



AN OBSERVATIONAL STUDY OF PSYCHIATRIC DISTRESS IN INFERTILITY

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ABSTRACT

Infertility is defined as the failure to conceive pregnancy after 12 months of marital life. The chance to conceive depends on the length of sexual exposure, frequency of coitus, and couple's age. The normal, young aged couples have a 25 % chance to conceive after 1 month of marital life; 70 % of the couple's conceive within 6 months, and 90% of the couples have a probability to conceive by 1 year. Only 5% of the couples will conceive after one and a half year or two years. Both males and females are equally responsible for the infertility. Most of the infertile couples have one of these three major reasons including a azoospermia, oligospermia, asthenospermia. Ovulatory dysfunction, or tubal-peritoneal disease. Study population of 520 (both male and female) infertility patients was selected at surya fertility centre. Studies on psychological distress in men and women two parameters, stress and depression are compared in our study. We conclude that female infertility patients were in many aspects undergoing stress and depression compared to male along with the infertility treatment. To avoid serious complications in infertility patients treatment for psychiatric distress and depression such as patient counseling and some stress relief tools and counseling to the care takers should be given in order to manage stress levels and depression.

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INTRODUCTION

Primary sub-fertility is a delay for a couple who have had no previous pregnancies; and, secondary sub-fertility is a delay for a couple who have conceived previously, although the pregnancy may not have been successful for example, miscarriage, and ectopic pregnancy. The chance to conceive depends on the length of sexual exposure, frequency of coitus, and couple's age. The normal, young aged couples have a 25% chance to conceive after 1 month of marital life ; 70% of the couple's conceive by 6 months, and 90% of the couples have a probability to conceive by 1 year. Only 5% of the couples will conceive after one and a half year or two years. Both males and females are equally responsible for the causes. Most of the infertile couples have one of these three major causes including a male factor, ovulatory dysfunction, or tubal-peritoneal disease . In normal physiology, the two gonadotropin hormones, follicle stimulating hormone (FSH) and luteinizing hormone (LH) are produced in the pituitary and their secretion is controlled by gonadotropin releasing hormone (GnRH) that is released by the hypothalamus. At the start of a new cycle, the hypothalamus begins to release GnRH

that acts on the pituitary gland to release FSH and LH. These two hormones stimulate the ovary and cause the follicles to develop. Every month about 30-40 follicles start to grow in response to FSH, but only a single mature egg is released every month. This involves messages transmission in the form of hormones from the ovary, pituitary and hypothalamus. When the egg is ripe, the mature follicle releases an increasing amount of estrogen, is produced by the granulosa cells lining the follicle. The estrogen produced by the dominant follicle progressively increases in quantity as the egg matures, until a surge of estrogen is released into the blood. The high level of estrogen stimulates the pituitary to release a large amount of LH, thus leading to the LH surge. This LH in turn acts on the mature follicle, causing it to rupture to release the mature egg (ovulation) in the ovary .Males born without testes or vas deferens can become infertile. Some men have both the testes but they are not able to produce sperm or may produce very few sperms also suffer from infertility. Moreover, stress can cause decreased libido and the couple can end up in having infertility byBoivin J.*et al.*,

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Common Causes for Infertility

Table 1 common causes of infertility

Male	Female
Azoospermia	Anovulation
Oligospermia	Endometriosis
Vas block	Hormonal imbalance
varicoceles	Genetic abnormalities
Hormonal deficiency	Genetic disorders
Genetic disorders	Fallopian tubal block

METHODOLOGY

Study Design

It is a prospective observational study conducted in an outpatient department.

Inclusion Criteria

- Patients diagnosed with infertility along with other comorbid conditions such as PCOD, Endometriosis, ectopic pregnancy, fallopian tubal block
- Oligospermia, azoospermia, varicocele, vas block..
- Patients of all age groups and both gender.

