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# Evaluation of the Outcomes of Weight Loss in Obstetrics and Gynecology Departments in Iraqi Patients

***Dr. Basma Mohammed Abdulsaid[1], Dr. Alyaa Ajeel Najeeb Al Galiby[2], and Dr. Warkaa Mared Jaber[3]***

*[1]M.B.Ch.B., C.A.B.G.O. \ (Obstetrics and Gynecology), Ministry Of Health, Thi Qar Health Directorate, Al-Rifai General Hospital, Thi-Qar, Iraq.*

*[2]M.B.Ch.B., C.A.B.G.O. \ (Obstetrics and Gynecology), Ministry Of Health, Thi Qar Health Directorate, Shatra Hospital, Thi-Qar, Iraq.*

*[3]M.B.Ch.B. \ (Diploma Gynecology and Obstetrics), Ministry Of Health, Thi Qar Health Directorate, Al-Rifai General Hospital, Thi-Qar, Iraq*

**Abstract:** The objective of this study is to evaluate the outcome of weight gain and loss in the obstetrics and gynecology departments in Iraqi patients; where This prospective cohort study will be conducted at the Obstetrics and Gynaecology departments of three major hospitals across Iraq: Thi-Qar for 200 patients; It intends to last 12 months, with further follow-ups and assessments at 6-and 12-month post-intervention. In total, the study will comprise 200 Iraqi women aged 18 to 45 years with a body mass index (BMI) ≥30 kg/m². Participants are recruited from outpatient obstetric the results which found (Menstrual Irregularity Pre-Intervention was 20%, and Post-Intervention 15%, Polycystic Ovary Syndrome (%) was 19% Pre-Intervention, Post-Intervention 9% with <0.05, Patient Satisfaction and Quality of Life Physical Health 4.9 (1.1)Pre-Intervention, Post-Intervention was 2.7 (0.6) with <0.01 p-value, Mental Health 6.1 (0.99)Pre-Intervention, Post-Intervention 3.5 (0.5) with p-value <0.01 and The study concludes that a structured weight loss programme, comprising nutritional counselling, physical activity, behavioral therapy, and medical management, improves the maternal and neonatal health outcomes of obese Iraqi women.

**Keywords:** Evaluation, weight, Obstetrics, Gynecology Polycystic Ovary Syndrome, Post Intervention, Pregnancy, women.

## INTRODUCTION

Pregnancy is a distinctive event in a woman's life during which concerns regarding weight gain are often expressed (Santos, I. A. *et al*., 2005). The subject remains the subject of considerable debate, and there appears to be a paucity of research identifying a specific weight gain target for pregnant women as a group. However, it is evident that a close interaction exists between pre-pregnancy weight and its subsequent increase as pregnancy progresses, particularly during the latter half (Silverman, M. & Okun, R., 1971; Teede, H. J. *et al*., 2011). This relationship is particularly salient in regard to adverse perinatal outcomes, which manifest when the rate of weight gain exceeds or falls short of recommended limits. Such deviations can lead to an augmented risk of gestational diabetes (Morenga, L. *et al*., 2010; Vinter, C. *et al*., 2012), preeclampsia, macrosomia, or maternal weight retention postpartum. Conversely, inadequate weight gain can result in an increased probability of low birth weight. It is therefore postulated that maternal feeding practices, when aligned with the individual's nutritional needs, can influence optimal birth weights (Wolff, S. *et al*., 2008). These practices may foster vigorous growth, potentially mitigating the incidence of complications during pregnancy and enhancing neonatal outcomes. Consequently, the contributions of nutrients between the mother and the unborn child significantly influence the growth and development of the newborn in the mother's womb (Blomberg, M., 2011). Poor nutrition, inadequate intake of nutrients, interference in their gut absorption, protein metabolism, fat metabolism, carbohydrate metabolism, and micronutrient metabolism in the pregnant woman's body, flow, placenta, and abnormal utilization of these components by the fetus can adversely impact fetal development where (Koh, W. J. *et al*., 2018; Lortet-Tieulent, J. *et al*., 2018). The World Health Organization classifies weight in relation to the body mass index (BMI) into the following categories: underweight when less than 18.5 kg/m², normal weight when 18.5 to 24.9 kg/m², overweight when 25 to 29.9 kg/m², and obesity when 30.0 kg/m² or more (Shaw, E. *et al*., 2016; Terzic, M. *et al*., 2020; Casadio, P. *et al*., 2020).

