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RESEARCH ARTICLE

The Relationship between Nausea and Vomiting with General and Psychological Health of Pregnant Women Referral to Clinics in Arak City, 2015

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Abstract:

Objectives:

This study was conducted with the aim of investigating the relationship between pregnancy and nausea and vomiting with the general and mental health of pregnant women Referral to clinics in Arak in 2015.

Methods:

This cross-sectional study was conducted at one of the prenatal referral centers of the city of Arak in 2015. A questionnaire was completed for measuring the severity of nausea and vomiting for 310 eligible pregnant women eligible to enter the study. 240 out of 310 people had nausea and vomiting in pregnancy and 70 patients had no nausea and vomiting. Iranian version of SF-36 quality of life questionnaire was used to evaluate general and mental health indicators. The analysis was performed using SPSS version 18 software, descriptive statistics, percentage and mean, analytical T-test and analysis of variance.

Results:

The prevalence of nausea and vomiting was 77.5% among samples. The rate of mild nausea and vomiting index was moderate in 18.8% and it was observed to be severe in 59.2% and 22.1% of cases. All dimensions of the general health of pregnant women were significantly reduced ($p < 0.05$) except for mental health, which was the same in all 2 groups.

Conclusion:

Considering that in this study, nausea and vomiting affected the general health and physical functioning of pregnant mothers, therefore it is suggested that health care providers have more emphasis on pharmaceutical and non-pharmaceutical techniques to reduce or improve these symptoms in a pregnant woman.

Keywords: Pregnancy, Prenatal, Quality of life, General health, Psychological health, Second trimester.

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1. INTRODUCTION

Nausea and vomiting are one of the most common complaints in pregnancy which are often one of the first symptoms of pregnancy occuring when the first menstruation is terminated and often continues until the end of the second trimester. Although these symptoms are not life-threatening, they can cause stress for the pregnant women and his or her family [1, 2]. 50 to 90 percent of women in the first 3 months of pregnancy naturally suffer from nausea with or without vomiting in which severity and duration can vary from person to person [3]. Nausea and vomiting are severe in 1-3% of cases which is called hyperemesis. Most of the hyperemesis cases need special care, such as antiemetic's consumption, admission to the hospital and hospitalization in hospital [4]. Lack of treatment of severe nausea and vomiting leads to coma, seizure and loss of the fetus. The exact cause of nausea and vomiting is unknown. However, hormonal, psychological, individual, socio-occupational and geographic factors are effective in their occurrence [5 - 7]. When nausea and vomiting intensify, pregnant women may experience lower levels of social-emotional and psychosocial function [8, 9]. Most of the pregnant women, in the first 3 months due to nausea and vomiting, suffering from decreased sexual function [10], experience weakness and depression, disturbance in relations with the spouse, fear of loss of the fetus [11]. A study on 230

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pregnant women with nausea and vomiting showed that there is a positive relationship between these two symptoms and depression [12]. Tan and colleagues showed that 37% of pregnant women had nausea and vomiting with distress and depression and more severe nausea and vomiting, the greater the severity of depression [13]. Uguz and colleagues also showed that anxiety disorders are 36% in severe nausea and vomiting [14]. General and mental health, are measurable at any time during pregnancy and has different dimensions of psychological, social, physical, emotional. General and mental health in terms of quality of life is important in mother and baby care programs and quality of service delivery. Knowing the disruptive factors of general and mental health as an important indicator of the quality of life in pregnancy can help health care providers and midwives in providing better services. For example, in the first 3 months of pregnancy disabling effect of nausea and vomiting is the most important in this period which is associated with maternal weight loss, electrolyte imbalance and imbalance in maternal PH which not only threaten the mother's life but also lead to fetal complications, including low birth weight, early delivery and even the termination of pregnancy at the request of couples [15, 16]. O'Brien's study showed that nausea and vomiting during pregnancy have negative effects on the physical and mental dimension of the quality of life [17]. On the other hand, studies show that other variables of quality of life, including social behaviors, are under the influence of physical problems of this period, such as physical pain, Stomach ache, and constipation [13, 18, 19]. This study was designed and implemented, considering that there has been no study on the general and psychological health of women with nausea and vomiting during the first trimester of pregnancy in Arak, so far.

