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Research Article

Assessment of Emotional Distresses among Women with Recent Miscarriage in Kerbala, 2024

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Abstract

Background: Miscarriage is considered one of the major complications of pregnancy and has short- and long-term adverse emotional effects on women. Women may experience emotional distress disorders after miscarriage, such as anxiety, anger, depression, or hopelessness. The study aimed to assess the emotional distress of recent miscarriage among women in Holly Kerbala 2024.

Methods: A cross-sectional study was conducted on 450 women who had 1 or more previous miscarriages before 6 months or less and who attended Obstetrics and Gynecology Teaching Hospital and Al-Husseinyia General Hospital from March 2024 to July 2024. Emotional distress was assessed using the revised Perceived Emotional Distress Inventory (PEDI).

Results: The study found that the history of previous miscarriage was reported by 50.7%, and spontaneous miscarriage by more than two-thirds (66%). Miscarriage in the first trimester was reported by 70%. Complications after miscarriage were reported close to two-thirds (65.3%), including bleeding, infection, and retained pieces. Infertility before miscarriage was reported by more than one half of participants (53.1%); most of them have infertility of one year's duration. Regarding emotional distress, the highest mean score was for anger (1.60±0.68), and the lowest was for hopelessness (1.40±0.74). There is significant correlation between occupation, chronic disease, drug history, parity, previous miscarriage, complication after miscarriage, infertility before miscarriage, type of pregnancy, and all the items of the perceived emotional distress inventory scale (PEDI).

Conclusions: There was a significant association between miscarriage and emotional distress (anger, anxiety, depression, and hopelessness), and there is an approximately close ratio between all four items of the emotional distress scale in women who have had previous miscarriages.

Keywords: Miscarriages, Anxiety, Depression, Emotional distresses, Hopelessness

Introduction

Miscarriage refers to the loss of a pregnancy before the fetus reaches viability. Globally, it is estimated that approximately 23 million miscarriages occur each year, which equates to around 44 pregnancy losses every minute. The combined risk of miscarriage among recognized pregnancies is about 15.3%. In terms of prevalence, about 10.8% of women have experienced one miscarriage, 1.9% have had two, and 0.7% have suffered three or more [1]. According to the American College of Obstetricians and Gynecologists (ACOG), spontaneous abortion, or miscarriage, is the most frequently occurring type of pregnancy loss. Estimates suggest that miscarriage occurs in around 26% of all pregnancies, with up to 10% showing clinical signs [2]. Miscarriage is one of the most common problems during pregnancy, affecting approximately 10 to 15% of pregnancies. The criteria used to define miscarriage vary from country to country. In Canada, the United States, and Australia, miscarriage is defined as the loss of a pregnancy before the twenty-first week of a pregnancy, which typically lasts forty weeks. In the United Kingdom, the definition includes all pregnancy losses from the moment of fertilization until the twenty-fourth week of pregnancy [3]. One of the most common causes of maternal death is miscarriage. According to a recent study based on 115 nations from 2003 to 2009, 7.9% of maternal deaths were attributed to miscarriage [4].

The World Health Organization (WHO) defines miscarriage as “the expulsion from its mother of an embryo or fetus weighing 500 g or less, corresponding to a gestational age of up to 20

completed weeks of gestation with no signs of life." The Ministry of Health and Social Welfare estimates in Iraq that approximately 16% of maternal deaths are the result of miscarriage complications [5]. Miscarriage is clinically classified into two main types: early miscarriage, "occurring before 13 weeks of gestation," and late miscarriage "occurring between 13 and 24 weeks of gestation" [6]. In Iraq, many women have been experiencing recurrent miscarriages in recent years. The increase in abnormal karyotypes and patterns of recurrent miscarriages has been shown to have an impact on this condition with the increase in environmental pollution in Iraq [7]. For women/couples with recurrent pregnancy loss (RPL), the situation is even more dire. Although the prevalence of RPL is not high in the general population, it is significant for women who experience miscarriage. Therefore, each miscarriage deserves careful investigation to identify specific causes and risk factors [8].

