



Obstetrics & Gynaecology

DEPRESSION AND ANXIETY IN WOMEN OF REPRODUCTIVE AGE WITH DELAYED CONCEPTION IN ANDRA PRADESH, INDIA-A HOSPITAL BASED OBSERVATIONAL STUDY

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ABSTRACT **Background:** According to World Health Organization 1 in 6 people or 17.5% of population in the reproductive age group experience infertility. Anxiety and depression rank in the top ten worldwide causes of years lived with a disability Particularly in social or cultural contexts where having a child is highly valued, infertility or delayed conception can have a substantial negative influence on mental health and wellbeing⁴. Infertility can have a number of negative effects on mental health in both men and women. **Aims:** Study to evaluate the prevalence of anxiety, and depression as well as the risk factors linked to these conditions in women of reproductive age who had delayed conception. **Methodology:** The current study is an observational cross sectional study. The current study was conducted in a patients of Outpatient department of private infertility clinic in Guntur, Andhra Pradesh, India. The study was conducted for a period of 3 months. **Results:** In the current study the mean anxiety score was 8.12 ± 5.74 and mean depression score was 5.49 ± 4.50 . A total of 53% of women had anxiety and 34% of the women experienced depression. Out of 53 women, who had anxiety, 16.9% i.e 9 participants had mild anxiety, 60.3% i.e. 32 participants had moderate anxiety and 22.8% i.e 22 participants had severe anxiety. Out of 34 women, who had depression, 64.7% i.e 22 participants had mild depression, 23.6% i.e. 8 participants had moderate depression and 11.7 % i.e. 4 participants had severe depression.

KEYWORDS : Infertility, Anxiety, Depression, Hospital Anxiety and Depression Scale.**INTRODUCTION**

Infertility is a major health concern among reproductive age group. According to the World Health Organization (WHO), infertility is defined as failure of couple to conceive after 12 months or more with regular unprotected intercourse without use of any contraceptive methods. According to World Health Organization 1 in 6 people or 17.5% of population in the reproductive age group experience infertility. The lifetime prevalence in high income countries and low to middle income countries are 17.8% and 16.5% respectively. Nearly 48 million to 186 million people are infertile globally.¹ Millions of people are impacted by the complicated and multidimensional problem of delayed or difficult conception or reproductive goals Even though infertility issues can persist for different lengths of time, the inability to conceive a clinical pregnancy. Infertility is defined as having regular, unprotected sex for 12 months or longer². Worldwide, infertility is a serious but frequently unseen public health issue. An estimated 48.5 million couples experience infertility. Infertility affects one in six individuals of reproductive age at some point in their lives. Furthermore, the lifetime prevalence of infertility is relatively constant worldwide, ranging from 17.8% in high-income countries to 16.5% in low- and middle-income countries.³

Anxiety and depression rank in the top ten worldwide causes of years lived with a disability Particularly in social or cultural contexts where having a child is highly valued, infertility or delayed conception can have a substantial negative influence on mental health and wellbeing⁴. Infertility can have a number of negative effects on mental health in both men and women. First of all, being diagnosed with infertility can cause emotions such as shame, guilt, and rejection anxiety. Second, both men and women who are infertile experience social humiliation and stigmatization, which can exacerbate mental health.⁵ A number of variables could contribute to the detrimental effects of infertility on women's mental health. For example, women are more likely to experience psychological distress because they face harsher social consequences, even though male factors contribute to infertility difficulties. In many patriarchal societies, infertile women are stigmatized due to sociocultural beliefs that view infertility as exclusively the fault of the woman.⁶ In addition, compared to women who become pregnant, those who struggle to conceive are more likely to encounter intimate partner violence and other relationship issues.⁷ Infertility is common in India, where reports range from 12 to 14%. However, little attention is paid to the mental health of infertile women. This knowledge gap and the necessity of investigating the prevalence, risk factors, and aftereffects of psychological distress, anxiety, and depression in Indian populations with infertility have been brought to light by a number of researchers.⁸ It is estimated that 25-60 % of infertile couple suffer with anxiety and depression. Anxiety and depression are more prevalent in infertile women than men. Studies

over mental health problems in infertile couple have reported 23 to 76 % women suffer with anxiety and 11 to 56% women suffer with depression¹

Psychological distress is a more general term that includes a variety of emotional disturbances, whereas anxiety and depression are specific mental health disorders with unique diagnostic criteria. Although psychological distress can include stress, worry, and other types of mental discomfort that might not always fall under a particular psychiatric category, anxiety and depression are frequently the main causes of psychological distress.⁹ In order to fill this knowledge gap, we carried out a cross-sectional study to evaluate the prevalence of anxiety, and depression as well as the risk factors linked to these conditions in women of reproductive age who had delayed conception.

