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Psychiatry Section

Prevalence of Psychiatric Morbidity in Females amongst Infertile Couples- A Hospital Based Report

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ABSTRACT

Introduction: Infertility leads to significant stress among couple and the reaction to infertility differs among males and females.

Aim: To know the prevalence of psychiatric morbidity in infertile couples and compare the prevalence of various psychiatric disorders among husband and wife.

Materials and Methods: A cross-sectional study was conducted on 50 couples diagnosed with infertility from outdoor clinics. Both male and female partner of couple were interviewed for detailed history and clinical examination was done. General Health Questionnaire (GHQ-12) was applied to detect any psychological strain in couples and in those with illness, final diagnosis were made on the basis of DSM -IV (TR). The data thus generated was subjected to appropriate Statistical Analysis.

Results: Out of the 50 couples, 54% of females had psychiatric morbidity. The most common diagnosis amongst the female participants was MDD (Major Depressive Disorder) (18%), whereas the second most common diagnosis was GAD (Generalized Anxiety Disorder) (16%). Psychiatric morbidity was found in only 26% of males suffering with Adjustment Disorder being most common diagnosis (8%) and Dysthymia and MDD as the second most common diagnosis (6% each). Majority of patients having psychiatric morbidity were from age group 20-29 years. The difference between females and male counterparts was statistically significant.

Conclusion: Psychiatric morbidity was higher among female partners than male partners. The difference was statistically significant and the situation needs further workup.

Keywords: Anxiety, Parenthood, Primary infertility, Psychological factors

INTRODUCTION

No definitive studies for prevalence of infertility are available in India as it varies from state to state and among different cast and tribes. But, WHO reports estimates that 3.9 and 16.8 per cent is the estimated prevalence rate [1]. In adulthood, parenthood and planning life according to children's is the most desirable goals [2]. Most men and women express a strong desire for a child. Parenthood is mostly desired for the expected feelings of love and happiness [3]. Though, not all couples, who desire pregnancy, will get it spontaneously, some have to seek medical help for the same. World Health Organization (WHO) recognizes infertility to be a worldwide health issue [2].

The medical definition of infertility is the failure to conceive following 12 months of unprotected intercourse [3]. Infertility is rising at a rapid rate; nearly 30 million couples in the country suffer from infertility, making the incidence rate of infertile couples to be 10 percent [4]. Overall median global prevalence of infertility is 9% and Indian couples comprise 15% of it. An estimated 56% of them, seek medical care for infertility, which speaks of the burden on health manpower and healthcare costs [2,5-7].

The reasons for infertility can involve one or both partners [8].

In about one-third of cases, the cause of infertility involves only the male, in another one-third of cases only female and in the remaining cases both the male and female or no cause can be identified.

There are different male reactions to diagnosis, treatment and social support concerns after sterility [9]. There is gender disparity in response to infertility with male sex having an upper hand as men not being reminded on a monthly basis of infertility, the man often being assessed for infertility after the woman and diagnostic procedures being more complicated and invasive for women. Culturally, media images are not as frequent or visible about fathering as they are about mothering and few men's magazines focus on fathering.

The important relationship between infertility and depression is highlighted by some studies which suggest that high depression levels in women may result in lower percentages of pregnancy and lower commitment to future in vitro fertilization cycles. The proposed mechanisms through which depression could directly affect infertility involve the physiology of the depressed state such as elevated prolactin level, disruption of the hypothalamic-pituitary-adrenal axis and thyroid dysfunction [7]. It is assumed that stress has a direct effect on cortisol level production, by increasing the release hormones from pituitary and therefore, a negative effect on fertility. Infertility, being perceived distress, leads to physiological reactions that actually interfere with successful treatments for infertility e.g., high cortisol levels negatively influence the outcome of IVF [10].

