

Psychologic Sequelae in Early Pregnancy Complications

Lili Jia¹, Wenfei Li¹, Yue Liu¹, Longqin Wang²

¹Department of Gynaecology and Obstetrics, Binhai County People's Hospital, Yancheng City, People's Republic of China; ²Department of Emergency, Binhai County People's Hospital, Yancheng City, People's Republic of China

Correspondence: Longqin Wang, Department of Emergency, Binhai County People's Hospital, 248 Fudong Middle Road, Yancheng City, 224599, People's Republic of China, Email WLQ_binhai@126.com

Abstract: Early pregnancy complications, including miscarriage, ectopic pregnancies, and hyperemesis gravidarum, are common discomforts accounting for about 15% to 20% of all pregnancies. A proportion of women with early pregnancy complications will experience short- and long-term psychologic sequelae in the aftermath of pregnancy complications, including anxiety, depression, and post-traumatic stress disorder (PTSD) which are the most commonly reported psychologic reactions. This review will focus on the course and impact of these psychologic sequelae in early pregnancy complications, and the noninvasive interventions to improve mental health are also briefly discussed.

Keywords: miscarriage, ectopic pregnancies, hyperemesis gravidarum, psychologic sequelae

Introduction

Many women are faced with pregnancy complications, and these adverse pregnancy outcomes are significantly related to perpetual health consequences for both newborn and mother.¹ Complications in early pregnancy, such as miscarriage, ectopic pregnancies, and hyperemesis gravidarum, are typical discomforts accounting for nearly quintile of all pregnancies.² Early pregnancy complications often prompt many patients to seek emergency evaluation and treatment.³ Women with early pregnancy complications are always exposed to long times waiting,⁴ lacking continuity care and physician responsible.⁵ Hence, it is necessary to improve hospital service delivery model for patients with early pregnancy complications.

A certain amount of literatures indicating that a portion of women will undergo short- and long-term psychologic sequelae in consequence of pregnancy complications, including depression, anxiety, and post-traumatic stress disorder (PTSD). In addition, numerous women have been reported to experience emotional well-being when interacting with health professionals in hospitals.⁶ The quality of care women received during miscarriage will influence their mental health, even after a period of miscarriage.⁷ Women's experiences involved in healthcare for early pregnancy loss are mainly adverse, especially in emergency departments.^{8,9} Much research is focused on studying adverse pregnancy complications, but less attention is devoted to the psychological outcomes associated with these outcomes. Hence, improving women's experiences should go beyond efforts to meliorate the current care structures, including psychological care. This study therefore summarizes the psychologic sequelae such as anxiety, depression, and PTSD in women with early pregnancy complications, with the aim of providing noninvasive interventions to improve mental health.

Miscarriage

Miscarriage, defined as the loss of a pregnancy before viability, was estimated to 23 million every year worldwide.¹⁰ The aftermaths of miscarriage are both physical and psychological.¹¹ The physical aftermaths of miscarriage are well obvious, but psychological sequelae are indistinct. Women with fetal loss seem to have a higher risk for mental disorders.¹²⁻¹⁴ The psychological consequences might have barely external performance, so can be unrecognized by medical staff. Patients

sought miscarriage care in the emergency departments were more likely to be disadvantaged in socioeconomic and psychosocial aspects and were less content with their nursing care, compared with a separate outpatient setting.¹⁵ Hence, hospitals need to take evidence-informed actions to promote psychological support for people experiencing miscarriage.¹⁶

Depression and anxiety were more frequent among women with miscarriage history.¹⁷ Women with previous miscarriages were more vulnerable to experiencing excessive worry (OR value = 2.01, 95% CI: 1.24 to 3.24), as well as sadness and/or drooped spirits (OR value = 1.75, 95% CI: 1.11 to 2.76) during subsequent pregnancies.¹⁸ Women who experienced recurrent miscarriages became conscious of a higher level of anxiety, stress and depression than their partners.¹⁹ Factors influencing depression screening included a younger age, lower education level, larger gestational age at miscarriage, and prior miscarriage.²⁰ For example, for patients with a low educational level and high neuroticism scores, the risk of PTSD is estimated to be about 70%, while for those with a higher education level and a low score for neuroticism, the risk was negligible.²¹ There was a positive correlation between female ostracism and post-traumatic stress symptoms.²²

