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Assessment the Level of Depression, Anxiety, Stress among Infertile Women (20- 45 Years Age) in Tertiary Care Hospital

Muhmooda Abdul RAzzaque, Amjad Ali, Waqas Ahmed, Sabir Hussain, Abdul Wahid, Abdul Razzaque

Muhmooda Abdul RAzzaque *(Corresponding Author)*
Lecturer
Institute of Nursing and Midwifery
Dow University of Health Sciences, Karachi, Sindh-Pakistan.
Email: mahmooda.duhs@gmail.com

Amjad Ali
Lecturer
Institute of Nursing and Midwifery
Dow University of Health Sciences, Karachi, Sindh-Pakistan.

Waqas Ahmed
Lecturer of Biostatistics
Dow University of Health Sciences, Karachi, Sindh-Pakistan.

Sabir Hussain
Associate Professor
Shaheed Muhtarma Benazir Bhutto University
Larkana, Sindh-Pakistan.

Abdul Wahid
Lecturer
Shaheed Muhtarma Benazir Bhutto University
Larkana, Sindh-Pakistan.

Abdul Razzaque
Staff Nurse in Intensive Care Unit
Dow University Hospital
Karachi, Sindh- Pakistan.

ABSTRACT

OBJECTIVE: To assess the level of depression, anxiety, and stress among infertile women and its relationship with the type of infertility and demographic attributes.

METHODOLOGY: Observational study was conducted in the outpatient department of Dr. Ruth K. M. Pfau Civil Hospital Karachi from March to August 2020. Through the purposive sampling method; 200 infertile women whose ages were between 20 to 45 years and gave consent were included, and excluded those who had a history of psychiatric illness. DASS (42 items) was used to collect data, which infers 0 = no symptoms, and 3 = severe symptoms. Data were analyzed by using IBM SPSS version 21.0. Data were analyzed by using IBM SPSS version 21.0. Percentages and frequencies provided to assess the categorical variables and chi-square test applied to analyze relationship of level of depression, anxiety and stress with infertility type and its association with demographic attributes. P-value <0.05 used as a statistically significant.

RESULTS: Current study reported the highest percentage of the level of depression (Severe 58.2%), anxiety (Severe 57.3%), and stress (Severe 50.0%) which is significantly related to primary infertility. Age (0.008), household income (0.005), and emotional strain from family (0.001) indicated a significant association with the level of depression, anxiety, and stress.

CONCLUSION: The highest level of depression, anxiety, and stress among primary infertility highlighted a significant relationship. Age, household income, and emotional strain were significantly associated with depression, anxiety, and stress of infertile women.

KEYWORDS: Primary and Secondary infertility, Depression, Anxiety, Stress Scale (DASS), Tertiary care Hospital

INTRODUCTION

Infertility is a serious personal, interpersonal, emotional, cultural, and social catastrophe affecting both genders[1]. According to Global statistics and analysis of the National Health Survey of infertility, 60 to 168 million people are affected in both developed and developing countries Namely: United states 8.8%, Bangladesh 4%, Iran 20.2%, Iraq 3.5%, China 25% ,Dubai 50% and in Pakistan 12% [2,3]. Studies have found that 40% of couples who are under treatment for fertility face stress, anxiety, and depression due to the long duration of treatment[3,4]. Currently, it is very common to have mental distress among infertile women than men which might be contributing factor of instability in marital relationships.

The study by Hess RF 2018[5] in Africa found that infertile women suffered from various kinds of psychological disorders that worsened their marital life. The investigation by Hoff HS 2018[6] in the United States showed that 75% of participants agreed that infertility-related psychological disorders created problems even in conceiving a pregnancy. Payne N 2019[7] Surveyed in the UK and reported that long duration of treatment of infertility resulted in distress along with job responsibilities. Moreover, numerous studies have been found out that culturally dominated societies have a history of substantial mental issues due to infertility like Iran, Iraq, Bangladesh, and Pakistan[2-4].

Several studies have examined different aspects of infertility in Pakistan, as per a study by Kiesswetter M et al.[8] found infertile women had more issues of mental distress than women who had a child. Another study by Hassan SU 2020[9] reporting the case of Baluchistan discovered that dignity of marital life is secured in society by giving birth to a baby, whereas infertile women face physical and verbal taunting and are traumatized by relatives, friends, and in-laws. The descriptive study by Khalil A 2020[10] in Karachi, Pakistan concluded that > 67.7% of participants had conflicts in interpersonal relationships, 69% were claimed for fertility by the family members, 51% by in-laws, 38% by the partner, and 11.4% by family and friends. By considering the above facts, there is a need for early identification of psychological problems of infertile women that might hamper successful treatment of infertility. Therefore, it is important to assess the level of depression, anxiety, and stress among infertile women and its relationship with the type of infertility and with demographic attributes in the outpatient department of Dr. Ruth K. M. Pfau Civil Hospital Karachi.

