

**A Questionnaire Based Study on The Knowledge, Attitude and Fertility Awareness Among Infertile Women Seeking Fertility Treatment In ASCOMS And Hospital, Jammu**

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**Abstract**

**Introduction:** Infertility is this huge emotional roller coaster. It's the hardest thing a couple may go through physically, emotionally, and financially. From past 15 years, there has been a substantial reduction in the fertility rates in Indian women. Fertility awareness is the women's ability to identify the fertile period of the menstrual cycle. Despite a high burden of infertility, Fertility awareness among women of reproductive age group is generally very poor.

**Aim:** To access the fertility knowledge and awareness among infertile women attending gynae OPD in ASCOMS and Hospital and their understanding of the menstrual cycle, role of age, ovulatory period and need for assisted fertility treatment.

**Methods:** A questionnaire based - cross sectional study was conducted including 195 women seeking fertility treatment in the Gynae OPD at ASCOMS & Hospital

between June 2022 to December 2022. Patients were interviewed with the help of a self-made questionnaire, for which many previous studies were reviewed, and a questionnaire was made according to our patient profile and socio-demographic characteristics. Knowledge and awareness were stratified according to socioeconomic status (SES).

**Results:** Of the total 195 patients, majority of women (57%) were aged between 20 to 30 years and primary infertility (65.6%) was the most common type, indicating concern about their fertility and need for evaluation. More than half (61%) women were from the middle socio-economic strata. Knowledge about fertility and reproduction was low: 83% were not aware of the ovulatory period in the menstrual cycle, only 10% considered age more than 35 years as the most significant risk factor for infertility and most were unaware of when to seek treatment for infertility after trying for pregnancy.

Nearly, two-thirds respondents believed that conception is not possible by any means if fallopian tubes are blocked. Less than half of women understood the need for assisted fertility treatment and donor oocytes in advanced age.

**Conclusions:** Most Indian women seeking fertility treatment have low to moderate fertility knowledge. Those across different SES are unaware of the effect of age on fertility. Considerable gaps in knowledge and understanding of fertility issues were identified irrespective of their socio-demographic and fertility characteristics. Targeted educational interventions are needed to improve knowledge regarding ideal age of fertility, factors affecting fertility potential and fertility options available for sub-fertile couples. Fertility counseling and information should be provided to young people at every contact with health care professionals.

**Keywords:** Fertility, Awareness, Infertility, Knowledge, Socio-economic scale

### **Introduction**

Infertility has stigmatized women from time immemorial. It is a worldwide problem affecting 8–12 percent of couples during their reproductive lives (WHO, 1991). The WHO estimates the overall prevalence of primary infertility in India to be between 3.9 and 16.8%.

Modernization and acumens about career independence are snowballing on to burden. A recent tendency among them was observed wherein first-time parenthood was considered in late thirties. As child conception is deferred for considerable time giving priority to professional goals, it deteriorates the probability of natural conception and subsequently requires specialized treatment to help the couples.[3] Statistics are available, emphasized the fact that there was downward trend in the total fertility rate, i.e. 1.7. Scarce, incorrect information, and myths prevailing in the society further delays the decision-

making for parenthood and the process of accessing therapeutic consultation in appropriate time. There are further evidence of lower levels of health awareness among low resource settings and individuals with lower academic qualification. Looking into all the aspects, it is apparent that infertility is progressively becoming alarming and a public health issue.

Traditionally fertility awareness was considered to be knowledge of female anatomy and physiology and its application to family planning [3]. However, as age at first conception is increasing globally, the epidemic of infertility looms large. The global trend in delaying parenthood is being attributed to a number of factors, primarily, pursuit of higher education and career goals, desire for a stable job and delay in finding a suitable partner. It has been observed that couples have a basic knowledge of factors affecting fertility, but remain unaware of the impact that advancing age has on a women's fertility [3, 5]. It is well established that female fertility declines after age of 30 and more rapidly once women turn 35 years [5, 6]. The advent of assisted reproductive technique (ART) and its widespread availability has helped many couples realize their dream of parenthood [7]. A major factor responsible for delayed child bearing and increasing incidence of subfertility is lack of awareness about fertility potential. Decisions about whether, when and how to conceive, should be a matter of individual or couples' choice. However, an accurate understanding of reproductive facts is essential for informed fertility decision making. Currently awareness about fertility is low worldwide [2, 5]. Until recent years in India, there was a trend of early marriage and having a first child at less than 25 years, but now due to socioeconomic development and greater interest in education, job and financial settlement there is a delay in parenthood. Most of the women now plan their first

pregnancy after 30 years of age. As in other developing countries, in India, having children is the social norm while childlessness is socially stigmatized [8]. Infertility has a profound effect on the psychological and social well-being of women much more than men [9]. In recent years the fertility rate has declined in virtually all regions of the world and a recent report by United Nations has stated that the fertility rate of Indians has decreased by half in last 40 years [10]. Although the incidence of infertility is on rise, no study till date has evaluated fertility awareness among Indian women. Determining the level of knowledge and awareness of fertility practices among Indian women has important public health implications. Targeted fertility education and public enlightenment programmes may help in reducing the number of women experiencing age related infertility and also enable timely referral for assisted fertility treatment. The present study was conducted to access the fertility knowledge and awareness among infertile women attending gynae OPD in ASCOMS and Hospital and their understanding of the menstrual cycle, role of age, ovulatory period and need for assisted fertility treatment

## **Methods**

This was a cross sectional study conducted from June 2022 to December 2022 in ASCOMS & Hospital among infertile women seeking fertility treatment for the same.

