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Knowledge and perceptions of infertility among adults in Anekal Taluk Hospital, Karnataka

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Abstract

Background: Fertility is the ability to produce a child. Most couples value parenthood and look forward to it. Infertility is a global phenomenon and is considered a public problem; it does not only affect the couples' lives but also affects their social environment and the healthcare services

Objectives: To assess the knowledge and perceptions of fertility among the adults aged 18-49 years visiting Anekal Taluk general hospital.

Methodology: A hospital based cross-sectional study was done in Anekal Taluk General Hospital. A consecutive sampling technique was used. Participants aged 18-49 years who were aware of the word infertility were included in the study. A total of 218 participants fulfilled the criteria and were included in the study. To assess the knowledge, a nine-item fertility awareness questionnaire was administered by an interviewer. Assessment of the perceptions of fertility was done using a structured, face-validated 15 item questionnaire. Data was analysed using Statistical Package for Social Sciences version 20.

Results: There were 300 participants in the study. The mean age was 31.2±9.1. A total of 218 (72.7%) study participants were aware of infertility. A total of 171 (78.4%) had adequate knowledge of fertility. Most participants had positive perceptions about infertility. Gender, marital status, and socio-economic status were significantly associated with awareness on fertility.

Conclusion: Awareness on fertility is increasing among general population however negative attitude towards infertility and stigma towards infertile females is still present in the communities.

Keywords: Infertility, fertility awareness, misconceptions, reproductive health, fertility, ovulation

Introduction

Childbirth is a major component of human life. Most couples value parenthood and look forward to it ^[1]. Fertility is the ability to produce a child ^[2]. The advanced age of the parents is known to be related to reduced fertility ^[3]. Infertility is a global phenomenon, affecting 13% to 15% of couples worldwide ^[4]. It has been named a major medical and social problem by the World Health Organization ^[5]. Depending upon the availability of the resources for investigation and treatment, the prevalence of infertility varies widely, being less in developed countries and more in developing countries ^[6]. Infertility is also considered a public problem, it not only affects the couples' lives but also the healthcare services and social environment ^[7]. Approximately 20% of reproductive age couples have difficulty conceiving or maintaining an established pregnancy ^[7]. Infertility is associated with social taboos and it's usually the woman is blamed for the childlessness.

The common causes of infertility in males are sperm abnormalities and female factors are ovulation dysfunction and tubal pathology, combined male and female factors and unexplained infertility, smoking, obesity, alcohol consumption, advanced maternal age, and sexually transmitted infections ^[4, 8].

In the city of Bengaluru, 6% of infertility was perceived to be due to tubal factors, 36% told government hospitals would be the best place for the treatment and 37% had a correct knowledge about ovulation ^[9]. In Raichur, 75% of married couples reported that both males and females were responsible for infertility. Half of the couples had knowledge about ovulation and 52% reported that infertility is due to male factors such as reduced sperm count ^[10].

Until recent years in India, there was a trend of early marriage and having a first child when the woman was less than 25 years of age. However, now due to various factors like socioeconomic development and greater interest in education, employment, and financial settlement, there is a delay in parenthood.

Many women are now considering their first pregnancy after 30 years of age ^[11].

We aimed to assess the knowledge and perceptions of fertility among the adults aged 18-49 years visiting Anekal Taluk general hospital.

Methodology

This is a hospital based cross-sectional study done in Anekal Taluk general hospital, Bangalore rural district, Karnataka, India. Anekal is a peri-urban area, and the study hospital is a government Taluk hospital which caters to a population of about 517,575(12). Everyday around 500 patients visit the hospital to utilize the out-patient services. This study was conducted during the two month community medicine internship posting at the hospital. Ethical approval was obtained from the Institutional Ethical Committee, St. John's National Academy of Health Sciences, Bangalore. The IEC study reference number is 80/2020. A written informed consent was obtained from all the participants of the study.