MATERIALS AND METHODOLOGY

Study Design: The current study is an observational cross sectional study

Aim to assess the prevalence of psychological distress, anxiety, and depression as well as the risk factors linked to these conditions in women of reproductive age who had delayed conception.

The current study was conducted in patients of Outpatient department of private infertility clinic in Guntur, Andhra Pradesh, India. The study was conducted for a period of 3 months from December 2024 to February 2025.

Sample Size

According to the study by Kamboj N et al. prevalence of depression in infertile women was 76.8% which included mild moderate and severe depression. using open epi 2.3.1 software, with 90% confidence level and frequency as 76.8%, A total sample size of 100 was calculated.¹⁰ A simple random sampling technique was used for collection of the samples. Infertile women who belonged to the age group of 18 to 40 and women who were willing to participate in study were included in the study. Women who were not willing to participate, those with systemic with illness, women with previous psychiatric conditions were excluded from the study.

Tools of Assessment

The basic socio demographic details was collected using a semi structured questionnaire. To assess the depression and anxiety Hospital Anxiety and Depression Scale (HADS) was used. It is validated self-administered instrument that has 14 items. This scale is intended to assess depression (HADS-D) as well as anxiety (HADS-A). A 4-point Likert scale, ranging from 0 to 3, is used to score each item. Higher scores indicate higher levels of anxiety and depression. The total HADS-A and HADS-D scores can range from 0 to 21. Scoring was

done as 0 to 7 – normal, 8 to 10 – mild, 11 to 14 – moderate 15 to 21 – severe¹¹

Data Collection

The women were provided with detailed information about the study and its aims. Informed consent was obtained from the women who were willing to participate in the study after explaining them about the study. The women were interviewed face to face in the comfortable environment, maintaining confidentiality at all times. The interview was conducted in the language of the preference of the participant. The data was collected using a semi structured questionnaire using standard protocols, later this data was entered in the electronic format

Statistical Analysis

The data was entered in MS excel 2016 and analysis was done using SPSS 21. Results were presented in form of proportions and percentages and represented in form of tables. Chi square test was used to assess associations and Unpaired t test was used to compare the means and standard deviations. P Value of less than 0.05 was considered statistically significant

RESULTS

Table No 1 Showing The Socio Demographic Details Of The Study Participants

Particulars		N	%
Age in years	18-25	0	0
	26-30	26	26%
	31-35	57	57%
	35-40	17	17%
	TOTAL	100	100
		N	%
Period of infertility in years	1-3	11	11%
	3-6	29	29%
	6-10	37	37%
	More than 10 years	23	23%
	TOTAL	100	100
	MEAN	STD DEV	
Mean anxiety score	8.12	5.74	
	MEAN	STD DEV	
Mean depression score	5.49	4.50	

Table No 2 Showing The Prevalence And Grade Of Anxiety And Depression In The Study Participants

	PRESENT	ABSENT	TOTAL
ANXIETY	53	47	100
DEPRESSION	34	66	100
GRADE OF ANXIETY	MILD 9(16.9%)	MODERATE 32(60.3%)	SEVERE 12(22.8%)
GRADE OF DEPRESSION	MILD 22(64.7%)	MODERATE 8(23.6%)	SEVERE 4(11.7%)
			Total 47(100%)
			34(100%)

Table No 3 Showing The Anxiety And Depression In The Study Participants

Particulars	Age in years	Anxiety score Mean ±Std Dev	F statistic	P value
AGE GROUP	18-25	0	0.877	0.4211
	26-30	6.12±5.85		
	31-35	8.30±5.53		
	35-40	8.18±6.15		
	Duration of infertility in years	Anxiety score Mean ±Std Dev	ANOVA	
DURATION OF INFERTILITY	1-3	3.82±3.34	3.21	0.02*
	3-6	7.28±5.55		
	6-9	9.45±5.93		
	9-12	8.70±5.98		
Particulars	Age in years	Depression score Mean ±Std Dev	ANOVA	P value
AGE GROUP	18-25	0	3.11	0.04*
	26-30	4.31±3.94		
	31-35	5.44±4.50		
	35-40	7.47±4.87		
	Duration of infertility in years	Depression score Mean ±Std Dev	ANOVA	

DURATION OF INFERTILITY	1-3	3.45±2.95	2.84	0.04*
	3-6	5.21±4.27		
	6-9	7.50±5.39		
	9-12	5.61±4.11		

ANOVA test was used to compare the means across the groups. p value <0.05 was considered as statistically significant

Table No 4 Showing The Correlation Of Age And Period Of Fertility With Anxiety And Depression Score

VARIABLES	ANXIETY SCORE		DEPRESSION SCORE	
	R value	P value	R value	P value
Age	0.746	<0.001*	0.10	0.332
Years of infertility	0.022	0.082	0.073	0.448

Pearson's correlation was used to assess the correlation, p value less than 0.05 was considered as statistically significant

RESULTS

In the current study majority of the women belonged to the age group of 31-35 years which was 57% followed by 26-30 years which was 26% followed by 35-40 years which was 17%, none of the participants belonged to 18-25 years age group. In the current study, majority of the women had infertility since 6-10 years i.e. 37% of them, followed by 3-6 years (29%), followed by more than 10 years which was 23%, least was 11% which was 1 to 3 years of infertility.