Exclusion Criteria

- Women and men without any infertility issues
- Patients not willing to participate in the study

Source of Data

Data was collected from multiple sources such as patient records, laboratory data, direct communication with patients and their care takers, information such as demographic details, Past medical history, Past medication history, family history, Social history, Diagnosis, and Treatment was obtained.

Study Procedure

Male and female study patients were evaluated regarding psychological distress (stress and depression) based on HDR SCALE HAMILTON DEPRESSION RATING SCALE (HAM-D)The questionnaire is designed for adults and is used to rate the severity of their depression by probing mood, feelings of guilt suicide ideation, insomnia, agitation or retardation, anxiety, weight loss, and somatic symptoms.

RESULTS

Gender wise Distribution

Among 520 patients, 217 were male and 303 were female . Female patients were majorly affected than male .The prevalence of infertility and psychological distress was more in female compared to male.

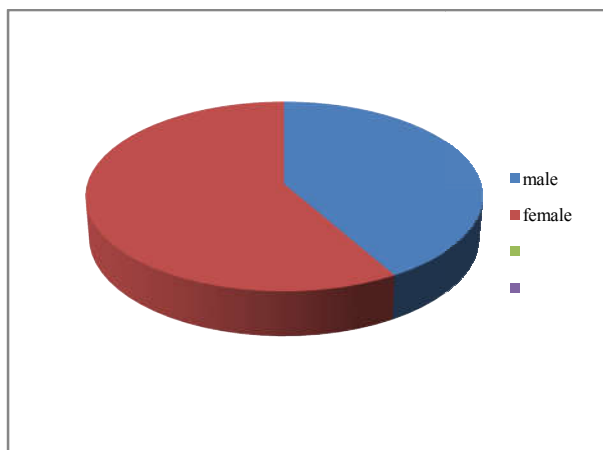


Figure 1 Gender wise distribution

Age wise Distribution

Out of 520 study population, patients were divided into various groups according to their age. In males highest prevalence was observed in the age group between 26-30 years (29%) followed by 31-35 years(26.7%) ,followed by 41-45years (20.7%) and least prevalence was observed in the age group of 46-50 years(4.6%) followed by 20-25years (5.5%) In females highest prevalence was observed in the age group of 26-30 years (33.3%) followed by 20-25 years (28.3%) , followed by 31-35years (18.4%) and least prevalence was observed in the age group of 46-50 years (3.6%) followed by 41-45 years (4.9%).

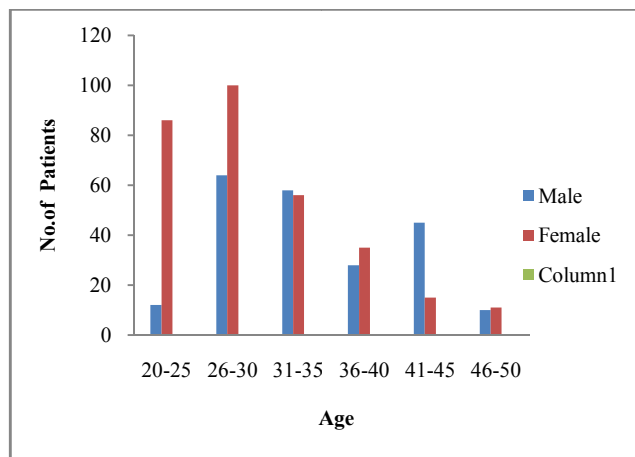


Figure 2 Age wise distribution

Area wise Distribution

Out of 217 male patients ,98 patients are urban and 119 are from rural back ground of 303 female patients ,146 are from urban and 156 are from rural area .Highest prevalence of disease was observed in rural area in (both males and females).

