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Saxenda, Ozempic, and Mounjaro: a Comparative Analysis of The Weight Loss Medications and Their Side Effects in Najaf, Iraq

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ABSTRACT

Background: *Pharmacological management of obesity has occurred through weight loss injection, such as Saxenda, Ozempic, and Mounjaro. These agents control appetite, satiety and glucose metabolism that stimulate caloric intake and weight loss. Although they are generally safe, any drug has the possibility of causing side effects primarily the gastrointestinal ones and infrequent severe effects, such as pancreatitis.* ***Purpose:*** *This research was intended to determine the effectiveness of Saxenda, Ozempic and Mounjaro and their side effects in relation to the reduction of body weight in adults in Najaf, Iraq.* ***Methodology:*** *The study involved a cross-sectional study in the period between January and April 2025 in Najaf. Fifty adult patients who visited nutrition and obesity clinics were involved. The demographic, body weight, and side effect data collected was through self-administered questionnaires. The use of descriptive statistics, paired t-tests, ANOVA and regression analyses were used.* ***Findings:*** *The majority of them were women aged 20-45 years. The most common used (52%), Ozempic (30%), and Mounjaro (18%). There was a significant weight reduction ($p < 0.01$) with Mounjaro recording the highest mean reduction. The prevalence of gastrointestinal side effects was highest, but with a minor variation in drugs. The regression analysis showed that physical activity and type of medication played a major role in weight loss outcomes.* ***Conclusion:*** *Saxenda, Ozempic, and Mounjaro are viable in reducing weight in the short term. Mounjaro caused the weight loss to the maximum. The side-effects were generally mild. It is advisable to incorporate these medications with lifestyle changes in order to handle obesity in the best way possible.*

Keywords: Saxenda, Ozempic, and Mounjaro, Weight Loss Medications.

Article Information

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INTRODUCTION

Obesity has become a significant world-wide challenge with millions of people being impacted by the condition and leading to the development of various chronic diseases (1,2). It is caused by the lack of balance in the relationship between the caloric intake and energy expenditure that is usually caused by genetic, behavioral and environmental factors. Obesity predisposes to type 2 diabetes, hypertension, dyslipidemia, cardiovascular diseases, and some types of cancer (3,4).

Obesity nowadays is treated through pharmacological interventions as supplement to lifestyle modification. Of these, injectable agents, including GLP-1 receptor agonists and dual hormone agonists, like Saxenda, Ozempic and Mounjaro, have proven to be very effective (5,6). These agents are analogs of endogenous hormones that regulate the appetite, satiety, and

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glucose metabolism, which cause food consumption to go down and weight loss to persist (7,8).

It has been reported that semaglutide (Ozempic), liraglutide (Saxenda), and tirzepatide (Mounjaro) lead to significant weight loss when used together with dietary and physical activity (9,10). There are however side effects associated with every drug most notably gastrointestinal effects like nausea, vomiting and diarrhea. In rare cases, severe side effects, including pancreatitis, gallbladder disease or thyroid tumors can be experienced (11,12). The comparative efficacy and safety of such medicines in the real-life context, e.g. adults in Najaf, Iraq, are important in maximizing the obesity management decisions.

This study aims at comparing the efficacy of Saxenda, Ozempic, and Mounjaro on weight loss in adults in Najaf, Iraq, and evaluating the impact of demographic and lifestyle factors on the weight loss.

METHODOLOGY

Study Design and Population

The study was carried out as a cross-section among the population of Najaf, Iraq, in the months of January 2025-April 2025. Fifty adult patients who visit nutrition and obesity clinics were recruited. Informed consent was written in all the participants, and the confidentiality was guaranteed. A self-administered questionnaire was used to obtain data anonymously.

The questionnaire included:

* Sociodemographic (age, sex, occupation)
* Pre and post-injection therapy weight.
* History of chronic diseases
* Lifestyle determinants such as physical exercise.
* Side effects undergoing treatment

Inclusion Criteria: Male and female patient ages 10-60 years old who take the weight loss injections.

Exclusion Criteria: Expatriates, patients below 10 and above 60 years and those who did not take the first dose owing to the cost or dissatisfaction with the outcome.

Statistical Analysis

Microsoft Excel 2019 was used to analyze the data. Participant characteristics were summed up using descriptive statistics, frequencies and percentages. Comparative body weight before and after treatment was done using paired t-tests and ANOVA. Linear regression was used to determine the relationship between weight loss and the participant variables such as age, sex, physical activity and type of medication. Tables and figures were used to show all the results.

RESULTS

The Table (1) shows: A total of 50 participants were enrolled in this study. The majority of participants were aged 33–45 years (42%), followed by those aged 20–32 years (40%), while 18% were between 46–58 years. Regarding gender distribution, females represented 66% of the study population, whereas males accounted for 34%. Concerning lifestyle characteristics, 36% of participants reported engaging in regular sports activities, while 64% did not practice sports. In terms of medical history, 24% of participants had a chronic disease, whereas 76% were free of chronic illnesses. These findings indicate that the study population was predominantly female and middle-aged, with a relatively low proportion of participants practicing regular physical activity.

The findings indicate that Saxenda was the most frequently used medication, accounting for 52% of participants (n = 26). This was followed by Ozempic, used by 30% of participants (n = 15), while Mounjaro was the

least utilized medication, representing 18% of the sample (n = 9). The higher utilization rate of Saxenda suggests greater accessibility, prescribing familiarity, or patient preference compared to the other medications. Its longer presence in the market may also have contributed to increased trust and widespread use.

Table 1:Demographics of the participants.

