

ORIGINAL ARTICLE

FREQUENCY AND DETERMINANTS OF DEPRESSIVE ILLNESS AMONG INFERTILE WOMEN

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ABSTRACT

Background: Depression is much more common among infertile women as compared to the general population. The objectives of our study were to determine the frequency of depression among infertile women and association of depression among infertile women with age groups, level of education, and duration of infertility.

Materials & Methods: This cross-sectional study was conducted at Department of Psychiatry, Gomal Medical College, D.I.Khan, Pakistan from 1st January 2018 to 31st December 2018. Sample size was 145 women with primary infertility selected through consecutive sampling technique. The demographic variables were; age groups, level education, duration of primary infertility and research variables was presence of depression. Observed and expected frequency for depression was analyzed by chi-square goodness-of-fit test. Association of depression with age groups, level of education and infertility duration were analyzed by chi-square test of independence.

Results: Out of 145 infertile women. 122(84.1%;78.15-90.05%) had depression whereas 23(15.9%;9.95-21.85%) had no depression. Thirty seven out of 145(25.52%) women in the age group <25 years had depression, 76 out of 145(52.41%) women in the age group 25-34 years had depression. Twenty five out of 145(17.24%) infertile women in the uneducated category had depression, 28 out of 145(19.31%) infertile women in the primary education category had depression whereas 16(11.03%) and 53(36.55%) infertile women in the middle and matriculation and more categories respectively had depression.

Conclusion: Frequency of depression in infertile women was high especially in women having infertility duration of 1-3 years. The difference in frequency of depression between the sample and population was statistically significant. Presence of depression was associated with infertility duration.

KEY WORDS: Infertility; Depressive illness.

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INTRODUCTION

WHO declares a sexually active, non-contraceptive using, non-lactating woman to be infertile if she is unable to give birth to a live baby after twelve months of regular non-protected intercourse. Primary infertility is infertility in a couple who have never had a child.¹ Secondary infertility means that a sexually active, non-contraceptive using, non-lactating woman, having a child but now she is unable to become pregnant despite regular, non-protected intercourse for at least twelve months.²

Incapability of have a child, can lead to major psychological disturbances like depression, in any gender.

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Depression has significant association with infertility.² Infertility is both medically and socially a significant problem. Infertility is found in 10-15% of the couples in their life time. It is a stressful condition leading to different psychological problems and badly affects patient's quality of life.³

It is estimated that about 86.8 percent of infertile women develop anxiety and 40.8 percent develop depression.⁴ In a study conducted in Karachi, depression rate was almost 62% in infertile women. Out of them 53% were affected by major depression.⁵

The significance of this study was to provide local data about presence of depression in infertile women and to draw attention of the treating physicians and gynecologists towards this co-morbid depression which significantly affects patient's quality of life. Following were the research questions of this study.

1. What is the frequency of depression among infertile women in sample and population?
2. Is there any difference between the sample and population in the frequency of depression among infertile women?

3. Is there any association between presence of depression and age groups among infertile women in population?

4. Is there any association between presence of depression and level of education among infertile women in population?

5. Is there any association between presence of depression and infertility duration among infertile women in population?

The objectives of our study were to determine the frequency of depression among infertile women and association of depression among infertile women with age, level of education, and duration of infertility.

Null hypotheses were;

H_{01} : There is no statistically significant difference between sample and population in frequency of depression among infertile women.

H_{02} : There is no association between presence of depression and age groups.

H_{03} : There is no association between presence of depression and level of education.

H_{04} : There is no association between presence of depression and duration of infertility.

MATERIALS AND METHODS

This comparative cross sectional study was conducted at Department of Psychiatry, Gomal Medical College, D.I.Khan, Pakistan from 1st January 2018 to 31st December 2018. Sample size was calculated to be 145, using 40.8% proportion of infertile women having depression⁴, 95% confidence interval and 8% margin of error, with the help of Raosoft sample size calculator.¹³ The sample was collected through non-probability consecutive sampling. The inclusion criteria included women in the age group 18 to 40 years, married for not less than one year, and having primary infertility. Women having secondary infertility, and those who were suffering from depression before their marriage were excluded from the study. Approval from ethical committee was taken. Out patient Department of Gynecology and Obstetrics, District Headquarter Teaching Hospital D.I.Khan was our data collection site. The consent of the participating women was sought before inclusion.

Depression among patients with infertility was recorded through PHQ-9 scale. PHQ-9 (Patient Health Questionnaire) is among one of the several self-reported depression scoring instruments. It has nine items each item score from 0-3 depending upon the severity of depression. The total score is 27. A score of 0-4 is considered as no depression, 5-9 as mild, 10-14 as moderate depression and a score of 15-27 as severe depression. Demographic variables were age groups (<25 years, 25-34 years, and 35-40 years), education (uneducated, primary, middle, matric or above), infertility duration (1-3 years, 4-6 years, 7-9 years, 10 years or above) and presence of depression (yes/no).

All the four variables, being categorical were analyzed by frequency and percentage. Estimation of parameter for proportion for population was given as confidence interval at confidence level of 95%. The difference between frequency of depression in infertile women between sample and population was analyzed by chi-square goodness-of-fit test. Association of depression with age, level of education and duration of infertility was analyzed among infertile women by Chi-square test of independence (association). Data was analyzed by SPSS version 25.

RESULTS

Out of 145 infertile women. 122 (84.1%;78.15-90.05%) had depression whereas 23 (15.9%;9.95-21.85%) had no depression. Thirty seven out of 145 (25.52%) women in the age group <25 years had depression, 76 out of 145 (52.41%) women in the age group 25-34 years had depression, and 9 out of 145 (6.21%) women in the age group 35-40 years had depression. Twenty five out of 145 (17.24%) infertile women in the uneducated category had depression, 28 out of 145 (19.31%) infertile women in the primary education category had depression whereas 16 (11.03%) and 53 (36.55%) infertile women in the middle and matriculation and above categories respectively had depression.

