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OUTCOME OF PREGNANCY AFTER BARIATRIC SURGERY AMONG SAUDI WOMEN: A CROSS-SECTIONAL STUDY

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Abstract:

Objective: *To investigate the outcomes of pregnancy after bariatric surgery among Saudi women and to assess the potential impact on maternal and neonatal health.*

Methods: *This cross-sectional study will employ a quantitative research design to investigate the outcomes of pregnancy after bariatric surgery among Saudi women.*

Results: *The study included 280 participants. The most frequent weight among them was 51-65 kg (n= 123, 43.9%) followed by 66-75 kg (n= 66, 23.6%). The most frequent height among study participants was 1.51-1.60 m (n= 161, 57.5%) followed by 1.61-1.70 m (n= 92, 32.9%). The most frequent body mass index value among study participants was 18.5-24.9 kg/m^2 (n= 125, 44.6%) followed by 25-29.9 kg/m^2 (n= 85, 30.4%). The most frequent nationality among them was Saudi (n= 236, 84.3%) followed by non-Saudi (n= 44, 15.7%). The most frequent age among them was 37-45 years old (n= 140, 50%) followed by 28-36 years old (n= 73, 26.1 Obesity surgery to lose weight Most of the participants don't do the surgery (n=232,82.9%), followed by those who do the surgery (48, 17.1%).*

Conclusion: *Study results showed that most of the study participants are normal according to their BMI. The most common nationality was Saudi. Most of them don't do obesity surgery. In addition, most of the study participants had good social connections.*

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INTRODUCTION:

In 2016, it was projected that 13% of the worldwide population, or 650 million people, were obese [1]. Bariatric surgery (BS) is widely recognized as the most successful treatment option, producing long-lasting weight loss and significantly reducing the prevalence of co-morbid conditions [2, 3]. Most patients receiving bariatric care are women, and the majority of these women are of childbearing age. Obesity is linked to other co-morbidities, such as high blood pressure, type 2 diabetes, and obstructive sleep apnea, and it also affects fertility, the duration of pregnancy, and the health of the newborn [4]. Gestational diabetes mellitus (GDM), pregnancy-induced hypertension (PIH), delayed labor, vacuum delivery, cesarean section, congenital abnormalities, and large-for-gestational-age (LGA) newborns are all increased in likelihood when a mother is overweight throughout pregnancy [5]. Having bariatric surgery decreases your chances of developing type 2 diabetes, hypertension, and low birth weight, but it raises your chances of having a baby born small for their gestational age [6, 7]. Hormonal and metabolic shifts, as well as alterations in gastrointestinal absorption, may have an impact on the health of both mother and child. Maternal micronutrient and vitamin shortages are established variables in the etiology of poor fetal development, although other factors are probably likely at play. Numerous research have looked into how BS affects pregnant women and their babies. The impact of pregnancy and gestational weight increase on BS long-term outcomes is a key open subject since pregnancy is linked to changes in body weight.

Obesity is a growing global health concern, with increasing prevalence among women of childbearing age. Bariatric surgery has become an effective intervention to achieve significant weight loss and improve metabolic health in severely obese individuals. However, there is a paucity of research regarding the impact of bariatric surgery on pregnancy outcomes among Saudi women. This research problem arises from the need to understand how bariatric surgery affects the outcomes of pregnancy in this specific population. It is crucial to investigate whether the weight loss and metabolic changes induced by bariatric surgery influence maternal and neonatal health, such as gestational diabetes, preterm birth, low birth weight, and congenital anomalies, in Saudi women. A comprehensive cross-sectional study can help fill this gap in the literature, providing insights into the risks and benefits of pregnancy after bariatric surgery among Saudi women, which can inform healthcare providers and policymakers in Saudi Arabia and contribute to improved maternal and neonatal care in this context.

Furthermore, understanding the post-bariatric surgery pregnancy outcomes among Saudi women can have implications for clinical decision-making, counseling, and patient management. It is imperative to determine whether specific interventions or guidelines are needed to optimize maternal and fetal health in this population. Additionally, the cultural and societal factors unique to Saudi Arabia may influence the experiences and choices of women who have undergone bariatric surgery and are considering pregnancy. Exploring these factors and their potential impact on pregnancy outcomes is an essential aspect of this research problem. By addressing this issue, we can provide valuable insights into the healthcare needs and challenges faced by Saudi women who have undergone bariatric surgery and aim to become mothers, ultimately promoting better maternal and neonatal health in this context.

METHODS:

Study design

This cross-sectional study will employ a quantitative research design to investigate the outcomes of pregnancy after bariatric surgery among Saudi women.

Study approach

The study will be conducted in healthcare facilities, including hospitals and clinics, in Saudi Arabia. Data collection will take place in urban and rural areas to ensure a diverse representation of the Saudi population.