Although the cause of most miscarriages is unknown, they presumably result from a complex interplay between parental age and genetic, hormonal, immunological, and environmental factors. The greatest known risk factor is maternal age. Younger women have a slightly higher risk of miscarriage, whereas older mothers have a much higher risk. The underlying risk factors for miscarriage and other unfavorable pregnancy outcomes may be similar. Fewer studies have examined how pregnancy problems may predict future miscarriage risk, but several have examined the relationship between past miscarriages and future risk of other pregnancy issues [9].

Miscarriage is a medical event with a complex combination of psychosocial sequelae; however, research indicates that healthcare providers and clinical teams often fail to attend to the complex and sensitive nature of miscarriage [10]. Many cases go unreported, and even among professionals who provide care for miscarriages, the emotional impacts may be severe but frequently receive little to no attention. In scholarly research, they are occasionally confused with the results of other perinatal losses, like stillbirth and neonatal death [11]. Numerous qualitative studies have detailed and assessed the miscarriage experience of women who wanted to bring their pregnancy to term. One study discusses the traumatic elements of miscarriage, such as pain, blood, and quick hospitalization. Some women saw their miscarriages as personal failures and were worried that they might have been caused by a disease, food they had consumed, or even breathing in car exhaust fumes. Other women believed that they were under too much stress, that they did not want the baby enough, or that their own negative thoughts were the cause of the miscarriage [12].

Miscarriage can also lead to a threat to life; besides that, it can increase women's risk for psychiatric symptoms. It can cause grief, depression, and anxiety following miscarriage. There have also been reports of obsessive-compulsive disorder and post-traumatic stress disorder [13]. Qualitative work has highlighted that many women experience grief and guilt after miscarriage, and that the 'silence that surrounds miscarriage' can lead to feelings of loneliness and isolation [14]. A history of psychiatric illnesses, infertility, lack of social support or marital satisfaction, fetal loss in prior pregnancies, and unintended or unwanted pregnancies are some of the risk factors that contribute to psychiatric issues [15]. Both the woman who miscarries and her male spouse are impacted by recurrent miscarriages. When comparing the impacts of repeated miscarriages, 51% of women and 19% of their male partners showed a risk of depression, while 72.7% of the affected women and 66.3% of their male partners showed a risk of anxiety. Women are generally more likely to experience anxiety and despair [16]. This issue of reproductive health is extremely complicated since it impacts not only the health of women but also that of their partners, kids, and entire family. Numerous scientific studies have demonstrated the connections between miscarriage and various mental and physical health conditions, including difficult grief, anxiety, depression, post-traumatic stress disorder, suicidal thoughts and feelings, psychosomatic illnesses, sexual health disorders, and more. One month following the loss of a pregnancy, 29% of women had symptoms suggestive of post-traumatic stress disorder, 24% of moderate-to-severe anxiety, and 11% of moderate-to-severe depression, according to one of the largest studies on longitudinal morbidity following pregnancy loss. Even after nine months, these symptoms were still at clinically significant levels, even though they gradually decreased [17]. Other research has demonstrated that women seem to be at a very high risk of psychological morbidity after miscarriage; within a month, up to 41% of women self-report clinically significant levels of anxiety, 36% report depression, and 39% self-report meeting criteria for PTSD after three months [18]. Following a miscarriage, anxiety symptoms begin right away and last for almost four to six months. Additionally, there is typically a lot of uncertainty and anxiety while waiting for the next

pregnancy, which makes it harder for the person to deal with issues. As per the World Health Organization's guidelines, women should wait six months following a miscarriage before trying to conceive again. Nonetheless, between 50 and 80 percent of women conceive again shortly after the miscarriage, and the subsequent pregnancy may result in anxiety and melancholy. Therefore, it's uncertain if women's anxiety or depression is linked to previous recurrent miscarriages. Additionally, it is unknown what the long-term effects of a repeated miscarriage will be [19]. This study aimed to evaluate the emotional distress of recent miscarriage among women in Holly Kerbala in 2024.