2. MATERIALS AND METHODS

This study is a cross-sectional study of 310 pregnant women which were in the first 3 months of pregnancy and have set up a health record at one of the prenatal centers of the Referral city of Arak in 2016. Sampling was done so that calls were made to pregnant women who had a file of pregnancy and they participated if they were willing to participate in the study and had entry requirements. Entry terms were included: Desired pregnancy, gestational age between 8-14 weeks, the absence of acute and chronic illness in pregnancy and before it, living with spouse, not having a history of mental illness and hospitalization due to it. Of the 500 cases, 320 had entry conditions and were willing to attend, they entered the study after providing written informed consent. At the beginning of the study, the questionnaire for measuring the severity of nausea and vomiting was given to 310 patients and the questionnaire was completed by women in collaboration with the researcher. 240 of 310 people had nausea and vomiting during pregnancy, and 70 had no nausea and vomiting. The sample size was determined using the formula for comparing the mean to 310 people. To measure nausea and vomiting, a quantitative tool was used to measure nausea and vomiting. This scale is based on 3 questions. First one was how long did you feel nauseous over the past 12 hours which if they did not have nausea and vomiting, they took score one, those who felt nausea for less than an hour scored (2), those who experienced between 2 and 3 hours, score (3), those who experienced 4-6 hours scored (4) those who experienced and more than 6 hours, scored (5). The other two questions were each related to the number of vomiting and nausea. Non-vomiting or nausea, scored (1), those who experienced between 1-2, scored (2), those who experienced 3- 4, scored (3), those who experienced 5-6, scored (4) and those who experienced more than 7 times in the last 12 hours, scored 5. The range of the lowest and highest scores was between 3 and 15 points. Total score of nausea and vomiting between 3-6 was considered mild between 7-12 was moderate and 13 and higher as severe [19]. The other questionnaire is based on the quality of life(SF-36) focusing on the physical and mental health of mothers in 8 different criteria: Physical function, physical limitations, physical pain, general health, vitality, social function, general health and mental health. Each of the 8 scales has a score of 0-100. This scoring is based on the SF-36 standard measurement and a higher score indicates a higher quality of life. The 3-option questions with scores (0, 50,100) and 5-option questions with scores (0, 25, 50, 75, 100) and 6-option questions with scores (0, 20, 40, 60, 80, 100) 9 are considered. Meanwhile, validly of the Iranian version of this tool by Montazeri *et al.* [20] was determined between 0.58-0.95 and its reliability is 0.77-0.95. By identifying the two groups, they were invited to visit the center on the day they were coordinated and answer the questions on the quality of life accurately. After completing the questionnaire of analysis, the analysis of variance was performed, using SPSS version 18 and descriptive state of percent and average and analytical affairs.

3. RESULTS

310 pregnant women entered the study. The age of mothers was between 17-40 years old. 13.2%, (41) were between the ages of 17 and 20 years. 36.5. % (113) were between 21 and 25 years old and 46.8% (145) were between the ages of 26 and 35, and 3.5% (11) were over 36 years old. 7.99% had pregnancy age between 7-10 weeks. The characteristic of the participants are shown in the Table **1**. Dimensions of general and psychological health are also shown in the Table **2**. Table **3** shows the quality of life in mild, moderate and severe levels of nausea and vomiting.