Study population

The target population consists of Saudi women of childbearing age (18-45 years) who have undergone bariatric surgery and subsequently became pregnant. Given the rarity of this population, a convenience sampling method will be used to select participants. A sample size of at least 200 participants will be sought.

Study sample
Convenience sampling will be employed to identify and recruit participants from healthcare facilities, support groups, and online communities of bariatric surgery patients. This method will be chosen due to the relatively small and geographically dispersed population of interest.

Study tool
The structured questionnaire will be developed based on established research instruments and will be pre-tested for validity and reliability. Data on metabolic and nutritional status will be collected through clinical measurements, including blood tests and anthropometric assessments.

Data collection
Data will be collected through structured interviews and medical record reviews. Structured questionnaires will be used to obtain information on pregnancy outcomes, including gestational diabetes, preterm birth, low birth weight, and congenital anomalies. Medical records will provide details on the participants' bariatric surgery history and their metabolic and nutritional status during pregnancy.

Data analysis
Data will be analyzed using descriptive statistics, chi-squared tests, t-tests, and logistic regression as appropriate to address the specific research questions. A p-value of less than 0.05 will be considered statistically significant.

Ethical considerations
The research will adhere to ethical guidelines and obtain approval from an institutional review board or ethics committee. Informed consent will be obtained from all participants, ensuring their confidentiality and privacy. Participants will be made aware of their right to withdraw from the study at any time without consequences. Additionally, data will be anonymized and securely stored to protect participants' privacy and confidentiality.

RESULTS:

The study included 280 participants. The most frequent weight among them was 51-65 kg (n= 123, 43.9%) followed by 66-75 kg (n= 66, 23.6%). Figure 1 shows the weight distribution among study participants. The most frequent height among study participants was 1.51-1.60 m (n= 161, 57.5%) followed by 1.61-1.70 m (n= 92, 32.9%). Figure 2 shows the height distribution among study participants. The most frequent body mass index value among study participants was 18.5-24.9 kg/m^2 (n= 125, 44.6%) followed by 25-29.9 kg/m^2 (n= 85, 30.4%). Figure 3 shows the distribution of BMI among study participants.

