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Original Research Article

Study of prevalence of depression, anxiety and sexual dysfunction in females attending infertility clinic

Ripal Patel, Mahesh Suthar, Mehul Tadavi*, Yashasvi Vaidya

Department of Psychiatry, Medical College Baroda & SSG Hospital, Vadodara, Gujarat, India

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***Correspondence:**
Dr. Mehul Tadavi,
E-mail: mehultadvi10@gmail.com

ABSTRACT

Background: Infertility is a significant social issue affecting individuals' personal, social, and mental health. Infertility can be caused by infection in the man or woman but often has no apparent underlying cause. The most common cause is ovulatory problems, while male infertility is most commonly due to semen deficiencies. The experience of infertility and its treatments can be highly stressful, affecting work, family, and relationships. It can also affect sexual self-esteem, desire, and performance, leading to depression and social isolation. So, we conducted this study to determine the prevalence of depression, anxiety and sexual dysfunction in females attending infertility clinics from July 2022 to December 2022.
Methods: This cross-sectional study included 100 females aged 18 to 45 years, who attended the infertility clinic at the obstetrics and gynaecology department of S.S.G. Hospital, Vadodara, from July to December 2022. Different diagnostic tools were used for depression, anxiety and sexual dysfunction, and the data were collected and analysed.
Results: According to the study, 44% of infertile patients suffered from depression, while 58% experienced anxiety. Depression was more common among people aged 23 to 27 years who lived in rural areas and had a lower socioeconomic position. Anxiety was more common among people aged 28 to 32 who lived in rural areas, had a poor level of education, and were unemployed. Furthermore, 54% of patients reported sexual dysfunction, which was more common in joint households.
Conclusions: This study concluded that the prevalence of depression and anxiety was 44%, and 58% in patients with infertility and sexual dysfunction was 54%.

Keywords: Anxiety, Depression, Infertility, Sexual dysfunction

INTRODUCTION

Infertility is a significant social issue that affects the personal, social, and mental health of individuals affected by it. It is often associated with a female partner, but both partners contribute equally to infertility. Infertility is defined as the inability to conceive after 12 months of unprotected sexual intercourse, with primary infertility occurring in couples who have never had a child and secondary infertility following a previous pregnancy.[1]

Infertility may be caused by infection in the man or woman, but often, there is no apparent underlying cause. In about one-third of cases, the cause of infertility involves only the male; in another one-third of cases, only the female; and in the remaining cases, both the male and female or no cause can be identified. The most common cause of female infertility is ovulatory problems, which manifest themselves in sparse or absent menstrual periods. Male infertility is most commonly due to deficiencies in the semen.[2]

The experience of infertility and its treatments is highly stressful and can interfere with many aspects of life, including work, family, and relationships. In many developing and developed societies, women are considered complete individuals only when they become mothers. The social pressure to bear children after marriage is so enormous that women who are unable to produce a child may feel rejected or isolated. This leads to anxiety and depression, significantly affecting their quality of life and all domains of life.[3] Infertility can also affect a person's sexual self-esteem, desire, and performance. Many couples have sex to connect emotionally, but when sex becomes associated with failure and frustration, couples may lose this emotional connection. The pressure to perform or abstain from sex due to infertility treatments can isolate partners and divide couples.[4] Fertility treatments also make sex less spontaneous, making spontaneity and emotional connection more challenging.

Many women's infertility is accompanied by extensive psychological changes, such as depression, which is followed by social isolation and low self-esteem.[5,6] Factors contributing to depression include frequent visits to doctors and medications, which affect the responses of women to infertility treatments and their health statuses. Sexual function is another affected aspect in infertile women that has not been given sufficient importance.[7] Keeping this in mind, we conducted the study to determine the prevalence of depression, anxiety and sexual dysfunction in females attending infertility clinics from July 2022 to December 2022.

METHODS

This cross-sectional study was conducted on females attending the infertility clinic at the obstetrics and gynaecology department of S.S.G. Hospital, Vadodara, Gujarat, from July 2022 to December 2022. All the participants were assessed in the presence of an attendant, and when required, an interview was taken only with participants. A total of 100 participants for the study were recruited after getting written approval from the Statistical and Ethical Committee of S.S.G. Hospital, Vadodara. All the patients aged between 18 to 45 years, having primary (Those who never had a child) or secondary (Those who had at least one child) infertility, Infertility due to any cause (Male factor, female factor or any unknown reason), and were willing to give consent were included in this study. The patients who were already diagnosed with psychiatric illness/ mental retardation before a diagnosis of infertility and patients with substance use disorder, except Nicotine use disorder, with co-morbid severe medical illness, were excluded from the study.