A cross-sectional study recruited 182 miscarriage patients and found that the positive rate of female depression screening was 34.1% of the women 2 weeks after a miscarriage.²³ Only 8.9% of the women were diagnosed with anxiety, depression, or adaptation disorder 1 year after the index date.²⁴ Psychological problems are greater after recurrent miscarriage, which was estimated approximately 2 times greater at 1 year after the last pregnancy (OR=1.99; 95% CI: 1.42–2.78).²⁵ Among Chinese pregnant women with recurrent miscarriage history in Guangzhou, China, the incidence rate of anxiety and depression were 45.0% and 37.0%, respectively.²⁶ While in Beijing, China, the occurrence of high perceived stress and depression symptoms was 25.3% and 22.5%, respectively.²⁷ A cross-sectional survey also investigated the correlativity between post-traumatic stress symptoms, being ostracized, and recall sadness intensity in women with miscarriage in cisgender, indicating that women's ostracism was correlative positively to post-traumatic stress symptoms and negatively with sadness consistency.⁶

Women with a history of mental health problems, or having miscarriage history, may be at greater hazard of anxiety, depression and post-traumatic stress after pregnancy loss, and the overall prognostic ability was poor.²⁸ More high-quality, prospective studies were employed to investigate psychologic sequelae in women following the miscarriage. Among women with prior selective and/or spontaneous abortion, the rate of depression was 16.8%, the rate of post-traumatic stress during the later pregnancy was 12.6%, and 5.4% met the criteria for both disorders.²⁹ Among women after early pregnancy loss, 32% meeting the criteria for anxiety, 16% for depression, and 28% for probable PTSD at 1 month.³⁰ Three months after miscarriage 1.2–38% were diagnosed with anxiety disorder, 10–20% suffered depressive disorder, and 0.6–5% suffered PTSD.^{30,31} Whereas 9 months after the miscarriage, the data became 17%, 6%, and 18%, respectively.³² A high incidence of anxiety (28.7%) and depression symptoms (48.6%) were found in recurrent pregnancy loss cases,³³ and 8.6% of the women met the criteria for moderate-to-severe depression.³⁴ In Guangzhou, China, the incidence rate of anxiety in early-stage, middle-stage and late-stage pregnancy was 47.6%, 36.1% and 32.5%, respectively, whereas the incidence of depression was 38%, 34.3% and 31.3%, respectively.³⁵ While in central London, of the recurrent miscarriage women, 34% fulfilled the criteria for post-traumatic stress symptoms at first month, 26% at third month and 21% at ninth month, respectively, and that of anxiety was 30% at first month, 25% at third month and 22% at ninth month, as well as depression for 10% at first month, 8% at third month and 7% at ninth month, respectively.³⁶ Since the psychological incidence rate is common after pregnancy loss, available screening tools and treatment programs for psychological health consequences of miscarriage need to be accessible.

Ectopic Pregnancies

Ectopic pregnancy accounts for 1–2% of all pregnancies worldwide,³⁷ with an increasing incidence worldwide.^{38,39} Although ectopic pregnancies account for a tiny ratio of pregnancies, the mortality rate for ectopic pregnancy rupture accounted for 2.7% of the pregnancy-related deaths.⁴⁰ Ectopic pregnancy has a profound impact not only on corporal health but also on psychological health, with previous research indicating a negative impact on the mental health of mothers.^{30,41–43} Women diagnosed with prepregnancy depression have a bit increased risk of ectopic pregnancy.⁴⁴ Mental distress was universal among women with ectopic pregnancy, and lower self-esteem was significantly related to

depression (OR: 0.70; 95% CI: 0.60–0.80) and anxiety (OR: 0.76; 95% CI: 0.66–0.87).⁴⁵ However, studies assessing psychologic sequelae in women with ectopic pregnancy are still limited.

There are two independent multicenter, prospective, cohort studies investigating depression, anxiety, and post-traumatic stress in women following an ectopic pregnancy. Jessica et al³² showed that for women who had an ectopic pregnancy, 21% fulfilled the criteria for moderate/severe anxiety at first month, 31% fulfilled the criteria at third month, and 23% fulfilled the criteria at ninth month; moderate/severe depression was reported to 7% at month 1, to 12% at month 3, and to 11% at month 9; for posttraumatic stress, the data were 23%, 28%, and 21%, respectively. According to Farren and Jalmbrant's study, in the group of women following ectopic pregnancy, 30% fulfilled the criteria for moderate/severe anxiety at first month, 25% at third month and 22 at ninth month; 10% fulfilled the criteria for moderate/severe depression at first month, 8% at third month and 7% at ninth month, while the corresponding proportions for posttraumatic stress were 34%, 26% and 21%, respectively.³⁶