Materials and Methods

Subjects

Samples were collected from two hospitals; the first hospital is Obstetrics and Gynecology Teaching Hospital, which is in the center of Kerbala, and the second one is Al-Husseinyia General Hospital, which is in the periphery. The data was collected by the non-probability convenience sampling technique. The estimate of the sample size was predicated on the 50% chance of a sufficient association between female miscarriage and emotional distress, with a 95% CI and a 5% margin of error. The aforementioned estimation technique indicated that a minimum sample size of 384 was needed. By the end of the survey, 450 samples had been collected, more than the study's minimum need. The equation below has been approved by the pilot study:

$N = Z^2 P (1-P)/d^2$

- Where n is the sample size.
- Z is the statistic corresponding to level of confidence (1.96 for 95% CI).
- P is expected prevalence (that can be obtained from the same studies or a pilot study conducted by the researchers); p was set as 0.5, because the proportion was not known.
- d is precision (corresponding to effect size).

Study methods

Based on the non-probability-convenience sampling technique method, we select 450 women who had 1 or more previous abortions within 6 months or less and who attended Obstetrics and Gynecology Teaching Hospital and Al-Husseinyia General Hospital. Data was collected by face-to-face interviews. The data relevant to the study's purpose was obtained through a specially structured, validated questionnaire. The items of the questionnaires were either formulated or identified and extracted from published questionnaires or scientific literature [20]. The questionnaire includes demographic data (age, occupation, residence, education, economic state, smoking, parity, previous miscarriage, type of miscarriage, chronic disease, drug history, G.A. at time of miscarriage, complication after miscarriage, infertility before miscarriage, duration of infertility before miscarriage, and type of pregnancy before miscarriage: spontaneous or induced pregnancy). The second part contained the Perceived Emotional Distress Inventory (PEDI), a 15-item self-report screening scale designed to reflect the presence and severity of emotional distress and general mood disturbances. The instrument assesses key emotional responses such as anxiety, anger, depression, and hopelessness, with a particular focus on distinguishing between the expression and suppression of angry feelings. Participants responded to each item by indicating the extent to which they had experienced emotional distress symptoms during the past month, using a 4-point Likert scale ranging from 0 to 3.

Inclusion criteria

Women who have had one or more previous miscarriages before 6 months or less.

Exclusion criteria

Exclusion criteria include women who are seriously ill to ensure participants' safety and to reduce variability in study results, and women who refuse cooperation.

Ethical consideration

The study was approved by the research ethics committee at the College of Medicine, University of Kerbala, and the Kerbala Health Directorate, dated May 21, 2024, No. 24-26.

Statistical Analysis

The Statistical Package for the Social Sciences (SPSS 24.0 for Windows) was used to enter and analyze the data for this study. In the relevant tables and figures, the descriptive statistics were utilized in terms of frequency, percentage, and mean ±SD. The Kruskal-Wallis test was used to compare the means of three or more groups, and the Mann-Whitney test was used to compare the means of two groups in order to identify any potential associations for abnormally distributed variables (by applying the Kolmogorov-Smirnov test of one sample test). When $p < 0.05$, the significance threshold was taken into account.

Results

The study showed that more than one half of the study participants (52.7%) were aged 24-35 years. Close to one half of the study women (49.6%) were employed. Primary and secondary educations were close to one half of the study population (50.9%). Chronic disease and drug abuse were reported by more than one-third of the study women (36.4% and 35.3%, respectively). Concerning monthly income, the current study shows the rate of medium income for women who had previous miscarriages was 59.8%, more than the poor income (16.9%) and good income (23.3%), as described in Table 1. Null parity was reported by one quarter of the study women. A history of previous miscarriage was reported by 50.7%. Spontaneous miscarriage was reported by more than two-thirds (66%) of the study women. Close to two-thirds of the study women (65.3%) reported complications after miscarriage. Bleeding, infection, and retained pieces were the most frequent complications reported by the study women (Figure 1). Infertility before miscarriage was reported by more than one half of the study participants (53.1%). Induced pregnancy was reported by about one-third of the study women (Table 2).

