

## Original Research Article

# A study to screen infertile couples for psychological problems by using the perceived stress scale, brief COPE scale and hospital anxiety and depression scale

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### ABSTRACT

**Background:** Infertility refers to the biological inability of a couple to contribute towards conception, or the state of a woman, who is unable to carry a pregnancy to full term. Though infertility is not only a disease per se it embraces a wide spectrum, but its treatment also affects all aspects of people's lives. Aim of the study was to screen infertile couples for psychological problems, and to identify various psychological problems and factors associated with these problems.

**Methods:** It was a cross-sectional study with total of 270 consecutive couples (patients) either of them diagnosed with infertility. All the patients who were found to have anxiety and depression score above seven were then interviewed by the psychiatrist for anxiety and depression.

**Results:** Mean age of the males and females was 32.2 years and 29.7 years, respectively. Duration of marriage was less than five years in 37% couples while it was more than ten years in 19.6% couples. The major cause of infertility was identified in about two-thirds of the cases (64.1%). Prevalence of anxiety was observed in 49.6% females and 45.6% of males. Prevalence of depression was significantly higher among females (41.9%) as compared to males (37%).

**Conclusions:** The present study has endeavored to draw attention to the interrelation of anxiety and depression among infertile couples. Apart from searching for the gynecological causes of infertility; psychological morbidity should be considered as a serious concern affecting these women.

**Keywords:** Perceived stress scale, Brief COPE scale, Hospital anxiety, Depression scale

### INTRODUCTION

Infertility primarily refers to the biological inability of a couple to contribute towards conception within one year of married life. It may also refer to the state of a woman, who is unable to carry a pregnancy to full term or to the inability of a couple to achieve pregnancy after at least one year of trying to do so without using any means of birth control.<sup>1</sup>

In recent metanalysis, infertility affects 72.4 million populaces worldwide and has been named as a foremost medical and social problem by the World Health Organization. Infertility rates vary among different countries with a wide range from less than 5% to over 30%.<sup>2</sup> WHO has calculated that over 10% of womenfolk are inflicted, women who have tried fruitlessly, and have remained in a stable relationship for five years or more. Estimates in women using a two-year time edge, result in prevalence values 2.5 times larger. The overall burden of subfertility and infertility is significant, likely

underestimated, and it had not displayed any decrease over the last 20 years.<sup>3</sup>

Etiology of infertility varies from region to region and ethnicity from one population to another and even from one locality to another within the same group of population.<sup>4</sup> For a large part, involuntary infertility is related to the conditions that are preventable in principle such as sexually transmitted diseases, infections of reproductive organs and parasitic diseases, health care practices which lead to iatrogenic pathology, exposure to toxic substances either in the diet or environment and complications suffered during the post-partum or post-abortion period, particularly in case of an unsafely induced abortion and male factor of infertility.<sup>5</sup>

Though infertility is not only a disease per se it embraces a wide spectrum, but its treatment also affects all aspects of people's lives, affecting psychological burden and emotional turbulence leading to frustration, depression, unrest, anxiety, hopelessness, guilt, and a feeling of worthlessness in life.<sup>6</sup> The overall prevalence of psychological problems associated with infertile is estimated to be 20-60%, which is attributed to a complexity of factors like gender, root cause, duration of infertility, treatment method, cost, and outcome in a viable pregnancy.<sup>7</sup> Depression is a common reaction to this problem. It is the response to the excessive losses and prolonged stress created by the infertility process. Infertile couples may have feelings of failure, loss, disappointment, and betrayal.<sup>8</sup>

### Aim

Aim of the study was to screen infertile couples for psychological problems by using the perceived stress scale, brief COPE scale and hospital anxiety and depression scale, to identify various psychological problems and factors associated with these problems.

### METHODS

It was a cross-sectional study carried out in a single center, Nashik between January 2018 to December 2019. Total of 270 consecutive couples (patients) either of them diagnosed with infertility and undergoing treatment for infertility at ART center was included in the study. The patients were assessed for prevalence and severity of anxiety and depression using hospital anxiety and depression scale (HADS). Their resilience and coping mechanism were assessed by hardiness-12 scale and brief COPE questionnaire, respectively.