Fifty six out of 145 (38.62%) infertile women in the 1-3 years infertility duration category had depression, 31 (21.37%), 17 (11.72%) and 18 (12.41%) infertile women in the 4-6 years, 7-9 years and ≥ 10 years respectively had depression. The observed frequency of depression in a sample of infertile women was compared to the expected frequency of the population by chi-square goodness-of-fit test at alpha 0.05. H_{01} proved to be false, hence rejected, showing that the observed counts of depression have not a good fit to the expected counts. In other words the difference between the observed and expected counts for depression frequency among infertile women was statistically significant. The expected counts were taken from a study by Ali HS, et al from Karachi, Pakistan. (Table 1)

Association of depression with age groups was analyzed through chi-square test of association. H_{02} proved to be true, hence accepted, showing that the presence of depression was not associated to age groups. (Table 2)

Association of depression with education was analyzed through chi-square test of association. H_{03} proved to be true, hence accepted, showing that the presence of depression was not associated to level of education. (Table 3)

Association of depression with infertility duration was analyzed through chi-square test of association. H_{04} proved to be false, hence rejected, showing that the presence of depression was associated to infertility duration. (Table 4)

Table 1: Comparison of observed (sample) to expected (population) frequency of depression in infertile women in D.I.Khan, Pakistan (n=145).

Depression	Observed frequency	Expected frequency	Chi-Square Value	Degree of freedom	P-value
No	23	55.1	30.162	1	0.000
Yes	122	89.9			H_{01} rejected
Total	145	145	Chi-square goodness-of-fit test		

Table 2: Association between presence of depression and age groups in infertile women in D.I.Khan, Pakistan (n=145).

Age in years	Depression		Rows Totals	Chi-Square Value	Degree of freedom	P-value
	Yes	No				
<25	37	5	42	2.123	2	0.346
25-34	76	18	94			H_{02} accepted
35-40	9	0	9			
Column Totals	122	23	145	Chi-square test of independence (association)		

Table 3: Association between presence of depression and level of education in infertile women in D.I.Khan, Pakistan (n=145).

Educational status	Depression		Rows Totals	Chi-Square Value	Degree of freedom	P-value
	Yes	No				
Uneducated	25	2	27	2.186	3	0.535
Primary education	28	5	33			H_{03} accepted
Middle	16	3	19			
Matriculation or more	53	13	66			
Column Totals	122	23	145	Chi-square test of independence (association)		

Table 4: Association between presence of depression and duration of infertility in infertile women in D.I.Khan, Pakistan (n=145).

Infertility duration (in years)	Depression		Rows Totals	Chi-Square Value	Degree of freedom	P-value
	Yes	No				
1-3	56	18	74	10.674	3	0.014
4-6	31	5	36			H_{04} rejected
7-9	17	0	17			
10 or more	18	0	18			
Column Totals	122	23	145	Chi-square test of independence (association)		

DISCUSSION

Results of the present study show that 84.1% infertile women are depressed. Several local studies have shown similar results. These include Ali et al⁵ (2015) and Erdem et al.⁴ The women suffering from infertility pass through a significant social stigma and it always earns a bad name for them even if this is a male factor infertility. A study conducted in India has highlighted this fact.⁶ This is a common tradition in most of the countries in South Asia that a woman will get respect and security in her in-laws home only after she is able to reproduce.⁷ Although the birth of a child is cele-

brated by the whole family, if the woman fails to give birth to a desired number of children or the desired sex of children the woman alone is considered to be responsible for this which can be a source of threat for her status in the family.

Large number of studies have been conducted, mostly in eastern countries, which highlight the fact that most of the women seek treatment for their infertility only because of the negative reactions of their family members and close relatives. These negative comments from the family members also have a major impact on the women psychology and thus leading to the symptoms

of depression.⁸ Evidence from Some other studies have delineated the fact that poor husband support or negative reactions by the husband lead to depression in women suffering from infertility.⁹

In underdeveloped countries most of the research is focused on the role of relatives in causing depression among women suffering from infertility. A Chinese study concluded that although there exist a lot of difference in culture, ethnicity and religious beliefs between Chinese and Western societies, the response of Chinese couples to infertility was not much different from that of Western couples. However in Chinese society the role of parents-in-law was much positive in determining marital satisfaction.¹⁰

Nowadays a shift can be seen from the old system of joint families to nuclear families even in developing countries like Iran, especially among people who belong to the lower socioeconomic groups. Extended families offer greater authority to the husband's relatives, and thus they get a chance to interfere in the domestic problems of couples. A study was conducted in Pakistan upon why women with secondary infertility seek treatment and it was found that in 22.6% cases family pressure was responsible for health seeking, while in 20.4% cases the reason behind seeking treatment for infertility was the desire of husbands or in-laws for a son.¹¹ A case was reported in Karachi, Pakistan, where a woman was compelled by her mother in-law to get treatment for her infertility even in the first month of their marriage.¹²

CONCLUSION

Frequency of depression in infertile women was high especially in women having infertility duration of 1-3 years. The difference in frequency of depression between the sample and population was statistically significant. Presence of depression was associated with infertility duration.

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CONFLICT OF INTEREST

Authors declare no conflict of interest.
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AUTHORS' CONTRIBUTION

The following authors have made substantial contributions to the manuscript as under:

Conception or Design:	AK, HA
Acquisition, Analysis or Interpretation of Data:	AK, HA, IR, MI, MM, GK
Manuscript Writing & Approval:	AK, HA, IR, MI, MM, GK

All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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