Regarding the 15-item self-report screening scale of the questionnaire form to assess the presence and severity of emotional distress and general mood disturbance (higher scores correspond to higher levels of perceived emotional distress), the results of the study concluded that the Global Severity Index (GSI) was 22.97 out of 45 and the mean was 1.53±0.57 (Table 3).

Table 1: Socio-demographic characteristics of the study participants

Characteristics	Categories	Frequency (%)
Age (years)	23 or less	82 (18.2 %)
	24-29	117 (26 %)
	30-35	120 (26.7 %)
	36-41	84 (18.7 %)
	42 and more	47 (10.4 %)
Residence	Rural	205 (45.6 %)
	Urban	245 (54.4 %)
Occupation	Housewife	227 (50.4 %)
	Employee	223 (49.6 %)
Education	Illiterate	43 (9.6 %)
	Primary	118 (26.2 %)
	Secondary	111 (24.7 %)
	College and higher	178 (39.6 %)
Monthly income	Poor	76 (16.9 %)
	Medium	269 (59.8 %)
	Good	105 (23.3 %)
Smoking	Yes	54 (12.0 %)
	No	396 (88.0%)
Chronic disease	Yes	164 (36.4 %)
	No	286 (63.6 %)
Drug history	Yes	159 (35.3 %)
	No	291 (64.7 %)

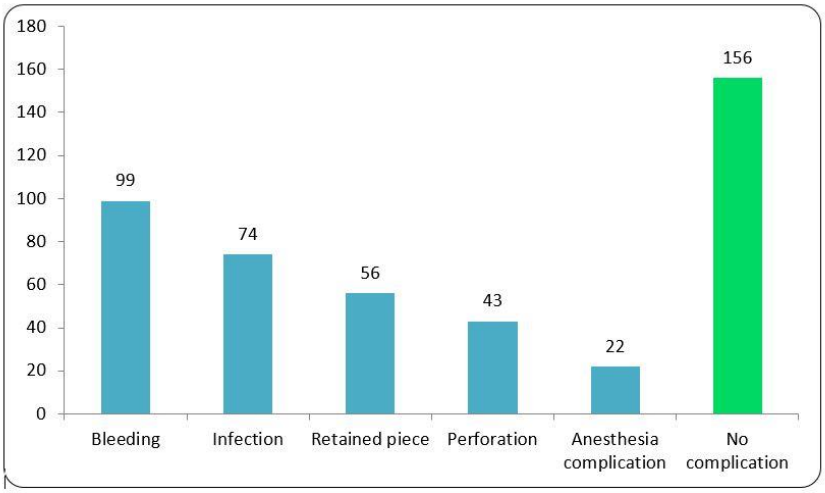

Figure 1: Types of complications after miscarriade among study participants

Table 2: Obstetric and gynecological history of the study women

Characteristics	Categories	Frequency (%)
Parity	Null	115 (25.6 %)
	Primi	187 (41.6 %)
	Multi	148 (32.9 %)
Previous miscarriage	Yes	228 (50.7 %)
	No	222 (49.3 %)
Type of miscarriage	Induced	153 (34.0 %)
	Spontaneously	297 (66.0 %)
GA at time of miscarriage	First trimester	315 (70.0 %)
	Second trimester	135 (30.0 %)
Complication after miscarriage	Yes	294 (65.3 %)
	No	156 (34.7 %)
Infertility before miscarriage	Yes	239 (53.1 %)
	No	211 (46.9 %)
Duration of infertility	One year	173 (72.4 %)
	Over one year	66 (27.6 %)
Type of pregnancy	Spontaneously	306 (68.0 %)
	Induced	144 (32.0 %)

In regard to anxiety, anger, depression, and hopelessness scores, the highest mean score was for anger, followed by anxiety and depression; the lowest score was for hopelessness, as shown in table 3 and figure 2.