## **Study population**

A total of 195 women attending the Gynae OPD in ASCOMS & Hospital, participated in the study.

The inclusion criteria were women of age group 21 to 44 years who either consulted the Gynae OPD for infertility treatment or were referred from General Obgyn OPD and were trying for conception for at least 6 months. Women were invited to participate in the study at the initial consultation and those who voluntarily gave written

consent were interviewed. The interview consisted of a self-made questionnaire which was designed after reviewing previous papers on fertility awareness and modified according to patient population, level of understanding and socio-demographic characteristics.

The patients had to identify the correct answers from the options given after each question. There were questions regarding the age-related decline in fertility, the fertile period in the menstrual cycle, the ovulatory period, relation of oral contraceptive pill intake with fertility, the duration after which to consult a fertility specialist after trying for pregnancy, various fertility options for women in advanced age (> 40 years). Figure 1 depicts the questions and possible correct answers in bold. Baseline demographic parameters were recorded and socio-economic status (SES) calculated according to Modified Kuppaswamy scale. The modified Kuppaswamy scale consisted of three parameters – education and occupation of head of family and total family income. According to the score obtained in each of these three parameters the participants were grouped in five SES classes as shown in Figure 2. The correct answers were stratified according to SES.

Ethical approval was obtained from the Institute Ethics committee before starting the study.

## **Statistical analysis**

All statistical analysis was carried out using SPSS, IBM version 19 (Armonk, NY: IBM Corp). Descriptive statistics were used for quantitative variables and were expressed as mean, standard deviation or frequencies, and percentages. The percentage of participants answering correctly was stratified according to SES scale. For comparing categorical data, Pearson's chi square test or Fishers exact test was carried out as appropriate. For all statistical tests  $P < 0.05$  was considered to be statistically significant.

### Statistical analysis

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1. What is the best age to become pregnant?

20-30 years	31-35 years	I don't know
36-40 years	Age doesn't matter	

2. At what age is there a marked decrease in women’s ability to become pregnant?

20-30 years	31-35 years	I don't know
36-40 years	Age doesn't matter	

3. Which phase of menstrual cycle are you most likely to become pregnant?

Just before the period	Halfway between 2 periods	I don't know
Just after the period	Moment doesn't matter	

4. What is ovulatory period?

Period before menses	Halfway between 2 menses
Period after menses	I don't know

5. Which of these factors is the highest infertility risk factor?

Age more than 35 years	Stress
Smoking more than 10 cigarettes per day	Having more than 2 alcoholic drinks per day

6. Is intake of oral contraceptive pills associated with infertility in any way ? NO

7. When does a woman attempting to become pregnant have to consult a fertility specialist if she is aged less than 35 years?

After 3 months of unprotected sex without becoming pregnant	After 6 months of unprotected sex without becoming pregnant
After 1 year of unprotected sex without becoming pregnant	After 2 years of unprotected sex without becoming pregnant

8. When does a woman attempting to become pregnant have to consult a fertility specialist if she is aged more than 35 years?

After 3 months of unprotected sex without becoming pregnant	After 6 months of unprotected sex without becoming pregnant
After 1 year of unprotected sex without becoming pregnant	After 2 years of unprotected sex without becoming pregnant

9. Which is the most likely option to become pregnant if the woman is more than 45 years old?

Spontaneous natural pregnancy	Pregnancy following assisted reproduction with the eggs of a donor
Pregnancy following assisted reproduction with her own eggs	Natural pregnancy with a healthy diet & exercise

10. What is Surrogacy?

Putting embryos in your own uterus	Putting embryos in other women's uterus
Taking donor eggs from others	Taking semen from male other than husband

Education of head of family	Score
Profession or honours	7
Graduate or postgraduate	6
Intermediate or post high school diploma	5
High school certificate	4
Middle school certificate	3
Primary school certificate	2
Literate	1
<b>Occupation of head of family</b>	
Profession	10
Semi- profession	6
Clerical, Shop-owner	5
Skilled owner	4
Semi-skilled worker	3
Unskilled worker	2
Unemployed	1
<b>Monthly income of family (2017)</b>	
>41430	12
20715-41429	10
15536-20714	6
10357-15535	4
6214-10356	3
2092-6213	2
<2091	1

Socioeconomic status	Total Score
I Upper	26-29
II Upper Middle	16-25
III Lower Middle	11-15
IV Upper Lower	5-10
V Lower	<5