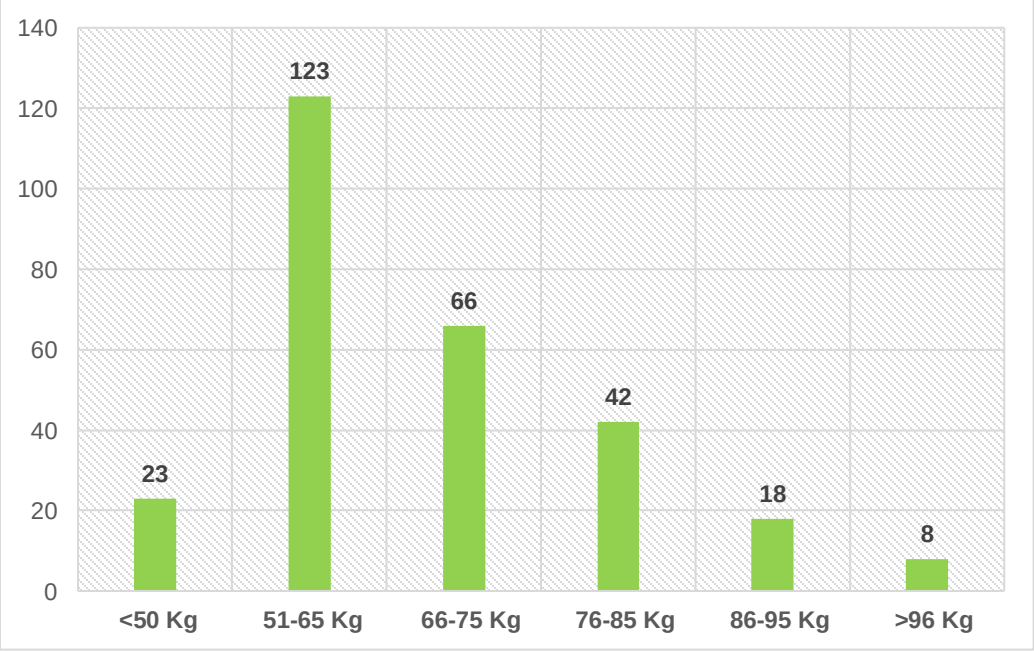

Figure 1: Weight distribution among study participants

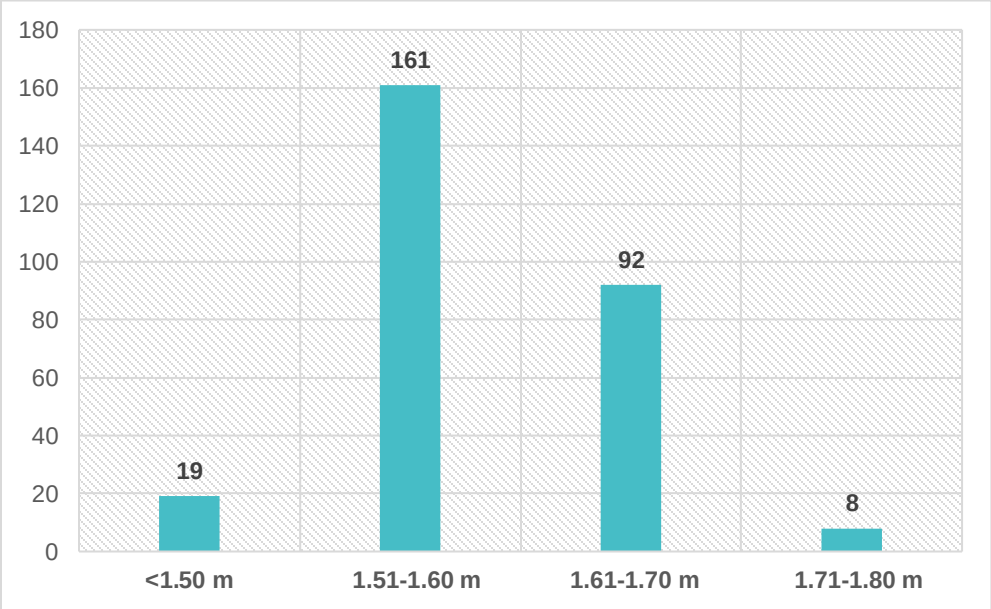

Figure 2: Height distribution among study participants

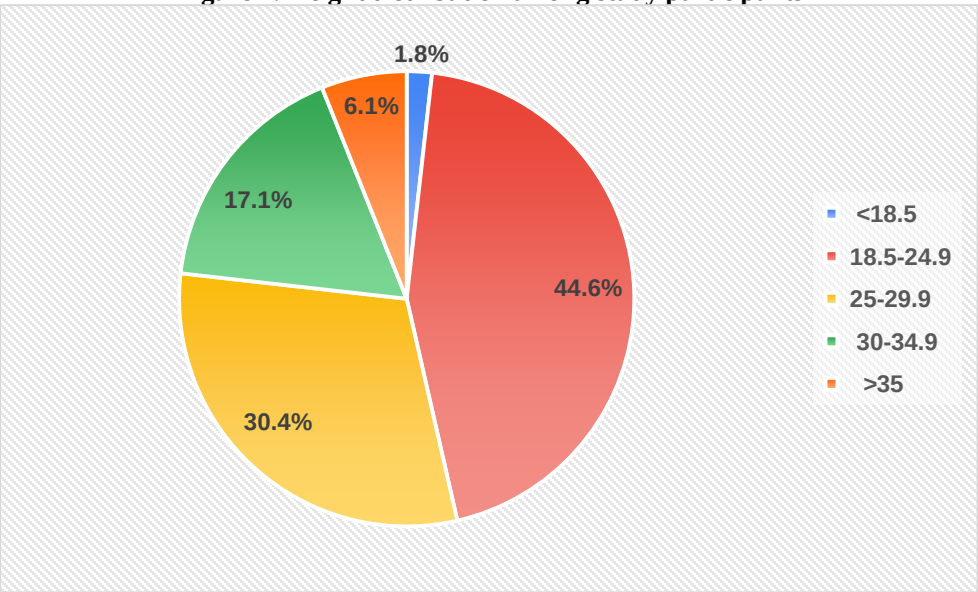

Figure 3: BMI distribution among study participants

The most frequent nationality among them was Saudi (n= 236, 84.3%) followed by non-Saudi (n= 44, 15.7%). Figure 4 shows the nationality distribution among study participants. The most frequent age among them was 37-45 years old (n= 140, 50%) followed by 28-36 years old (n= 73, 26.1%). Figure 5 shows the age distribution among study participants.

