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Frequency of Depression in Women after Spontaneous Miscarriage

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ABSTRACT

Post-miscarriage depression represents an important but under-studied community health burden. Miscarriage or pregnancy loss before the 24th week of gestation is not only a physiological occurrence but also a psychological shock that leads to depressive disorders. The objective of this descriptive cross-sectional study was to find out the prevalence of depression and its correlates among women admitted in a tertiary care hospital in Karachi, Pakistan, following miscarriage. One hundred and fifty-five women aged between 18-50 years and who had experienced pregnancy loss to the 24 weeks were recruited by consecutive sampling. ICD-10 depression inventory scale was used to measure depression. The average age of the participants was 29.4 +- 6.2 years and the mean gestational age at loss was 14.2 +- 4.3 weeks. Depression was identified to occur at 18.0% (27/150). Stratified reality indicated that there are considerable relations between depression and maternal age more than 30 years (p = 0.048), rural residence (p = 0.041), and low monthly income (p = 0.031). There were no statistically significant relationships between gravidity, BMI and gestational age at miscarriage. These results emphasize the psychological effect of miscarriage and the importance of socioeconomic and demographic factors. Routine psychological assessment and incorporation of mental health services into obstetric care are justified particularly in higher-risk women. Sealing these gaps can assist in alleviating the psychiatric morbidity burden on post-miscarriage women in the long term.

INTRODUCTION

Depression is a psychiatric disorder that is usually described as a mood, behavior, and cognition dysfunction and thus has its symptoms as hopelessness, insomnia, appetite, and even suicidal thoughts (Nzoma and Shaw, 2024; Margoni, Preziosa, Rocca, and Filippi, 2023; Ambriz-Lopez et al., 2017). Miscarriage, which is the unintended loss of pregnancy during the gestation period that is less than 24 weeks, is not only a physiologic phenomenon but also a significant psychological stressor contributing to the development of depressive disorders (Turesheva et al., 2023; La, Wang, Zhang, and Liang, 2021). The psychological burden after miscarriage is usually not related to the gestational age as much as it is to the maternal-fetal bond, and multiple miscarriages increasing the risk of depression, anxiety, dysphoria, and a sense of not being in control of reproductive health (Fernandez-Pineda, Swift, Dolbier, and Banasiewicz, 2024; Ambriz-Lopez et al., 2017).

Findings in at least three studies (all 2,500 plus women) in the last 30 years showed a significant correlation between early pregnancy loss (EPL) and mental illness. Farren et al. (2018) found that 8-20 percent of women had moderate to severe depressive symptoms 4-6 weeks after the miscarriage, and 25-39 percent qualified as having post-traumatic stress disorder (PTSD) at one month. Psychological sequelae may last longer than the acute course, and 30-55% of women will develop major depression six months after a miscarriage (Jia, Li, Liu, and Wang, 2023; Kukulskiene and Zemaitiene, 2022; Bialek and Malmur, 2020; Sajjad, 2025). Miscarriage has therefore been identified as a disruptive life experience, commonly linked with acute and chronic psychiatric morbidity (Mendes, Fonseca, and Cameiro, 2023).

Besides depression, anxiety disorders and PTSD have been found to be causes of miscarriage, which, together with depression, are associated with poor maternal well-being (Cankaya and Ibrahimoglu, 2022; Quenby et al., 2021). The comparative research has registered considerably high scores on depression and anxiety in women who had previously experienced a miscarriage compared to women without a prior loss (Ozgen et al., 2022; Wang et al., 2021). In an article about 782 pregnant women, Malik et al. (2020) also found that women with a history of miscarriage had higher chances of developing depressive symptoms, especially those with low educational status and low family income. He et al. (2019) in turn discovered that 15.3% of women in their cohort

became depressed after miscarriage, and socioeconomic and demographic factors further affected risk. A more recent study conducted in Quetta, Pakistan, also drew attention to the significant incidence of PTSD in women after miscarriage, which underscores the psychological susceptibility of local communities (Khan and Saadat, 2024).

Since post-miscarriage depression is a major burden and is linked with demographic, socioeconomic, and reproductive factors, there is an urgent need to understand its prevalence and determinants in local settings. Recognition of at-risk groups can inform early screening, prompt counseling and incorporation of mental health services in obstetric care. The research was thus conducted to identify the prevalence of depression in women who had been admitted following miscarriage in a tertiary care hospital in Karachi, Pakistan.

METHODOLOGY

This research was developed as a descriptive cross-sectional study and was carried out at the Department of Obstetrics and Gynecology at Abbasi Shaheed Hospital, Karachi on 21 February 2025 to 21 May 2025. The study lasted eight months and began once the synopsis was approved by the College of Physicians and Surgeons Pakistan (CPSP). The total number of women recruited was 150, when the study took into account the error of 5% and the confidence interval of 95, using a calculated prevalence level of depression in women following miscarriage of 10%. Non-probability consecutive sampling was used in sampling.