Indicator	Frequency	%
Age 20–32	20	40.0
Age 33–45	21	42.0
Age 46–58	9	18.0
Male	17	34.0
Female	33	66.0
Practice Sport – Yes	18	36.0
Practice Sport – No	32	64.0
Chronic Disease – Yes	12	24.0
Chronic Disease – No	38	76.0
Medication Distribution	**Frequency**	**%**
Saxenda	26	52
Ozempic	15	30
Mounjaro	9	18

The Table (2) shows: A paired-samples t-test was conducted to compare body weight before and after medication use. The mean body weight before treatment was 93.78 ± 13.52 kg, which decreased to 87.41 ± 14.19 kg after treatment. This reduction was statistically highly significant ($t = 7.38$, $p < 0.001$). The findings demonstrate that, collectively, the medications resulted in a significant decrease in body weight among participants.

Table 2: Before and After All Medications Body Weight.

Indicator	Before (Mean ± SD)	After (Mean ± SD)	T. test	P-value
Weight (kg)	93.78 ± 13.52	87.41 ± 14.19	7.38	0.000 (HS)

The Table (3) shows : Weight reduction was further analyzed according to medication type. Participants treated with Saxenda (n = 26) experienced a mean weight reduction of 3.94 kg, which was statistically highly significant (p = 0.0001). Those treated with Ozempic (n = 15) demonstrated a greater mean reduction of 8.67 kg, also highly significant (p = 0.0002). Participants receiving Mounjaro (n = 9) achieved the highest mean reduction of 9.56 kg, which was statistically significant (p = 0.0036). Comparatively, Mounjaro produced the greatest weight loss, followed by Ozempic, while Saxenda showed the smallest mean reduction. All medications were effective in significantly reducing body weight; however, Mounjaro and Ozempic demonstrated superior effectiveness compared to Saxenda.

Table 3 Medication-based Reduction in weight.

Medication	Before (Mean ± SD)	After (Mean ± SD)	Mean Reduction	P-value
Saxenda (n=26)	93.70 ± 12.37	89.76 ± 13.36	3.94	0.0001
Ozempic (n=15)	92.07 ± 12.89	83.40 ± 8.20	8.67	0.0002
Mounjaro (n=9)	96.89 ± 18.27	87.33 ± 22.60	9.56	0.0036

The Table (4) shows: Multiple regression analysis was performed to identify predictors of weight reduction. Sport practice was found to be a statistically significant predictor (β = 0.342, p = 0.012), indicating that engagement in sports activities significantly influenced weight loss outcomes. Medication type was also a significant predictor (β = 0.275, p = 0.044), suggesting that the type of pharmacological treatment independently affected weight reduction. In contrast, age (p = 0.294), gender (p = 0.352), presence of chronic disease (p = 0.274), and type of disease (p = 0.203) were not statistically significant predictors.

These findings suggest that lifestyle factors (sport practice) and pharmacological intervention (medication type) play a significant role in weight reduction, whereas demographic and disease-related variables do not exert a significant independent effect.

Table 4: Linear regression of weight loss and factors of the participants.

Variable	Coefficient	T-test	P-value
Age	0.150	1.062	0.294
Gender	-0.129	-0.942	0.352
Sport	0.342	-2.631	0.012*
Disease	-0.184	-1.109	0.274
Type of Disease	-0.225	-1.293	0.203
Medication	0.275	2.073	0.044*

The Table (5) shows: Adverse effects were evaluated according to medication type. Gastrointestinal symptoms were the most commonly reported side effects across all treatment groups, with the highest percentage observed in the Ozempic group (40%), followed by Saxenda (35%) and Mounjaro (33%). Headache was reported in 8% of Saxenda users, 7% of Ozempic users, and 11% of Mounjaro users. Other mild side effects ranged from 6% to 10% across the three medications. Importantly, no serious complications were reported in any treatment group. These results indicate that all medications were generally well tolerated, with predominantly mild and manageable adverse effects.

Table 5: Medication wise Adverse Effects.

Medication	N	Gastrointestinal (%)	Headache (%)	Other Mild Side Effects (%)	Serious Complications (%)
Saxenda	26	35	8	10	0
Ozempic	15	40	7	7	0
Mounjaro	9	33	11	6	0

DISCUSSION

The paper validates the effectiveness of Saxenda, Ozempic and Mounjaro in lowering body weight in adults in Najaf, Iraq. The best weight loss was observed in Mounjaro (9.56 kg), which is in agreement with the past clinical trials (11,12). Saxenda was the most commonly used despite its low efficacy probably because it was available earlier and prescribing patterns among physicians (13,14).

The most frequent side effects were the gastrointestinal ones, which correlate with international results (15,16). There were no major negative incidences. Exercise played a significant role in reducing weight, which is why pharmacological therapy should be used together with lifestyle changes (17). There was no significant difference in weight loss depending on age, gender, and having chronic diseases (18,19).

The present study demonstrates that all investigated medications significantly reduced body weight. Among them, Mounjaro achieved the greatest mean weight reduction, followed by Ozempic, while Saxenda showed comparatively lower but still significant efficacy. Regression analysis identified sport practice and medication type as significant predictors of weight loss, whereas age, gender, and chronic disease variables were not significant. Additionally, all medications exhibited acceptable safety profiles, with no serious adverse events recorded.

CONCLUSION

Saxenda, Ozempic and Mounjardo are used to aid weight loss in the short term among adults. Mounjaro has recorded the most reduction. Exercise improves the outcomes, whereas demographic variables do not play an important role. The most common of the side effects were gastrointestinal symptoms, which were mild. It is advisable to combine these drugs with lifestyle changes.

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