Mental Health Outcome After Habitual Miscarriage

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Abstract-
Habitual miscarriage has been reported as a traumatic event for women leading to severe mental distress and affect quality of life (QoL). Unfortunately, little or no attention is given towards it even not by the health care providers so the aims of current study are to find out the prevalence of stress, anxiety and depression among the women having history of habitual miscarriage their association and the coping strategies. A cross-sectional study was conducted in Obstetrics and Gynecology department of Ziauddin Hospital from July 2020 to December 2020. A detailed proforma along with Depression, Anxiety, and Stress Scale (DASS-21) was used. Coping-scale was used to identify the coping strategies. SPSS version 20 was used. P-value less than 0.05 was considered as significant. The mean maternal age was 28.86 ± 4.45 years. p-value reported a highly significant association between DASS 21 score and habitual miscarriage. Beside this, DASS 21 score has a significant association with the maternal and paternal age. The analysis showed that the female experienced more stress, anxiety and depression if their male counterpart is from the older age group. The female who were having more BMI, facing high level of stress, anxiety or depression. Post-hoc Tuckey's test found significantly higher DASS 21 score among the women who were having a positive family history of miscarriages. Looking over the coping strategies, the majority of study participants were in the state of avoidance coping. It can be concluded that frequent miscarriages increase the burden of mental distress among women with a higher level of avoidance coping attitude.

Index Terms- Habitual miscarriage, Mental distress, Post-traumatic stress

Introduction

Soon after marriage, the first thing a woman fascinate is to give birth to a child but the miscarriage humiliates this emotional journey and if the miscarriage is of habitual type then it can affect the mental health. The literature revealed that during pregnancy the parents get attach to their children and the primigravida lady has more maternal fetal attachment as compare to multigravida (1). When a woman conceive she takes her fetus as a real person and develop the feeling of love and pleasure, she prepares herself psychologically to welcome the child but when she loses that child, feels intense grief and pain (2). Beside this if there is frequent pregnancy loss this grief become more intense and she develops the feeling of losing everything and uncertainty of being a mother ever which affects her relationship with the spouse, leading to severe stress followed by anxiety and depression (3).

It is estimated that about 15-20% of the pregnancies end up as miscarriage, roughly it is estimated that 1/3rd of all pregnant women experienced it (4), while 5% of them having consecutive loss of two pregnancies and 0.5-2.3% having consecutive loss of three or more pregnancies (5, 6). Most of the time the women are unaware of

having pregnancy which leads to miscarriage so exact percentage of miscarriage is unknown. Looking over the developing countries especially Pakistan there are very few studies that have reported the prevalence of miscarriage which is about 10-12% (7) but there is lack of recent data and almost no follow-ups by the healthcare team to report the incidence of post-traumatic stress, anxiety and depression. It is estimated that the rate of mental distress is 3-4 times more than the control group and remains elevated up to 3-4 months then get subside within 6-12 months post-miscarriage (8).

Habitual miscarriage has been reported as a traumatic event for women leading to severe mental distress and affect quality of life (QoL) (9). Soon after miscarriage, the women feels mental confusion, shock, losing hope, guilt, self-blame, fear of reaction of in-laws, fear of losing next pregnancy; so is vulnerable to develop frustration, anger, stress, anxiety, panic attacks and depression (10). In Pakistan, the child birth is not only the parent's desire but to fulfil the expectations of family as well, when it fails, leaving a negative reaction towards the woman which further causes unnecessary distress (11). Unfortunately, little or no attention is given towards it even not by the health care providers (12). Literature review revealed that most of the studies done in western countries report the prevalence of mental distress (13, 14) but unfortunately none of the study has been done in our setup. So the aims of current study are to find out the prevalence of stress, anxiety and depression among the women having history of habitual miscarriage their association and the coping strategies.

Methodology:

Study design and Participants:

A cross-sectional study was conducted in Obstetrics and Gynecology department of Ziauddin Hospital. Prior to starting the study, an Ethical certificate was obtained from the Ethical review committee of PMAS-AAUR. Written informed consent was obtained from the study participants. The study was started in July 2020 and ended up in December 2020. The sample size calculated was 200 by using OpenEpi calculator. The inclusion criteria used was the women who had (i) age more than 18-years (ii) recent history of miscarriage (iii) past history of recurrent miscarriages (iv) was able to understand and mark the appropriate response on Proforma. Those couples were excluded who had (i) history of induced abortion (ii) history of mental illness (iii) were known case of any medical disease. Sample was collected randomly.