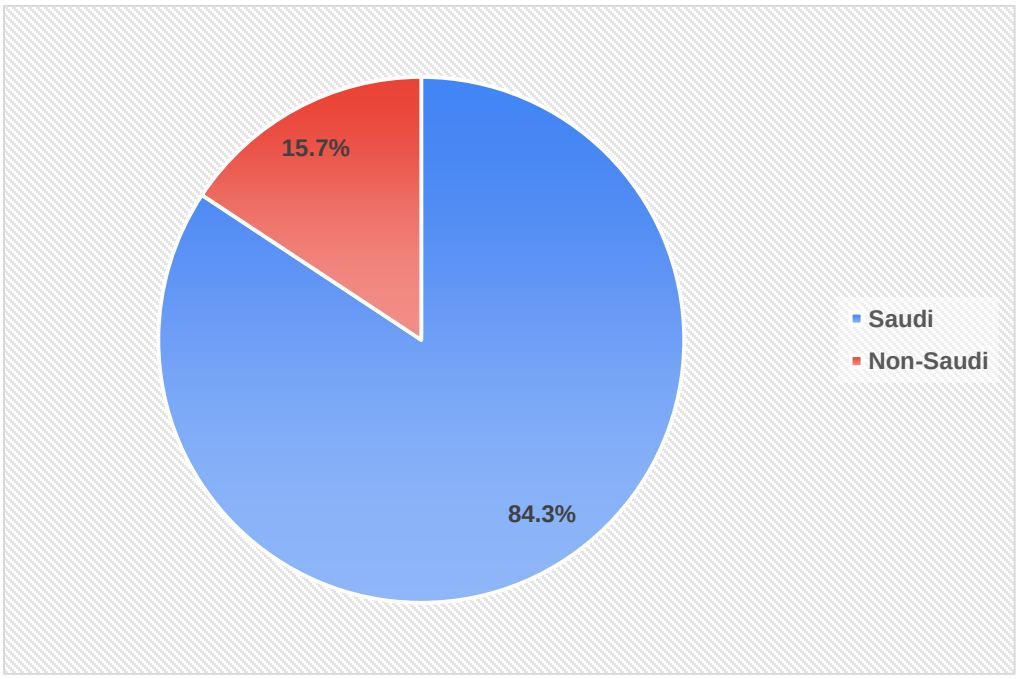

Figure 4: Nationality distribution among study participants

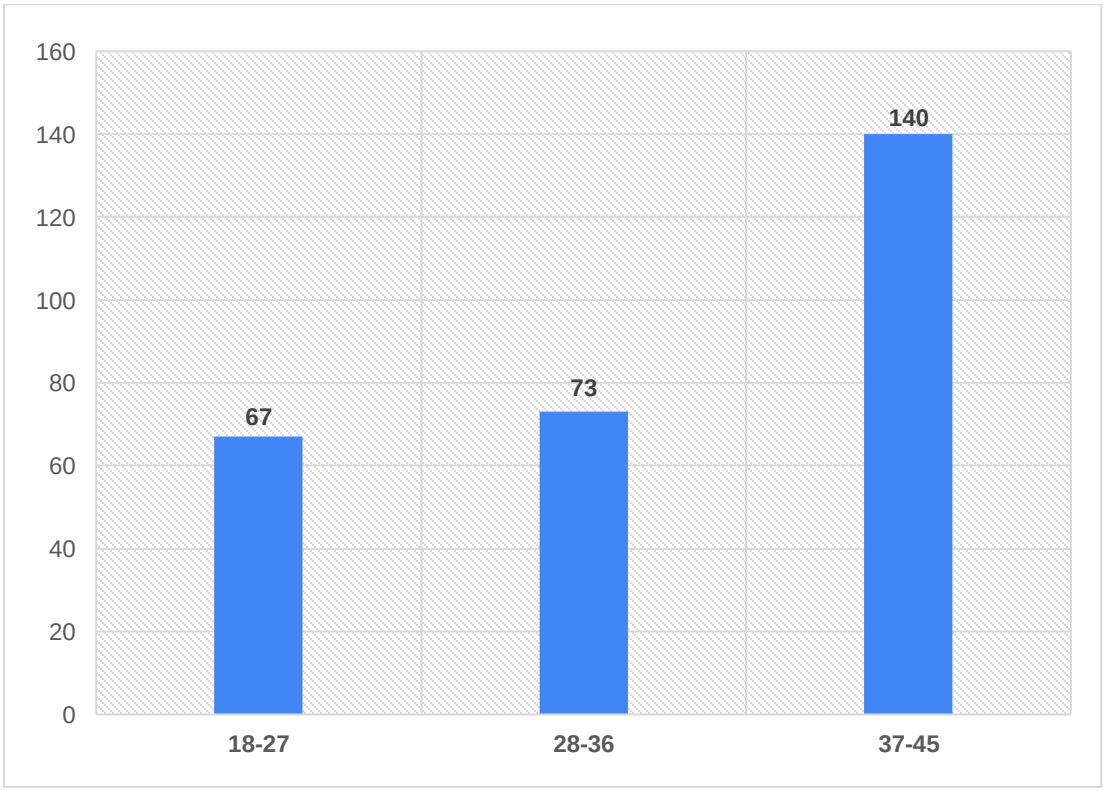

Figure 5: Age distribution among study participants

Participants were asked about their menstrual periods and diseases. Their responses and results are presented in Table 1.