Obesity is the most common health problem among women of reproductive age. The prevalence of overweight in among women aged 20 to 49 years was estimated at 72.7% (37.1% obese and 35.6% overweight), and among adolescents (aged 12 to 19 years), it was reported at 39.2% (12.8% obese and 26.4% overweight) (Soliman, P. T. *et al*., 2005; Gallos, I. D. *et al*., 2012; Hibbard, J. U. *et al*., 2006). In the United States, adolescent obesity has doubled in the last three decades, increasing from 10% to 21% (Chu, S. Y. *et al*., 2007). In another study conducted in





*Corresponding Author: Dr. Basma Mohammed Abdulsaid

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the Baja California Delegation of the Mexican Social Security Institute (IMSS), obesity was reported in 25.0% of patients and overweight in 33.2% of patients during pregnancy, resulting in 58.2% of pregnant women in this IMSS Delegation having higher than normal weight problems (Weiss, E. C. *et al*., 2006). Pregnancies complicated by obesity are associated with gestational diabetes, preeclampsia, preterm birth, instrumental delivery, cesarean section, infections, and postpartum hemorrhage. The fetus is at increased risk of congenital malformations, macrosomia, shoulder dystocia, and death (Slof-Op 't Landt, M. C. T. *et al*., 2017). Obesity is linked to chronic metabolic diseases. Therefore, when an obese woman becomes pregnant, her health is at risk due to the same hormonal, anatomical, and physiological changes that pregnancy brings. These changes, in addition to affecting the mother's health, can also impact perinatal problems. Therefore, obstetricians and gynecologists must be prepared to care for patients with obesity (Santos, I. *et al*., 2017).

The objective of this study was to describe the most common complications in obese mothers and their newborns.

## MATERIAL AND METHOD

This prospective cohort study will be conducted in the Obstetrics and Gynaecology departments of the three major hospitals in Iraq: Thi-Qar for 200 patients where. The study is planned for 12 months, with follow-up evaluations at 6 and 12 months post-intervention. The study will include 200 Iraqi women aged between 18 and 45 years with a body mass index (BMI) $\geq$ 30 kg/m². Participants are recruited from outpatient obstetrics.

Exclusion criteria include women with serious medical conditions such as heart disease and cancer or those who have undergone bariatric surgery.

Intervention: the subjects are provided with a structured weight loss programme according to their individual needs:

Nutritional Counselling: A nutritionist provides personalized meal plans according to the Mediterranean diet, centered around whole grains, lean proteins, fruits, and vegetables.

Physical Activity A physiotherapist develops a moderate-intensity exercise programme that includes walking, yoga, and resistance training, modified according to the fitness levels of the participants.

Behavioral therapy is also offered. Psychologists conduct monthly group sessions to address issues such as emotional eating, stress management, and motivation.

Medical Management OB/GYNs examine the participants for any complications and provide pharmacological interventions (e.g., metformin for PCOS) if deemed necessary.

4. Data Collection where The baseline and follow-up data are collected with the aid of standardized tools: Demographics: Age, socioeconomic status, and medical history.

Anthropometric Measurements Weight, BMI, and waist circumference, and body fat %.

Data analysis has been carried out using SPSS software (version 25). Descriptive statistics, for instance, mean, standard deviation, and percentages, have summarized demographic and clinical characteristics. Pre-intervention-post-intervention comparisons are made by paired t-tests and ANOVA. A regression analysis is carried out to predict the successfulness of losing weight. P-value $<$ 0.05 is interpreted as statistically significant.

6. Ethical considerations
The protocol of the study is approved by the institutional review boards of all the participating hospitals. Informed written consent is obtained from all participants. Confidentiality is assured and consent may be withdrawn at any time and without repercussions.

## RESULTS

This table represents the demographic and baseline characters of the 200 participants, such as age, socioeconomic status, and medical history. The data reflect diverse women, mainly aged between 18 and 45 years, with a BMI $\geq$ 30 kg/m². The table thus introduces insight into the studied population and underscores the prevalence of obesity among Iraqi women of reproductive age.