The mean anxiety score was 8.12±5.74 and mean depression score was 5.49±4.50 in our study. A total of 53% of women had anxiety and 34% of the women experienced depression. Out of 53 women, who had anxiety, 16.9% i.e. 9 participants had mild anxiety, 60.3% i.e. 32 participants had moderate anxiety and 22.8% i.e. 12 participants had severe anxiety. Out of 34 women, who had depression, 64.7% i.e. 22 participants had mild depression, 23.6% i.e. 8 participants had moderate depression and 11.7 % i.e. 4 participants had severe depression.

When we compared the mean anxiety score and age group, the mean anxiety score of 8.30±5.53 was highest in 31-35 years, followed by 8.18±6.15 in 35-40 years, followed by 6.12±5.85 in 26-30 years age group, however this difference was not statistically significant. When we compared the mean anxiety score and duration of infertility group, the mean anxiety score of 9.45±5.93 was highest in 6-9 years of infertility, followed by 8.70±5.98 in 9-12 years of infertility, followed by 7.28±5.55 in 3-6 years if infertility, least score was seen in women with 1-3 years of infertility which was 3.82±3.34. This difference in mean score was statistically significant with Anova of 3.21 and p value of 0.02.

When we compared the mean depression score and age group, the mean depression score of 7.47±4.87 was highest in 35-40 years, followed by 5.44±4.50 in 31-35 years, followed by 4.31±3.94 in 26-30 years age group. This difference in mean score was statistically significant with Anova of 3.11 and p value of 0.04. When we compared the mean depression score and duration of infertility group, the mean depression score of 7.50±5.39 was highest in 6-9 years of infertility, followed by 5.61±4.11 in 9-12 years of infertility, and followed by 5.21±4.27 in 3-6 years if infertility, least score was seen in women with 1-3 years of infertility which was 3.45±2.95. This difference in mean score was statistically significant with Anova of 2.84 and p value of 0.04.

Pearson's correlation was used to assess the age and infertility with anxiety and depression score. the age of the participant was positively correlated with anxiety score, this correlation was statistically significant with r value of 0.746 and p value of <0.001. The years of infertility and anxiety score, age and depression score and years of infertility and depression score were all positively co related, however the correlation was not statistically significant

DISCUSSION

According to the National Mental Health Survey of India, which used a uniform methodology to gather data from multiple sites through a nationwide household survey, 5.8% of women of all ages had common mental disorders, such as anxiety and depression¹². However, numerous studies comparing the mental health outcomes of infertile and fertile women conducted both internationally and in India have consistently shown that infertile women experience a noticeably higher burden of psychological distress. According to one study, the

mean depression score of infertile women was significantly higher than that of fertile women on the Beck Depression Inventory (11.84), with 15.7% of infertile women reporting moderate depression, compared to none in the fertile group¹³. In our study we found that 23.6% of women had moderate depression which was more. Our study's findings were in lines with previous studies⁶⁻⁸

In a study by Domar A D et al Infertile women were twice as likely to have depression as controls, according to another study, and those who had been infertile for two to three years had noticeably higher depression scores than those who had been infertile for shorter or longer periods of time¹⁴. The higher prevalence of distress, anxiety, and depression in our study population further supports the comparisons' emphasis on the psychological effects of infertility. In another study by Pahtak B G et al¹⁵ the authors found that women with delayed conception had high rates of psychological distress (44.3%), anxiety (16.07%), and depression (20%)¹⁵, this was in agreement with our study.

Khademi A et al¹⁶ compared multiple studies, which showed similar and consistent results that were in agreement to findings from studies conducted in low- and middle-income countries¹⁶. Our study also had similar findings. In another study by Abdulla M A et al¹⁷ it was found that that among women aged 18–23, 65 (19.1%) had no depression, 78 (22.9%) experienced mild depression, and 56 (16.5%) had moderate depression. In the age group of 24–29, 48 (14.1%) women had moderately severe depression. Among women aged 42–49, 59 (17.4%) had no depression, and 34 (10%) were classified as having severe depression. We also had similar findings in our study.¹⁷

CONCLUSION AND RECOMMENDATION

This study reveals high levels of anxiety, and depression and highlights the substantial mental health burden experienced by women with delayed conception.

It takes a multifaceted strategy that incorporates psychosocial support into infertility prevention, diagnosis, and treatment to effectively address these mental health issues. Evidence-based practices, like routine mental health evaluations for women receiving infertility treatment and early psychological distress screening can successfully identify individuals who require assistance which should be provided to such women.

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