Although the relationship between emotional stress and infertility has been widely accepted [11], knowledge is not widely used in the infertile couple's care. Determining the prevalence and pattern of mental illness in this population subgroup would assist clinicians in incorporating treatment for these problems in fertility programs. Furthermore, the detection and management of psychiatric co-morbidity may improve treatment outcomes and improve patient's quality of life. Because at one hand in the treatment we have to deal with the stress leading to infertility and at the other hand we have to deal with the infertility leading to stress.

Most common psychological issues in infertile couples are anxiety, probably because of anticipated stressful nature of the treatment and treatment failure [12,13]. Depression is highest between the second and third years of infertility because of the inability to conceive [14]. Most of the Infertile women had higher scores on the depression and anxiety scales [13].

AIM

In this study, our aim was to know the prevalence of psychiatric morbidity in infertile couples and compare the prevalence of various psychiatric disorders among husband and wife.

MATERIALS AND METHODS

Study Design

Present study is a descriptive, cross-sectional, tertiary care hospital based study including 50 couples who were diagnosed cases of infertility. This study had the approval of the institutional research ethics committee. The data collection lasted from 1st March 2013 to 30th August 2014. Subjects were recruited from Clinics of Psychiatry and Obstetrics and Gynaecologic Department of 'Guru Gobind Singh Medical College and Hospital, Faridkot, Punjab. Sample was collected by nonrandomized convenient sampling and all the patients meeting inclusion criterion were enrolled during the study period.

Inclusion Criteria

Both male and female partner of couple, who were a diagnosed case of infertility, attending Psychiatry and Obstetrics and Gynaecologic clinic of Guru Gobind Singh Medical College and Hospital were included. Female partner of couple was in age group of 20-45 years and the Couples were married and cohabitating for more than 1 year. Informed consent was taken from the eligible couple.

Exclusion Criteria

Couples refusing to give consent were excluded. Female partner of couple, having history of abortion or using contraception were not enrolled. Couples having any major surgical/medical illness and gross psychiatric illness at the time of enrollment were excluded. Subjects who were diagnosed mental retardation/ cognitive impairment were not included for the study.

Requirement and procedure followed are as follows:

Instruments

General Health Questionnaire [15]

The General Health Questionnaire (GHQ) is a self administered screening questionnaire, developed by David Goldberg in 1974, one of the first mental screening devices for medical and surgical settings aimed at detecting individuals with a diagnosable psychiatric disorder.

Psychiatric Proforma

Psychiatric Interview Proforma made by Department of Psychiatry was applied to find out socio-economic status and symptoms of mental illnesses in the patients. Before applying for the study, content validity of questionnaire was tested in the pilot study. Reliability of the tool was established using croncbach alpha value (α), which turned out to be 0.86. Twenty patients were enrolled for the pilot study. Psychiatric morbidity was revealed both among male and females significantly ($p<0.05$). Correlation could be made positively in respect of duration of marriage, duration of treatment. Since the number of patients of primary infertility are not so frequent, so the patients of pilot study were included in the main study.

DSM -IV TR criteria [16]

The diagnosis was made on the basis of Diagnostic and Statistical Manual–IV TR criterion.

STATISTICAL ANALYSIS

The data thus generated was subjected to statistical evaluation using Epi Info software. Descriptive statistics, in terms of percentage were used to describe the categorical variable. To test the association between variable and disease, Chi-square test was used. The p-values were determined from chi-square test and p-values <0.05 were considered significant. To compare the mean of GHQ in both groups t-test was used.