According to the study done by Reeta Mahey *et al.* were 85% of the women were not aware of the ovulatory period ^[11]. Using this, to estimate the sample size with an absolute precision of 5% and 95% confidence level the sample size calculated was 204. A consecutive sampling technique was used. Participants aged 18-49 years who were aware of the word infertility were included in the study and terminally ill patients were excluded. A total of 218 participants fulfilled the criteria and were included in the study. The socio economic status of the participants was assessed using Modified B G Prasad's classification, 2019. To assess the knowledge about fertility awareness, the questionnaire in the study done by Mahey *et al* was used ^[11]. It is a nine-item questionnaire where each correct answer was given 1 mark. The total score ranged from 0-9. A score greater than or equal to 4 was considered as adequate knowledge and less than or equal to 3.9 as inadequate knowledge. To assess the perceptions of infertility, an interviewer schedule, structured, face-validated 15 item questionnaire was used ^[11]. Data was analysed using SPSS version 20. The continuous data were analysed using percentages, mean, standard deviation and z-scores. The results were depicted in tables and graphs. Associations were analysed using Chi-square test. A p-value of <0.05 was considered significant.

Results

There were 300 participants in the study. The socio-demographic details are depicted in table 1. The mean age was 31.2±9.1. A total of 218 (72.7%) study participants were aware of infertility.

Table 2 depicts the knowledge of fertility among the study population. About 69 (31.7%) had a correct knowledge that 14th day of menstrual cycle is a phase where women becomes pregnant. A total of 171 (78.4%) had adequate knowledge of fertility.

Most participants had positive perceptions about infertility (Table 3). However half of the participants perceived infertility as a disease. Most of them were welcoming adoption as a solution for infertility 183 (83.9%). Table 4 shows the association between socio-demographic details and awareness on fertility which was analyzed. Gender, marital status, and socio- economic status were significantly associated with awareness on fertility. Females, higher socio- economic status and married participants had a better

knowledge of fertility. Age was not significantly associated with better knowledge.

Discussion

In our study 218 (72.7%) were aware of infertility. Lack of awareness of the word infertility could be due to young age, illiteracy, inadequate knowledge of reproductive health, and lack of awareness of infertility as a medical condition. Government of India under Adolescence Education Programme, Department of School education and Literacy, Ministry of Human Resource development (MHRD) teaches adolescent school children on Adolescent Reproductive and Sexual Health (ARSH) concerns ^[13]. This existing programme needs to be strengthened and expanded to state government and private schools to ensure universal distribution of knowledge of reproductive health.

The knowledge on fertility was adequate 171 (78.4%) among the study participants in our study. However a study by Reeta Mahey *et al* in New Delhi mentions that the knowledge of infertility is low ^[11]. Better knowledge in our study participants could be due to higher income and educational status of the study population. In our study 68.3% were not aware of ovulatory period. Educational background of the participant, lack of reproductive health knowledge, marital status, exposure to media and gender could have played a role in the awareness of ovulation. Most of the study participants (69.7%) believed that past history of intake of oral contraceptive pill was associated with infertility. In general, there is a misconception that modern contraceptive methods are associated with infertility. This is due to lack of family planning education ^[14].

According to the study done by Ashwini Nayaka *et al.* in Bengaluru, 36% told government hospitals would be the best place for the treatment and 37% had a correct knowledge about ovulation(9) whereas in our 98.2% said hospitals are the best place for the treatment and 31.7% had a correct knowledge about ovulation. Increased knowledge of study subjects in our study could be that the study was conducted in a Taluk hospital setting. Our study findings denote that more people prefer hospital for infertility treatment as compared to religious centers. A study done in Pakistan by Sumera Ali *et al* reported more than 70% of the participants identified irregularity of menses, blocked tubes and genital tract infections as a cause of infertility, 76% of them did not think smoking is a cause of infertility ^[15]. In line with these findings, in our study 67% reported infertility was due to tubal factors.

According to the study done by Padma in Raichur 75% of the respondents reported both males and females were responsible for infertility, 51% knew it was due to lack of ovulation and 52% reported due to male factors like lack of sperm count ^[10]. Similar to these findings, in our study 80% reported that both husband and wife should seek treatment for infertility. In a study done by Shayesta Rahi, it was reported that 74.7% believed that infertility is treatable ^[16]. This and our study findings denote changing social trends towards infertility.