### Inclusion criteria

All the patients who were found to have anxiety and depression score above seven were then interviewed by a psychiatrist for anxiety and depression; ICD-10 criteria for research then confirmed the diagnosis. After diagnosis, patients were given appropriate therapy.

Ethical approval was obtained from the committee. All the analysis was done in SPSS-27. T test and chi square test was performed at 95% significance level.

### RESULTS

Mean age of the males and females of the study was 32.2 years and 29.7 years, respectively. Majority of the couples (76.3%) belonged to 25-35 years age group.

**Table 1: Age distribution according to gender.**

Age group (year)	Female (%)	Male (%)
20-24	26 (9.6)	10 (3.7)
25-29	124 (45.9)	62 (23.0)
30-34	101 (37.4)	125 (46.3)
35-39	19 (7.0)	60 (22.2)
40-44	0 (0.0)	13 (4.8)
<b>Total</b>	270 (100)	270 (100)

**Table 2: Distribution of couples based on geographical location.**

Native area	No. of patients	Percentage (%)
Urban	36	13.3
Rural	209	77.4
Semi urban	25	9.3
<b>Total</b>	270	100

Most of the couples were from a rural background (77.4%).

**Figure 3: Distribution of patients according to the Duration of marriage.**

Duration of marriage (year)	No. of patients	Percentage (%)
<5	100	37.0
6-10	117	43.3
11-15	51	18.9
>15	2	0.7
<b>Total</b>	270	100

Duration of marriage was less than five years in 37% couples while it was more than ten years in 19.6% couples.

**Table 4: Distribution of patients according to the support of the spouse.**

Support of spouse	No. of patients	%
Yes	270	100.0
No	0	0.0

All the couples visiting the ART center had spouse support.

A total of 15.9% of couples had conceived previously.

**Table 5: Distribution of patients according to a prior conception.**

Prior conception	No. of patients	%
Yes	43	15.9
No	227	84.1
<b>Total</b>	<b>270</b>	<b>100</b>

**Table 6: Distribution of patients according to the cause of infertility.**

Cause of infertility	No. of patients	%
Male	29	10.7
Female	129	47.8
Unknown	97	35.9
Both	15	5.6
<b>Total</b>	<b>270</b>	<b>100</b>

On investigations, cause of infertility was identified in about two-third of the cases (64.1%). Female factors were responsible for 47.8% cases while malefactors were responsible for 10.7% cases.

**Table 7: History of ART.**

History of ART	No. of patients	%
Yes	132	48.9
No	138	51.1

History of prior ART was given by 48.9% distribution of couples according to history of ART cases.

**Table 8: Distribution of patients according to HADS anxiety score.**

HADS anxiety score	Female (%)	Male (%)	P
Absent	27 (10.0)	24 (8.9)	<0.05
Doubtful	109 (40.4)	123 (45.6)	
Present	134 (49.6)	123 (45.6)	
<b>Total</b>	<b>270 (100)</b>	<b>270 (100)</b>	

Prevalence of anxiety was observed in 49.6% females and 45.6% of males. The difference was statistically significant.

**Table 9: Distribution of patients according to HADS anxiety score.**

HADS depression score	Female (%)	Male (%)	P
Absent	30 (11.1)	68 (25.2)	<0.05
Doubtful	127 (47)	102 (37.8)	
Present	113 (41.9)	100 (37)	
<b>Total</b>	<b>270 (100)</b>	<b>100</b>	

Prevalence of depression was significantly higher among females (41.9%) as compared to males (37%). The difference was statistically significant.