In regard to the correlation of the socio-demographic and obstetric/gynecological correlates and the severity of the score, analysis of data revealed that employed women had significantly higher severity scores than housewives (p=0.004).

There was no significant difference between educational level and the severity score (p=0.066). The results showed that women with no history of chronic diseases and those with no drug history had significantly lower severity scores than those with a history of chronic diseases and those with drug history (p= 0.005 and 0.041, respectively).

There was a significant difference between parity and the severity score (p=0.045); the post hoc test concluded that nulliparous women had significantly lower severity scores than primiparous and multiparous women. The study revealed that women with a history of previous miscarriage, presence of complications after miscarriage, history of infertility before miscarriage, and induced pregnancy had significantly higher severity scores than others (p<0.05) (Table 4).

Discussion

The study found that there was emotional distress following miscarriage among women, and there was a statistical correlation between socio-demographic characteristics and gynecological and obstetric history with all items of the perceived emotional distress inventory scale. When assessing the emotional distress following miscarriage among women by using the perceived emotional distress inventory scale, it was revealed that the women who have miscarriages suffer from emotional distress. According to the current study, the largest proportion of the study sample was in the 30- to 35-year-old age range, which disagrees with the study done in Iraq [21] that showed the majority of women between the ages of 23 and 27, another study done in Iraq [4] that showed the highest percentage between the ages of 20 and 29, and a study done in Turkey [22] that showed the highest percentage between 26 and 35 years. Our study disagrees with the study that was done in Egypt [23], which showed the rate of primary and secondary education is 40%, while the rate of college and higher education is 60%; the rate of illiteracy is 0%, while our study showed the rate of illiteracy was 9.6%, the rate of primary and secondary education was 50.9%, and the rate of college and higher education was 39.6%. Our study showed that the percentage of women that do not have chronic disease was 63.6%, while those that have chronic disease was 36.4%. This is close to the study that was done in India [24] that showed the rate of women who do not have chronic disease is 73%, while the rate of women that have chronic disease is 27%.

The current study showed the rate of previous miscarriage for women was 50.7%, approximately equal to the women who do not have previous miscarriages (49.3%). This contrasts with the study that was done in Iraq [25] that showed the rate of women who don't have previous miscarriages is 13.3%, which was less than the rate of women who

have previous miscarriages, 86.7%. Our study showed that the rate of housewives is 50.4%, which is approximately equal to the rate of employees, 49.6%. This contrasts with the study that was done in Bangladesh [26], which showed the rate of housewives was 70% more than the rate of employees, which was 30%, and disagrees with the study that was done in Portugal [27], which showed the rate of employees was 93.2% more than the rate of housewives, which was 6.8%.

Table 3: Frequencies and mean scores for answers to the 15 items of the questionnaire.