Procedure:

A detailed proforma was used, consisting of demographic variables, history of comorbidities, past history of miscarriages, family history, beside this the Depression, Anxiety, and Stress Scale (DASS-21), given by Lovibond (15) was used for analyzing the level of stress, anxiety and depression. It consists of 21 items, each containing four options including 0= "Did not apply to me at all", 1= "Applied to me to some degree", "Applied to me to a good part of the time", and 3= "Applied to me most of the time". The participants were asked to mark on the basis of their experience faced soon after miscarriage. After that asked about the coping strategies which consisted of 28 items, modified form of 60 items cope-scale (16). Coping-scale was used to identify the coping strategies used by the participants under stress. Height in cm and weight in kg was measured and then BMI was calculated manually.

Statistical Analysis:

For analyzing the collected data, SPSS version 20 was used. Frequency and percentages were calculated for all the qualitative variables and mean with standard deviation (SD) for numerical variables. DASS-21 score was calculated. The severity of stress, anxiety and depression was calculated in percentages by identifying mild,

moderate, severe and extremely severe states. ANOVA with Post-hoc Tukey's test was applied to find out association of DASS-21 score with habitual miscarriage. Independent t-test was used to determine the association of DASS-21 score with maternal age, paternal age, BMI and the family history. A linear regression model was applied to compare stress, anxiety and depression and their associations with multiple coping strategies. P-value less than 0.05 was considered as significant.

Results:

About 687 pregnant ladies were admitted in the gynecology department, out of which 363 were having complaint of miscarriage and the majority (96.1%) were having spontaneous miscarriage during the first trimester (69%). Following the inclusion and exclusion criteria around 200 cases were included in the study. The mean maternal age was 28.86 ± 4.45 years and the paternal age was 31.67 ± 4.67 years. Looking over the ethnic group, the majority of participants were Balochi followed by Pathans. It was very difficult to take the history of drug abuse but on enquiring deeply it was found out that a large number of study participants and their spouses were having tobacco consumption in different forms including Gutka, Hukka, Pan, Beeri and Cigarette. The basic demographic variables of study participants are mentioned in Table 1.

Table 1 Demographic variables of study participants

Maternal age (years)	28.86 ± 4.45
Paternal age (years)	31.67 ± 4.67
Parity	1.88 ± 1.49
Weight (kg)	62.94 ± 8.66
Height (cm)	154.8 ± 6.7
BMI	26.2 ± 3.39

DASS 21 score was used for detecting the level of stress, anxiety and depression among the study participants but before that association between DASS 21 score and habitual miscarriage was calculated and p-value reported a highly significant association as mentioned in Table 2.

Table 2 Association of DASS 21 Score with habitual miscarriages

		Sum of Squares	df	Mean Square	p-value
Stress	Between Groups	254.244	4	63.561	0.009
	Within Groups	1331.262	76	17.517	
	Total	1585.506	80		

Anxiety	Between Groups	185.543	4	46.386	0.020
	Within Groups	1558.457	76	20.506	
	Total	1744.000	80		
Depression	Between Groups	27.958	4	6.989	0.006
	Within Groups	895.842	76	11.787	
	Total	923.799	80		

Focusing individually the stress, anxiety and depression score, it was found out that about 98.3% of study participants were facing stress, about 71.4% reported signs of anxiety while about 53.5% of study participants were experiencing depression, further focusing on mild, moderate, severe and extremely severe levels are presented in Figure 1.