Sample Selection

The women included in the study were aged 18-50 years and had been admitted to deliver and had suffered loss of pregnancy up to 24 weeks of gestation, either primigravida or multigravida. Women who had had a previous diagnosis of psychiatric illness, gynecological (fibroid, endometriosis or PCOS), or medical illness (chronic liver disease, diabetes mellitus (FBS >120, HbA1c >6%), hepatitis, or hypertension (BP >150/90 mmHg)) were excluded. Women who were on antipsychotics or those who had undergone abortion voluntarily were excluded as well.

Data Collection Procedure

The research was done with the permission of the Institutional Ethical Review Committee. All eligible women admitted to the Obstetrics and Gynecology Department were approached to take part. The purpose of the research was elaborated and informed consent signed in writing was obtained by each respondent before the enrolment. At the time of recruitment, demographic information was taken. History and examination were used to acquire clinical information. Vitals such as blood pressure and heart rate were checked; blood pressure checked with a sphygmomanometer cuff on both arms, weight checked on a weighing scale and height checked on a stadiometer. Baseline body mass index (BMI) was computed.

The depression diagnosis was conducted according to the ICD-10 scale of depression assessment (Annexure I) under the guidance of a consultant gynecologist whose professional experience is at least five years. The results were all recorded in a pre-planned pro-forma.

Data Analysis

All data collected were inputted and analyzed in SPSS version 26.0 windows. Quantitative variables age, BMI, gestational age, miscarriages, and monthly income were given as mean +- standard deviation. The Shapiro-Wilk test was used to check the normality of data. Qualitative variables, such as place of residence (urban/rural) and other possible determinants of depression (as per the proforma) were also given as frequencies and percentages. The effect modifiers such as gestational age, age, monthly income, family size, educational level, place of residence and number of miscarriages were stratified to determine their impact on the outcome variable (depression). Fisher exact test or chi-square test was used accordingly after stratification. The p-value [?]0.05 was taken as statistically significant.

RESULTS

The study involved a total of 150 women that met the inclusion and exclusion criteria. The average age of the participants was 29.4 +- 6.2 years and most of the participants (61.3% or 5/8) were in the age bracket of 21-30 years. The mean BMI was 26.8 +- 3.9 kg/m2. The predominant number of participants was multigravida (64.7%), and primigravida (35.3%). The average gestation period at which the pregnancy was lost was 14.2 +- 4.3 weeks.

Table 1

Demographic and Clinical Characteristics of the Study Participants (n = 150)

Variable	Frequency (%)	Mean ± SD
Age (years)		29.4 ± 6.2
18–20	18 (12.0)	
21–30	92 (61.3)	
31–40	34 (22.7)	
>40	6 (4.0)	
BMI (kg/m^2)		26.8 ± 3.9
Gestational age at loss (weeks)		14.2 ± 4.3
Gravidity		
Primigravida	53 (35.3)	
Multigravida	97 (64.7)	
Place of residence		
Urban	94 (62.7)	
Rural	56 (37.3)	
Monthly income (PKR)		42,300 ± 13,500

The frequency of depression among women after miscarriage, assessed using the ICD-10 depression inventory, was 18.0% (27/150).

Table 2

Frequency of Depression Among Women After Miscarriage

Depression Status	Frequency (n)	Percentage (%)
Present	27	18.0
Absent	123	82.0
Total	150	100

The stratified analysis revealed that women aged >30 years (27.8) were more likely to have depression than those aged [?]30 years (14.0) (p = 0.048). Low monthly income (p = 0.031) and rural residence (p = 0.041) were also significantly related to depression. There was no statistically significant correlation between depression and gravidity, BMI and gestational age at loss.

Table 3

Stratified Analysis of Factors Associated with Depression After Miscarriage

Variable	Depression Present n (%)	Depression Absent n (%)	p-value
Age (years)			
≤30 (n=110)	15 (14.0)	95 (86.0)	0.048*
>30 (n=40)	12 (27.8)	28 (72.2)	
Gravidity			
Primigravida (n=53)	8 (15.1)	45 (84.9)	0.623
Multigravida (n=97)	19 (19.6)	78 (80.4)	
Place of Residence			
Urban (n=94)	11 (11.7)	83 (88.3)	0.041*
Rural (n=56)	16 (28.6)	40 (71.4)	
Monthly Income (PKR)			
<40,000 (n=72)	18 (25.0)	54 (75.0)	0.031*
≥40,000 (n=78)	9 (11.5)	69 (88.5)	
Gestational Age at Loss			
≤12 weeks (n=81)	13 (16.0)	68 (84.0)	0.554
>12 weeks (n=69)	14 (20.3)	55 (79.7)	

**p-value ≤0.05 considered statistically significant*

Summary of Results

The post-miscarriage depression rate was 18 percent in women. Depression was significantly related to age exceeding 30 years, rural dwelling, and low monthly income, whereas gravidity, BMI and gestational age were not important.

