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Evaluation of Quality of Life and Pregnancy Outcome in Overweight Pregnant Women in Zahedan

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Abstract

Objective: To evaluate of quality of life and pregnancy complications in overweight pregnant women in Zahedan.

Study design: We studied 440 pregnant women (220 normal weights and 220 overweight) who completed by the SF-36 questionnaire Iranian version during at the first and the third trimester of pregnancy. Finally, pregnancy complications were assessed.

Results: Physical functioning, role limitation due to physical problems and Bodily pain was lower in overweight women than in normal weight women at the first trimester of pregnancy. The all domains of quality of life decreased during pregnancy and was lower in overweight than in normal weight pregnant women at the third trimester of pregnancy (P=0.001). The risks for preterm labor, gestational hypertension, pre-eclampsia, gestational diabetes, caesarian section and Macrosomia were higher for those who were overweight at the third trimester of pregnancy (P<0.05). Maternal BMI was associated with a higher risk for gestational hypertension, gestational diabetes, preterm labor, preeclampsia, emergency caesarian section and fetal macrosomia (P<0.05).

Conclusion: Overweight at the third trimester was related to low quality of life. This research demonstrates that maternal BMI was associated with increased risks for adverse pregnancy outcomes.

Keywords: Overweight pregnant women; Quality of life (QOL); Pregnancy complications

Introduction

Obesity and overweight is increasing in prevalence worldwide, and is now considered a global epidemic. It has become a significant threat to health in all sectors of the population, including women of reproductive age [1]. The World Health Organization estimates that more than 1 billion people are overweight, with 300 million meeting the criteria for obesity [2]. In the USA 2% of pregnant women have a BMI<18.5 and more than 50% have a BMI>25 [3]. In Iran, women generally have a lower BMI and/or a smaller gestational weight gain than in developed countries [4]. Body mass index (BMI) before pregnancy and weight gaining during pregnancy affect infant birth weight and are associated with unfavorable pregnancy outcomes. The maternal complications associated with obesity include gestational hypertension, pre-eclampsia, gestational diabetes, premature rupture of membranes, prematurity, infection, caesarean sectionand shoulder dystocia [5]. The fetal risks associated with obesity include stillbirths and neonatal deaths, macrosomia, neonatal unit admission, preterm births, congenital abnormalities and childhood obesity with associated long-term risks [6]. In addition, a growing body of literature describes the close association between obesity and QOL and pregnancy outcomes [7,8]. The objective of this study was to determine the relationship between quality of life at the first and third trimester of pregnancy in overweight pregnant women with the SF-36 questionnaire Iranian version during at the first and the third trimester of pregnancy. Finally, pregnancy outcomes were obtained.

Materials and Methods

At the beginning the Ethics Committee of Zahedan Medical University approved the study and all participants gave written informed consent. This study was conducted in the health centers of Zahedan University of Medical Sciences in Iran in 2010-2012. The sample was comprised of 440 pregnant women (220 overweight and 220 normal weight) who completed by theSF-36 questionnaire Iranian version with 36 question during at the first visit of pregnancy and the third trimester. The Persian version of SF-36 questionnaire has a good structural characteristic and is a reliable and valid instrument for measuring the quality of life. This questionnaire includes 36 items, in a Likert-type or forced-choice format, and contains brief indices of the following eight functional domains: physical functioning, physical problems, emotional problems, social functioning, bodily pain, vitality, mental health and general health perception. Health change in the past year (one item, 5-point scale) was also assessed. Scores for each domain ranged from 0 to 100, with high scores indicating a better status [9]. We were categorized pregnant women to be non-obese when their body mass index (BMI) in the first trimester was 19.8-25.9 kg/m^2 and to be overweight when their BMI was 26-29.9 kg/m^2, according to the protocol of health of ministry in Iran. Gestational age was later confirmed through a review of the electronic medical record and was based on either the obstetrician's assessment of the LMP or both the LMP and obstetric ultrasound assessment. Sitting blood pressure was measured by using a standard mercury sphygmomanometer. Systolic and diastolic blood pressures were measured twice on the right upper arm, and the average was used for analysis. Hypertension was defined as a systolic blood pressure of ≥ 140 mmHg and/or a diastolic blood pressure of ≥ 90 mmHg, respectively. Fasting plasma glucose was determined. In obese pregnant women and the women with fasting glucose levels of ≥ 105 mg/dl (according to the protocol of health of ministry in Iran) we performed a screening oral glucose tolerance test with GCT test (Glucose challenge tests). Demographic variable was included maternal age, Number of pregnancies, BMI, weight gain,

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Gestational age at first visit, family history of diabetes and hypertension. Exclusions criteria were: history about preterm labor, previous preeclampsia and gestational diabetes, chronic disease, depression and use of special drug and take a special diet. Finally, pregnancy outcomes included the following: preterm delivery, gestational diabetes mellitus, hypertensive disorders of pregnancy, preeclampsia, caesarian section, and Macrocosmic infants were obtained.