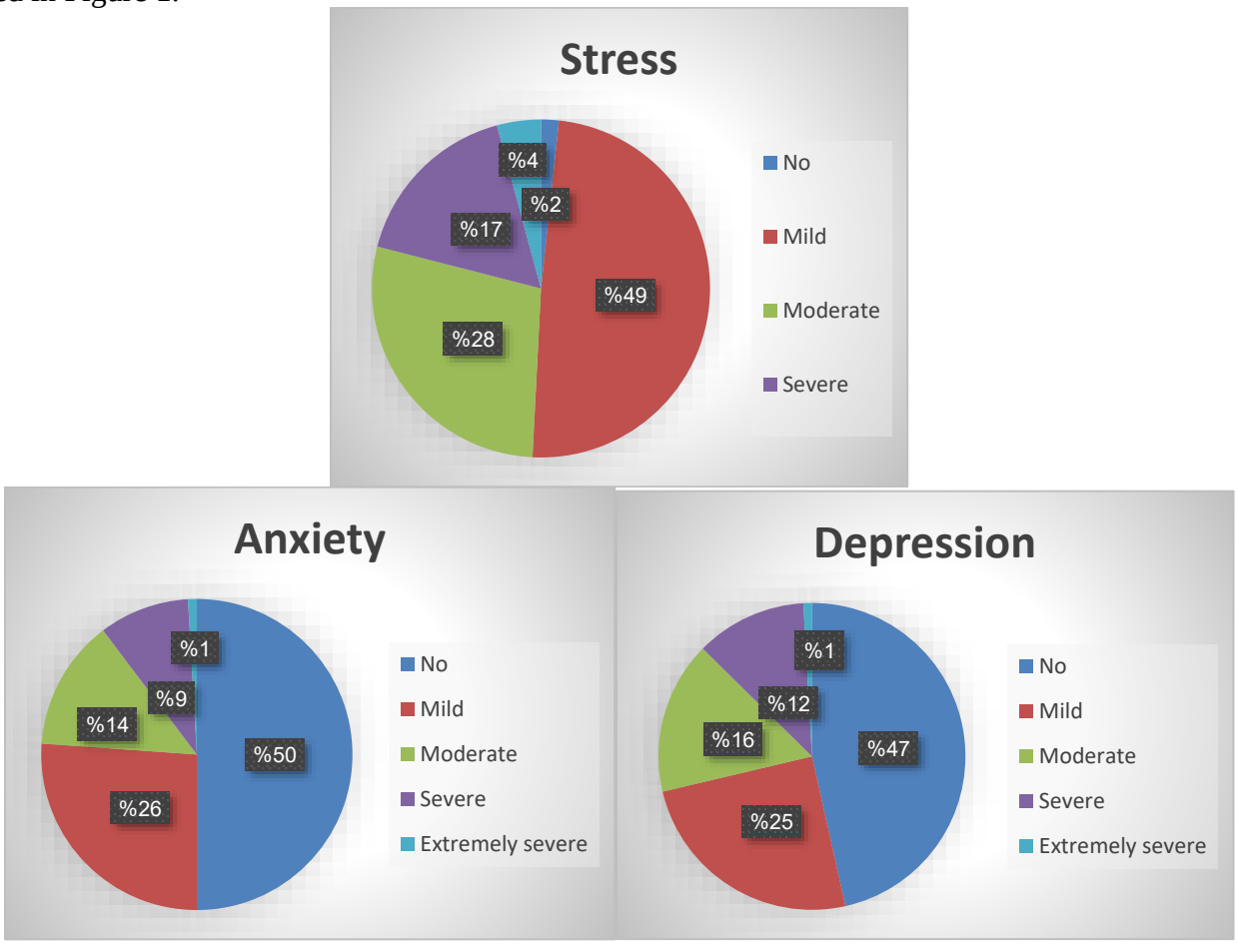

Figure 1 Stress, anxiety and depression scores among study participants

Association of DASS 21 scores with Maternal Age:

It was found out by using independent t-test that DASS 21 score has a significant association with the maternal age as the p-values were 0.02, 0.001 and 0.000 for stress, anxiety and depression respectively.

Association of DASS 21 scores with Paternal Age:

Independent t-test also reported a significant association of paternal age with the DASS 21 score, p=values were <0.001 for all three factors including stress, anxiety and depression. The analysis showed that the female experienced more stress, anxiety and depression if their male counterpart is from the older age group.

Association of DASS 21 scores with BMI:

Independent t-test was also used to determine the association between BMI and DASS 21 scores with significant p=values <0.001, that is the females who were having more BMI, facing high levels of stress, anxiety or depression.

Association of DASS 21 scores with Family History:

ANOVA was applied to find out the association of family history with DASS 21 score then the Post-hoc Tuckey's test was used for further elaboration of associations. The results reported a strong association of stress, anxiety and depression with positive family history of miscarriages and produced a highly significant p-value of 0.007, 0.000 and 0.001 respectively. Post-hoc Tuckey's test found significantly higher DASS 21 score among the women who were having a positive family history of miscarriages.