PEDI Questions		Not at all	Sometimes	Often	Very much so	Mean score
PEDI: Anxiety	I feel strained (Q2)	49 (10.9%)	169 (37.6%)	144 (32%)	88 (19.6%)	1.60±0.92
	I feel nervous (Q5)	73 (16.2%)	139 (30.9%)	130 (28.9%)	108 (24%)	1.61±1.02
	I feel confused and restless (Q6)	61 (13.6%)	154 (34.2%)	145 (32.2%)	90 (20%)	1.59±0.96
	I feel overwhelmed by "simple difficulties" (Q7)	76 (16.9%)	170 (37.8%)	112 (24.9%)	92 (20.4%)	1.49±1.00
	Mean score					1.57±0.69
PEDI: Depression	I worry that my condition will get worse (Q8)	95 (21.1%)	141 (31.3%)	127 (28.2%)	87 (19.3%)	1.46±1.03
	I feel sad (Q14)	57 (12.7%)	128 (28.4%)	140 (31.1%)	125 (27.8%)	1.74±1.00
	I am not enjoying the things I usually do for fun (Q9)	78 (17.3%)	159 (35.3%)	137 (30.4%)	76 (16.9%)	1.47±0.97
	Mean score					1.56±0.74
PEDI: Hopelessness	I feel distant from my friends (Q3)	89 (19.8%)	149 (33.1%)	131 (29.1%)	81 (18%)	1.45±1.00
	I am losing hope in the fight against my illness (Q10)	108 (24%)	143 (31.8%)	115 (25.6%)	84 (18.7%)	1.39±1.05
	I feel like a failure (Q15)	111 (24.7%)	134 (29.8%)	115 (25.6%)	90 (20%)	1.41±1.07
	I am losing faith in my medical treatment (Q12)	114 (25.3%)	141 (31.3%)	113 (25.1%)	82 (18.2%)	1.36±1.05
	Mean score					1.40±0.74
PEDI: Anger	I get easily irritated (Q1)	83 (18.4%)	160 (35.6%)	81 (18%)	126 (28%)	1.56±1.09
	I am angrier than I am willing to admit (Q4)	83 (18.4%)	145 (32.2%)	138 (30.7%)	84 (18.7%)	1.50±1.00
	I feel angry (Q13)	55 (12.2%)	123 (27.3%)	144 (32%)	128 (28.4%)	1.77±1.00
	I "boil inside", but I try not to show it (Q11)	81 (18%)	135 (30%)	121 (26.9%)	113 (25.1%)	1.59±1.05
	Mean score					1.60±0.68
GSI						22.97±8.50
Mean						1.53±0.57

PEDI; Perceived Emotional Distress Inventory, GSI; Global Severity Index.

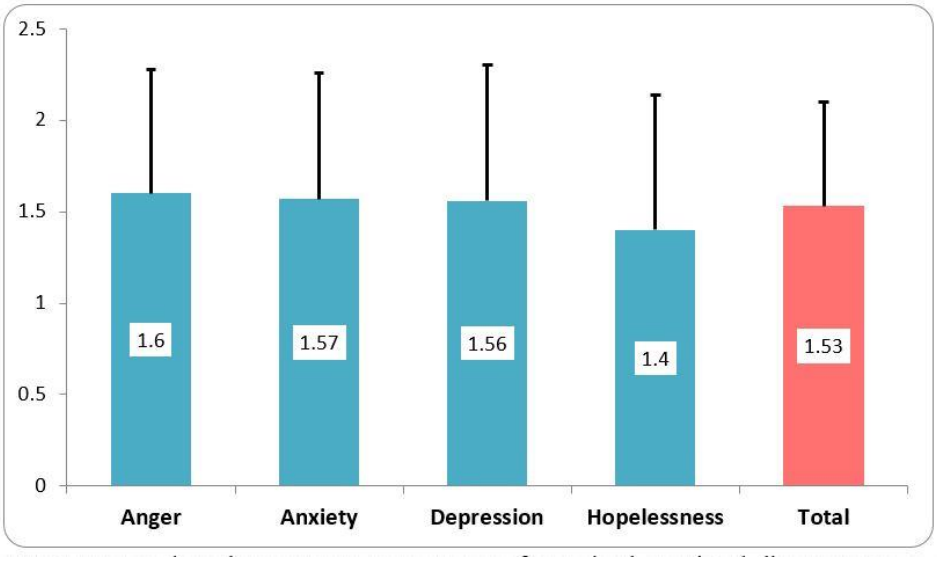

Figure 2: bar chart demonstrates mean scores of perceived emotional distresses among study participants

Table 4: Association of the socio-demographic and obstetric and gynecological correlates and the mean score among study women

