

Impact of Normal and Overweight Pregnant Women upon Pregnancy Complications in Al-Nasiriya Hospitals: Comparative Study



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ABSTRACT

Abstract: Maternal obesity is a major risk for both the mother and the fetus, and it is considered an obstetrical risk factor that leads to a high incidence of complications, as well as an increased risk of many adverse pregnancy outcomes.

Objectives: To assess the impact of overweight pregnant women upon pregnancy complication at Al-Nasiriya city.

الخلاصة:

خلفية البحث: تعتبر سمنة الأمهات من المخاطر الرئيسية لكل من الأم والجنين، وتعتبر عامل خطر أثناء الولادة يؤدي إلى ارتفاع معدل حدوث المضاعفات طوال فترة ما قبل الولادة، فضلاً عن زيادة مخاطر حدوث العديد من نتائج الحمل السلبية.

الهدف: تقييم أثر الحوامل الطبيعيات وذوات الوزن الزائد على مضاعفات الحمل في مدينة الناصرية.

المنهجية: أجريت دراسة وصفية تحليلية من 11 يناير 2021 إلى 18 مارس 2021 في مستشفيات مدينة الناصرية للولادة والأطفال على (88) امرأة حامل يترددن على مستشفيات الولادة في مدينة الناصرية، و (44) امرأة زائدة الوزن و(44) حامل وزن طبيعي. تم استخدام عينة غير احتمالية (عينة هادفة) لاختيار المشاركات، واستخدم الاستبيان كأداة لجمع محتوى البيانات، وتم تحديد صدقها من خلال مراجعتها من قبل (16) خبيراً في مجالات مختلفة. تم استخدام الإحصاء الوصفي والاستنتاجي لتحليل البيانات.

النتائج: أوضحت نتائج الدراسة أن (34.1%) (36.4%) من عينة الدراسة الذين تتراوح أعمارهم (26-30) سنة في الوضع الطبيعي، والحوامل زائدة الوزن على التوالي. كما أوضحت نتائج الدراسة مؤشر كتلة الجسم السابق والحالي بين الحوامل ذات الوزن الطبيعي (100% و 95%) على التوالي، بينما في الوزن الزائد (63.6%) زاندي الوزن سابقاً و (65.9%) فئة السمنة (I) حالياً. تأثير الوزن على نتائج الحمل؛ تشير النتائج إلى أن الوزن له تأثير كبير على النتائج المتعلقة بالحمل، عند قيمة $p = 0.007$ ، بينما لم يكن لها تأثير بين مجموعة النساء الحوامل ذات الوزن الطبيعي.

الاستنتاج: خلصت الدراسة إلى أن زيادة الوزن تؤثر على النتائج المتعلقة بالحمل، بينما لم يكن هنالك تأثير بين مجموعة النساء الحوامل ذات الوزن الطبيعي.

التوصيات: زيادة النشاط البدني ومعرفة عادات الأكل الصحية لدى الحوامل كجزء من مبادرات مراكز الرعاية الصحية الأولية للحد من السمنة لدى النساء.

كلمات المفتاحية: حامل، وزن زائد، وزن طبيعي، نتائج عكسية للأم.

Methodology: A descriptive analytic study was conducted from January 11th, 2021 to March 18th, 2021 at Al-Nasiriya city Hospitals for Maternity and Children on (88) pregnant women who are attending Al-Nasiriya city Maternity Hospitals, (44) were overweight and (44) normal weight pregnant women. A non-probability (Purposive sample) was used to select the participants of study sample, a questionnaire was used as a tool to collect data content, validity was determined through reviewing it

by (16) experts in different fields. Descriptive and inferential statistics were used to analyze the data.

Results: The result of study revealed that (34.1%) (36.4%) of study sample aged (26-30) years in normal, and overweight pregnant respectively. The study results clarifies the previous and current body mass index among normal weight pregnant women (100% & 95%) respectively, while in overweight (63.6%) overweight previously and (65.9%) obesity class (I) at current. the impact of weight upon pregnancy outcomes; the findings indicates that weight has significant impact up on outcomes related to pregnancy, at p-value= 0.007, while there is no

impact has been reported among group of normal weight pregnant women.

Conclusion: The study concluded that overweight impact upon outcomes related to pregnancy, while there is no impact has been reported among group of normal weight pregnant women.