4. DISCUSSION

Among those, 240 were nauseous and vomiting pregnant women. The prevalence of nausea and vomiting among samples was 77.5%. The rate of mild nausea and vomiting was observed in which 18.8% was moderate and in 59.2% and 22.1%, were severe cases. Other specifications are classified into two groups as shown in Table **1**. Table **2** shows that all aspects of quality of life, except mental health, were significantly reduced in the group with nausea and vomiting. Table **3**, also shows the mean of quality of life by severity of nausea and vomiting. The results of this study showed that more than one-third of Iranian women suffer from nausea and vomiting of pregnancy and this group of women had lower general health. And this group of women had lower general health. Along with this study including Lacasse *et al*. [21] in 2008 they investigated 367 pregnant women less than 16 weeks in Quebec, Canada and they reported the prevalence of nausea

and vomiting between the samples was 78%. Their study using the SF-12 quality of life questionnaire and also the quality of life questionnaire of nausea and vomiting of pregnancy showed that the quality of life in these women was lower than those who did not have vomiting nausea. On the contrary, Chan *et al.* in 2010 in Hong Kong, reported that the prevalence of nausea and vomiting was 90.9% in 396 cases, in the weeks between 10-14 weeks. According to the report, most aspects of quality of life were affected by these two symptoms and their severity [22].

The present study showed that the physical activity of women has significantly decreased due to nausea and vomiting. Pregnancy studies show that changes in pregnancy and problems, such as nausea and vomiting, fatigue, back pain, cramp and leg varicose, edema, dizziness can be important factors in reducing the quality of life and the ability of women to carry out daily activities [23, 24]. The present study showed that physical function of women and more restrictions on daily activities has caused more problems with high intensity of nausea and vomiting, so that the quality score is less of women with severe nausea and vomiting.The study of Smith and colleagues in Australia was conducted to determine the effect of nausea and vomiting on 593 pregnant women in the first trimester using SF-36 questionnaire. According to collected

Table 1. The demographic characteristic of participants with and without the experience of nausea and vomiting.

Variables	Nausea and Vomiting	Absence of Nausea and Vomiting		
	Mean± SD	**Mean± SD**	**P**	
Age	26.45 ±4.895	25.39±5.128	0.126	
Gestational age	8.44±1.180	8.24±1.185	0.229	
Gravid	1.75±.821	1.51±.775	0.33	
Para	0.67±.723 N(%)	46±.755 N(%)	0.32	
Job	Housewife	229(95.4)	69(98.6)	0.203
	Employee	11(4.6)	1(1.4)	
Level of education	No educated	4(1.7)	1(1.4)	0.962
	elementary	54(22.5)	14(20)	
	Guidance	71(29.6)	19(27.1)	
	High school	13(5.4)	5(7.1)	
	Diploma	78(32.5)	26(37.1)	
	Upper level	20(8.3)	5(7.1)	

Table 2. Mean of general and psychological health of pregnant women with and without nausea and vomiting.

	Nausea and Vomiting	Absence of Nausea and Vomiting	P Value
	Mean± SD	**Mean± SD**	**0.001**
Physical Functioning	65.50±28.22	79.35±21.02	0.017
Role limitation-Physical	45.00±40.01	58.21±41.85	0.015
Bodily Pain	66.89±24.91	75.10±24.19	0.001
General health perception	65.37±20.46	74.14±17.21	0.001
Energy	54.91±17.14	62.71±17.95	0.001
Social functioning	65.20±22.21	75.35±21.69	0.001
Role limitation -Emotionally	64.02±45.20	80.95±35.24	0.001
Mental Health	66.96±16.64	70.26±17.73	0.154
Change in health	61.73±19.41	72.03±16.53	0.001

Table 3. The quality of life in mild, moderate and severe levels of nausea and vomiting.

	SF36			95% Confidence Interval for Mean		P
	N	Mean	Std. Deviation	Lower Bound	Upper Bound	
low	45	*69.6657	16.78029	64.6244	74.7071	0.001
intermediate	142	×63.4881	16.87873	60.6879	66.2883	
Severe	53	×*50.3101	22.91848	43.9930	56.6273	
Total	240	61.7363	19.41155	59.2679	64.2046	

ANOVA test
*P=0.001
×p=0.001

results, nausea and vomiting had a significant effect on general health and mothers' daily activities and nausea was the most problematic symptom which is most commonly experienced by the mothers [24].