Characteristics	Categories	Mean score	SD		Sum of Squares	Df	F	P-value
Age (years)	23 or less	22.09	10.27	Between groups	148.028	4	.510	0.728
	24-29	23.08	8.26					
	30-35	23.74	7.19	Within Groups	32413.680	445		
	36-41	22.61	7.89					
	42 and more	22.96	9.88	Total	32265.652	449		
Residence	Rural	23.43	9.34					0.298
	Urban	22.60	7.72					
Occupation	Housewife	21.83	9.04					0.004*
	Employee	24.14	7.75					
Education	Illiterate	22.74	9.90	Between Groups	517.178	3	2.411	0.066
	Primary	22.49	8.50					
	Secondary	21.59	8.43	Within Groups	31896.502	446		
	College and higher	24.21	8.06	Total	32413.680	449		
Monthly income	Poor	24.87	8.76	Between Groups	340.139	2	2.370	0.095
	Medium	22.70	8.50	Within Groups	32073.541	447		
	Good	22.31	8.18	Total	32413.680	449		
Smoking	Yes	23.72	6.63					0.491
	No	22.87	8.72					
Chronic disease	Yes	24.46	7.54					0.005*
	No	22.12	8.90					
Drug history	Yes	24.08	7.50					0.041*
	No	22.37	8.95					
Parity	Null	21.28	8.90	Between Groups	446.643	2	3.123	0.045*
	Primi	23.64	7.80	Within Groups	31967.037	447		
	Multi	23.45	8.90	Total	32413.680	449		
Previous miscarriage	Yes	22.87	8.27					0.023*
	No	22.05	8.64					
Type of miscarriage	Induced	23.67	7.81					0.217
	Spontaneously	22.62	8.82					
GA at time of miscarriage	First trimester	22.85	8.38					0.632
	Second trimester	23.27	8.78					
Complication after miscarriage	Yes	23.83	8.34					0.003*
	No	21.35	8.58					
Infertility before miscarriage	Yes	25.18	8.26					<0.001*
	No	20.48	8.08					
Duration of infertility	One year	24.61	7.72					0.085
	Over one year	26.67	9.45					
Type of pregnancy	Spontaneously	21.36	8.18					<0.001*
	Induced	26.41	8.16					

* Significant P value of less than 0.05. Independent t-test or ANOVA test was used.

Concerning residence, our study showed that the rate of women who live in urban areas is 54.4%, more than the rate of women who live in rural areas (45.6%). Such findings emerged because urban areas are crowded, and transportation is available, making it easier to seek health care. However, in rural areas, women rarely visit hospitals and health centers, or they may not return because they are stigmatized as having spontaneous miscarriages. As a result, many of them prefer to see a midwife to receive facility care, which raises the likelihood that there are more urban women in the sample than rural women. This is in line with the study that was done in Nigeria [28], which showed the rate of women who live in urban areas is 92.20%, which is more than the rate of women who live in rural areas, 7.80%.

Concerning monthly income, the current study showed the rate of medium income for women who had previous miscarriages was 59.8%, more than the poor income (16.9%) and good income (23.3%). This agrees with the study that was done in Turkey [23] that showed the medium income (70.5%) was more than poor income (20.5%) and good income (9.1%), but disagrees with the study that was done in Iraq [4], which showed the rate of good income is 44.1%, which was more than medium income (28.8%) and poor income (27.1%).

Regarding the type of pregnancy, our study found that the rate of women who have spontaneous pregnancies was 68%, more than induced pregnancies at 32%. This result disagrees with the study that was done in Iraq [25] that showed the rate of induced pregnancy was 62% while the rate of spontaneous pregnancy was 38%. Our study showed that there was a significant correlation between occupation and emotional distress for women after miscarriage. This disagrees with the study that was done in China [29] and Pakistan [30], which referred to increased hours of work in Iraq and increased load and decreased time for rest in contrast to China and Pakistan.