The sample size of 77 (adjusted up to 100 for possible data loss) was estimated based on a prevalence of 56.4% for anxiety and depression found in females attending infertility OPD in the previous study, using a power of 80% and setting α at 5%. Information about certain variables, including age, religion, reciting area, duration of the marriage, educational level, occupation, income, type of family, the primary cause of infertility, duration of infertility, number of miscarriages, and infertility treatment, was collected or not. If taken, the duration of therapy was also collected.

Study tools used in this study:

General Health Questionnaire-28 (GHQ-28)[8]

The GHQ-28 is a recognised screening tool for assessing psychiatric problems. GHQ is proposed with 28 elements and four subscales: 1. Somatic symptoms. 2. Anxiety and sleeplessness. 3. Social dysfunction. 4. Severe depression. In the GHQ scoring technique (0-1-2-3), the total score ranges from 0 to 84. In this study, a GHQ-28 score of more than 24 was considered positive for psychiatric illness.

Hamilton Depression Rating Scale (HAM-D)[9]

The Hamilton Depression Rating Scale (HAM-D/HDRS) is the most common tool used by physicians to assess and measure depression in patients. The initial version has 17 items about depression symptoms experienced within the past week. In this study, the scale is routinely administered for 20-30 minutes. The cut-offs for determining the severity of depression are as follows: Calculate the total scores for the 17 items and categorise them as a) 0 to 7 = Normal; b) 8 to 13 = Mild Depression; c) 14 to 18 = Moderate Depression; d) 19 to 22 = Severe Depression; e) ≥23 indicates severe depression.

Hamilton Anxiety Rating Scale (HAM-A)[10]

The scale comprises 14 items, each characterised by a set of symptoms. It assesses both psychic anxiety (mental restlessness and psychological discomfort) and somatic anxiety (physical symptoms associated with anxiety). The scale is typically administered for 10 to 15 minutes and is primarily conducted with adults. Calculate the total scores by adding up the values of all 14 parameters. It is categorised as, 0 to 13 = Normal; 14 to 17 = Mild Anxiety; 18 to 24 = Moderate Anxiety; 25 to 30 = Severe Anxiety

Female sexual function index[11]

The Female Sexual Function Index (FSFI) is a 19-item self-report inventory designed to assess female sexual function. It comprises six domains: 1) Desire [two items], 2) Arousal [four items], 3) Lubrication [four items], 4) Orgasm [three items], 5) Satisfaction [three items], 6) Pain [three items].

The cut-off score to demarcate sexual dysfunction is 26.55, as obtained from a validation study. Accordingly, scores less than 4.28, 5.08, 5.45, 5.05, 5.04, and 5.51 on desire, arousal, lubrication, Orgasm, satisfaction and pain domains, respectively, were used to classify participants with such dysfunction reliably.

Statistical analysis was performed using the statistical software (MedcalC version 7 and epi info 7.2). Descriptive analysis was carried out, estimating mean and standard deviation (SD). Frequencies and percentages were calculated for the categorical variables. The Chi-square test was used to test the differences between groups in categorical variables. Independent t-tests and ANOVA tests were done to test differences between groups in continuous variables. The p-values less than 0.05 were considered significant.

Statistical analysis

All data were collected in a secure and confidential environment. Data were analysed as cumulative in a manner that maintained individual privacy. This study was approved by the IECHR (Institutional Ethics Committee for Human Research) of Medical College and S. S. G. Hospital, Vadodara. Verbal consent was taken from respondents, clarifying the primary purpose of the study and the importance of the respondents' views. Thanking in advance and assuring strict confidentiality of the information with the consent request and purpose of the study stated on the questionnaire.