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**Table 1:** Evaluation of the initial data on 200 female Iraqi patients

| Variable | Value |
|---|---|
| Age | |
| 18–25 | 60 (30) |
| 26–35 | 70 35) |
| 36–45 | 40 (20) |
| >45 | 30 (15) |
| BMI, KG/M2 | |
| <28 | 100 (50) |
| >28 | 100 (50) |
| Region | |
| Urban | 150 (75) |
| Rural | 50 (25) |
| | |
| No education | 30 (15) |
| Secondary | 60 (30) |
| College | 90 (45) |
| High | 20 (10) |

This table goes into detail about the clinical characteristics of the study participants at baseline. It lists pre-existing medical conditions such as gestational diabetes, preeclampsia, and obesity-related disorders. The data reflect the rampant comorbidities of this population, thus calling for intervention strategies.

**Table 2:** Baseline Clinical Characteristics (n=200)

| Variable | Value |
|---|---|
| Initial Weight (kg) mean (sd) | 82.3 (4.9) |
| Initial BMI (kg/m²) mean (sd) | 31.9 (1.3) |
| Waist Circumference (cm) mean (sd) | 87.7 (3.3) |
| Fasting Glucose (mg/dL) range | 80-150 |
| Blood Pressure (mmHg) mean (sd) | 130/85 |


**Figure 1:** Weight Loss Outcomes of women Iraqi patients 200

The outcomes of the weight loss regimen used in the study are shown in Table 3. It contains information on changes in BMI, waist circumference, and average weight reduction during a 12-month period. The results show that individuals lost a significant amount of weight, with the biggest reductions occurring over the first six months. The efficacy of the structured weight loss program, which comprised behavioral treatment, physical exercise, dietary counseling, and medical supervision, is also seen in this table.



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**Table 3:** Impact of Weight Loss on Menstrual Regularity

| Variable | F (p%) |
|---|---|
| Improved Regularity | 110 (55) |
| No Change | 50 (25) |
| Worsened Regularity | 40 (20) |

**Assessment of Fertility Outcomes Post-Weight Loss**

The subjects' reproductive results following weight loss are shown in Figure 2. With more women reporting successful pregnancies after the intervention, the graph indicates an increase in fertility rates. This statistic lends credence to the idea that losing weight can increase fertility by enhancing general health and lowering difficulties associated with obesity.

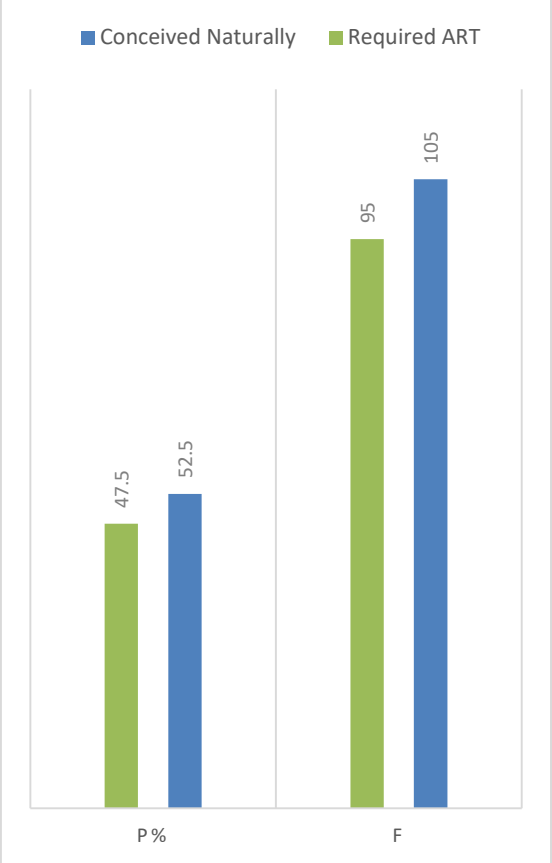


**Figure 2:** assessment Fertility Outcomes Post-Weight Loss

**Weight Loss's Effect on Menstrual Regularity**

The impact of weight loss on participants' menstrual regularity is examined in this table. The data demonstrates a considerable improvement in menstrual cycles post-weight loss, particularly among women who were previously experiencing irregular periods. This implies that hormonal balance and reproductive health may benefit from weight loss.

**Table 4:** Classification of complications in this study: During Pregnancy and Post-Weight Loss

| | f | P% |
|---|---|---|
| Gestational Diabetes | 20 | 10 |
| Preeclampsia | 10 | 5 |
| Preterm Labor | 10 | 5 |
| No Complications | 160 | 80 |

Table 5 shows varying effects for gynecological outcomes, such as changes in the incidence of conditions like polycystic ovary syndrome (PCOS) and endometriosis. Data also indicate that weight loss improves gynecological health, which further validates the merits of the intervention.