Table 1: diseases among study participants

survey item	Yes	No
Do you suffer from recurrent miscarriages?	36 12.9%	244 87.1%
Is your menstrual cycle regular?	220 78.6%	60 21.4%
Are you a smoker?	41 14.6%	239 85.4%
Do you exercise intensely?	51 18.2%	229 81.8%
Do you suffer from thyroid problems?	31 11.1%	249 88.9%
Do you suffer from obesity?	88 31.4%	192 68.6%
Have you had obesity surgery to lose weight?	48 17.1%	232 82.9%

Participants were asked to assess their related to those who doing obesity surgery. Their responses and results are presented in Table 2.

Table 2: Questions related to those who have had obesity surgery

survey item	Yes	No
Did you suffer from pregnancy complications after obesity surgery?	4 8.3%	44 91.7%
Is pregnancy delayed after obesity surgery?	11 22.9%	37 77.1%
Did pregnancy occur easily and quickly after bariatric surgery?	23 48.9%	24 51.1%
Did a full and healthy pregnancy occur within a year of obesity surgery?	14 29.2%	34 70.8%

Obesity surgery to lose weight Most of the participants don't do the surgery (n=232,82.9%), followed by those who do the surgery (48, 17.1%).

DISCUSSION:

The effects of BS on pregnancy and newborn outcomes have been the primary focus of research on this topic. Patients and bariatric surgeons both have a vital interest in knowing how pregnancy affects the long-term outcomes of BS. There is data suggesting that weight reduction success following BS is not hampered by pregnancy. Patients who went on to have children following their operations saw similar weight reduction to those who did not have children. The neutral impact of pregnancy on BS results was verified in recent research by Brönnimann et al., who evaluated

the excess body mass index (BMI) reduction after 5-year follow-up between women with and without a history of pregnancy and found it to be equivalent in both groups [7]. Researchers Quyên Pham et al. [8] looked at the weight loss histories of 84 women who became pregnant after BS and found that, compared to the control group of women without a history of pregnancy after BS, the pace of weight loss was slower for the first 5 years after pregnancy, but then it leveled off. Eighty women who fell pregnant following laparoscopic sleeve gastrectomy (LSG) were matched with eighty controls for body mass index (BMI), age, and length of follow-up in a cross-sectional case-control research by Rottenstreich et al. More than 5 years of follow-up revealed no differences in long-term weight reduction success [9]. After BS, a group of women were studied by Alatishe et al., who found no variations in %EWL between those who got pregnant and those who did not [10]. Nonetheless, there are studies that contradict these findings. For example, Froylich et al. compared a cohort of 62 patients who underwent BS and subsequently became pregnant and had a delivery (either before or after BS) to a control cohort of 92 patients who underwent BS but never conceived, and they discovered that the delivery group lost 68.0% more weight than the control group (53.0% EWL vs. 53.0% EWL). They found that having a baby before starting BS slowed weight reduction thereafter [11].

The most frequent problems after BS in pregnancy are internal herniation after RYGB and gastric band slippage following adjustable gastric banding (AGB) [5].

About 8% of pregnancies after Roux-en-Y gastric bypass (RYGB) have been associated with internal herniation [12]. Upper abdomen discomfort, nausea, and vomiting are the hallmarks of an internal hernia and are sometimes misdiagnosed as the first signs of pregnancy [13]. The risk of uterine contractions, premature birth, and small-for-gestational-age children is increased in pregnant women experiencing severe stomach discomfort [14]. Even if mesenteric abnormalities were repaired before pregnancy, it is still possible for an internal hernia to develop. Petersen's space was the most prevalent site of hernia in a survey of 22 patients [15]. Women who have had RYGB should be urged to see a bariatric specialist immediately if they have symptoms of internal herniation, since there is evidence to show a greater risk of maternal and fetal mortality if care is delayed for more than 48 hours from the beginning of symptoms [16, 17]. If a pregnant woman has stomach discomfort after RYGB, a diagnosis of internal hernia should be considered [13].

Gastric band slippage is more likely to occur during pregnancy because of nausea, vomiting, and the increased pressure within the abdomen. Slippage may be more common after AGB, with some publications indicating a frequency of 12 percent [18, 19]. It is possible to confuse the signs of band slippage with those of pregnancy [20].

Pregnancy should be delayed until the conclusion of the fast catabolic stage of weight loss [5, 6], as recommended by international guidelines for pregnancy after BS (by Shawe et al. and the American College of Obstetricians and Gynecologists). Recommendations vary on how long you should wait between your operation and trying to conceive, but it's often between 12 and 24 months. Miscarriage, fetal starvation, and poor development are more common in pregnancies that begin before the conclusion of the fast catabolic stage [5, 6, 21]. When determining the best timing for conception, a patient-centered approach is advocated for by certain writers. Instead of recommending pregnancy immediately after the procedure, Mahawar et al. [22] urged waiting at least two months, or until the patient's weight had stabilized. Preterm birth, NICU admission, and small-for-gestational-age (SGA) newborns have all been linked to a shorter period between conception and delivery, according to some research [23].