Recommendations: Increased physical activity and knowledge of healthy eating habits among pregnant women as part of primary health care center initiatives to reduce obesity in women.

Keywords: Pregnant, Overweight, Normal weight, Adverse maternal outcome.

INTRODUCTION

Overweight and obesity are steadily growing in all age groups worldwide, especially in countries with low and medium incomes (1). Given the correlation with negative short- and long-term maternal and child outcomes, pre-pregnancy obesity (body mass index, BMI > 30 kg/m²), excessive gestational weight gain (GWG) and postpartum weight retention (PPWR) are seen as new public health threats (2). These findings include, in later life, obstetric or neonatal complications, obesity, type 2 diabetes (T2D) and cardiovascular disease (CVD) (3).

Overweight is defined by a BMI of ≥ 25 and obesity by a BMI of ≥ 30 (4). Several maternal, fetal and neonatal complications are associated with overweight and obesity. Maternal complications are associated with maternal obesity as well as fetal and neonatal complications, such as hypertensive disorders, diabetes and venous thrombo-embolism, including miscarriage and stillbirth, foetal abnormalities, macrosomia, preterm birth, extended pregnancy, Caesarean delivery, postpartum haemorrhage and complications in anaesthesia (5).

AIMS OF THE STUDY

To assess the impact of overweight pregnant women upon pregnancy complication at Al-Nasiriya city.

METHODOLOGY

A descriptive analytic study was conducted to determine the Impact of normal and overweight pregnant women upon Pregnancy Complications In Al-Nasiriya city Hospitals : Comparative Study. The study was performed from 14 th of December 2020 up to 24 th June 2021. Non-probability (purposive sample) used to collect the data from (88) pregnant women. The study sample consists of (44) pregnant women with normal weight and (44) pregnant women with overweight . A pilot study conducted in order to determine the reliability of the questionnaire in a sample of (5) pregnant women who have the overweight and (5) pregnant women who have normal weight . content validity was determined through a panel of (16) experts who had more than 8 years of experience in their field. The data was collected after obtaining the agreement from women to participant in this study . Data are analyzed through the use of (SPSS) ver. (24.0).

RESULTS

Table (1): Distribution of Pregnant Women According to their Socio-demographic Characteristics

List	Characteristics		Normal weight		Overweight	
			f	%	f	%
1	Age	16 – 20 year	14	31.8	7	15.9
		21 – 25 year	11	25	10	22.7
		26 – 30 year	15	34.1	16	36.4
		31 – 35 year	4	9.1	8	18.2
		36 ≤ year	0	0	3	6.8
		Total	44	100	44	100
		M±SD	24±5		27±6	
2	Level of education	Doesn't read & write	2	4.5	4	9.1
		Read & write	3	6.8	3	6.8
		Primary school	17	38.6	21	47.7
		Intermediate	7	15.9	6	13.6
		Secondary	4	9.1	3	6.8
		Institute	0	0	2	4.5
		College/higher	11	25	5	11.4
		Total	44	100	44	100
3	Perceived income	Insufficient	6	13.6	13	29.5
		Barely sufficient	31	70.5	29	65.9
		Sufficient	7	15.9	2	4.5
		Total	44	100	44	100

f: Frequency, %: Percentage, M: Mean, SD: Standard deviation

This table (1) shows that the highest percentage (34.1%), normal weight pregnant are with age group of (26 – 30) years, with mean ± SD (24±5) years, the highest percentage(36.4%), among overweight pregnant is also refers to (26 – 30) age group, with mean ± SD of (27±6) years. Regarding the level of education, the pregnant women are graduated from primary school; (38.6%) among normal weight pregnant and (47.7%) among overweight pregnant. The highest percentage among pregnant women are perceived barely sufficient monthly income (70.5%) among normal weight pregnant and (65.9%) among overweight pregnant women.

Table (2): Distribution of Pregnant Women According to BMI

List	Body mass index		Normal weight		Overweight	
			f	%	f	%
1	Previous	Underweight	0	0	0	0
		Normal	44	100	0	0
		Overweight	0	0	28	63.6
		Obesity I	0	0	15	34.1
		Obesity II	0	0	1	2.3

		Obesity III	0	0	0	0
		Total	44	100	44	100
2	Current	Underweight	0	0	0	0
		Normal	42	95.5	0	0
		Overweight	2	4.5	3	6.8
		Obesity I	0	0	29	65.9
		Obesity II	0	0	12	27.3
		Obesity III	0	0	0	0
		Total	44	100	44	100

f: Frequency, %: Percentage

Table(2) clarifies the previous and current body mass index among pregnant women that refer to normal among the group of normal weight pregnant (100% and 95.5%), while refer to overweight previously (63.6%) and obesity I (65.9%) at current among the group of overweight pregnant women.