A study by Kugahara *et al.* [25] in Japan showed that all three signs of nausea and vomiting and gagging are associated with a significant decrease in the quality of life. The present study showed that the higher the severity of nausea and vomiting, the lower the quality score and there is a significant difference between the severity of nausea and vomiting with a decrease in quality of life. Tan and colleagues study also showed that the higher the severity of nausea and vomiting, the lower the quality of life which coincided with this study [18]. The present study showed that maternal fatigue with nausea and vomiting is high and they have less energy. Vomiting causes refusal to eat and thus reduces the energy intake of the individual which ultimately reduces the physical activity [24, 25]. The study by Couto *et al.* showed that fatigue is the most common complaint during pregnancy and Chow and colleagues also showed that more than 70% of mothers experience fatigue that affects the quality of life of these women from the physical, mental and emotional dimensions [26]. In the present study, no significant difference was found in the mental health of women without nausea and vomiting. However, many studies have shown a combination of psychological problems, such as anxiety and depression with nausea and vomiting in pregnancy [12, 27]. The absence of depression in pregnant women increases personal health, and the ability to perform tasks and activities in multiple ways; some are confident in their ability to avoid the problem rather than being threatened.some, try to control them and some are strongly committed. Some are confident and are capable of controlling potential threats and adapt to the situation well and experience less anxiety and higher mental health [28]. Dekkers *et al.* showed that High hCG levels play important role in elevating depressive symptoms in the first trimester [29].

The present study showed that the quality of social relationships of these women also had a significant decrease. Pregnancy-associated nausea and vomiting have an effect on the social, family, and occupational roles of the individual [30]. As these women tend to be isolated, they are more likely to be shy and if nausea and vomiting are severe (Hyperemesis), this may also affect the attachment of the mother and the baby [31]. Also, a significant decline in the ability to perform maternal roles and tasks has been observed in these mothers. Along with this study, Clark and colleagues showed that 84% of women with nausea and vomiting of pregnancy didn't have the ability to take care of their children during pregnancy, and 43% had an inappropriate relationship with their spouses and 90% had trouble to go to work [32].

The present study showed that mother's perception of general health has been significantly reduced. Fearing that pregnancy may be associated with problems and illness, may originate from automatic negative thoughts during pregnancy. Decline in cognitive processes and negative thoughts, make the pregnancy a catastrophe, besides worries, and their misconceptions about it reduce the general health of these women. The results of Otchet *et al.* showed that psychological stresses and pregnancy concerns have a direct effect on the physiological function of the body and ultimately reduces general health in pregnant women [33]. A study showed that behaviors, such as uneasiness, lack of self-care, loss of control over yourself, and social isolation is seen in women's compatibility in pregnancy with more nausea and vomiting [34].

From the limitations of this study, it is possible to refer to the limitation of the age range and the number of pregnancies and assess the quality of life in the 10-week period which is suggested that more extensive studies should be done on this subject. Also, the design and diversity of the study type, including the cohort, is one of the author's suggestions for this paper.

CONCLUSION

Considering that nausea and vomiting affected the general health and physical functioning of pregnant mothers, it is therefore suggested that health care providers at the beginning of pregnancy will emphasize the pharmacological or non-pharmacological methods of these symptoms.

AUTHORS' CONTRIBUTION

The idea of this project was raised by KV and the implementation of the plan was carried out by NSZA. The first draft was written by MDA and then completed by KV.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study is approved by the Ethical Committee of Arak University of Medical Sciences, Iran (Approval no. 93-163-2).

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All human research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2013.

CONSENT FOR PUBLICATION

Written informed consent was obtained from all the participants prior to data collection.

AVAILABILITY OF DATA AND MATERIALS

Not applicable.

FUNDING

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CONFLICT INTEREST

The authors declare no conflict of interest, financial or otherwise.

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