RESULTS

Socio-demographic variables

One hundred patients were included in this study after obtaining informed consent. Among all the participants included in this study, the majority of the patients were in the age group of 28 to 32 years (42%), followed by 23 to 27 years (30%), 18 to 22 years (21%), and more than 33 years (7%). Of the total population, 69% were Hindus, and 31% were Muslims; 72% were residing in rural areas. Among all the participants in this study, 32% could not read or write, 36% completed elementary school, 20% completed secondary education, and 12% had obtained a graduate degree or higher. Most patients were unemployed (38%) and worked in unskilled positions (55%). Of the patients who could not conceive, 44% were from the lower socioeconomic class, while 31%, 19%, and 6% were from the lower middle, middle, and upper middle class, respectively. 52% of the participants were married for 6-10 years, 36% were for 0-5 years, and 12% were for more than ten years. Most patients (76%) resided in a joint family setting. Only 18% of the individuals consumed substances, the common substance being tobacco.

Table 1: Association between socio-demographic characteristics and depression, anxiety and sexual dysfunction (n=100).

Charact-eristics	Depression present N (%)	Depression absent N (%)	P value	Anxiety present N (%)	Anxiety absent N (%)	P value	Dysfunction present N (%)	Dysfunction absent N (%)	P value
Age in years									
18-22	12 (57.1)	9 (42.9)	0.5	6 (28.6)	15 (71.4)	0.0192	11 (52.4)	10 (47.6)	0.9956
23-27	13 (43.3)	17 (56.7)		19 (63.3)	11 (36.7)		16 (53.3)	14 (46.7)	
28-32	17 (40.5)	25 (59.5)		29 (69.1)	13 (30.9)		23 (54.8)	19 (45.2)	
33-37	2 (28.5)	5 (71.5)		4 (57.1)	3 (42.9)		4 (57.1)	3 (42.9)	
Religion									
Hindu	28 (40.5)	41 (59.5)	0.3039	39 (56.5)	30 (43.5)	0.6549	36 (52.2)	33 (47.8)	0.5486
Muslim	16 (51.6)	15 (48.4)		19 (61.3)	12 (38.7)		18 (58.1)	13 (41.9)	
Area									
Rural	38 (52.8)	34 (47.2)	0.004	45 (62.5)	27 (37.5)	0.1437	39 (54.2)	33 (45.8)	0.9572
Urban	6 (24.4)	22 (75.6)		13 (46.4)	15 (53.6)		15 (53.6)	13 (46.4)	
Education									
Illiterate	13 (40.6)	19 (59.4)	0.9534	21 (65.6)	11 (34.4)	0.0391	17 (53.1)	15 (46.9)	0.6887
Primary	17 (47.2)	19 (52.8)		25 (69.4)	11 (30.6)		20 (55.6)	16 (44.4)	
Secondary	9 (45.0)	11 (55.0)		7 (35.0)	13 (65.0)		9 (45.0)	11 (55.0)	
Graduate and above	5 (41.7)	7 (58.3)		5 (41.7)	7 (58.3)		8 (66.7)	4 (33.3)	
Occupation									
Unemployed	14 (36.8)	24 (63.2)	0.2819	25 (65.8)	13 (34.2)	0.4546	21 (55.3)	17 (44.7)	0.8265
Unskilled	28 (50.9)	27 (49.1)		29 (52.7)	26 (47.3)		30 (54.5)	25 (45.5)	
Skilled	2 (28.6)	5 (71.4)		4 (57.1)	3 (42.9)		3 (42.8)	4 (57.2)	
Income									
Lower	21 (47.7)	23 (52.3)	0.8949	30 (68.2)	14 (31.8)	0.2479	25 (56.8)	19 (43.2)	0.6550
Lower-middle	13 (41.9)	18 (58.1)		17 (54.8)	14 (45.2)		14 (45.2)	17 (54.8)	

Continued.