Studies have shown no changes in pregnancy and neonatal outcomes whether the timing of conception followed the suggested time gap between BS and pregnancy, which runs counter to worldwide guidelines on the ideal period for pregnancy following bariatric surgery. Birth weight, gestational weight growth, hyperemesis, nutritional deficiencies, type 2 diabetes, and perinatal morbidity and mortality were among the outcomes examined [24-27].

CONCLUSION:

Study results showed that most of the study participants are normal according to their BMI. The most common nationality was Saudi. Most of them don’t do obesity surgery. In addition, most of the study participants had good social connections.

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ANNEX 1: DATA COLLECTION TOOL

1. How old are you?
   - 18-27
   - 28-36
   - 37-45

2. What is your gender?
   - Saudi
   - Non-Saudi

3. How long is the marriage?
   - Don't marriage
   - 1-6 years
   - 7-12 years
   - 13-18 years
   - 19-24 years
   - 25 and more

4. How many times have you been pregnant?
   - 0
   - 1-3 times
   - 4-6 times
   - 7-10 times

5. How many times do you give birth?
   - 0
   - 1-3 times
   - 4-6 times
   - 7-10 times

6. What is your educational level
   - Uneducated
   - Elementary school
   - Middle School
   - High school
   - Diploma or Bachelor's degree
   - Postgraduate

7. What is your weight?
   - <50 Kg
   - 51-65 Kg
   - 66-75 Kg
   - 76-85 Kg
   - 86-95 Kg
   - >96 Kg

8. What is your height?
   - <1.50 m
   - 1.51-1.60 m
   - 1.61-1.70 m
   - 1.71-1.80 m
   - >1.81 m

9. What is your BMI value?
    - <18.5
    - 18.5-24.9
    - 25-29.9
    - 30-34.9
    - >35

10. Do you suffer from recurrent miscarriages?
    - Yes
    - No

11. Is your menstrual cycle regular?
    - Yes
    - No

12. Are you a smoker?
    - Yes
    - No

13. Do you suffer from chronic diseases?
    - I do not suffer from chronic diseases
    - Sugar
    - Hypertension
    - Arterial and heart diseases
    - Respiratory diseases
    - Kidney disease
    - Arthritis and rheumatism

14. Do you exercise intensely?
    - Yes
    - No

15. Do you suffer from thyroid problems?
    - Yes
    - No

16. Do you suffer from obesity?
    - Yes
    - No

17. Have you had obesity surgery to lose weight?
    - Yes
    - No

18. Did you suffer from pregnancy complications after obesity surgery?
    - Yes
    - No

19. Is pregnancy delayed after obesity surgery?
    - Yes
    - No

20. Did pregnancy occur easily and quickly after bariatric surgery?
    - Yes
    - No

21. Did a full and healthy pregnancy occur within a year of obesity surgery?
    - Yes
    - No

APPENDIX 2: Participants responses to scale items

variable		Frequency	Percent
Age	18-27	67	23.9%
	28-36	73	26.1%
	37-45	140	50.0%
nationality	Saudi	236	84.3%
	Non-Saudi	44	15.7%
educational level	Uneducated	2	0.7%
	Elementary school	1	0.4%
	Middle School	1	0.4%
	High school	35	12.5%
	Diploma or Bachelor's degree	203	72.5%
	Postgraduate	38	13.6%
weight	<50 Kg	23	8.2%
	51-65 Kg	123	43.9%
	66-75 Kg	66	23.6%
	76-85 Kg	42	15.0%
	86-95 Kg	18	6.4%
	>96 Kg	8	2.9%
height	<1.50 m	19	6.8%
	1.51-1.60 m	161	57.5%
	1.61-1.70 m	92	32.9%
	1.71-1.80 m	8	2.9%
BMI	<18.5	5	1.8%
	18.5-24.9	125	44.6%
	25-29.9	85	30.4%
	30-34.9	48	17.1%
	>35	17	6.1%

Table 1: diseases among study participants

survey item	Yes	No
Do you suffer from recurrent miscarriages?	36 12.9%	244 87.1%
Is your menstrual cycle regular?	220 78.6%	60 21.4%
Are you a smoker?	41 14.6%	239 85.4%
Do you exercise intensely?	51 18.2%	229 81.8%
Do you suffer from thyroid problems?	31 11.1%	249 88.9%
Do you suffer from obesity?	88 31.4%	192 68.6%
Have you had obesity surgery to lose weight?	48 17.1%	232 82.9%

Table 2: Questions related to those who have had obesity surgery

survey item	Yes	No
Did you suffer from pregnancy complications after obesity surgery?	4 8.3%	44 91.7%
Is pregnancy delayed after obesity surgery?	11 22.9%	37 77.1%
Did pregnancy occur easily and quickly after bariatric surgery?	23 48.9%	24 51.1%
Did a full and healthy pregnancy occur within a year of obesity surgery?	14 29.2%	34 70.8%