The current study indicated that working women had a mean emotional distress score of 24.14, which was higher than the mean score for housewives, which was 21.83. This finding may be due to the fact that employed women try to generate money for their families. In this instance, the woman's medical condition and the strain of her profession are causing her a great deal of psychological distress. Although employment guarantees women's freedom and financial stability, it also wears them out and exposes them to negative societal scrutiny, which can cause psychological issues, according to a 2016 study conducted in Egypt [31].

Regarding chronic disease, our study showed that there is a significant correlation between chronic disease and emotional distress for women who had previous miscarriages; this result disagrees with the study that was done in Saudi Arabia [32]. The current study showed there is a significant correlation between the complication after miscarriage and emotional distress in women with previous miscarriages. This disagrees with the study that was done in China [33] but agrees with the study in Nigeria [34]. Regarding parity, our study showed there was a significant correlation between parity and emotional distress for women who had miscarriages; this agrees with the study that was done in China [30] and is in line with the study that was done in Bangladesh [35]. In our study the mean score for primiparous (23.64) and multiparous (23.45) was more than null parity (21.28); this contrasts with the study in Egypt [24], which showed increased emotional distress in null parity following miscarriage.

The current study showed a significant correlation between previous miscarriage and emotional distress for women who had previous miscarriages. This is in line with the study that was done in Kenya [36]. Repetition of the traumatic occurrence immediately enhances the intensity of symptoms since the experience of recurrent miscarriage was a painful event that caused emotional suffering. The current study showed there is a significant correlation between drug history and emotional distress. This is in line with the study that was done in Turkey [37] and the study in China [38], which showed elevated risk of miscarriage after drug use, and misuse of some drugs contributes to decline in emotional and mental well-being. Regarding infertility before miscarriage, the current study showed there was a significant correlation between infertility before miscarriage and emotional distress. This is in line with the study that was done in Bangladesh [39]. Concerning age, our study showed there is no significant correlation between age and emotional distress in women with previous miscarriage; this contrasts with the study that was done in Turkey [19] but agrees with the study that was done in Iran [2] that showed no significant correlation. Regarding smoking, the current study showed there is no significant correlation between smoking and emotional distress. This result disagrees with the study that was done in Australia [42] that showed there is significant correlation and disagrees with the study in the United States [40].

The current study showed there is no significant correlation between gestational age at time of miscarriage and emotional distress. This agreed with the study in Turkey [43], which showed no significant correlation, but contrasts with the study that was done in Kenya [36], which showed a significant correlation between emotional distress and G.A. at the time of miscarriage. The current study showed there is no significant correlation between type of miscarriage and emotional distress of women with previous miscarriages, which is in line with the study that was done in Lithuania [17].

Regarding education, our study showed no significant correlation between education and emotional distress; “this can be rationalized by the idea that educated women were more aware of their health problem and could easily cope with it.” This

agrees with the study in India 2018 [44], which also shows no significant correlation.

The current study showed that there is no significant correlation between monthly income and emotional distress in women with previous miscarriage. This agrees with the studies that were done in Saudi Arabia [32] and Iran [41], which showed no correlation either, but disagrees with the study in China [33], which showed a significant correlation between monthly income and emotional distress. This study showed the mean score for emotional distress for poor income was 24.87, which is more than good income (22.31) and medium income (22.70). This may be due to the fact that the patients belonging to poor families were concerned about themselves and about the treatment expenses because they were unable to bear the high expenses of treatment of infertility and miscarriage. This is in line with the study that was done in Egypt [31]. Concerning residence, the current study showed there is no significant correlation between residence and emotional distress in women with previous miscarriage, in contrast with the study in Turkey [19], which showed a significant correlation between the two.

Conclusions

The study showed that there is an association between miscarriage and emotional distress (anger, anxiety, depression, and hopelessness), and there is an approximately close ratio between all four items of the emotional distress scale in women who have had previous miscarriages.

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