Charact-eristics	Depression present N (%)	Depression absent N (%)	P value	Anxiety present N (%)	Anxiety absent N (%)	P value	Dysfunction present N (%)	Dysfunction absent N (%)	P value
Middle	8 (42.1)	11 (57.9)		8 (42.1)	11 (57.9)		11 (57.9)	8 (42.1)	
Upper-middle	2 (33.3)	4 (66.7)		3 (50.0)	3 (50.0)		4 (66.7)	2 (33.3)	
Family type									
Joint	35 (46.1)	41 (53.9)	0.4618	43 (56.6)	33 (43.4)	0.6084	43 (56.6)	33 (43.4)	0.3571
Nuclear	9 (37.5)	15 (62.5)		15 (62.5)	9 (37.5)		11 (45.8)	13 (54.2)	
Duration of marriage									
0-5 years	16 (44.4)	20 (55.6)	0.8875	18 (50.0)	18 (50.0)	0.4531	19 (52.8)	17 (47.2)	0.6417
6-10 years	22 (42.3)	30 (57.7)		33 (63.5)	19 (36.5)		27 (51.9)	25 (48.1)	
>10 years	6 (50.0)	6 (50.0)		7 (58.3)	5 (41.7)		8 (66.7)	4 (33.3)	
Substance use									
None	39 (47.6)	43 (52.4)	1.2573	48 (58.5)	34 (41.5)	0.8165	42 (51.2)	40 (48.8)	0.2337
Alcohol/ tobacco	5 (27.8)	13 (72.2)		10 (55.6)	8 (44.4)		12 (66.7)	6 (33.3)	

Table 2: Association between illness-related factors and depression, anxiety and sexual dysfunction (n=100).

Charac-teristics	Depression present N (%)	Depression absent N (%)	P value	Anxiety present N (%)	Anxiety absent N (%)	P value	Dysfunction present N (%)	Dysfunction absent N (%)	P value
Duration of infertility in years									
0-5	23 (44.2)	29 (55.8)	0.9904	28 (53.8)	24 (46.2)	0.5660	28 (53.8)	24 (46.2)	0.8036
6-10	16 (43.2)	21 (56.8)		24 (64.9)	13 (35.1)		21 (56.8)	16 (43.2)	
>10	5 (45.4)	6 (54.6)		6 (54.5)	5 (45.5)		5 (45.4)	6 (54.6)	
Number of abortion									
0	3 (17.6)	14 (82.4)	0.0130	11 (64.7)	6 (35.3)	0.6312	9 (52.9)	8 (47.1)	0.8364
0-3	23 (42.6)	31 (57.4)		29 (53.7)	25 (46.3)		28 (51.8)	26 (48.2)	
>3	18 (62.1)	11 (37.9)		18 (62.1)	11 (37.9)		17 (58.6)	12 (41.4)	
Number of children									
0	33 (52.4)	30 (47.6)	0.0275	45 (71.4)	18 (28.6)	0.0038	29 (46.0)	34 (54.0)	0.0369
1 or >1	11 (29.7)	26 (70.3)		13 (35.1)	24 (64.9)		25 (67.6)	12 (32.4)	
Treatment taken									
None	12 (42.9)	16 (57.1)	0.9809	13 (46.4)	15 (53.6)	0.3395	12 (42.8)	16 (57.2)	0.3764
Medical	26 (44.8)	32 (55.2)		36 (62.1)	22 (37.9)		34 (58.6)	24 (41.4)	
Surgical	6 (42.8)	8 (57.2)		9 (64.3)	5 (35.7)		8 (57.1)	6 (42.9)	
Duration of treatment									
None	16 (42.1)	22 (57.9)	0.7434	16 (42.1)	22 (57.9)	0.0413	19 (50.0)	19 (50.0)	0.5778
<2 years	21 (42.9)	28 (57.1)		33 (67.3)	16 (32.7)		29 (59.2)	20 (40.8)	
≥2 years	7 (53.8)	6 (46.2)		9 (69.2)	4 (30.8)		6 (46.1)	7 (53.9)	

Psychiatric comorbidities

Using the General Health Questionnaire (GHQ-28), the assessment found that 62 participants had indications of psychiatric comorbidities, whereas 38 did not show any signs of such illness. The DSM V criteria were used to validate the diagnosis, and 44 and 58 participants out of 100 met the requirements outlined in the DSM for Major Depressive Disorder and Anxiety, respectively. So, the prevalence of depression and anxiety among infertile participants was 44% and 58% in this study, respectively.

Depression

All the patients with MDD were further assessed with the Hamilton Depression Rating Scale (HDRS/ HAM-D), and it found that the majority of the participants had mild depression (52.27%), followed by moderate depression (27.27%), severe depression (15.91%) and very severe depression (4.55%). The prevalence of depression was significantly higher in the participants residing in rural areas (52.8%), in joint families (46.1%), who had undergone more than three abortions (62.1%), and who had no children till now (52.4%).