RESULTS

In our study, majority of the females (72%) and males (48%) belonged to age group 20-29 years. In our study findings, maximum psychiatric morbidity was present in age group 20-29 years (77.8% in females and 53.8% in males) [Table/Fig-1]. Majority of the couples (40%) were married for 3-6 years. Also, in our study findings, most of the persons with psychiatric morbidity were married for 3-6 years (52.2% in females, 35.1% in males) but the effect of duration of marriage was not significant on distribution of psychiatric morbidity among females as well as in males [Table/Fig-2]. Maximum numbers of the couples (62%) were taking treatment for 3-6 years [Table/Fig-3]. In our findings, most

Age Group (Years)	Psychiatric Morbidity			
	Females		Males	
	Yes	No	Yes	No
20-29	21(77.8%)	15(65.2%)	7 (53.8%)	17 (45.9%)
30-39	6 (22.2%)	8 (34.8%)	4 (30.8%)	18 (48.6%)
40-49	0 (0.0%)	0 (0.0%)	2 (15.4%)	2 (5.4%)
Total	27	23	13	37

[Table/Fig-1]: Distribution of psychiatric morbidity according to Age.
Females - $\chi^2 = 0.972$, df = 1, p-value = 0.324; Males - $\chi^2 = 2.022$, df = 2, p-value = 0.364

Duration of Marriage (years)	Psychiatric Morbidity			
	Females		Males	
	Yes	No	Yes	No
0-3	5 (21.7%)	8 (29.6%)	11 (29.7%)	2 (15.4%)
3-6	12 (52.2%)	8 (29.6%)	13 (35.1%)	7 (53.8%)
6-9	1 (4.3%)	4 (14.8%)	4 (10.8%)	1 (7.7%)
9-12	2 (8.7%)	3 (11.1%)	4 (10.8%)	1 (7.7%)
12-15	1 (4.3%)	2 (8.7%)	3 (8.1%)	0 (0.0%)
15-18	2 (8.7%)	1 (4.3%)	2 (5.4%)	1 (7.7%)
18-21	0 (0.0%)	1 (4.3%)	0 (0.0%)	1 (7.7%)
Total	23	27	37	13

[Table/Fig-2]: Distribution of psychiatric morbidity according to Duration of Marriage.
Females - $\chi^2 = 4.879$, df = 6, p-value = 0.364; Males - $\chi^2 = 5.775$, df = 6, p-value = 0.449

Duration of Treatment (years)	Number of Couples	Percentage (%)
0-3	4	8.0
3-6	31	62.0
6-9	5	10.0
9-12	4	8.0
12-15	6	12.0
Total	50	100.0

[Table/Fig-3]: Distribution of total sample according to duration of treatment (n=50).

Duration of Treatment (years)	Psychiatric Morbidity			
	Females		Males	
	Yes	No	Yes	No
0-3	2 (7.4%)	2 (8.7%)	0 (0.0%)	4 (10.8%)
3-6	16 (59.3%)	15 (65.2%)	8 (61.5%)	22 (59.5%)
6-9	4 (14.8%)	1 (4.3%)	2 (15.4%)	4 (10.8%)
9-12	2 (7.4%)	2 (8.7%)	2 (15.4%)	3 (8.1%)
12-15	3 (11.1%)	3 (13.0%)	1 (7.7%)	4 (10.8%)
Total	27	23	13	37

[Table/Fig-4]: Distribution of psychiatric morbidity according to duration of treatment.
Female - $\chi^2 = 1.522$, df = 4, p-value = 0.823; Male - $\chi^2 = 2.813$, df = 4, p-value = 0.702

of the subjects with psychiatric morbidity were taking treatment for 3-6 years (59.3% in females, 61.5% in males) but the effect of duration of treatment with psychiatry morbidity was not statistically significant [Table/Fig-4]. Majority of the subjects (62%) were living in rural region. In our study, in rural area less number of females (55.6%) had psychiatric morbidity as compared to males (69.2%), whereas in urban areas it was opposite (44.4% females vs 30.8% males).

Majority of the couples (76%) belong to Sikh religion, (66%) were living in joint families. Majority of females (84%) were housewives and majority of males (42%) were doing their own business and majority of couples (38%) belonged to socioeconomic status IV according to Kuppuswamy Socioeconomic Scale.

In our study, mean GHQ was more in females (14.30 ± 5.519) as compared to males (11.38 ± 5.103) and the difference was statistically significant (p-value < 0.05) [Table/Fig-5]. Out of 50 couples, 34 (68%) females had GHQ score >12 while only 18 (36%) males had GHQ score >12.