Statistical Analysis

The SPSS was used to analyses the variables. Differences between baseline and final variables in each group women were tested with the independent T- test or Mann–Whitney Scores for the eight functional domains of the SF-36 were calculated. Results will be given as mean values with 95% confidence intervals. P-values < 0.05 will be considered significant.

Results

400 pregnant women were eligible for inclusion in this study. The groups did not differ significantly with respect to socio demographic characteristics, age, education, parity, gestational age at initiation of prenatal care (PNC) (weeks), family history of diabetes and hypertension. In addition, Weight gain in overweight women was lower (8.4 ± 3.7) than the normal weight women (10.4 ± 3.6) (Table 1).

Only One hundred forty two (35%) number of women experienced a normal pregnancy, free from any complication. In contrast 64.5% of both groups had a variety of complication. There was a significant high rate of emergency caesarean section (n=101), preterm delivery (n=30), macrosomia (n=37), gestational diabetes (n=10), hypertension (n=19) and preeclampsia (n=10) in overweight group (Table 2).

We found lower scores in physical function, role limitation due to physical problems, and bodily pain in overweight women at the first trimester (Table 3). Data are shown as mean ± SD. Paired Student t test was performed to compare variables in each group.

We also explored that overweight women had significantly lower scores in all domains of quality of life than the normal weight women at the third trimester of pregnancy (Table 4).

Discussion

Obesity and overweight is as a chronic disease that is cause of disability in life activities and effected on quality of life. This study compare association between normal weight and overweight pregnant women and quality of life and complication of pregnancy. Results of study demonstrated that no significant different between Maternal characteristics in both group.

This study suggests that overweight, measured by BMI, predisposes women to complicated pregnancies and increased obstetric interventions. Our data support prior studies, Baeten et al., report that maternal obesity is regarded a high-risk obstetric condition and is associated with pregnancy complications and adverse outcomes [10]. We found a linear relationship between body mass index and the risk of developing pre-eclampsia, preterm labor, macrosomia, gestational diabetes, hypertension and emergency caesarean section. In contrast, some pregnancy complications were lower in normal weight group. Robinson et al. [11] and Leonie et al. [12] shows in two separate studies that obese women are at high risk for pre-eclampsia which is in line with the results of this study. Yazdani et al. in Iran reported that maternal BMI is an important risk factor of pre-eclampsia. An increased BMI increases the incidence of induction of labor, caesarean section, preterm labor and macrosomia [4]. Tabatabaei reported that

variable	Normal weight women	Overweight women	p- value
Age	24.4 ± 4.9	25.6 ± 5.1	0.27
Education: Illiterate Primary school High school College and graduate	 119 (59.5%) 48 (24%) 38 (19%) 15 (7.5%)	 117 (58.5%) 50 (25%) 36 (18%) 17 (8.5%)	0.9
Parity	2	2	0.12
BMI	22.2 ± 2.1	28.5 ± 3.9	< 0.0001
Weight gain (kg)	10.4 ± 3.6	8.4 ± 3.7	0.002
Gestational age at initiation of PNC	13.2 ± 3.1	13 ± 3.0	0.82
family history of diabetes	116 (52.7%)	104 (47.27%)	NS
family history of hypertension	102 (46.36)	118 (53.63)	NS

Table 1: Maternal characteristics between normal weight and overweight pregnant women.

Variable	Normal weight women (n=214)	Overweight women (n=210)	p-value
Preterm delivery	10 (4.67%)	30 (14.28%)	0.00
Gestational diabetes mellitus	4 (1.86%)	10 (4.76%)	0.01
Hypertensive disorders of pregnancy	4 (1.86%)	18 (8.57%)	0.01
Preeclampsia	2 (2.8%)	10 (4.76%)	0.04
Emergency Caesarian section	60 (28.03%)	101 (48.09%)	0.00
Macrocosmic infants	12 (5.6%)	37 (17.6%)	0.00

Table 2: Pregnancy complications between normal weight and overweight pregnant women.