Anxiety

All the patients met the criteria for anxiety on DSM V, further investigated by the Hamilton Depression Rating Scale (HAM-A), and we found that the majority of participants had mild anxiety (55.17%). In comparison, 32.76% experienced moderate anxiety, and 12% experienced severe anxiety. There was a significant association found between anxiety and Primary infertility (71.4%) and the duration of treatment for infertility for more than two years (69.2%).

Sexual dysfunction

When the FSFI was applied, we found that 54% were suffering from sexual dysfunction and among them, 35.19% experienced a malfunction in their desire; 18.52% experienced arousal difficulties, 16.67% experienced pain, and 14.81% had problems with orgasm and satisfaction each. The prevalence of sexual dysfunction was significantly higher in patients with secondary infertility (67.6%) compared to patients with primary infertility (46%).

DISCUSSION

Infertility poses a worldwide obstacle for countless couples. Infertility poses a challenging situation for individuals and couples who want to have a family that includes children, particularly those who prefer to have children with whom they share a genetic connection. It impacts a demographic including 10-15% of couples in the age range where they are capable of reproduction. Infertility is not only a medical problem but also has a social aspect. It is a chronic stressor that is poorly regulated and has significant and enduring detrimental effects on both social and psychological well-being. Although infertility is expected, the majority of women choose not to confide in their family and friends, which prevents them from receiving social support. Infertility, along with the consequent societal disapproval, self-criticism, self-doubt, and guilt regarding their physical well-being, as well as fears of future isolation, divorce, and the uncertain nature of treatment, are significant contributors to the emergence of sorrow and depression in this cohort of women.[12] Our study focused on examining the frequency of anxiety, depression, and sexual dysfunction, as well as their correlation with sociodemographic traits and illness-related factors.

Socio-demographic and clinical factors

In this study, out of 100 ladies, the predominant age range was 23 to 32. Additionally, most of these females identified as Hindu and resided in rural areas. 32% of the population could not read or write, 36% had completed primary education, and the remaining individuals had attained secondary education or higher. Our study was conducted in a government tertiary care centre that provides economic medical services. Half of the participants in our study belonged to a lower socio-economic level. Most females were jobless (38%) and lacked skills for employment (55%). When considering the length of marriage, 50% of the ladies were married for 6-10 years. Around 76% of patients resided in a joint family. Only 18% of individuals consumed substances, the primary substance being tobacco.

Examining the illness-related specifics of the infertile patients, almost fifty per cent of the patients had been experiencing infertility for 0-5 years. 54% of the participants had undergone 1-3 abortions, 29% had undergone more than three abortions, and 17% had not undergone any abortions. When it comes to the type of infertility, the majority, 63%, experienced primary infertility, meaning they had not yet had a kid. The remaining 37% experienced secondary infertility, meaning they already had one or more children.

Approximately half of the patients were undergoing medical treatment, which involved using medicines such as Clomiphene Citrate and human gonadotropins to induce ovulation. Approximately one-third of the patients had not received any form of therapy. Approximately 49% of the patients were undergoing treatment for infertility for less than two years. Only a small proportion (13%) of patients received treatment over two years.

Depression in infertile patients

Among the 100 patients in our study, 44% exhibited symptoms of depression. This prevalence rate aligns with the findings of a systematic review and meta-analysis conducted by Zahra Kiani et al in 2020. Their analysis revealed that the lowest and highest pooled prevalence rates of depression were 21.01% and 52.21%, respectively.[7]

In our study, it was shown that among the entire patient population, 23% exhibited mild depression, 12% moderate depression, 7% severe depression, and a mere 2% of patients demonstrated very severe depression according to the Hamilton Depression Rating Scale. In contrast, the study carried out by Indu Lata et al in 2020 at a tertiary care hospital in northern India revealed that 16.8% of patients experienced mild depression, 32.7% experienced moderate depression, and 8.9% experienced severe depression.[13] A further investigation carried out by Gupta et al in 2021 at MGM Medical College, Mumbai, revealed that 22.3% of patients exhibited mild depression, 8.6% displayed moderate depression, and 10.6% had severe depression. These figures are lower than our study's findings.[14]