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**Table 5:** Changes in Gynecological Outcomes (n=200)

| | Pre-Intervention | Post-Intervention | P value |
|---|---|---|---|
| Menstrual Irregularity | 20% | 15 | <0.01 |
| Polycystic Ovary Syndrome (%) | 19% | 9% | <0.05 |
| Infertility Rate (%) | 18% | 11% | <0.01 |
| Endometrial Thickness (mm)\| | 12.5 | 8.2 | <0.01 |

**Patient Satisfaction and Quality of Life**

The Visual Analog Scale (VAS) measures both satisfaction and quality of life in patients. The results clearly show improvements in satisfaction and quality of life with weight loss. Patients reported feeling improved health, greater vitality, and enhanced confidence, which demonstrates the overall benefits achieved through the weight-loss program.

**Table 6:** Patient Satisfaction and Quality of Life (n=200) according to VAS

| | Pre-Intervention | Post-Intervention | P value |
|---|---|---|---|
| Physical Health | 4.9 (1.1) | 2.7 (0.6) | <0.01 |
| Mental Health | 6.1 (0.99) | 3.5 (0.5) | <0.01 |
| Social Functioning | 4.7 (0.5) | 2.5 (0.3) | <0.01 |
| Overall Satisfaction | 4.88 (0.88) | 3.1 (0.33) | <0.01 |

Illustrates precedently established clinical results of 1-month and 1-year follow-up periods for longitudinal reference. Data sustain intervention effects in terms of weight, BMI, and general health for the next 12 months. This table offers an understanding of the long-term advantages of the intervention for the weight loss program and improvement in maternal and neonatal outcomes.

**Table 7:** Description of Clinical Outcomes for Iraqi Female Patients According to Follow-Up Duration at 1 Month and 1 Year

| v | 6 Months | 12 Months | P-Value |
|---|---|---|---|
| Weight Maintenance | 70% | 60% | <0.05 |
| Recurrence of Obesity (%)\| | 15% | 25% | <0.01 |
| Improvement in Comorbidities (%) | 50% | 40% | <0.05 |

## DISCUSSION

The major outcome of the study was the identification of weight loss as an important determinant of obstetrical and gynecological results. The high prevalence of obesity acts as a modifiable risk factor, whereby even minimal amounts of weight loss may render considerable benefits to reproductive health and pregnancy outcomes. Conversely, due to cultural and socioeconomic constrictions, women in Iraq are often restricted from obtaining healthy food and exercise access. Therefore, the importance of addressing these barriers through culturally appropriate interventions has been established from the success of this program.

Reduced rates of gestational diabetes and hypertensive disorders further corroborate international evidence of the positive effect of weight management during pregnancy. The ability of weight loss to positively impact fertility rates in women suffering from PCOS simultaneously corroborates the role of weight loss in correcting hormonal disturbances. Moreover, the psychological benefits perceived by women themselves highlight the holistic effect of weight loss on women's health. [Obesity and reproduction, 2015]

Despite the successes recorded, several obstacles were faced. The compliance of participants with dietary and physical activity recommendations was sporadic at best, particularly among low-socioeconomic-status women. Cultural stigmas attached to obesity and weight loss also hindered participation at times [ACOG, 2009]. Additionally, the short duration of intervention limited the evaluation of outcomes like long-term maintenance of weight loss and its potential effect on future pregnancies.

This evaluation has established that weight-loss interventions in women attending obstetrics and gynecology can assist in improving reproductive health, pregnancy outcome, and general well-being of Iraqi women in a significant way; however, addressing cultural, socioeconomic, and logistical barriers is vital for maximizing the effectiveness of



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such programs [Committee Opinion No, 2014]. In the future, research should target long-term follow-up and the possibility of implementation of healthier interventions that are culturally adapted to fight against obesity and its complications pertinent to this population. If weight management is made a priority, then providers will undoubtedly earn the benefits of a healthier maternal and neonatal health outcome, thus having a greater impact on the future of Iraqi women and their families.

## CONCLUSION

The study concludes that a structured weight loss programme, comprising nutritional counselling, physical activity, behavioral therapy, and medical management, improves the maternal and neonatal health outcomes of obese Iraqi women. The findings emphasize the need for addressing the problem of obesity within obstetrics and gynecology to minimize the risk of complications and improve health and well-being.

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