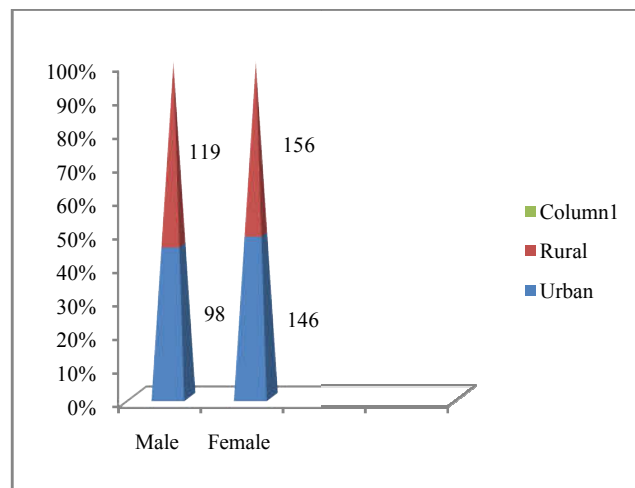


Figure 3 Area wise distribution

Distribution of Data Based on Disease

Out of 217 male patients, highest prevalence of oligospermia was found in the age group of 31-35 years (84%) followed by 46-50 years (83.3%) and least prevalence was observed in the age group 41-45 years (53.3%).

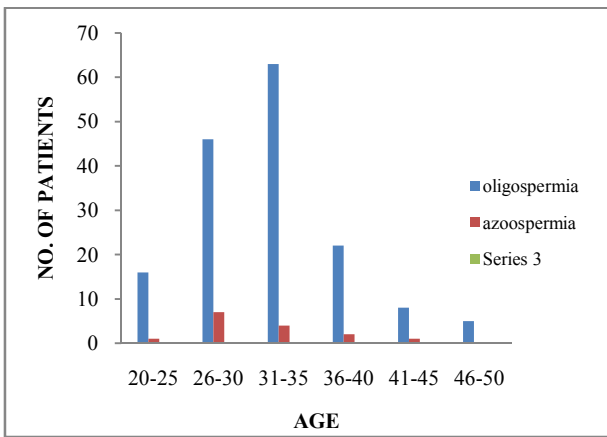


Figure 4 Distribution of data based on disease

Distribution of Data Based on Comorbid Conditions

Out of 303 female patients, the most frequently observed comorbid condition was PCOD in 59(19.4%) Patients followed by primary infertility 56 (18.4%) and least co-morbid condition was observed in PCOD with secondary infertility 4 (1.3%).

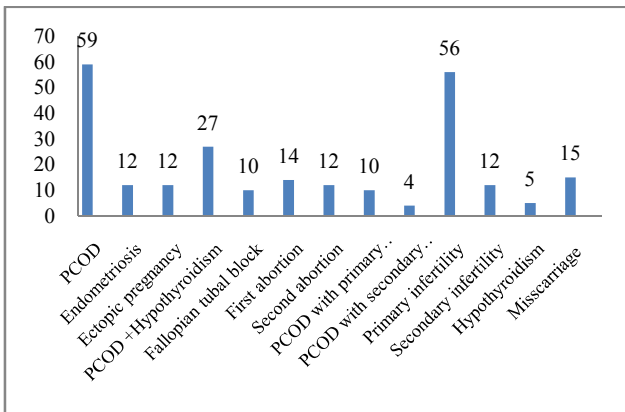


Figure 5 Distribution of data based on co morbid conditions

Distribution of Data Based on Stress

Gender wise Distribution of Data Based on Stress

Out of 520 Patients, 217 were male and 303 were female and out of 217 male patients, 43 (19.8%) were had mild stress and 59 (27.1%) were had moderate stress and 87(40%). out of 303 female patients 52(17.1%) were had mild stress and 72(23.7%) were had moderate stress and 120 (39.6%) were had severe stress.