Looking at psychiatric diagnosis, in our study the most common diagnosis amongst the female participants was MDD in 9 (18%) patients with GAD being the second most common diagnosis in 8 (16%) patients. Rest of the diagnoses were Dysthymia in 6 (12%), Adjustment Disorder in 3 (6%) and OCD in 1(2%) patient. In male sample, Adjustment Disorder was most common diagnosis in 4

Group	Number of subjects with GHQ Score >12	Percentage (%)	Number of subjects with GHQ Score <12	Percentage (%)
Female	34	68.0	16	32.0
Male	18	36.0	32	64.0

[Table/Fig-5]: Comparison of number of cases with GHQ score among males and females.

DSM IV TR Diagnosis	Females		Males	
	n	%	n	%
Major Depressive Disorder (MDD)	9	18.0	3	6.0
Generalized Anxiety Disorder (GAD)	8	16.0	1	2.0
Dysthymia	6	12.0	3	6.0
Adjustment Disorder	3	6.0	4	8.0
Alcohol Dependence	0	0.0	2	4.0
Obsessive Compulsive Disorder	1	2.0	0	0.0
Total	27	54.0	13	26.0

[Table/Fig-6]: Comparison of DSM IV-TR diagnosis in males and females having psychiatric morbidity.
$\chi^2 = 15.854$, df = 6, p value = 0.015

(8%) patients and Dysthymia and MDD were the second most common diagnosis present in 3 (6%) patients each in this group. Alcohol Dependence and GAD were also present in 2 (4%) and 1 (2%) patient respectively [Table/Fig-6].

DISCUSSION

In our study, majority of the couples belonged to age group 20-29 years and maximum psychiatric morbidity was present in age group 20-29 years too but the difference in distribution of psychiatric morbidity with age was not significant in both females as well as males which corroborates with some of earlier studies who found that age was not associated with psychiatry morbidity [17,18]. Majority of the couples were married for 3-6 years. Also, in our study findings, most of the persons with psychiatric morbidity were married for 3-6 years but the effect of duration of marriage was not significant on distribution of psychiatric morbidity among females as well as in males. Our findings are consistent with the finding of Olive K et al., who found that prevalence of anxiety among infertile females was not affected by duration of marriage [19]. Maximum numbers of the couples (62%) were taking treatment for 3-6 years.

In our findings, most of the subjects with psychiatric morbidity were taking treatment for 3-6 years but the effect of duration of treatment with psychiatry morbidity was not statistically significant. It was supported by Volgsten H et al., who found that distribution of psychiatric morbidity was not influenced by numbers of previous IVF/ICSI treatments [18]. The possibility of remarriage of spouse, curiosity of significant others about infertility, regret feelings, fear of failure of treatment adds to distress which persist regardless of duration of treatment. Majority of the subjects (62%) were living in rural region. Psychiatric morbidity varied among rural and urban population among both sex but we assumed that psychiatric morbidity would be high in rural but the difference in distribution was not significant among both groups. These findings were supported by Sultan S who found that mean BDI score in infertile couple living in rural area is 17.74 and that living in urban area is 16.99 [20]. EL-Sherbini AM also found in their study on infertile females that females living in urban areas had slightly better self concept (287.1) than those living in rural areas (284.7) although the differences were not statistically significant [17].

Majority of the couples (76%) belong to Sikh religion, (66%) were living in joint families. Majority of females (84%) were housewives and majority of males (42%) were doing their own business and Majority of couples (38%) belonged to socioeconomic status IV according to Kuppuswamy Socioeconomic Scale. In our study, mean GHQ was more in females (14.30 ± 5.519) as compared to males (11.38 ± 5.103) and the difference was statistically significant (p-value < 0.05) [Table/Fig-5]. Out of 50 couples, 34 (68%) females had GHQ score >12 while only 18 (36%) males had GHQ score >12. This was consistent with the findings of earlier studies. Laffont I et al., and Baghianimoghadam MH et al., found that GHQ score was more in females than males [21,22]. This was in contradiction to work of Berg BJ et al., and Sreshthaputra O et al., who found that infertile women and men experience equal distress levels [23,24]. This finding was expected in our study due to the fact that in our culture, the responsibility to bear child lies more on females as compared to males so stress regarding infertility is more among females.

