Journal of Midwifery & Reproductive Health

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The Effect of Stress Caused by the COVID-19 Pandemic on Pregnant Women's Dietetic and Clinical Outcomes

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ARTICLE INFO

Article type:
Commentary

Article History:
Received: 26-Oct-2020
Accepted: 22-Dec-2020

Please cite this paper as:
Shojaaddini Ardakani T, Shojaaldini Ardakani H, Dafei M. The Effect of Stress Caused by the COVID-19 Pandemic on Pregnant Women's Dietetic and Clinical Outcomes. Journal of Midwifery and Reproductive Health. 2021; 9(1): 2636-2638. DOI: 10.22038/jmrh.2020.53064.1650

At the end of 2019, the Coronavirus emerged in Wuhan, China, and rapidly spread all over China and the world. Thereafter, the World Health Organization declared a public health emergency of international concern over the global outbreak of novel coronavirus (1). The most common symptoms of COVID-19 include fever, fatigue, cough, runny or stuffy nose, diarrhea, lymphopenia, and bronchial pneumonia-like changes in the CT scans of the lungs. The virus can be transmitted by respiratory routes and rapidly infects numerous (2). To this end, some restrictions were imposed by health systems to control the disease, including home quarantine, telework, and social distancing.

COVID-19 pandemic has brought about various changes to people's lives. These new conditions have resulted in dramatic changes in lifestyle and academic education, new families, economic, and nutritional problems, as well as the onset or exacerbation of mental disorders(3). Non-adaptation to these conditions caused by the COVID pandemic is a source of stress for some people (4). In this regard, during this pandemic, numerous people try to incorporate high-calorie foods, multivitamins, and supplements into the diet to strengthen their immune system. Teleworking and social distancing also hinder people from determining their body image from a sociological perspective and social norms (5).

Psychological stress will lead to poor food choices or the use of unhealthy and inappropriate foods. Various studies have demonstrated that about 40% of people tend to eat more when exposed to stress, while 40% eat less and 20% experience no change in the amount of food they eat. Moreover, people tend to seek high-calorie, high-fat foods during times of stress. FDA has recommended that individuals provide for their needs on a monthly basis, and people's nutritional responses will vary depending on how long this stress is going to last (there is uncertainty over the end of COVID-19 Pandemic) (6); therefore, assiduous attention should be devoted to vulnerable groups during this crisis.

In the study conducted by Maranija et al., anemia and micronutrient deficiency in pregnant women were reported to be 40%-50% (7). In this regard, a study performed by Rezaei and Norouzi on the nutritional status of pregnant women showed that the consumption of solid oil was 21.7% among pregnant women, and carbohydrates were more frequently consumed, compared to dairy products, especially milk. Moreover, 67.5% of women received more and 24.2% received fewer calories than needed (8)

It seems that pregnant women are at risk for mental disorders and subsequent eating

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disorders and are regarded as a vulnerable group due to the following reasons: concern over vertical transmission in the case of COVID-19, the stress of delivery mode adopted and disease transmission through the birth canal, absence of childbirth preparation classes, and physiological changes in pregnancy (9). Changes in dietary habits of people, especially pregnant women, are among the marked effects of this pandemic. Lack of access to an adequate amount of food due to the restrictions, such as house quarantine, reduced social activities, fears and concerns about fetal health and development as well as exposure of pregnant women to anorexia or overeating. Based on various studies, the choice of nutritional patterns is affected by psychological factors and stressors (4). Along the same lines, the results of studies conducted by Yar Beigi et al. and Halatai et al. were indicative of the relationship between stress and the choice of unhealthy eating patterns so that in times of stress, physiological and psychological responses to external stimuli lead to a significant increase in appetite (10, 11).

Unhealthy eating patterns, such as low intake of fruits and vegetables, consumption of solid oils, salty snacks, potatoes, and high-fat dairy, are deemed as eating disorders. In this regard, a study was conducted in China in 2020 to investigate bulimia and its relationship with food intake and weight gain. The results of the stated study pointed to a high rate of bulimia due to the conditions caused by this disease, especially in areas that were more involved. A significant decrease was also reported in physical activity, as well as a change in the dietary pattern (consumption of more grains and oils and less fish) (12). If pregnant women are not screened at the right time, they are at risk for weight gain problems, including overweight and underweight. Malnutrition can adversely affect the weight gain pattern of pregnant women.. Moreover, if nutritional problems are not identified and corrected, it can lead to one of the following two groups of complications:

A: Gaining less than the recommended amount of weight in pregnancy, thereby increasing the likelihood of low birth weight, miscarriage, preterm delivery, and intrauterine growth restriction (13).

B: Excess weight that can be associated with gestational hypertension, preeclampsia, gestational diabetes, fetal macrosomia, and preterm delivery (14).

Pregnant women are considered a vulnerable group due to their eating disorders. The stresses caused by the COVID-19 pandemic can directly affect the choice of nutritional patterns. The main effects are choosing a high-calorie diet, increasing carbohydrate intake, and reducing fruit and vegetable consumption. The restrictions caused by this pandemic can exacerbate eating disorders among pregnant women. Due to the controversy over the end of the quarantine period, specialists in the field of reproductive health, health centers, and health care providers should concentrate to maintain neonatal health with appropriate training and preventive measures.Therefore, it is necessary to consider the nutritional status of pregnant women, necessary nutritional training and counseling, and if necessary, perform psychiatric interventions to prevent short-term and long-term complications caused by incompatible diet and dietary habits.

Conflict of interest

The author declares no conflicts of interest.

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