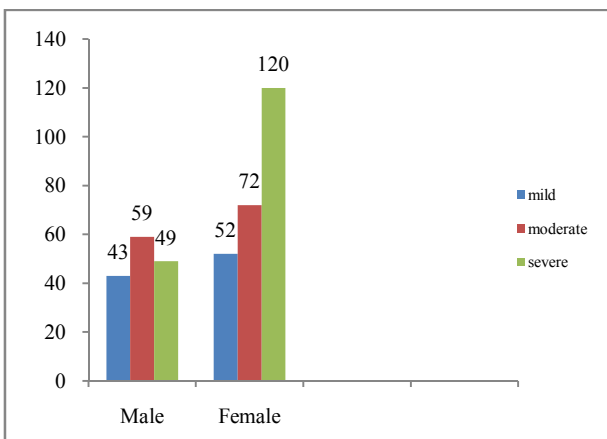


Figure 6 Gender wise distributions of data based on stress

Area wise Distribution of Stress

Out of 98 urban male patients, 22 (22.4%) patients are had mild stress and 28 (28.5%) patients are had moderate stress and 35(35.7%) patients were had severe stress. Out of 146 urban female patients, 37 (25.3%) were had mild stress and 45 (30.8%) were had moderate stress and 52(35.6 %) were had severe stress. Of 119 rural male patients , 21 (17.6%) were had mild stress and 29(24.3%were had moderate stress 48 (40.3%) were had severe stress out of 156 rural female patients, 28 (17.9%) were had mild stress 48 (30.7%) were had moderate stress and 61 (39.1%) were had severe stress.

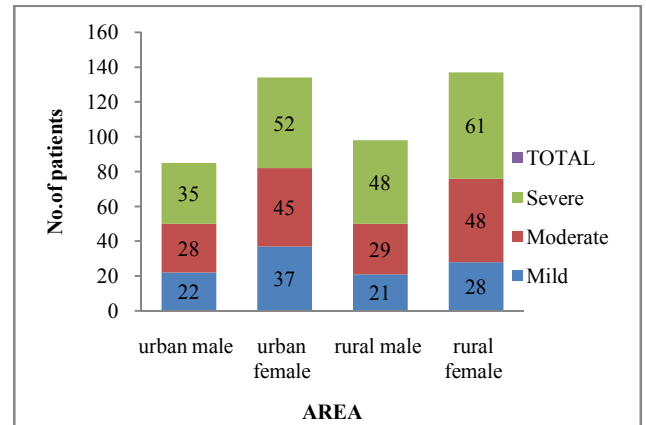


Figure 7 Area wise distribution of stress

Classification of Co-Morbid Condition Based on Stress

Out of 303 female patients , highest prevalence of co-morbid condition was PCOD and highest prevalence of stress was found in patients with secondary infertility(99%) followed by PCOD (91.4%) ,least prevalence of stress was found in PCOD with secondary infertility (75%).

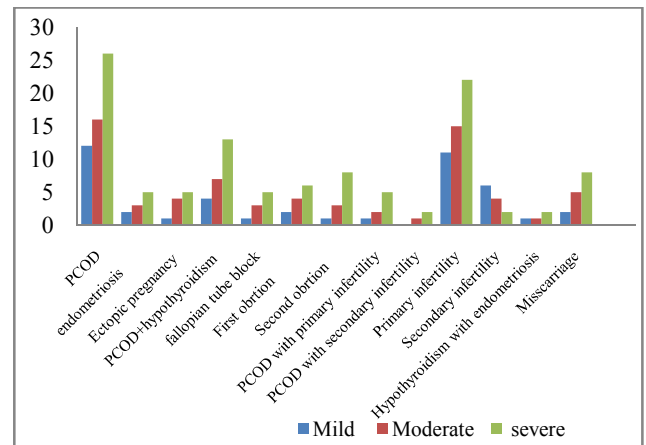


Figure 8 Classification of co-morbid condition based on stress

Gender wise Distribution of data based on Depression

Out of 520 male patients, highest prevalence of depression was found in females than male .out of 303 female patients 52(17.1%) patients are had mild depression and 62 (21.4%) patients were had moderate depression and 132 (43.5%) patients were had severe depression. And out of 217 male patients, 71 (32.7%) were had mild depression and 52(23.9%) patients were had moderate depression and 46 (21.1%) were had severe depression 48 (22.1%) male patients were normal.