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METHODOLOGY

An observational study was conducted in the outpatient department of Dr. Ruth K. M. Pfau Civil Hospital Karachi from March 2020 to August 2020. The study was conducted after ethical approval from the Institutional Review Board of Dow University of Health Sciences, Karachi (IRB, DUHS) reference No: 1304/2019. The formula n= [DEFF*Np (1-p)]/ [(d^2/$Z^2$1-α/2*(N-1)+p*(1-p)] was implied to calculated sample size by using the prevalence of "depression (12.2%)[11] among infertile women in Tu Du hospital Vietnam in 2016". The calculated sample size of the study was 165 by considering 95% C.I and 80% of the power of the test. Moreover, the sample size was increased to 200 to avoid leftovers and gain significant findings. Through the purposive sampling method, infertile women whose age lie between 20 to 45 years and gave consent were included in the study. Those who had any psychiatric history were excluded from the study.

The aim of the study and anonymity of responses was well defined to all participants before the commencement of the study. The DASS (Depression, Anxiety Stress Scale)[12,13] is a validated and reliable scale that was used to assess the level of depression, anxiety, and stress among infertile women in the current study. Reliability of DASS-42 revealed excellent Cronbach's alpha values of 0.94, 0.90, and 0.87 for depression, anxiety, and stress[12] and it is validated Urdu version scale[13] and has open access to use. DASS comprises 42 items and each of the 42 items has a score of 0 (Did not apply to me at all), 1 (Applied to me to some degree, or some of the time), 2 (Applied to me to a considerable degree, or a good part of the time) and 3 (Applied to me very much, or most of the time). Overall score for depression is from 0-9 (normal), 10-13 (mild), 14-20 (moderate), 21-27 (severe) and more than 27 is considered as extremely severe.

The score for anxiety from 0-7 is rated as normal, 8-9 as moderate, 10-14 is described as moderate, 15-19 as severe, and ≥20 as very severe. While concerning the stress scale, the ranges between 0-14 are rated as normal, 15-18 as mild, and 19-25 as moderate, 26-33 as severe, and ≥34 as very severe stress. Participants had three choices from 0 to 03 i.e. no symptoms were labeled 0, mild symptoms were rated as 01, and for moderate labeled 02, and severe symptoms were labeled as 03. Each classification of negative emotions was separately calculated according to DASS Scale. Furthermore, demographic attributes for depression, anxiety, and stress of infertile women included age, occupation, household income, educational level, and emotional strain from family. Data were analyzed by using IBM SPSS version 21.0. Percentages and frequencies were provided to assess the categorical variables, like age, educational level, and occupation, duration of the marriage, household income, and cause of infertility. Chi-square test was used to analyze the relationship of level of depression, emotional strain from family anxiety, and stress with infertility type and its association with demographic attributes. A P-value of <0.05 was considered significant.

RESULTS

In the current study, a total of 200 (primary n=100, secondary n=100) infertile women participated. The highest percentage of the level of depression (Severe n=32, 58.2%), anxiety (Severe n=35, 57.3%), and stress (Severe n=30, 50.0%) was found among infertile (primary infertile group) women. Level of Depression was associated with infertility type, extremely severe and severe depression was observed in primary infertility group 77/100=77.0%, while in the secondary infertility group, it was found in 62/100=62.0%. A p-value of 0.049 was found statistically significant. The level of Anxiety was also associated with infertility type. Extremely severe and severe anxiety were observed in the primary infertility group among 77/100=77.0%, while in the secondary infertility group, it was found in 62/100=62.0%. A p-value of 0.009 was found statistically significant. The level of Stress was associated with infertility type. Extremely severe and severe stress was witnessed in the primary infertility group among 80/100=80.0%, while in the secondary infertility group, it was found in 60/100=60.0%. A p-value of 0.007 was found statistically significant. (Table I)

The highest age of women n=106 (52.7%) lies between the 31-40 years and n=150 (75%) were educated. Majority of women (n=133, 66.5%) were housewife, duration of marriage (n=122, 61%) >10 years while household income (n=88, 44%) >30 thousands. About n=71(35%) of women had emotional strain from in-laws and most of their infertility cause (n=81, 40.3%) was a female factor. Association of depression, anxiety, and stress with demographic attributes including age, income, and emotional strain from family were found statistically significant with a p-value of 0.008, <0.0 05, and 0.001 respectively (Table II)