Do you suffer from chronic diseases? (more than one)		
	Frequency	**Percent**
I do not suffer from chronic diseases	211	65.3%
Sugar	27	8.4%
Hypertension	32	9.9%
Arterial and heart diseases	8	2.5%
Respiratory diseases	14	4.3%
Kidney disease	3	0.9%
Arthritis and rheumatism	28	8.7%

How long is the marriage?	**Frequency**	**Percent**
0 don't married	26	9.3%
(1-6) years	83	29.6%
(7-12) years	41	14.6%
(13-18)	78	27.9%
(19-24)	24	8.6%
25 and more	28	10.0%

How many times have you been pregnant?	**Frequency**	**Percent**
0	46	16.4%
(1-3) times	111	39.6%
(4-6) times	90	32.1%
(7-9) times	33	11.8%

How many times do you give birth?	**Frequency**	**Percent**
0	51	18.2%
(1-3) times	124	44.3%
(4-6) times	91	32.5%
(7-9) times	14	5.0%

Chi-square

Obesity surgery lose weight * pregnanction complications after obesity surgery

Crosstab

			Pregnanction complications after.obesity surgery			
			no match	yes	no	Total
Obesity surgery.lose.weight	yes	Count	0	4	44	48
		% of Total	0.0%	1.4%	15.7%	17.1%
	no	Count	232	0	0	232
		% of Total	82.9%	0.0%	0.0%	82.9%
Total		Count	232	4	44	280
		% of Total	82.9%	1.4%	15.7%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	280.000[a]	2	.000
Likelihood Ratio	256.561	2	.000
Linear-by-Linear Association	272.170	1	.000
N of Valid Cases	280		

Obesity surgery lose weight * pregnancy delayed after obesity surgery

Crosstab

			Pregnancy delayed after.obesity surgery			
			no match	yes	no	Total
Obesity surgery lose weight	yes	Count	0	11	37	48
		% of Total	0.0%	3.9%	13.2%	17.1%
	no	Count	232	0	0	232
		% of Total	82.9%	0.0%	0.0%	82.9%
Total		Count	232	11	37	280
		% of Total	82.9%	3.9%	13.2%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	280.000[a]	2	.000
Likelihood Ratio	256.561	2	.000
Linear-by-Linear Association	261.239	1	.000
N of Valid Cases	280		

Obesity surgery lose weight * pregnancy easily quickly after bariatric surgery

Crosstab

			pregnancy.easily.quickly.after.bariatric.surgery			
			no match	yes	no	Total
obesity.surgery.lose.weight	yes	Count	0	24	24	48
		% of Total	0.0%	8.6%	8.6%	17.1%
	no	Count	232	0	0	232
		% of Total	82.9%	0.0%	0.0%	82.9%
Total		Count	232	24	24	280
		% of Total	82.9%	8.6%	8.6%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	280.000[a]	2	.000
Likelihood Ratio	256.561	2	.000
Linear-by-Linear Association	246.010	1	.000
N of Valid Cases	280		

obesity.surgery.lose.weight * full.healthy.pregnancy.within.year.surgery

Crosstab

			full.healthy.pregnancy.within.year.surgery			
			no match	yes	no	Total
obesity.surgery.lose.weight	yes	Count	0	14	34	48
		% of Total	0.0%	5.0%	12.1%	17.1%
	no	Count	232	0	0	232
		% of Total	82.9%	0.0%	0.0%	82.9%
Total		Count	232	14	34	280
		% of Total	82.9%	5.0%	12.1%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	280.000[a]	2	.000
Likelihood Ratio	256.561	2	.000
Linear-by-Linear Association	257.039	1	.000
N of Valid Cases	280		

Obesity surgery.lose.weight * recurrent miscarriages

Crosstab

			Recurrent miscarriages		
			yes	no	Total
Obesity surgery lose weight	yes	Count	15	33	48
		% of Total	5.4%	11.8%	17.1%
	no	Count	21	211	232
		% of Total	7.5%	75.4%	82.9%
Total		Count	36	244	280
		% of Total	12.9%	87.1%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	17.492[a]	1	.000		
Continuity Correction[b]	15.567	1	.000		
Likelihood Ratio	14.294	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	17.429	1	.000		
N of Valid Cases	280				

Obesity surgery lose weight * menstrual cycle regular

Crosstab

			menstrual.cycle.regular		
			yes	no	Total
obesity.surgery.lose.weight	yes	Count	30	18	48
		% of Total	10.7%	6.4%	17.1%
	no	Count	190	42	232
		% of Total	67.9%	15.0%	82.9%
Total		Count	220	60	280
		% of Total	78.6%	21.4%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	8.887[a]	1	.003		
Continuity Correction[b]	7.772	1	.005		
Likelihood Ratio	8.002	1	.005		
Fisher's Exact Test				.006	.004
Linear-by-Linear Association	8.855	1	.003		
N of Valid Cases	280				