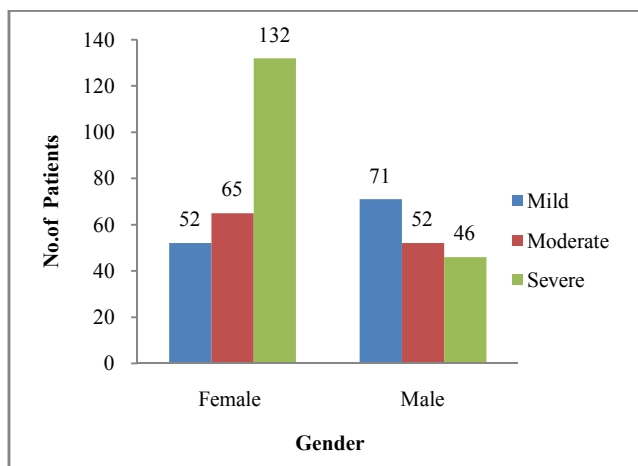


Figure 9 Gender wise Distribution of data based on depression

Area wise Distribution of data Based on Depression

Out of 98 urban male patients, 18 (18.3%) patients have mild depression 26 (26.5%) had moderate depression and 41 (41.8%) are had severe depression out of 146 urban female patients 28 (19.1%) are had mild depression and 42 (28.7) are had moderate depression and 60(41%) are had severe depression. Out of 119 rural male patients, 25 (21%) had mild depression and 33 (27.7%) are had moderate depression and 47 (39.4%) are had severe depression. Out of 156 rural female patients 31(19.8%) are having mild depression and 45(28.8%) are having moderate depression and 62 (39.7%) are having severe depression.

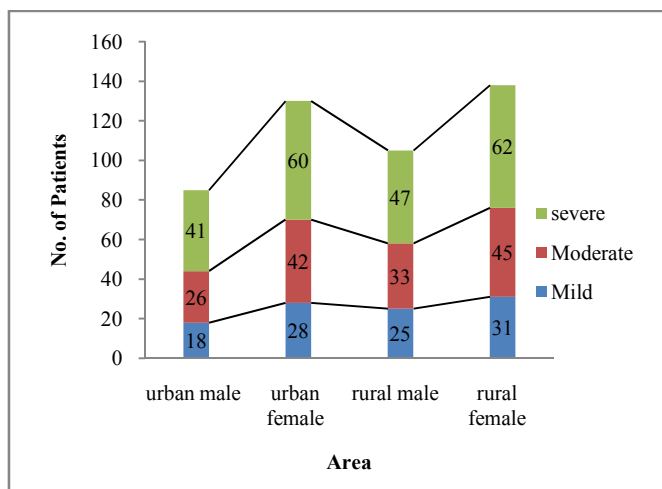


Figure 10 Area wise distributions of data based on depression

Classification of Co-morbid conditions based on depression

Out of 303 patients, highest prevalence was found in PCOD and highest depression severity was found in miscarriage patients (99%) followed by PCOD patients(92%) and least depression severity was found in PCOD with secondary infertility