Table (3): Assessment the Effect of Weight on Pregnancy Health Problems

List	Outcomes (health problems)		Normal weight N=44		Overweight N=44	
			f	%	f	%
1	Anemia during pregnancy	No	37	84.1	37	84.1
		Yes	7	15.9	7	15.9
2	Suffering from gestational diabetes	No	43	97.7	35	79.5
		Yes	1	2.3	9	20.5
3	Suffering from high blood pressure during pregnancy	No	44	100	28	63.6
		Yes	0	0	16	36.4
4	Suffering from headaches during pregnancy	No	35	79.5	20	45.5
		Yes	9	20.5	24	54.5
5	Suffering from chest pain	No	44	100	41	93.2
		Yes	0	0	3	6.8
6	Suffering from shortness of breath	No	44	100	39	88.6
		Yes	0	0	5	11.4
7	Suffering from albumin and swollen legs	No	43	97.7	19	43.2
		Yes	1	2.3	25	56.8
8	Bleeding early in pregnancy	No	43	97.7	38	86.4
		Yes	1	2.3	6	13.6
9	Bleeding at the end of pregnancy	No	43	97.7	39	88.6
		Yes	1	2.3	5	11.4
10	Prenatal hemorrhage as a result of advancing the placenta	No	43	97.7	40	90.9
		Yes	1	2.3	4	9.1
11	Pain and frequent urination	No	43	97.7	27	61.4
		Yes	1	2.3	17	38.6
12	Urinary tract infections	No	42	95.5	26	59.1
		Yes	2	4.5	18	40.9
13	Chronic vaginal infections and sexually transmitted diseases	No	44	100	44	100
		Yes	0	0	0	0

14	Morning fatigue during pregnancy	No	36	81.8	17	38.6
		Yes	8	18.2	27	61.4
15	Constant pain in the lower back	No	39	88.6	18	40.9
		Yes	5	11.4	26	59.1
16	Stomach pain and heartburn	No	38	86.4	34	77.3
		Yes	6	13.6	10	22.7
17	Decreased motor activity	No	35	79.5	12	27.3
		Yes	9	20.5	32	72.7
18	Premature birth	No	40	90.9	36	81.8
		Yes	4	9.1	8	18.2
19	Breech childbirth	No	41	93.2	39	88.6
		Yes	3	6.8	5	11.4
20	Still born	No	43	97.7	38	86.4
		Yes	1	2.3	6	13.6
21	Premature rupture of membranes	No	43	97.7	35	79.5
		Yes	1	2.3	9	20.5
22	Excessive amniotic fluid	No	42	95.5	37	84.1
		Yes	2	4.5	7	15.9
23	Oligohydramnios	No	38	86.4	31	70.5
		Yes	6	13.6	13	29.5

f: Frequency, %: Percentage.

This table (3) presents the pregnancy outcomes related to health problems; “anemia” is reported among (15.9%) of normal weight and overweight pregnant; “gestational diabetes” is reported among (2.3%) of normal weight and (20.5%) of overweight; “hypertension” is reported among overweight only with (36.4%); “headache” is reported among (20.5%) of normal weight and (54.5%) among overweight; the “shortness of breath” is reported among only (11.4%) of overweight; the “swollen legs” is reported among (2.3%) of normal weight and (56.8%) of overweight; the “early bleeding” is reported among (2.3%) of normal weight and (13.6%) of overweight; the “late bleeding” is reported among (2.3%) of normal weight and (11.4%) of overweight; “prenatal hemorrhage” is reported among (2.3%) of normal weight and (9.1%) of overweight; the “pain and frequent urination” is reported among (2.3%) of normal weight and (38.6%) of overweight; the “urinary tract infection” is reported among (4.5%) of normal weight and (40.9%) of overweight; the “morning fatigue” is reported among (18.2%) of normal weight and (61.4%) of overweight; the “lower back pain” is reported among (11.4%) of normal weight and (59.1%) of overweight; the “stomach pain and heartburn” is reported among (13.6%) of normal weight and (22.7%) of overweight; the “premature birth” is reported among (9.1%) of normal weight and (18.2%) of overweight; the breech childbirth is reported among (6.8%) of normal weight and (11.4%) of overweight; the “stillbirth is reported among (2.3%) of normal weight and (13.6%) of overweight; the “premature rupture of membrane” is reported among (2.3%) of normal weight and (20.5%) of overweight; “excessive amniotic fluid” is reported among (4.5%) of

normal weight and (15.9%) of overweight; and “Oligohydramnios” is reported among (13.6%) of normal weight and (29.5%) of overweight.