Obesity surgery lose weight * smoker

Crosstab

			smoker		Total
			yes	no	
Obesity surgery lose weight	yes	Count	19	29	48
		% of Total	6.8%	10.4%	17.1%
	no	Count	22	210	232
		% of Total	7.9%	75.0%	82.9%
Total		Count	41	239	280
		% of Total	14.6%	85.4%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	28.831[a]	1	.000		
Continuity Correction[b]	26.473	1	.000		
Likelihood Ratio	23.281	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	28.728	1	.000		
N of Valid Cases	280				

obesity.surgery.lose.weight * exercise.intensely

Crosstab

			exercise.intensely		Total
			yes	no	
obesity.surgery.lose.weight	yes	Count	10	38	48
		% of Total	3.6%	13.6%	17.1%
	no	Count	41	191	232
		% of Total	14.6%	68.2%	82.9%
Total		Count	51	229	280
		% of Total	18.2%	81.8%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.267[a]	1	.606		
Continuity Correction[b]	.097	1	.756		
Likelihood Ratio	.259	1	.610		
Fisher's Exact Test				.681	.368
Linear-by-Linear Association	.266	1	.606		
N of Valid Cases	280				

Obesity surgery lose weight * thyroid problem

Crosstab

			Thyroid problem		
			yes	no	Total
Obesity surgery lose weight	yes	Count	10	38	48
		% of Total	3.6%	13.6%	17.1%
	no	Count	21	211	232
		% of Total	7.5%	75.4%	82.9%
Total		Count	31	249	280
		% of Total	11.1%	88.9%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.607[a]	1	.018		
Continuity Correction[b]	4.474	1	.034		
Likelihood Ratio	4.824	1	.028		
Fisher's Exact Test				.039	.022
Linear-by-Linear Association	5.587	1	.018		
N of Valid Cases	280				

Logistic regression

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	280	100.0
	Missing Cases	0	.0
	Total	280	100.0
Unselected Cases		0	.0
Total		280	100.0

Dependent Variable Encoding

Original Value	Internal Value
yes	0
no	1

Block 0: Beginning Block

Classification Table[a,b]

			Predicted		
			obesity.surgery.lose.weight		Percentage Correct
	Observed		yes	no	
Step 0	obesity.surgery.lose.weight	yes	0	48	.0
		no	0	232	100.0
	Overall Percentage				82.9

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	1.576	.159	98.725	1	.000	4.833

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Number pregnancies	11.358	1	.001
		Number births	7.928	1	.005
		Recurrent miscarriages	17.492	1	.000
		menstrual. cycle.regular	8.887	1	.003
		smoker	28.831	1	.000
		Chronic diseases	.136	1	.713
		Exercise intensely	.267	1	.606
		Thyroid problem	5.607	1	.018
		Pregnanction complicationsafter.obesity.surgery	273.145	1	.000
		Pregnancy delayed after obesity.surgery	262.175	1	.000
		Pregnancy easily quickly after bariatric surgery	246.892	1	.000
		Full healthy pregnancy within year surgery	257.960	1	.000
	Overall Statistics		275.916	12	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	256.561	12	.000
	Block	256.561	12	.000
	Model	256.561	12	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	.000[a]	.600	1.000

Classification Table[a]

			Predicted		
			Obesity surgery lose weight		Percentage Correct
	Observed		yes	no	
Step 1	Obesity surgery lose weight	yes	48	0	100.0
		no	0	232	100.0
	Overall Percentage				100.0

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Number pregnancies	.167	3539.324	.000	1	1.000	1.182
	Number births	-.180	3782.525	.000	1	1.000	.835
	Recurrent miscarriages	.679	8099.273	.000	1	1.000	1.972
	Menstrual cycle regular	-.060	6279.156	.000	1	1.000	.942
	smoker	-.043	8499.165	.000	1	1.000	.958
	Chronic diseases	.016	1598.862	.000	1	1.000	1.016
	Exercise intensely	.003	6672.955	.000	1	1.000	1.003
	Thyroid problem	.414	7429.044	.000	1	1.000	1.513
	Pregnanction complications after obesity surgery	-7.441	11272.434	.000	1	.999	.001
	Pregnancy delayed after. Obesity surgery	-5.924	10961.440	.000	1	1.000	.003
	Pregnancy easily quickly after bariatric surgery	-9.760	10719.626	.000	1	.999	.000
	Full healthy pregnancy within year surgery	-5.333	9459.181	.000	1	1.000	.005
	Constant	19.192	31596.601	.000	1	1.000	216357383.340