Association with Coping Strategies:

A linear regression model was applied to compare stress, anxiety and depression and their associations with multiple coping strategies. Coping strategies were classified into three major classes including avoidance coping, approach coping and neutral coping. The majority of study participants were in the state of avoidance coping as mentioned in Table 3.

Table 03. Linear Regression model for comparison of Stress, anxiety and depression scores with coping strategies

Coping Strategies	Stress Scores		Anxiety Score		Depression Score	
	B	p-Value	B	p-Value	B	p-Value
Avoidance Coping						
Self-destruction	0.223	0.020	0.175	0.112	0.342	0.003
Denial	0.125	0.109	0.010	0.723	-0.221	0.334
Substance Abuse	0.141	0.091	0.549	0.001	0.379	0.051

Behavioral Disengagement	0.628	0.001	0.631	0.001	0.699	0.001
Venting	0.499	0.001	0.423	0.003	0.244	0.000
Self-blame	0.898	0.001	0.698	0.001	1.301	0.001
Approach Coping						
Active Coping	0.052	0.598	0.211	0.121	0.310	0.201
Emotional Support	0.043	0.007	0.048	0.010	0.149	0.421
Informational Support	0.172	0.239	0.087	0.382	0.141	0.539
Positive	0.364	0.032	0.139	0.198	0.312	0.013
Planning	0.140	0.412	0.035	0.832	0.052	0.683
Acceptance	0.039	0.801	0.109	0.421	0.235	0.131
Neutral Coping						
Religion	0.201	0.045	0.110	0.235	0.300	0.001

Discussion:

Mental distress is the most common symptom among women after habitual miscarriage. Farren et.al conducted a cohort study to assess the post-traumatic stress anxiety and depression following miscarriage and reported that soon after one month of miscarriage high proportion of women experienced moderate to severe levels of stress (29%), anxiety (24%) and depression (11%) (17). Current study favored this finding but having mild to moderate level of stress (28.2%), followed by anxiety (19.4%) and then depression (16.1%). It also reported a strong association of habitual miscarriage with stress, anxiety and depression (higher DASS score).

Looking over the maternal age literature revealed that the incidence rate of habitual miscarriage is more among the women over 35 years of age along with higher rate of psychological morbidity then the women with younger age. It has been also reported that as the age increases the uncertainty of being a mother also overwhelmed (18). The current study favored this finding by showing a strong positive association of age with the DASS score while the mean age of the study participants noted was 28.86 ± 4.45 years.

Few of the studies have been done to assess the quality of life among affected women and it is concluded that there is not only reduced post-miscarriage quality of life but also stimulating the negative emotions (19, 20). Current study reported that the majority of study participants are in the state of avoidance coping including Self-destruction, denial, substance abuse, behavioral disengagement, venting and self-blame so there is a need for family support especially that of the partner. The current finding is supported by Kim and Sherman's, their

study stated that in south east Asia, the culture is to hide self-expression leading to non-empathic behavior of husband to his wife after miscarriage resulting in further enhancing mental distress (21).

One of the study done by JI Nwafor et.al reported that soon after miscarriage if women could not get the attention or she felt that her concerns are ignored, resulting in developing higher level of stress, anxiety and depression (18). Similarly, Xi Tian & Denise concluded that the supportive communication of the partner was the key point to overcome the grief and to enhance the personal growth. Supportive communication elicits the woman's thoughts, she feels that her spouse is so concerned about her feelings, someone is there to listen to her, to take care of her, to show empathy and these all leave a positive impact on her mental health. It was also noticed that communication with partners was highly effective among women who either became silent or were hyper reactive but after partner's support her grief transformed into the positive attitude (22). Current study also reported a strong association of coping strategies especially emotional support and positive attitude with stress, anxiety and depression scores.

Conclusion:

It can be concluded that frequent miscarriages increase the burden of mental distress among women with a higher level of avoidance coping attitude. There is a need to improve the health care system and regular follow up visits for women who have the history of repeated pregnancy loss and counselling sessions for them by the health care providers to avoid post-traumatic stress, anxiety and depression.

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