



## Comparing General Health in Pregnant Women with Gestational Diabetes and Healthy Pregnant Women

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### ABSTRACT

The objective of the current study was to compare general health in pregnant women with gestational diabetes and healthy pregnant women. The method of this study was descriptive following a casual-comparative design. The statistical population included 9666 pregnant women referred to healthcare centers in Zahedan in 2016. The method of sampling was multistage cluster sampling, such that among all healthcare centers in Zahedan, 5 healthcare centers were randomly selected. Afterwards, using the convenience sampling method, the research questionnaires were distributed among 50 pregnant women with a history of gestational diabetes and 50 healthy pregnant women without such a history. To collect data, Goldberg and Hillier General Health Questionnaire (1979) was used. The results of multivariate analysis of variance (MANOVA) indicated that somatic symptoms, anxiety symptoms/sleep disorders, and depression symptoms were more prevalent among women with gestational diabetes compared to healthy pregnant women ( $P \leq 0.05$ ). However, considering social dysfunction symptoms, no significant difference was found between these two groups of pregnant women with and without gestational diabetes ( $P \geq 0.05$ ).

**Key words:** General Health, Pregnant Women, Gestational Diabetes

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### INTRODUCTION

#### Introduction and Statement of Problem

Diabetes is a common disease in Iran and around the world. It is chronic, progressive, and costly, and creates several complications. For individuals with diabetes, it is difficult to accept these threads which may change their lifestyle (1). Diabetics and pregnant women are two major groups: diabetics who had type 1 diabetes and 2 before pregnancy and the second group, gestational diabetes which are firstly diagnosed during pregnancy and in most cases are a form of type 2 diabetes. 50% - 30% are clearly leads to type 2 diabetes and in some cases, the process is similar to type 1

diabetes (2). Gestational diabetes refers to the glucose intolerance with variable intensity which is firstly diagnosed during pregnancy. Or diabetes refers to high blood glucose levels during pregnancy and symptoms of diabetes are appeared in pregnant women who had previously undiagnosed diabetes (3). Women who have diabetes during pregnancy may have children are suffering from obesity and glucose intolerance and diabetes (4). Diabetes in pregnancy has been paid attention due to fetal complications such as macrosomia, fetal abnormalities, birth injuries, premature birth, fetal death due to unspecified problems after birth (5). In addition to fetal problems mentioned, several complications threaten mother's health in pregnancy. The most common complications of diabetes are including nephropathy, retinopathy, neuropathy, hypertension and infections (6). Due to complications of diabetes in pregnancy and childbirth and especially on the general health of mothers, the main question is: is there a

significant difference in the general health of pregnant women with gestational diabetes and healthy pregnant women in Zahedan?

**MATERIALS AND METHODS**

The method of this study was descriptive following a casual-comparative design. The statistical population included 9666 pregnant women referred to healthcare centers in Zahedan in 2016. Since the sample size in causal-comparative studies in each group has been suggested 30 patients (7), in both healthy pregnant women and pregnant women with gestational diabetes were given 50 questionnaires for more accuracy and finally 100 questionnaires were collected in the study.

**Data collection tool**

In order to collect information, Gold-berg & Hillier mental health questionnaire (GHQ) (1979) was used.

*Goldberg and Hiller Mental Health Questionnaire (1979)*

General Health Questionnaire - 28 (GHQ-28) was introduced by Gold-berg & Hillier. This questionnaire has four sub-scales and every scale has 7 questions including: 1. physical symptoms, 2- anxiety symptoms and sleep disturbances 3- signs of social functioning, 4 - depression symptoms that are designed in multiple choices form. Low degree implies health and high degree represents lack of health or discomfort in individuals and Likert scale (0, 1, 2, 3) was used for scoring. The reliability of General Health Questionnaire - 28 (GHQ-28) has been reported by Palahang, Nasr, and Brahanie and Shah Mohammad Nasr (1996). In this study, reliability of this test was computed by Cronbach's alpha / retest method, 0/82 and 0/86, respectively.

**RESULTS**

**Descriptive findings**

**Table 1: frequency and percentage of subjects by gender**

Gender	Frequency	Percent
female	100	100
total	100	100

As can be seen in Table 1, the number of female subjects was 100.