Our study found a higher prevalence of depression among patients residing in rural areas, in contrast to the findings of a 2021 study conducted by Abhishek Gupta at MGM Medical College, Mumbai.[14] A study undertaken by Verma et al in 2014 at VMMC, New Delhi, yielded similar results, indicating no discernible distinction between

patients residing in rural and urban settings.[15] Our study found that schooling did not significantly impact depression, which aligns with a study conducted by Verma et al in 2014 at VMMC, New Delhi.[15] Contrary to the findings of a study conducted by Lata et al in 2020 at a tertiary care hospital in northern India and a study conducted by Abhishek Gupta et al in 2021 at MGM Medical College, Mumbai, it was observed that patients with secondary education or higher education had higher rates of depression remains unchanged.[13,14]

Our study found that socioeconomic class did not significantly determine infertility, aligning with Pragati Sethi's study in Punjab.[16] However, our findings contradict a study conducted by Verma et al in 2014 at VMMC, New Delhi, which indicated that individuals from higher socioeconomic classes experienced higher levels of depression.[15]

Our study found that individuals experiencing primary infertility had a greater incidence of depression, a finding consistent with a study conducted by Lata et al in 2020 at a tertiary care hospital in northern India, as well as a study conducted by Gupta et al in 2021 at MGM Medical College, Mumbai and in a study conducted by Sethi et al in Punjab.[13,14,16] In our study, we found a correlation between many abortions and an increased incidence of depression, which aligns with the findings of a study conducted by Verma et al in 2014 at VMMC, New Delhi.[15]

In our study, we found that the duration of time a person had infertility did not have a significant impact on their infertility. This finding contradicts the results of a study conducted by Alhassan et al in 2015, which demonstrated that women who experienced infertility for more than three years had a higher likelihood of experiencing depression.[17] In a 2021 study conducted at MGM Medical College, Mumbai, by Gupta et al, it was found that patients with less than five years of infertility had a higher prevalence of depressive symptoms.[14]

In our study, religion, occupation, type of family, duration of marriage, kind of treatment, and duration of therapy did not have a significant impact on depression. Individuals residing in rural regions or possessing less educational attainment exhibit an absence of understanding regarding infertility, including its characteristics, underlying causes, and possible therapeutic interventions. Furthermore, the lack of adequate social and economic assistance may contribute to a heightened prevalence of depression among this population.

Women experiencing primary infertility may encounter societal judgment and have concerns about potential divorce or loneliness in the future. Additionally, they may worry about their inability to pass on their genetic lineage, which could contribute to the higher prevalence of depression among this group. A higher incidence of abortions is strongly correlated with stress, resulting in self-doubt, scepticism towards treatment choices, and a sense of powerlessness, potentially contributing to the high prevalence of depression among individuals who have undergone abortions. A higher incidence of depression was observed in those undergoing infertility therapy for a duration exceeding two years. This could be attributed to the absence of satisfying outcomes despite undergoing treatment and a diminished sense of optimism around the possibility of conceiving a child.

Anxiety in infertile patients

The present study found a prevalence of anxiety of 58%, which is higher than the study conducted by Pawar et al, which found a prevalence of 32.6%, indicating a lesser occurrence[18]. However, it is lower than the study conducted by Ramezanzadeh et al in 2004, which found a prevalence of 86.6%, indicating a more significant occurrence.[19]

In this study, 32% of participants experienced mild anxiety, 19% experienced moderate anxiety, and only 7% experienced severe anxiety, according to the Hamilton Depression Rating Scale (HAM-A). These findings align with a previous study conducted by Pawar et al in 2019, when 37% of participants had mild anxiety, and 17.4% had significant anxiety.[18] However, in contrast to the study conducted by Gupta et al in 2021, they found that 39.1% of participants experienced mild anxiety, whereas 60.88% experienced moderate to severe anxiety.[14]

Our study revealed a higher prevalence of anxiety among women aged 23-32. In a study conducted by Ramezanzadeh et al in 2004, it was shown that anxiety was more common among those aged 21-25 years.[19] In contrast to our findings, a study conducted by Sethi et al in 2014 found a higher prevalence of anxiety among individuals above the age of 30.[16]

Our study found a positive correlation between lower education levels (illiterate, primary education) and higher rates of anxiety among patients. This contradicts the findings of a study conducted by Verma et al in 2014, which reported similar levels of anxiety across all education groups.[15] However, in a study conducted by Pawar et al, it was found that illiterate patients experienced higher levels of anxiety.[18] Religion, geographical location, profession, socio-economic standing, family structure, and length of marriage are not significant factors in determining anxiety.