Most of the study participants in our study mentioned that smoking, alcohol, and infection of male genital tract was responsible for infertility among males. Regarding females causes of infertility participants stated abnormal menses, advanced age, overweight and previous use of contraceptives were the causes of female infertility respectively. Substance use as a risk factor for infertility is well known among males ^[17].

The social construct of masculinity often complicates the perceptions about infertility and removes the males from the equation [18]. In our study few study participants justified second marriage in cases of infertility. In some communities of Gambia polygamy is accepted among childless couples [19]. According to the study done by Gagandeep Kaur *et al* in Punjab, 25% of the participants said that a couple should

seek doctor’s advice if pregnancy does not occur even after one year of sexual life [20]. In line with this our study participants (45.9%) mentioned that women less than 35 years should consult a doctor after one year of sexual life. More fertility awareness and education on modern assisted reproductive treatment should be provided to the eligible couples.

Table 1: Socio-demographic details of study participants (n=300)

Variable	Category	Frequency (%)
Gender	Males	100 (33.3%)
	Females	200 (66.7%)
Religion	Hindu	221 (73.7%)
	Muslim	68 (22.7%)
	Christian	11 (3.7%)
Occupation	Employed	182 (60.7%)
	Unemployed	118 (39.3%)
Education	Illiterate	23 (7.7%)
	Primary school	26 (8.7%)
	Middle school	88 (29.3%)
	High school	85 (28.3%)
	Pre-University	40 (13.3%)
	Bachelors	27 (9%)
	Masters	11 (3.7%)
Marital status	Single	64 (21.3%)
	Married	220 (73.3%)
	Separated	4 (1.3%)
Type of family	Widow/er	12 (4%)
	Nuclear	218 (72.7%)
	Joint	43 (14.3%)
	Three generation	38 (12.7%)
Socio-economic status	Extended	1 (0.3%)
	Upper class	50 (16.7%)
	Upper middle class	126 (42%)
	Middle class	90 (30%)
	Lower middle class	27 (9%)
	Lower class	7 (2.3%)

Table 2: Fertility awareness among study participants (n=218)

Variable	Frequency (%)
At what age is there a marked decrease in women’s ability to become pregnant?	122 (56.0%)
At what phase of menstrual cycle you are most likely to become pregnant?	69 (31.7%)
At what age is easier to become pregnant?	203 (93.1%)
Which is the highest infertility risk factor?	144 (48%)
Is past history of OCPs associated with infertility?	152 (69.7%)
When does a woman attempting to become pregnant have to consult a fertility specialist is she is aged less than 35 years?	100 (45.9%)
When does a woman attempting to become pregnant have to consult a fertility specialist is she is aged more than 35 years?	65 (29.8%)
A 50 years-old women desires pregnancy. Which is the most likely option?	34 (15.6%)
What do you mean by surrogacy?	101 (46.3%)

Table 3: Perceptions of infertility among study participants (n=218)

Sl. No	Perceptions on Infertility	Agree (%)	Disagree (%)
1	Do you see infertility as a disease	110 (50.5%)	108 (49.5%)
2	Do you believe it is treatable?	208 (95.4%)	10 (4.6%)
3	If a female cannot have a baby, do you think this is grounds for divorce?	31 (14.2%)	187 (85.8%)
4	If a female cannot have a baby, do you think this is a valid reason for a man to have second marriage?	27 (12.4%)	191 (87.6%)
5	If a male cannot have a baby, do you think this is grounds for divorce?	26 (11.9%)	192 (88.1%)
6	If a male cannot have a baby, do you think this is a valid reason for a man to have second marriage?	15 (6.9%)	203 (93.1%)
7	If a couple cannot have a child, do you think they should adopt?	183 (83.9%)	25 (16.1%)
8	Do you think it is socially acceptable to have a test-tube baby?	102 (46.8%)	116 (53.2%)
9	Do you think fertility drugs are socially acceptable?	167 (76.6%)	51 (23.4%)
10	Do you think if black-magic is responsible for infertility?	15 (6.9%)	203 (93.1%)
11	Do you think that if a couple conceives once they might have problems conceiving again?	54 (24.8%)	164 (75.2%)
12	Supernatural powers	34 (15.6%)	184 (84.4%)