**Table 10: Mean comparison of COPE subscales among males and females.**

COPE	Female	Male	P		
Self-distraction	5.93	1.74	5.78	1.78	0.32
Active coping	6.50	1.32	6.47	1.38	0.82
Denial	4.13	1.3	3.84	1.98	0.075
Substance use	2.50	1.08	2.59	1.33	0.375
Emotional support	5.68	1.57	5.69	1.21	0.93
Behavioral disengagement	5.26	1.75	5.24	1.74	0.94
Venting	4.74	1.30	4.66	1.40	0.54
Instrumental support	5.29	1.78	4.86	1.75	<0.01
Positive reframing	6.32	1.61	6.38	1.32	0.661
Self-blame	3.57	1.54	3.47	1.52	0.432
Planning	5.65	1.52	5.61	1.64	0.765
Humour	3.49	1.41	3.43	1.58	0.688
Acceptance	5.87	1.33	5.53	1.64	<0.01
Religion	6.18	1.63	5.81	1.82	0.012

As per COPE scale, instrumental support and acceptance towards infertility were significantly more in females as compared to males ( $p < 0.01$ ).

**Table 11: Mean comparison of perceived stress scale score among males and female.**

PSS	Female	Male	P		
PSS 1	2.28	0.96	1.81	0.95	<0.01
PSS 2	1.97	0.97	1.81	0.96	0.045
PSS 3	2.50	1.06	2.15	1.05	<0.01
PSS 4	2.81	0.79	3.00	0.75	<0.01
PSS 5	1.93	1.33	2.23	1.14	<0.01
PSS 6	1.98	4.30	1.43	1.06	0.043
PSS 7	2.32	1.18	2.19	0.96	0.162
PSS 8	2.42	1.16	2.32	1.02	0.29
PSS 9	1.87	1.08	1.75	1.16	0.22
PSS 10	2.35	1.19	1.89	1.10	<0.01
<b>PSS total</b>	<b>22.43</b>	<b>5.08</b>	<b>20.57</b>	<b>3.43</b>	<b>&lt;0.01</b>

Stress, as measured by the perceived stress scale, was significantly more among females as compared to males.

## DISCUSSION

In the present study, the mean age of the males and females of the study was 32.2 years and 29.7 years, respectively. The majority of the couples (76.3%) belonged to 25-35 years age group. Sujindra et al, in their similar study, reported that the mean age of the men was  $35.2 \pm 3.5$  years, while that of the women was  $28.4 \pm 2.8$  years.<sup>9</sup> The burden of male infertility was diagnosed in 28 couples and female infertility in 47 couples, both male and female infertility in 12 couples, and the remaining 71

couples were not diagnosed, or they might have unexplained infertility.

Most of the couples in the current study were from rural areas (77.4%). The duration of marriage was less than five years in 37% couples while it was more than ten years in 19.6% couples. Furthermore, on investigations, the cause of infertility was identified in about two-thirds of the cases (64.1%), 35.9% of the cases had unknown infertility. Female infertility was responsible for 47.8% cases while male infertility was responsible for 10.7% cases. The male cause of infertility was much lesser than 50% as estimated by a recent meta-analysis by Kumar et al or the golden rule of 1/3.<sup>10</sup> In this study, female infertility, on the other hand, was higher than generally held golden rule of 1/3 but was closer to estimate by Khan et al.<sup>11</sup>

History of prior ART was given by 48.9% cases. ART was sought within three years of marriage in 47% of the cases while 5.9% of cases reported to ART after ten years of marriage. Meta-analyses of Indian epidemiological studies of psychiatric disorders have reported a prevalence of anxiety ranging from 16.5 to 20.7% and for depression is 7.9 to 15.1%.<sup>12,13</sup> Moreover, in the current study, it was found that the prevalence of anxiety was seen in 49.6% females and 45.6% of males and this difference was statistically significant. The Mean anxiety and depression scores were also higher among females as compared to males; the difference was, however, not statistically significant. Stress, as measured by the perceived stress scale, was significantly more among females as compared to males. Makar et al reported a total of 56.4% (79/140) of the females were found to be suffering from depression, and 68.9% (96/140) of the females were found to be suffering from anxiety and depression both, which is higher with regard to the present study.<sup>14</sup> A recent study by Patel et al which revealed more women than men had much more stress and more difficulty in coping with the stress of infertility treatment.<sup>15</sup>

The most commonly adopted coping strategies in the present study were self-distraction, venting, emotional support and religious involvement and these coping strategies were correlating significantly with increasing age, higher education and better income availability. However, the statistically significant gender difference was evident in the use of Instrumental support which was more taken by females and acceptance by males as compared to females. Donkor et al the primary method of coping used by women was by keeping information about their infertility to themselves and also women tried to avoid situations that reminded them of infertility.<sup>16</sup>

Limitations of the study are that as it is cross-sectional study, further course of patients' progression were not studied. Secondly, the study relied primarily on self-report data which may be biased. Thirdly, association

with fluctuations in stress levels during a reproductive cycle was not studied.