Hyperemesis Gravidarum

Nausea and vomiting, affecting the physical and psychological condition during pregnancy,⁴⁶ can become tough and worse in 2% of the pregnant women to develop into hyperemesis gravidarum (HG).^{47,48} HG is defined as intractable vomiting during pregnancy, causing weight loss and insufficient capacity, leading to ketonuria and/or ketonemia,⁴⁹ hence, women need multiple hospitalizations during pregnancy.⁵⁰ HG is considered to be a psychosomatic disease generated by the interreaction of biological, psychological, and sociocultural elements.⁵¹ The incidence of severe depression and generalized anxiety disorder is higher in women with HG.^{52–54} Psychological symptoms such as anxiety and depression seem to be an outcome of the tension and the body burden of HG, rather than a reason.^{55,56}

Patients with HG were 5.5 and 6.7 times more vulnerable to fulfill the criteria for depression and anxiety disorder compared with comparative group, respectively.⁵⁷ To those with prolonged HG, several conditions including anxiety (32%) and PTSD (13%) were more likely to report.⁵⁸ Post-traumatic stress symptoms are common after HG pregnancies (18%) and are interrelated to negative life outcomes,⁵⁹ women with HG had higher post-traumatic stress symptom scores compared to women with non-nausea, mild nausea and severe nausea.⁶⁰ Contrary to the studies above, Burak et al found that the incidence rate of trait anxiety and state anxiety were 66.7% and 51.7%, respectively; however, in terms of anxiety, there was no difference between the healthy pregnant group and the HG group.⁶¹ Similarly, a comparative cross-sectional study in Malaysia also found that there were no differences in the incidence rate of any anxiety and depressive disorder among the HG patient and the comparative group, but women with HG statistically significantly reported to have more depressive symptoms than controls.⁶² Therefore, the ascertainment of the psychological status of HG women still needs more evidence to support.

Interventions

Considering the incidence and severity of psychological sequelae and their consequences on early pregnancy complications, early implementation of supportive interventions aimed to deal with moderate-to-severe psychological disorders are imminent. These supportive interventions might help clinicians to raise the cognizance of the available supportive interventions in the area of pregnancy loss, as well as to improve pregnant women's mental health and overall wellbeing.⁶³

Support from families, friends and professionals can be meaningful for decreasing the women's anxiety and depression levels.^{64,65} Psychosocial stress theory believes that social support is a protective element against anxiety and depression during pregnancy.^{35,66,67} Patient-centered counseling, including decision satisfaction and shared decision-making, has a positive influence on psychological consequences for women seeking pregnancy termination.⁶⁸ Besides, providing counseling based on health promotion awareness can decrease psychological health problems and increase self-esteem.⁶⁹ Existing evidence indicates that self-care education is effectual in the reduction of anxiety and depression in pregnant women with a history of miscarriage. Therefore, prenatal care programs with these training sessions should be enriched, and a comfortable environment should be provided for women during pregnancy.⁷⁰ As an efficient, and noninvasive treatment, the happiness counseling program had a positive consequence on abating depression, anxiety, and stress in women with recurrent miscarriages.⁷¹ A mindfulness-based intervention can remarkably decrease stress,

depression symptoms, and negative emotions, and improve positive mood and mental health in pregnant women with recurrent miscarriages.⁷² After receiving empathic care, the miscarriage participants showed notable decreases in stress and depression.^{73,74} Similarly, a comprehensive nursing program can improve the treatment result and significantly reduce the recovery time of ectopic pregnancy patients.⁷⁵ Muscle relaxation training can also effectively improve the anxiety of patients with ectopic pregnancy who received methotrexate treatment.⁷⁶

Conclusions

Women with miscarriages and ectopic pregnancy experience higher rates of anxiety, depression, and post-traumatic stress disorder compared to women in the general population. As psychological morbidity is common after pregnancy loss, effective screening instruments and treatment options for mental health consequences of miscarriage and ectopic pregnancy need to be available. The determination of the psychological status of women with HG is controversial and still needs more evidence to support. Considering the prevalence and severity of psychologic sequelae in early pregnancy complications, early implementation of non-pharmaceutical supportive interventions aimed at tackling moderate-to-severe psychological disorders can effectively improve pregnant women's mental health and overall wellbeing.

Data Sharing Statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

Disclosure

The authors report no conflict of interest for this study.

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