. By understanding the impact of lifestyle on reproductive health, and by actively modifying lifestyle behaviors, men and women are capable of controlling their own fertility potential.

Fertility might be impacted by Proper nutrition, weight, and exercise. Though no proper conclusion has been drawn regarding selection of proper nutrition. Underweight or overweight women are also at a risk for negative side effects, including changes in hormone levels. Recent research suggests that weight plays an important role in fertility, and controlling and maintaining an ideal weight may provide a way for couples to increase their fertility. Exercise is suggested to be beneficial, though too much may be detrimental. Lean and underweight men or women who exercise vigorously may put themselves at risk for a decrease in fertility, thus finding a balance may provide the best chances of achieving a pregnancy[13,14]

Psychological effects and infertility are associated with each other. Tests are subjective, and there is no general consensus on how to measure psychological stress. It is also worth noting that it is difficult to isolate psychological effects because subjects who are more depressed and anxious are also more inclined to participate in lifestyles that may negatively influence fertility, such as consuming alcohol. Efforts to try relaxing and reducing exposure to stressors may provide a betterment for an effort to increase fertility[15].

An average of thirty three percent of undergraduates were not aware of the term ovarian hyperstimulating syndrome(OHSS). It's a medical condition affecting few female consuming medication to stimulate egg growth. This condition is categorised based on its severity into mild, moderate, severe and critical[16]. The ovaries are enlarged and there may be accumulation of ascites with mild abdominal distension, abdominal pain, nausea and diarrhoea in mild forms of OHSS. Whereas in cases of severe forms of OHSS there's presence of hemoconcentration, thrombosis, distension, oliguria, pleural effusion and respiratory distress[17].

Thirty percent are another aware of the term PCOD which is a set of symptoms due to elevated male hormones like androgens in women. Signs and symptoms of PCOS include irregular or no menstrual periods, heavy periods, excess body and facial hair, acne, pelvic pain, difficulty getting pregnant, and patches of thick, darker, velvety skin. Associated conditions include type 2 diabetes, obesity, obstructive sleep apnea, heart disease, mood disorders, and endometrial cancer. It's caused due to a combination of genetic and environmental factors. Diagnosis is based on findings like lack of ovulation, high androgen levels, and ovarian cysts. In which Cysts may be detectable by ultrasound[18]. PCOS has no cure. Treatment may involve lifestyle changes such as weight loss and exercise. Birth control pills may help with improving the regularity of periods, excess hair growth, and acne. Clomiphene or Metformin and anti-androgens may also help[19].

Not all women with PCOS have difficulty in getting pregnant. For those that do, anovulation or infrequent ovulation is a common cause. And changed levels of gonadotropins, hyperandrogenemia and hyperinsulinemia are other factors that cause infertility. For overweight, anovulatory women with PCOS, weight loss and diet alterations are associated with resumption of natural ovulation[20]. There are options available including assisted reproductive technology procedures such as controlled ovarian hyperstimulation with follicle-stimulating hormone (FSH) injections followed by in vitro fertilisation (IVF) for females those who are not responsive to medications like clomiphene and modification of diet[21]. The polycystic ovaries can be treated with a laparoscopic procedure called "ovarian drilling" (puncture of 4–10 small follicles with electrocautery, laser, or biopsy needles), which often results in either resumption of spontaneous ovulations or ovulations after adjuvant treatment with clomiphene or FSH [22].

A population of forty percent are unaware of the term adenomyosis which indicates a gynecologic medical condition characterized by the abnormal presence of endometrial tissue (the inner lining of the uterus) within the myometrium (the thick, muscular layer of the uterus). Adenomyosis is often coupled together with another similar but distinct medical condition called endometriosis[23]. Endometriosis refers to a condition when endometrial tissue is present entirely outside the uterus. This condition is typically found in 35 to 50 years aged female population but can also be present in younger women. Adenomyosis is often associated with dysmenorrhea and menorrhagia. The functional layer, basal layer does not undergo typical cyclic changes with menstrual cycle because the basal endometrium penetrates into hyperplastic myometrial fibers in adenomyosis [24]. Adenomyosis may involve the uterus focally, creating an adenomyoma. With diffuse involvement, the uterus becomes bulky and heavier. Adenomyosis can only be cured definitively with surgical removal of the uterus. As adenomyosis is responsive to reproductive hormones, it reasonably abates following menopause when these hormones decrease. In women in their reproductive years, adenomyosis can typically be managed with the goals to provide pain relief, to restrict progression of the process, and to reduce significant menstrual bleeding.

Fifty three percent of the participants are unaware of a rare congenital abnormality named double uterus. In a female, the uterus starts out as two small tubes and join together to create a larger, hollow organ, the uterus. At times these tubes do not join completely and develops as two individual structures. Double uterus can be of two types, one with a single opening that's is one cervix into one vagina and the other type is two opening that is each uterine cavity may have a cervix.[25,26]. A thin wall of tissue separates the two openings by running along the length of the vagina. Pregnancy rate in women with double uterus is often successful. But

there are possibilities of increased risk of miscarriage or premature birth in female with this condition. This condition often causes no symptoms. There are certain examinations that might help in the recognition of double uterus like regular pelvic exam or during imaging tests to determine the cause of repeated miscarriages. This congenital abnormality can lead to complications like infertility, miscarriage, premature birth and kidney abnormalities. Treatment modalities include surgery. In case of a double vagina with the involvement of double uterus, an operation is performed to remove the wall of tissue separating the two vaginas. This can make childbirth a little easier[27].

Infertility is a condition that affects approximately 1 out of every 6 couples. Female infertility factors contribute to approximately 50% of all infertility cases, and female infertility alone accounts for approximately one-third of all infertility cases.

Female infertility treatment has such a huge breakthrough. The causes of female infertility are multifaceted, and may extend to either of the partners — or even both. Indeed, the root issues of infertility can be related to both sexes: approximately 60 percent of infertility is caused by female conditions, while approximately 40 percent is male related. It is also worth noting that in 25 percent of infertile couples, both partners will have a fertility problem. There are many different types of assisted fertility treatment available [28,29]. IVF Program is successful and is one of the most requested treatment options selected by the patients. Also, egg donor program has accumulated significant rates of success[30]. There are many potential causes of infertility that need to be considered in women having difficulty in becoming pregnant[31,32]. These causes can generally be coalesce into problems with egg production, tubal problems, and uterine problems. Each of these potential problems are evaluated before initiating fertility treatment.

One bold interpretation of these findings is that women generally value having children higher than men, but at the same time there is accordance between the desired number of children and age of first child across genders.[33] No gender differences emerged regarding parental age at birth of last child, but more than 60% of the women (significantly more than the men) agreed it is important to have children before being 'too old'.

A cautious interpretation of results obtained from other studies are -that similarities and discrepancies between genders in their intentions for parenthood may interplay in the 'negotiation' about family planning within a couple and, thus, partly explain why parenthood is postponed[34,35].

Other studies have time and again found similar knowledge among university students. A sizeable percentage of respondents intend to have their last child at the age of 35 years or older, where a marked decline in female fertility is a reality [36]. According to other studies, the fact that many participants lacked knowledge on fertility raises concern and may indicate that both men and women are making the decision to postpone parenthood without being aware of possible consequences [37].

Overall, among the students included in this study, female students knew more about infertility risk factors and treatment options than males. This could be due to the fact that females are more aware about infertility since they eventually bear children.

CONCLUSION

Young people are aware that the negative lifestyle factors reduce fertility but falsely believe in fertility myths and the benefits of healthy habits. Based on this survey, the knowledge of female infertility, its complications and treatment has been known by majority of the postgraduate students.

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