TABLE I: PERCENTAGE AND RELATIONSHIP OF LEVEL OF DEPRESSION, ANXIETY AND STRESS WITH TYPE OF INFERTILITY

Outcome	Total (N = 200)	Primary (N = 100)	Secondary (N = 100)	P-value[¥]
Depression				
Mild	29	08 (27.6%)	21 (72.4%)	0.049*
Moderate	32	15 (46.9%)	17 (53.1%)	
Severe	55	32 (58.2%)	23 (41.8%)	
Extreme Severe	84	45 (53.6%)	39 (46.4%)	
Anxiety				
Mild	26	05 (19.3%)	21 (80.7%)	0.009*
Moderate	35	18 (51.5%)	17 (48.5%)	
Severe	61	35 (57.3%)	26 (42.7%)	
Extreme Severe	78	42 (53.8%)	36 (46.2%)	
Stress				
Mild	33	08 (24.3%)	25 (75.7%)	0.007*
Moderate	27	12 (44.5%)	15 (55.5%)	
Severe	50	30 (60.0%)	20 (40.0%)	
Extreme Severe	90	50 (55.5%)	40 (44.5%)	

*Significant at 5%, **Significant at 1%, [¥]Chi-square Test

TABLE II: ASSOCIATION OF DEPRESSION, ANXIETY, AND STRESS WITH DEMOGRAPHIC ATTRIBUTES

Variables	N	%	P-value
Age (Years)			0.008**
20-25	45	22.4	
31-40	106	52.7	
41-45	49	24.9	
Education level			0.369¥
Uneducated	50	24.4	
Educated	150	75.0	
Occupation			0.1234
Housewife	133	66.5	
Employed	67	33.5	
Duration of marriage			1.2673
<5	35	17.5	
5 to 10	43	21.5	
>10	122	61	
Household income			<0.005*
<10,000 to 15,000	27	13.5	
16,000 to 30,000	85	42.5	
More then 30,000	88	44	
Emotional strain from			0.001**¥
Husband	28	13.9	
In-laws	71	35.3	
Relatives	50	24.9	
Family friends	27	13.4	
No one	25	12.4	
Actual cause of infertility			0.879
Male factor	28	13.9	
Female factor	81	40.3	
Male and female factor	48	23.9	
Unexplained	43	21.4	

**Significant at 1%, ¥Chi-square Test, ŧFisher Exact Test

DISCUSSION

The current study found the highest percentage of the level of depression (Severe n=32, 58.2%), anxiety (Severe n=35, 57.3%), and stress (Severe n=30, 50.0%) among infertile (primary infertile group) women. These findings were supported and contradicted by several national and international studies[14,15], which have shown that depression, anxiety, and stress were significantly associated with infertility and it was a most common problem among infertile women than fertile: In the literature[2,15-18], a similar finding was found in Bangladesh (54.5%) and in Iran study (58%) and the lower percentage was found in studies which were commenced in Sweden (14.8%), Saudi Arabia (21.8%), China (45%) and Nepal (40%). Another study has pointed wide range of variations in prevalence which was reported by the study of **Donkor ES 2017**[19] using the case of Hungary which was 70%.

The present study showed the significant relationship of level of depression, anxiety, and stress (DAS) with the primary infertile group of women. Irfan SN 2018[17] study showed analogous findings with the current study while Yassa M 2019[20] study found the highest level of depression, anxiety, and stress was related to the second type of infertility as compared to primary infertility.

This study has revealed a significant association of age with DAS and the majority of women's age lies between 31-40 years old. This result was in-lined with one of the descriptive study[16] and contradicted by multiple studies[15,18]. Findings of this study also stated that monthly income was associated with DAS and most of the participants had more than thirty thousand. These findings were supported by studies[16,21] and contradicted by a descriptive study[19]. Another significant finding of the current study was an emotional strain of infertile women from in-laws which was also associated with DAS. It was consistent with various researches[22, 23] and inconsistent findings were comparable with previous studies[24,25], following the present results of the study, educational status, duration of marriage and occupation was not finding any significant association with DAS. These outcomes were corroborated with the conclusions submitted by Ying LY 2015[25] while contrast findings were found by studies of Rooney KL 2018[4], Szkodziak F 2020[14] and Honarvar N 2020[15].

CONCLUSION

The highest level of depression, anxiety, and stress was found among infertile (primary infertile group) women and it was shown a significant relationship with the primary type of infertility. Demographic attributes including age, household income, and emotional strain were significantly associated with depression, anxiety, and stress of infertile women.

Ethical Permission: Dow University of Health Sciences Karachi, IRB letter No. IRB-1304/DUHS/ Approval/2019, dated 24-06-2019.
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AUTHOR CONTRIBUTIONS

Razzaque MA:	Conceived Idea, designed and drafting manuscript and writing
Ali A:	Review and final approval of manuscript
Ahmed W:	Statistical analysis and editing of manuscript
Hussain S:	Literature review, review of manuscript
Wahid A:	Data management and drafting of manuscript
Razzaque A:	Data collection, data entry

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