**Table2: Frequency and percentage of subjects by age**

Age	Frequency	Percent
20-25	50	50
26-30	25	25
31-35	25	25
Total	100	100

As can be seen in Table 2, 50% of subjects aged 20 to 25 years, 25 percentage of subjects aged 26 to 30 years and 25% of subjects had an average age of 31 to 35.

**The main research question:** Are there significant differences in the general health of pregnant women with gestational diabetes and healthy pregnant women in Zahedan ?

In order to answer the central question of this study, multivariate analysis of variance (MANOVA) was used; the results are presented in the following tables.

**Table 3: Lambdavikez statistical indicators of the general health subscales in two groups of pregnant women with gestational diabetes and healthy pregnant women**

Lambda vikez	F	Significance level	Eta root	test ability
0/850	5/474	0/00	0/21	0/864

As can be seen in Table 3, there are significant differences in the general health of pregnant women with gestational diabetes and healthy pregnant women in Zahedan (P =0/00, Wilks Lambda=0/850, F= 5/474) and test ability (0/864) reflects the adequacy of the sample size.

As can be seen in Table 4, the results of multivariate analysis of variance show that there are significant difference between the mean of somatic symptoms, anxiety / sleep disorders and depressive symptoms between two groups of pregnant women with gestational diabetes and healthy pregnant women in the (P ≤ 05 /0), thus, according to the means of two groups, we can see that the mean of three subscales in women with gestational diabetes is more prevalent than healthy pregnant women.

**Table 4: Results of multivariate analysis of variance (MANOVA) of general health of two groups of pregnant women with gestational diabetes and healthy pregnant women Significance level**

Variable	Pregnant women with gestational diabetes		Healthy pregnant women		Mean square	Degree of freedom	Sum of squares	F	Significance level
Physical symptoms	18/13	2/64	12/05	1/70	312/05	1	312/05	6/597	0/02
Symptoms of anxiety and sleep disorders	19/72	1/11	10/40	0/61	183/01	1	183/01	10/889	0/05
Symptoms of social functioning	15/37	2/49	13/95	1/45	6/612	1	6/612	0/264	0/11
Symptoms of Depression	18/17	1/03	13/13	0/33	3/354	1	3/353	0/346	0.04

However, there is no significant difference in social functioning subscale of symptoms between two groups of pregnant women with gestational diabetes and healthy pregnant women ( $P \geq 05 /0$ ).

#### DISCUSSION AND CONCLUSION

Pregnancy is the most sensitive and important time of woman's life. Days of pregnancy are very different from other days. Every woman will experience pregnancy and tolerate these hard days in hopes of motherhood. But what is important is that, the physical and mental health must be observed during this period (8). Pregnancy periods are accompanied with physical and emotional stress which requires much physiological and psychological changes (9). These changes are more severe in early pregnancy, because pregnant women encounter with hormonal changes change their perspective on life and assess skills and life-style (10). During pregnancy, hormonal changes will be affected by their mental condition and can affect a woman's general health (11). Finally, it can be stated that pregnancy is a period of vulnerability for women and mothers are faced with new problems and difficulties and these problems may cause impaired mental health and the quality of life (12). In a study by Zarepour and Sadeghie and Bazvand (13) titled as mental health and its related factors in 250 pregnant women referred to health centers in Kuhdasht in 2009, the results showed that 31/6 percent of pregnant women with a mean age of  $26/4 \pm 6/1$  years, were suspected of mental disorders. Based on the results, prevalence of mental disorders in the first, second and third quarters of pregnancy was 34/4, 23/1 and 40/2, respectively. Mental disorders during pregnancy with some personal characteristics and socio-economic factors were significantly correlated. In

a study by Larijani, Azizi and Hosseinnejad (14) entitled as prevalence of gestational diabetes mellitus in young women, the results showed that from 1209 women under 25 years (mean age of  $20/97 \pm 2/1$  years), 27 patients (2/23) were diagnosed with gestational diabetes with the average age of the  $21/11 \pm 1/85/$  years. Of these patients, 14/8% was fat, 22/2% had a family history of diabetes, 3.7% with a history of high blood pressure, and 11.11% were suffering from glycosuria. Of the 27 patients with gestational diabetes, 16 patients (59/25%) did not have any of well-known risk factor.

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