### Results

Demographic characteristics- The baseline demographic characteristics of the study population are presented in Table 1. A total of 195 women were interviewed. More than half of women (112/195; 57%) belonged to the age group of 20 to 30 years. Three fourths of the patients had good marital relations that is the couples were compatible and seldom had issues pertaining to the stress of infertility. When the study population was stratified into various SES according to modified Kuppuswamy scale, the majority of participants (118/195; 61%) belonged to the middle SES. Only 35 (16.1%) belonged to the upper lower category and there were no subjects in lower category. The frequency of participants who identified the correct answers among various SES categories is as shown in Table 2

Baseline Characteristics		Mean ± SD (n=195)
Age (wife) years		29.96 ± 4.67
Age (husband) years		34.97 ± 5
Marriage duration (years)		7.88 ± 4.52
Infertility duration (years)		6.10 ± 4.24
Frequency (%) (n=195)		
Age group (years)	20-30	112 (57)
	30-40	80 (41)
	>40	3 (1.5)
Socioeconomic Status	Upper	45 (23)
	Upper Middle	76 (38.9)
	Lower Middle	42 (21)
	Upper Lower	32 (16.1)
Infertility	Primary	151 (77.4)
	Secondary	44 (22.5)
Marital Relations	Good	149 (76.4)
	Bad	46 (23.5)

Questions (Correct Answers)	Overall(n=195)	Upper(n=44)	Upper Middle (n=74)	Lower Middle (n=51)	Upper Lower(n=26)	p
1.What is the best age to become pregnant? <b>20-30 years</b>	162(83.4%)	38(87.2%)	67(91.5%)	35(73.5%)	19(73.9%)	0.04

2. At what age is there a marked decrease in women's ability to become pregnant? <b>36-40 years</b>	54(28%)	15(35%)	18(25.3%)	10(20.9%)	4(15.2%)	0.13
3. Which phase of menstrual cycle are you most likely to become pregnant? <b>Halfway between 2 periods</b>	29(15%)	5(11%)	18(24.1%)	4(7.4%)	3(12.3%)	0.17
4. What is ovulatory period? <b>Halfway between 2 menses</b>	83(42.9%)	24(56.5%)	38(51.9%)	13(28.3%)	5(24%)	0.002
5. Which of these factors is the highest infertility risk factor? <b>Age more than 35 years</b>	11(5.8%)	4(8.5%)	7(9.7%)	3(5.5%)	0	0.24
6. Is intake of oral contraceptive pills associated with infertility in any way ? <b>NO</b>	9(4.9%)	3(6.3%)	3(6.6%)	0	2(8%)	0.3
7. When does a woman attempting to become pregnant have to consult a fertility specialist if she is aged less than 35 years? <b>After 1 year of unprotected sex without becoming pregnant</b>	78(40.5%)	17(39.3%)	27(37%)	21(41.4%)	7(26%)	0.35

8. When does a woman attempting to become pregnant have to consult a fertility specialist if she is aged more than 35 years? <b>After 6 months of unprotected sex without becoming pregnant</b>	39(20%)	8(19%)	10(13.6%)	10(20.9%)	4(15.2%)	0.85
9. Which is the most likely option to become pregnant if the woman is more than 45 years old? <b>Pregnancy following assisted reproduction with the eggs of a donor</b>	55(28.3%)	16(37.1%)	19(25.3%)	11(22.8%)	3(11.8%)	0.06
10. What is surrogacy? <b>Putting embryos in other women's uterus</b>	87(44.9%)	25(58.5%)	36(49.9%)	15(30.3%)	7(26.1%)	0.02

When we assessed the response in relation to age related decline in fertility, it was found that most participants (> 83%) were aware that young women are more fertile and it is easier to achieve pregnancy between 20 to 30 years. This awareness was demonstrated across all socioeconomic strata but significantly better in upper and upper middle class. However, only 28% (54/195) participants could correctly identify the critical age threshold of 35 years after which it becomes difficult to achieve pregnancy. On enquiry regarding the ovulatory period, it was found that 83% participants failed to correctly identify the mid cycle as the most likely phase to achieve pregnancy. This knowledge was consistently poor among all SES classes. Almost 95% (187/195)

participants associated past intake of combined oral contraceptive pills with infertility. This belief was similarly demonstrated in all classes of participants. 60 to 80 % of participants were not aware of the duration after which to consult a fertility specialist if they have been trying for pregnancy and are unable to achieve the same. Only 28% women were aware of the need of assisted reproduction and donor oocyte at the age of 50 years. On subgroup analysis according to SES, women in the upper SES had better knowledge (37% correctly answered) regarding need of ART and the option of donor oocyte in advanced age than in other categories. Similarly, knowledge regarding surrogacy was also higher among women belonging to upper SES category than in the

lower category (more than 50% in upper SES correctly answered versus 24% in lower SES).

### Discussion

There is a worldwide increase in age at first conception and decline in fertility rate [15]. Infertility is a major public health concern and globally affects 1 in 6 couples, with more prevalence in developing countries [16]. In India, parenthood is considered a true indicator of a happy married life. Like other developing countries, infertility is a taboo topic in India and a lot of social stigma is associated with childlessness [8]. Failure to conceive is not only very depressing for couples but may also affect sexual life and relationship with friends and family. Worldwide studies have shown that people are unaware of biological aspects of conception, have poor

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