A higher prevalence of anxiety is observed in those who have had infertility for more than six years, as demonstrated in a study conducted by Sethi et al and Ramezanzadeh et al.[16,19] Patients experiencing initial infertility had higher levels of anxiety in comparison to those with secondary infertility, as observed in the study conducted by Verma et al in 2014 and the study conducted by Pawar et al.[15,18] Individuals who had therapy for infertility for a duration beyond two years exhibited a

significant prevalence of anxiety. This is analogous to the study conducted by Verma et al in 2014.[15]

In this study, we found that the number of abortions or kind of treatment did not have a significant impact on anxiety levels. The prevalence of anxiety was higher among individuals aged 28-32 years, possibly due to stress related to the increasing difficulty of persuasion and uncertainty about future parenthood. Unemployed individuals had a higher incidence of anxiety in comparison to employed individuals, potentially stemming from concerns about expenses related to infertility treatment, feelings of insignificance, and a perceived absence of financial assistance. A significant incidence of anxiety was observed among those who were either illiterate or had only completed primary education. This could be attributed to the presence of misconceptions about infertility, along with a lack of scientific understanding regarding its causes, characteristics, and treatment. Individuals with primary infertility may be afflicted with anxiety, potentially stemming from feelings of uncertainty, concerns about an uncertain future, or worry about a deteriorating marriage. The prevalence of anxiety was higher among individuals who had been undergoing treatment for more than two years. This could be attributed to numerous hospital visits without achieving satisfactory results, compromising their professional and household responsibilities, and diminished trust in the effectiveness of the treatment.

Sexual dysfunction in infertile patients

In our study, we found that 54% of the patients experienced sexual dysfunction. In a 2019 meta-analysis and systematic review conducted by Omani-Samani et al, the lowest prevalence of sexual dysfunction was found to be 46.6%, while the highest prevalence was 87.1%.[20] In contrast to our findings, a study conducted by Rohina et al in Ahmedabad showed that 63.67% of patients experienced sexual dysfunction, and among them, 19% experienced a lack of desire, 10% of the participants experienced issues with arousal, 9% reported pain, and 8% had difficulties with orgasm and satisfaction.[21] In contrast to the findings of Omani-Samani's 2019 study, a significant proportion of participants experienced sexual dysfunctions, including 59.9% reporting dysfunction of desire, 53.8% reporting dysfunction of orgasm, and 52.9% reporting pain.[20] In a study conducted by Rohina et al, it was shown that 70% of participants experienced arousal dysfunction, 19% experienced dysfunction of desire, 18% experienced dysfunction of desire, and 58.8% experienced discomfort.[21]

In this study, characteristics such as age, religion, area of education, occupation, and type of family were found to have no significant influence on sexual dysfunction in infertile individuals. In Aggarwal's study, sexual dysfunction was shown to be more prevalent among those aged 31-37 years.[21] No other characteristics were found to have a significant association with sexual dysfunction. Secondary infertility is more commonly linked to a higher incidence of sexual dysfunction. This could be attributed to the reduced time spent by the spouse and the increasing responsibility of caring for the child. Sexual function in people with secondary infertility may be impacted by previous episiotomy or surgical operations. It is essential to promptly examine the psychological elements of infertile patients to provide them with appropriate aid and support. Enhanced psychological well-being will also strengthen the results of infertility treatment. Several patients lack awareness of and access to mental health specialists and counselling services that can assist them in managing the challenges they encounter.

CONCLUSION

The study found that 44% of patients with infertility experienced depression, while 58% experienced anxiety. Depression was more common among individuals aged 23-27, rural, and lower socioeconomic status. Patients with primary infertility and multiple abortions had higher depression rates. Anxiety was more prevalent among those aged 28-32, rural, low-educated, and unemployed. Additionally, 54% of patients experienced sexual dysfunction, with a higher prevalence in joint families.

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