Quality of life domains	Normal weight women		Overweight women		p- value
	Mean	SD	Mean	SD	
General health	60.72	14.51	62.14	12.20	0.27
Physical functioning	64.51	20.31	59.72	20.99	0.01
role limitation due to physical problems	55.49	18.77	50.04	19.70	0.00
role limitation due to emotional problems	62.74	21.49	64.02	22.58	0.5
Social function	63.74	22.47	62.80	21.44	0.4
Bodily pain	63.76	13.45	57.22	24.60	0.00
Mental health	66.03	18.01	65.12	17.56	0.09
Vitality	56.08	17.88	57.1	17.08	0.6

Table 3: QOL at the first trimester of pregnancy in normal weight and overweight pregnant women.

Quality of life domains	Normal weight women		Overweight women		p- value
	Mean	SD	Mean	SD	
General health	61.04	20.99	48.7	17.02	0.001
Physical functioning	59.05	20.06	47.9	16.99	0.001
role limitation due to physical problems	51.7	14.4	47.5	16.61	0.001
role limitation due to emotional problems	62.4	21.49	50.03	18.6	0.000
Social function	63.9	22.45	51.3	19.0	0.000
Bodily pain	58.04	21.98	50	18.1	0.001
Mental health	64.0	20.01	47.05	16.04	0.001
Vitality	57.03	24.32	49.0	18.02	0.00

Table 4: Quality of life at the third trimester of pregnancy in normal weight and overweight pregnant women.

the risks of gestational hypertension and pre-eclampsia had been higher for women who are overweight or obese [13].

In our study, quality of life at the first trimester of pregnancy in overweight women was lower than normal weight women especially in physical function, role of limitation due to physical problem and bodily pain. Amador et al. reported that physical domains of quality of life decreased clearly in both of first trimester and third trimester in obese pregnant women. Obesity was significant associated with low quality of life at the beginning of pregnancy and day time sleepiness at the third trimester [14].

Generally, pregnancy complications were higher in overweight group and linked to a decrease in physical parts of quality of life. Houston and Kasik Miller described quality of life during pregnancy and found significant declines only for physical domains. Houston has found that Socio demographic factors such as employment, and level of income, had only a small influence on functional status in pregnancy [15].

In addition, Otchet et al. found that physical functioning; mental domains were lower including role limitation due to emotional problems, vitality, and social function [16]. In our study, health-related QOL unrelated by age, education and parity. Level of education in both group were Illiterate. As mentioned above, Huston reported that Socio demographic factors were weakly related to QOL during pregnancy [17]. Race is a factor that effects in physical activity. Sue et al. reported black girls have a decline in activity twice more than white girls. Pregnancy (for black girls) also affected the decline in activity [17]. We believe that, maybe one of reason lower quality of life in overweight women is low level of education. Another reason may be antenatal lifestyle, dietary and activity, because some new researches show that quality of life and outcome of pregnancy link with lifestyle and dietary. Another significant limitation was the small sample size, which yielded low power in the analysis of the results, as already discussed. However, this study was not designed to evaluate quality of life during pregnancy according to level of education, lifestyle or some of socio demographic factors.

Surprisingly, we showed lower score in all of domains of QOL in overweight group than the other group at the third trimester. Our results consistent with study by Da Costa et al. in his study showed significant impairments in five of the eight SF-36 including physical function, role of limitation, bodily pain, vitality and social function during the third trimester [18].

Nascimento et al. showed that there was a significant decrease in the mean scores of the physical and social domains observed in obese and overweight groups at the end of pregnancy [19]. In addition, Mckee et al. demonstrate a reduction in emotional well-being that is indicated by lowered scores in mental health and emotional role functioning [20]. While a similar pattern of findings were reported by Furber and McGowan. He argued that body image in obese pregnant women linked to emotional problem in third trimester. In addition, eating behavior and weight gain during the pregnancy were related with obesity and emotional problems [21]. The negative effects on mental well-being of perceived overweight have been reported in the psychological literature. It is well known that the obese suffer social discrimination and, in particular, that those who come to clinics in search of treatment tend to have lower self-esteem, more anxiety and a poorer body image [22,23].

Our findings in quality of life and complication of pregnancy showed that there were unbelievable results that have not mentioned in other researches before. It is difficult to explain why our results have differences with other studies. In this study, a standard Iranian version SF36 was used. However, there are lots of quality of life scales which will not be free cultural or group bias [24]. Perhaps, it could explain deep differences between our studies with others. On the other hand, the perception of quality of life across groups could vary depending on the economic, social, cultural, and other relevant domains that shape those perceptions.

Conclusion

The authors believe that this study is important for general health care. We found a significantly reduced QOL in the group of overweight pregnant women also maternal BMI increased risks adverse pregnancy outcomes. More knowledge should be acquired in this issue.

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