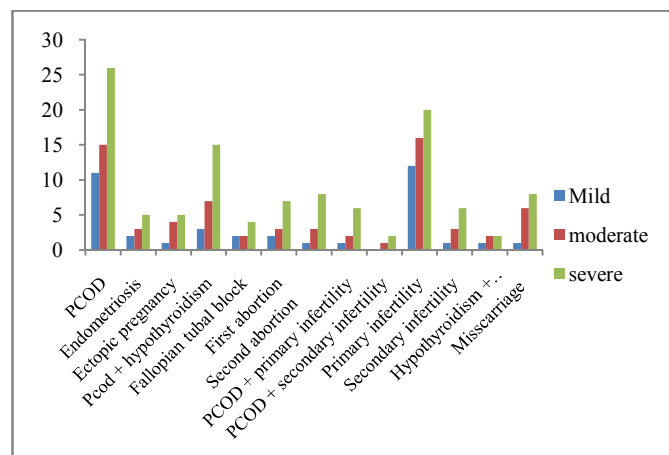


Figure 11 Classification of Co-morbid conditions based on depression

DISCUSSION

In our study population of (520 infertile patients) 217(41.7 %) were male and 303(58.2 %) were female. Female patients were majorly affected than male. The prevalence of infertility and psychological distress were more in female compared to male. These results are observed due to psychological issues in the female. Off 217 male patients, 43 (19.8%) were had mild stress and 59(27.1%) were having moderate stress and 87(40.%) . out of 303 female patients, 52(17.1%) were had mild stress and 72(23.7%) were had moderate stress and 120 (39.6%) . Out of 520 male patients highest prevalence of depression was found in female than male. Of 303 female patients, 52(17.1%) patients had mild depression and 62 (21.4%) patients were had moderate depression and 132 (43.5%) patients were had severe depression. And out of 217 male patients 71 (32.7 %) were having mild depression and 52(23.9%) patients were having moderate depression and 46 (21.1 %) were having severe depression 48 (22.1 %) male patients were normal. Compared to men, women are much more subjected to fluctuating hormone levels. This is especially the case around the time of child birth and at menopause. Both of these conditions are associated with an increased risk of developing depression. Women are more ruminative than men. That is, they tend to think about things more. Compared to men women may have a stronger genetic pre disposition for developing depression women are generally more invested in relationships then in men. Relationship problems are likely to effect them more, and so they are more likely to develop stress and depression. women come under more stress than men . not only do they have to go work just like men, but they may also be expected to bear the brunt of maintaining a home bringing up children, caring for older relatives .These results are similar with the study done by Edelmann RG *et al.*, Among 266 patients, 152 are female and 114 male were female patients have severe stress due to several key factors including menstrual cycle, reproduction and related hormones, role conflicts, parenting role expectations, and marriage role expectations. Moreover, infertility was found to induce stigmatization and negative emotions such as loss, grief, pain, guilt, remorse, self-pity, and self-denial. Previous studies have also documented similar results.

In our study, of 520 study population infertile patients were divided into various groups according to their age .In male highest prevalence was observed in the age group between 26-30 years (29%) followed by 31-35 years(26.7%) ,followed by

41-45years (20.7%) and least prevalence was observed in the age group of 46-50 years(4.6%) followed by 20-25years (5.5%) In females highest prevalence was observed in the age group of 26-30 years (33.3%) followed by 20-25 years (28.3%) , followed by 31-35years (18.4%) and least prevalence was observed in the age group of 46-50 years (3.6%) followed by 41-45 years (4.9%) . Highest prevalence of infertility was found in the age groups of 26-30 years in both gender our results are contrast with the study conducted by Lukse MP, et al, because age was not co-related with the depression and depression was associated with social support ,number of co morbid conditions ,and disease stage.

In our study, of 217 male patients 98 patients were urban and 119 were from rural back ground of 303 female patients 146 were from urban and 156 are from rural area highest prevalence of disease was observed in rural area in both males and female Out of 98 urban male patients 22 (22.4 %) patients are had mild stress and 28 (28.5 %) patients are had moderate stress and 35(35.7 %) patients were had severe stress. Out of 146 urban female patients 37 (25.3%) were had mild stress and 45 (30.8%) were had moderate stress and 52(35.6 %) were had severe stress. Of 119 rural male patients 21 (17.6 %) were had mild stress and 29(24.3%)were had moderate stress 48 (40.3%) were had severe stress. out of 156 rural female patients 28 (17.9 %) were had mild stress 48 (30.7 %) were had moderate stress and 61 (39.1%) were had severe stress. Out of 98 urban male patients 18(18.3%) patients are had mild depression 26(26.5%) are having moderate depression and 41 (41.8%) are had severe depression out of 146 urban female patients 28 (19.1 %) are had mild depression and 42 (28.7) are had moderate depression and 60(41 %) are had severe depression. Out of 119 rural male patients 25 (21 %) are had mild depression and 33(27.7 %) are having moderate depression and 47 (39.4%) are had severe depression. Of 156 rural female patients 31(19.8 %) are had mild depression and 45(28.8 %) are had moderate depression and 62 (39.7 %) are had severe depression. There are no supporting articles for these study. Highest prevalence of stress and depression was found in urban and rural female due to lack of family support ,work load.