Table 4: Association between socio-demographic details and Awareness on fertility (n=218)

Variables		Awareness on Fertility		P value
		Adequate	Inadequate	
Gender	Males	39 (65%)	21 (35%)	0.003*
	Females	132 (83.5%)	26 (16.5%)	
Religion	Hindu	142 (81.1%)	33 (18.9%)	0.111**
	Muslim	25 (65.8%)	13 (34.2%)	
	Christian	4 (80%)	1 (20%)	
Employment status	Employed	106 (76.8%)	32 (23.2%)	0.497*
	Unemployed	65 (81.2%)	15 (18.8%)	
Education status	Illiterate	8 (57.1%)	6 (42.9%)	0.222**
	Primary school	11 (84.6%)	2 (15.4%)	
	Middle school	41 (78.8%)	11 (21.2%)	
	High school	58 (79.5%)	15 (20.5%)	
	Pre-University	22 (71%)	9 (29%)	
Marital status	Single	20 (64.5%)	11 (35.5%)	0.000**
	Currently married	144 (84.2%)	27 (15.8%)	
	Separated/ Widow/er	7 (43.8%)	9 (56.2%)	
Type of family	Nuclear	131 (79.9%)	33 (20.1%)	0.679**
	Joint	22 (73.3%)	8 (26.7%)	
	Three Generation	17 (73.9%)	6 (26.1%)	
	Extended family	1 (100%)	0 (0%)	
Socio Economic status	Upper class	43 (95.6%)	2 (4.4%)	0.001**
	Upper middle class	69 (75%)	23 (25%)	
	Middle class	40 (71.4%)	16 (28.6%)	
	Lower middle class	19 (82.6%)	4 (17.4%)	
	Lower class	0 (0%)	2 (100%)	

*-Chi square test **-Fisher's Exact test

Conclusion

Awareness on fertility is increasing among general population, however negative attitude towards infertility and stigma towards infertile females is present in the communities.

Recommendations

Strengthening of the ARSH programme should be done nation-wide. Maintenance of eligible couple registry and health education on fertility awareness and modern assisted reproductive treatment options should be provided by grass root level workers such as Accredited Social Health Activists, Axillary Nurse Midwives and Anganwadi Workers.

Author's Contribution

Dr. Deepika N: Concept, methodology and study design, review of literature, data interpretation, statistical analysis

Dr. Abhishek G: Patient recruitment, Data collection, statistical analysis

Dr. Dev Anand Galgali: Patient recruitment, Data collection, statistical analysis
Dr. Pretesh R Kiran: Methodology, data interpretation, statistical analysis

Dr. Nancy Angeline: Methodology, data interpretation, statistical analysis

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References

1. Afshani SA, Abdoli AM, Hashempour M,

- Baghbeheshti M, Zolfaghari M. The attitudes of infertile couples towards assisted reproductive techniques in Yazd, Iran: A cross sectional study in 2014. *Int J Reprod Biomed (Yazd, Iran)* [Internet]. 2016 Dec [cited 2019 Dec 14];14(12):761-8. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/28066835>
2. Fertility & pregnancy | Jean Hailes [Internet]. [cited 2020 Feb 4]. Available from: <https://jeanhailes.org.au/health-a-z/fertility-pregnancy>
3. Delayed childbearing: effects on fertility and the outcome of pregnancy. - PubMed - NCBI [Internet]. [cited 2020 Feb 4]. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/21228557>
4. Kamel RM. Management of the infertile couple: An evidence-based protocol. *Reprod Biol Endocrinol* [Internet]. 2010 Mar 6 [cited 2019 Dec 8];8. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2844387/>
5. 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* [Internet]. 2007 [cited 2019 Dec 8];22(6):1506-12. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/17376819>
6. Cates W, Farley TM, Rowe PJ. Worldwide patterns of infertility: is Africa different? *Lancet (London, England)* [Internet]. 1985 Sep 14 [cited 2019 Dec 8];2(8455):596-8. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/2863605>
7. Whitman-Elia GF, Baxley EG. A primary care approach to the infertile couple [Internet]. Vol. 14, *Journal of the American Board of Family Practice*. 2001 [cited 2019 Dec 8]. p. 33-45. Available from: https://www.researchgate.net/publication/12123945_A_