Table (4): Simple Linear Regression for Assessment the Impact of Normal and Overweight upon Pregnancy Outcomes among Pregnant Women

Dependent Variables	Normal weight Pregnant (N=44)					Overweight Pregnant (N=44)				
	Un standardized Coefficients		Standardized Coefficients	t	Sig.	Un standardized Coefficients		Standardize d Coefficients	t	Sig.
	B	Std. Error	Beta			B	Std. Error	Beta		
Pregnancy outcome	0.595	1.161	0.079	0.513	0.611	2.532	0.897	0.399	2.824	0.007
Dependent Variable: Outcomes										

This table displays the impact of weight upon pregnancy outcomes; the findings indicates that weight has significant impact up on outcomes related to pregnancy, among overweight pregnant women at p-value= 0.007, while there is no impact has been reported among group of normal weight pregnant women.

Table (5): Correlation among Weight with Pregnancy Outcomes (Health Problems) among Pregnant Women

Pregnant Weight	Normal weight Pregnant (N=44)			Overweight Pregnant (N=44)		
	Spearman correlation	p-value	Sig	Spearman correlation	p-value	Sig
Anemia during pregnancy	0.095	0.540	N.S	-0.159	0.304	N.S
Suffering from gestational diabetes	0.033	0.830	N.S	0.330	0.029	S
Suffering from high blood pressure during pregnancy.	0.033	0.830	N.S	0.156	0.311	N.S
Suffering from headaches during pregnancy	0.111	0.475	N.S	-0.073	0.636	N.S
Suffering from chest pain	0.033	0.830	N.S	0.234	0.125	N.S
Suffering from shortness of breath	0.033	0.830	N.S	0.264	0.083	N.S
Suffering from albumin and swollen legs	0.033	0.830	N.S	0.332	0.028	S
Bleeding early in pregnancy	0.033	0.830	N.S	-0.041	0.793	N.S
Bleeding at the end of pregnancy	0.033	0.830	N.S	-0.122	0.431	N.S
Prenatal hemorrhage as a result of the placenta	0.033	0.830	N.S	0.172	0.264	N.S
Suffering from pain and frequent urination	0.033	0.830	N.S	0.135	0.384	N.S
Suffering from urinary tract infections	0.084	0.759	N.S	-0.116	0.454	N.S
Morning fatigue during pregnancy	0.103	0.506	N.S	0.298	0.049	S
Suffering from constant pain in the lower back	0.078	0.614	N.S	0.315	0.037	S
Suffering from stomach pain and heartburn	0.087	0.576	N.S	0.415	0.005	H.S

Decreased motor activity	-0.160	0.300	N.S	0.028	0.858	N.S
Premature birth	0.069	0.656	N.S	0.125	0.418	N.S
Breech childbirth	0.059	0.703	N.S	0.216	0.159	N.S
Still born	0.033	0.830	N.S	0.330	0.029	S
Premature rupture of membranes	0.033	0.830	N.S	0.176	0.252	N.S
Excessive amniotic fluid	0.048	0.759	N.S	0.207	0.177	N.S
Oligohydramnios	-0.231	0.131	N.S	0.176	0.252	N.S

P: probability, Sig: Significance, N.S: Not Significant, S: Significant, H.S: High significant

This table manifests that there is no significant relationship between pregnant women' weight with regard to pregnancy outcomes among the normal weight pregnant women, but among the overweight pregnant women, it shows there is significant relationship among weight with regard to pregnancy outcomes of: gestational diabetes, swollen legs, morning fatigue during pregnancy, constant pain in the lower back, stomach pain and heartburn, and stillbirth at p-value= (0.029, 0.028, 0.049, 0.037, 0.005, and 0.029).