In our study Out of 217 male patients 215 oligospermia and 2 azoospermia cases 95 were alcoholic (43.7 %), 65 were smokers(29.9 %), and 57 (26.2 %) were both alcoholic and smokers. These results are similar with the study conducted by Lee S. H *et al.*, alcohol and smoking reduces the sperm count and effect the morphology of sperm and causes male infertility.

In our study of 98 urban male patients ,18(18.3%) patients are had mild depression 26(26.5%) had moderate depression and 41 (41.8%) had severe depression out of 146 urban female patients 28 (19.1%) had mild depression and 42 (28.7) had moderate depression and 60(41%) had severe depression . Of 119 rural male patients 25 (21 %) are had mild depression and 33(27.7 %) had moderate depression and 47 (39.4%) had severe depression .Of 156 rural female patients 31(19.8 %) had mild depression and 45(28.8 %) had moderate depression and 62 (39.7 %) had severe depression .Of 520 population 128 are educated male and 89 are uneducated male and 181 are educated male and 122 are uneducated female and highest prevalence of stress is found in uneducated female (88.4%) and least prevalence of stress is found in educated male (78%) and highest prevalence of depression is found in educated male

(85%) and least prevalence of depression is found in uneducated male (68%). these results are in contrast with the study done by Roos C, *et al.*, because these authors did not consider education is an important factor for infertility. But in our study educated and uneducated females had more stress and depression.

In our study of 303 female patients the most frequently observed co morbid condition was PCOD in 59(19.4%) female, followed by primary infertility 56 (18.4%) and least co-morbid condition was observed in PCOD with secondary infertility 4 (1.3%) female. Of 303 female patients highest prevalence of co-morbid condition was PCOD and highest prevalence of stress was found in patients with secondary infertility (99%) followed by Pcod (91.4%), least prevalence of stress was found in PCOD with secondary infertility (75%). Of 303 patients highest prevalence was found in PCOD and highest depression severity was found in miscarriage patients (99%) followed by PCOD patients (92%) and least depression severity was found in PCOD with secondary infertility (75 %). These results are in similar to the study conducted by Teede H *et al.*, Several studies have shown a correlation between psychological distress scores and levels of serum androgen. It has been suggested that women with PCOD have a lower self esteem, more negative self image, higher levels of depression and psychological distress owing to the physical appearance of hyperandrogenism, including obesity hirsutism, cystic acne, seborrhea and hair loss, possibly by influencing feminine identity. The relationships between psychological health aspects and the clinical characteristics of PCOD are not yet clearly understood. In the present study, as we did not have a control group, we decided to compare some more intervening factors like demographic (age, education), signs of disease (acne, hirsutism) and economic state .Teede Deeks A Moran L *et al.*,

Highest Prevalence of stress and depression was obtained in female patients with primary infertility and PCOD .followed by Patients with PCOD and hypothyroidism, followed by patients with secondary infertility and patients with hypothyroidism with endometriosis .Least prevalence of stress and depression was observed in patients with hypothyroidism and endometriosis.

CONCLUSION

Psychological distress studies in both men and women infertile patients were studied .we conclude that female infertility patients were more in many aspects undergoing stress and depression when compared to male along with the infertility treatment. Psychological distress such as stress and depression can be over come by patient counseling and adopting some stress relief tools and counseling to the care takers Clinical pharmacist play an important role in patient education among patients and care takers regarding various causes of infertility and possible steps to overcome them.

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