- Primary_Care_Approach_to_the_Infertile_Couple
8. Namujju J. Knowledge, attitudes and practices towards infertility among adults 18-40 years in Kalisizo, Rakai District in Uganda [Internet]. [cited 2019 Dec 14]. Available from: <http://makir.mak.ac.ug/handle/10570/1705>
 9. UAN, GRK, NVK, MV. Dissecting the rural Indian women's knowledge, attitude and practice about infertility | U. | International Journal of Reproduction, Contraception, Obstetrics and Gynecology [Internet]. [cited 2019 Dec 14]. Available from: <https://www.ijrcog.org/index.php/ijrcog/article/view/3256>
 10. Padma B, Gandhi R. A Study to Assess the Knowledge of Infertile Couples Regarding Infertility in Selected Areas at Raichur [Internet]. 2005 [cited 2019 Dec 8]. Available from: <http://52.172.27.147:8080/jspui/bitstream/123456789/3043/1/Padma.pdf>
 11. Mahey R, Gupta M, Kandpal S, Malhotra N, Vanamail P, Singh N, *et al.* Fertility awareness and knowledge among Indian women attending an infertility clinic: a cross-sectional study. BMC Womens Health [Internet]. 2018 Dec 29 [cited 2019 Dec 8];18(1):177. Available from: <https://bmcmwomenshealth.biomedcentral.com/articles/10.1186/s12905-018-0669-y>
 12. Villages and Towns in Anekal Taluka of Bangalore, Karnataka - Census India [Internet]. [cited 2020 Oct 7]. Available from: <https://www.censusindia.co.in/villagestowns/anekal-taluka-bangalore-karnataka-5545>
 13. Secondary Education | Government of India, Ministry of Human Resource Development [Internet]. [cited 2020 Jun 10]. Available from: https://mhrd.gov.in/adolescence_programme
 14. Harzif AK, Santawi VPA, Wijaya S. Discrepancy in perception of infertility and attitude towards treatment options: Indonesian urban and rural area. Reprod Health [Internet]. 2019 Aug 19 [cited 2020 Jun 10];16(1):126. Available from: <https://reproductive-health-journal.biomedcentral.com/articles/10.1186/s12978-019-0792-8>
 15. Ali S, Sophie R, Imam AM, Khan FI, Ali SF, Shaikh A, *et al.* Knowledge, perceptions and myths regarding infertility among selected adult population in Pakistan: a cross-sectional study. - PubMed - NCBI [Internet]. [cited 2019 Dec 14]. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/21970548>
 16. (PDF) Perception Among Married Couple Towards Infertility, Causes And Treatments In Kashmir Valley [Internet]. [cited 2019 Dec 8]. Available from: https://www.researchgate.net/publication/329170183_PERCEPTION_among_married_couple_towards_infertility_causes_and_treatments_in_kashmir_valley
 17. Men's knowledge of their own fertility: a population-based survey examining the awareness of factors that are associated with male infertility [Internet]. [cited 2020 Jun 10]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5193328/>
 18. Parrott FR. At the hospital i learnt the truth: Diagnosing male infertility in rural Malawi. Anthropol Med. 2014 May 4;21(2):174-88.
 19. Dierickx S, Coene G, Jarju B, Longman C. Women with infertility complying with and resisting polygyny: An explorative qualitative study in urban Gambia. Reprod Health. 2019 Jul 15;16(1).
 20. Amritsar S, Kaur G, Saini P, Sharma K. A Descriptive study to assess the knowledge on infertility among women attending gynae opd, sgrd hospital [Internet]. [cited 2020 Feb 7]. Available from: <https://www.journalijdr.com/sites/default/files/issue-pdf/10156.pdf>

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