DISCUSSION

The present study results reveals that the highest percentage (34.1%) , normal weight pregnant are with age group of (26 – 30) years, with mean \pm SD (24 \pm 5) years, and the highest percentage (36.4%), among overweight pregnant is also refers to (26 – 30) age group, with mean \pm SD of (27 \pm 6) years. Khan & Qianli, (2017) stated that the most important cause for increase in weight gain with age is the activity of the metabolism, and this lead to fewer of body burns calories and this ends up accumulating lipid in the body and thus an increase in weight ⁽⁶⁾.

Regarding the level of education, the highest percentage among pregnant women are graduated from primary school; (47.7%) among overweight pregnant and (38.6%) among normal weight. These findings are consistent with Pakniat & Ranjkesh, (2015) and with Stanford et al., (2015) ,and with Teixeira et al., (2012) they found that lack of

appropriate understanding and adequate competence regarding obesity likely contributes to ambivalent belief development and negative attitudes toward obese individuals, who are described as unmotivated, lazy, and lacking self-control ^(7, 8, and 9).

Regarding Income, the highest percentage among pregnant women are perceived barely sufficient monthly income (70.5%) among normal weight pregnant and (65.9%) among overweight pregnant women. The study by Ogden et al., (2017), stated that obesity prevalence decreased with increased levels of income and educational attainment among women ⁽¹⁰⁾ and, May et al., (2013) have suggested that obesity prevalence varies by income and educational level, although patterns might differ between high-income and low-income countries ⁽¹¹⁾.

The study results clarifies the previous and current body mass index among pregnant women

that refer to normal among the group of normal weight pregnant (100% and 95.5%). This result agree with Eren et al., (2015) they found the mean of pre-pregnancy body mass index is (27.18 ± 5.38) , also one third of the study sample are within normal weight status and then followed by overweight and class-I obesity ⁽¹²⁾, this result also agrees with Machado et al., (2020) pregnancy BMI: (29.6%) women (n = 918) were classified as overweight and (27.3%) (n = 846) as obese ⁽¹³⁾. Also agree with Subhan et al., (2019) that most women (64%) had a normal pre-pregnancy BMI ⁽¹⁴⁾.

The results regarding effect of weight on pregnancy (Health Problems), manifests that there is no significant relationship between pregnant women' weight with regard to pregnancy outcomes among the normal weight, but among the overweight, it shows there is significant relationship among weight with regard to pregnancy outcomes of: gestational diabetes, swollen legs, morning fatigue during pregnancy, constant pain in the lower back, stomach pain and heartburn, and stillbirth at p-value= (0.029, 0.028, 0.049, 0.037, 0.005, and 0.029) . These results consistent with Du et al., (2019), Machado et al., (2020) they found the risk of gestational diabetes (RR= 0.71, 95% CI =[0.57-0.89], P =0.004) in overweight and obese pregnant women, more than half of the women (56.9%) who were diagnosed with GD were overweight or obese ^(15, 13). This worrying percentage reflects the dramatic increase in overweight and obesity among women of reproductive age. There are some reports in the

literature that showed similar results by Whiteman et al., (2015), and Sugiyama et al., (2014) ^(16, 17).

Yanagisawa et al., (2019) in their study found that (66.7%) Skin thickness of the legs in pregnant women with oedema was significantly increased compared with that in pregnant women without oedema. There were no significant differences in other outcomes such as gestational hypertension, preeclampsia, caesarean delivery, birth weight, large for gestational age, small for gestational age, macrosomia, and preterm birth ⁽¹⁸⁾.

Sinha et al.,(2016), and Dawood, (2013) they found the history of early stillbirth was greater in obese group than other groups ,however, history of stillbirth was same in obese and normal group ^(19, 20).

CONCLUSION

The study finding manifests that there is no significant relationship between pregnant women' weight with regard to pregnancy complications among the normal weight pregnant women, but among the overweight pregnant women, it shows there is significant relationship among weight with regard to: gestational diabetes, swollen legs, morning fatigue during pregnancy, constant pain in the lower back, stomach pain and heartburn, and stillbirth at p-value= (0.029, 0.028, 0.049, 0.037, 0.005, and 0.029).

RECOMMENDATIONS

The study suggests that nursing and health-care professionals play a bigger role in educating pregnant women and raising awareness about their

health, especially natural weight gain before and

during pregnancy.

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