## CONCLUSION

The present study has endeavored to draw attention to the interrelation of anxiety and depression among infertile couples, undergoing infertility treatment, both of which we have found to be of clinical significance. The psychological burden of anxiety in females was 49.6%, and in males, it was 45.6%. Females with Significant depression were found to be 41.9% as compared to male counterpart 37%. The stress level was significantly more in females as compared to males. Apart from searching for the gynecological causes of infertility; psychological morbidity should be considered as a serious concern affecting these women. Moreover, there are several risk factors that may increase the likelihood of psychological morbidity. Further, it was recommended to screen prospective patients coming in for the treatment of infertility; especially if they are found to have the presence of any of the above risk factors strongly associated with the prevalence of anxiety and/ or depression in these couples.

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## REFERENCES

1. Lash MM, Yaghamee A, Strohsnitter W, Lalwani s. Association between secondary infertility and fallopian tube obstruction on hysterosalpingography. *J Reprod Med.* 2008;5:677-80.
2. Vayena E, Rowe PJ, Griffin PD. Current Practices and Controversies in Assisted Reproduction. Geneva: World Health Organization. 2002;15-21.
3. Singh P, Shukla U. Inability to conceive and treatment seeking behavior in Uttar Pradesh state in India. *Canadian Studies Population.* 2015;15:1-12.
4. Lechner L, Bolman C, van Dalen A. Definite involuntary childlessness: Associations between coping, social support and psychological distress. *Hum Reprod.* 2007;22:288-94.
5. Singh P, Shukla U. Inability to conceive and treatment seeking behavior in Uttar Pradesh state in India. *Canadian Studies Population.* 2015;15:1-12.

6. El Kissi Y, Amamou B, Hidar S, Idrissi A, Khairi H, Hadj Ali BB. Quality of life of infertile Tunisian Couples and difference According to Gender. *Int J Gynaecol Obstetr.* 2014;125(2):134-7.
7. Verhaak CO, Vaillant GE. Is the U-curve of marital satisfaction an illusion? A 40-year study of marriage. *J Marriage Family.* 2001;55:230-9.
8. Boivin J. A review of psychosocial interventions in infertility. *Social Sci Med.* 2003;57:2325-41.
9. Sujindra E, Bupathy A, Praveena R, Sivasankari T. Psychological evaluation of infertile couples: Results of a questionnaire survey. *Fertility Sci Res.* 2015;2(1):34.
10. Kumar N, Singh AK. Trends of male factor infertility, an important cause of infertility: A review of literature. *J Human Reprod Sci.* 2015;8(4):191-6.
11. Khalid K, Gupta JK, Mires G. Core clinical cases in obstetrics and gynaecology: a problem-solving approach. London: Hodder Arnold. 2005.
12. Grover S, Dutt A, Avasthi A. An overview of Indian research in depression *Indian J Psychiatry.* 2010;52(1):S178-88.
13. Fassino S, Piero A, Boggio S, Piccioni V, Garzaro L. Anxiety, depression and anger suppression in infertile couples: a controlled study. *Human Reprod.* 2002;17:2986-94.
14. Makar RS, Toth TL. The evaluation of infertility. *Am J Clin Pathol.* 2002;117(1):95-103.
15. Patel A, Sharma PS, Kumar P, Binu VS. Illness cognitions, anxiety, and depression in men and women undergoing fertility treatments: A dyadic approach. *J Hum Reprod Sci.* 2018;11:180-9.
16. Donkor ES, Sandall J. Coping strategies of women seeking infertility treatment in southern Ghana. *Afr J Reprod Health.* 2009;13(4):81-93.

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