Female participants of our study had MDD 18% cases and GAD being the second most common diagnosis in 16% patient while male sample had adjustment disorder as most common diagnosis in 8% patients and dysthymia and MDD were the second most common diagnosis present in 6% patients each in this group. This is close to findings of some earlier studies of Anvar M et al., reported that among the infertile patients, 40% of the patients have MDD in which 60% had severe type of MDD and 40% suffered from mild to moderate depression. 46% of infertile patients have anxiety disorders [25]. Volgsten H et al., reported that 26.2% of females and 9.2% of males had suffered from any type of mood disorder. Depression was the most common mood disorder, prevalent in 5.1%% of males and 10.9% of females and anxiety disorder was second most common disoeder [18]. Omoaregba et al., also found in his study that depression (21%) was the commonest diagnosis in women followed by GAD (9%) and adjustment disorder (3%) [26]. There were slightly different results in other studies. Ramezanzadeh F et al., found in a survey that 40.8% of women had depression and 86.8% had anxiety [11] and Yusuf AJ et al., found psychological distress in 28.4%, depression in 17.3% and GAD in 11.1% of infertile males [27]. The diagnosis of alcohol dependence was due to increased prevalence and cultural acceptance of alcohol in this area. In our study the psychiatric morbidity was found to be more in females than males. Our finding corresponds with the available past studies in that females were having significant more effect of infertility and psychiatric morbidity than males. Although we assumed that psychiatric morbidity would be high in illiterate women as well as in housewives because illiterate women may find themselves more depressed in situations of failures and disappointments compared to educated women but the difference

was not significant. This could be due to our small sample size. The remarkable point of this study was evaluation of the psychiatric morbidity among infertile couples and a simultaneous study among both sexes while previous most studies were conducted to compare only infertile and fertile women and also to see the effect of psychiatric morbidity with other demographic variables. When couples are faced with infertility problems, the stress due to infertility is experienced by both partners. Therefore, it is better to evaluate both partners for stress.

Looking at the findings of our study among the couples with infertility, significant proportion of psychiatric morbidity was observed among these patients especially among females. Though it was lesser than females, the men were also having psychiatric morbidity. From this we can also state that the psychiatric disorders largely go unrecognized. So, it appears evident and there is a growing importance and need to consider these couples for psychiatric assessment for early detection of psychiatric disorders if any. There is also a need to conduct a large scale survey of psychiatric disorders in these patients to see the nature and extent of prevailing morbidity to trace its developmental course and study its psychosocial determinants which are known to contribute to psychiatric disorders. These should be treated as early as possible as stress, depression itself increases chances of infertility thus initiating a vicious cycle. On the other hand, health professionals can explain the gender differences when counseling infertile couples and encourage them to share each other's feelings, which may help couples to cope with the communication problems they may experience.

LIMITATIONS

However there were few shortcomings in this study-

- The sample size was small and findings need to be replicated in large sample.
- It was a hospital based study.
- Cross-sectional study should be followed by longitudinal study to find out the course and pattern of these disorders and follow up to see the effect of pregnancy after treatment.
- Figures cannot be generalized unless repeated in the community.

CONCLUSION

In view of the above discussion, it is concluded that it is imperative to carry out this type of epidemiological survey more in number and to follow-up them longitudinally to understand the natural history of psychiatric disorders in infertile couples. The results of the study have implications for clinical training, practice and policy initiatives. Integrating mental health into general health care is need of the hour to manage such issues.

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