DISCUSSION

The present study evaluated the prevalence rates of depression among women who had miscarriages after delivery and developed variables associated with depression. The findings revealed that 18 per cent of the women became depressed following the miscarriage, demonstrating the severe psychological effects of pregnancy loss. This prevalence is within the range that has been reported in previous researches that have indicated the prevalence of post-miscarriage depression has been between 10 percent and 25 percent, depending on the population being studied, the measurement tools, and the postpartum period being considered. These results justify the above-mentioned fact that miscarriage is not only a physical health complication but also a major mental health issue that should be detected and addressed as soon as possible.

In the current research, women older than 30 years were observed to have a significantly higher prevalence of depression as compared to women younger than 30 years. This is explained by the fact that there is more psychological pressure associated with the age of the mother since the expectations of forming the family and having the children are higher. Older women are more likely to perceive miscarriage as a risk to future child bearing and this can worsen depression symptoms. These findings are consistent with other studies that have reported that advanced maternal age is a risk factor in psychological morbidity in the context of pregnancy loss.

SES was also found to be a predictor of depression. The difference was highly significant due to the high level of likelihood of having depressive symptoms among women in the low incomes category than those in the high household income category. One can attribute such correlation to financial strain, inaccessibility of proper healthcare services and absence of psychosocial assistance. This has been observed in other low and middle-income countries, socioeconomic disadvantage is one of the factors that lead to predisposition to poor mental health outcomes in women. The findings of this analysis provide a description of the importance of considering social determinants of health when discussing psychological well-being following miscarriage.

Place of residence was another meaningful correlation because the women of the countryside portrayed higher levels of depression than the urban women. This can be credited to the inaccessibility of health facilities, the failure to seek medical attention, the culture stigmatizing miscarriage, and the lack of supportive equipment within the villages. It raises the question of the disparity in mental health between rural and urban populations and the need to build community-based mental health services in rural communities.

Depressions on the other hand were found not to have statistically significant correlation with gravidity, body mass index and gestational age at loss within this study. Though other research studies have anticipated that depression is highly prevalent among women with multiple miscarriages, we were unable to establish a comparable association that can be attributed to the fact that the amount of women with several miscarriages was too small. Likewise, the gestational age did not have any influence on the occurrence of depression but the literature has suggested that the losses experienced during the later trimesters might be more emotive. Such differences can be ascribed to differences in terms of culture in terms of perception of pregnancy loss or at which point of pregnancy is tested to be depressed.

The implications of this study are a few. To begin with, they highlight the importance of a routine psychological screening of women after a miscarriage and especially those who are said to be on the high risk list by virtue of old age, rurality and low socioeconomic status. Second, they refer to the need to take into account the integration of mental health services in obstetric and gynecological assistance. Interventions and counseling including grief management and early psychological referral may help to diminish the long-term experience of mental health effects. Last, but definitely not least, strategies in the public health sector should be implemented to minimize miscarriage stigma and create awareness on the psychological effects of miscarriage, in particular in localities that have inadequate resources.

This research had a constraint. The study was cross-sectional hence the causal relationship between miscarriage and depression could not be ascertained. A single center might be used as the sample, which might reduce the cross-sectional applicability of the findings to other groups. In addition, the survey involved self-reported depression inventory rather than psychiatric assessment, which may produce a bias in reporting. Despite these restrictions, the study informs about the prevalence and predictors of post-miscarriage depression in a local environment, and it emphasizes that specific interventions are urgently needed.

CONCLUSION

In this research, it is proven that approximately one out of five women has depression after a miscarriage, which reflects the significant psychological effect of depression. This resulted in significant associations with late maternal age, rural living and poor socioeconomic status, which point towards the critical impact of demographic and social factors on the development of mental health. The lack of relationships with gravidity, BMI, and gestational age indicates that psychosocial and contextual variables may be more influential in the development of post-miscarriage depression compared to clinical variables. The findings support the necessity of formal psychological assessment procedures in delivery rooms, especially among high-risk populations. Grief counseling, social support, and early psychiatric referral should be incorporated in regular post-miscarriage care, which could significantly reduce long-term psychiatric morbidity. Furthermore, increasing awareness, decreasing stigma, and access to mental health resources in resource-restrictive environments are important measures toward improving the well-being of mothers following pregnancy loss.

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