

Awareness of Population Regarding GLP-1 (liraglutide and Semaglutide) Prescribing in PHCC in Abha City, KSA

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Received: Received: June 2023. Accepted: July 2023; Published: August 1, 2023.

Citation: Majed Al saleh et al. Awareness of Population Regarding GLP-1 (liraglutide and Semaglutide) Prescribing in PHCC in Abha City, KSA. World Family Medicine. August 2023; 21(7): 79-88

DOI: 10.5742/MEWFM.2023.95256163

Abstract

Background: GLP-1 is a peptide hormone related to amino acid sequence with glucagon. The glucagon superfamily peptides are secreted from the small intestine, pancreas, brain, and peripheral nerves. Furthermore, GLP-1 controls intestinal motility and decreases gastric motility. It also has an effect of satiety, which may be attributed to its effect on the gut, but it also has a direct effect on the hypothalamic feeding centers.

Aim: This study aims to assess the population awareness level regarding GLP-1 prescribing in PHCC in Abha City.

Methods: A descriptive cross-sectional web-based study was used. An online questionnaire was developed by the study researchers based on a literature questionnaire of this study included participants' demographic data, medical history, and GLP-1 use and satisfaction. Also, it covered participants' awareness regarding GLP-1 and its effects.

Results: A total of 160 participants who used GLP-1 completed the study survey. Participants' ages ranged from 18 to more than 50 years with a mean age of 35.5 years. All participants were females. The most used GLP-1 were liraglutide and semaglutide. The awareness level regarding GLP-1 while only 33.1% of participants were aware of GLP-1.

Conclusion: In conclusion, the current study revealed that the awareness level regarding GLP-1 prescribing in PHCC in Abha City is low. The majority of participants use GLP-1 for reducing weight and controlling blood glucose levels. On the other hand, their awareness level regarding the drugs was unsatisfactory.

Keywords: GLP-1, diabetes, obesity, awareness, use, population, knowledge, Saudi Arabia.

Introduction

Glucagon-like peptide-1 (GLP-1) agonists which are also termed GLP-1 receptor agonists or GLP-1 analogs are a category of medicines mostly used with type 2 diabetes in liraglutide, albiglutide, dulaglutide, and semaglutide (2). therapy for type 2 diabetic patients, although, adding GLP-1 analog is preferred for patients with intolerance or contraindication to metformin, patients with poor glycemic control, or patients with elevated A1c for three months, especially patients with atherosclerosis, heart failure, or chronic kidney disease (3, 4).

Moreover, semaglutide and liraglutide are FDA approved as recommended management lines for obese and overweight patients with comorbidities (5). The use of GLP-1 analogs is an object of research with favorable hemoglobin A1c results and weight loss results in patients with type-1 diabetes mellitus. High costs, and tolerability are still the main barriers to prescribing these medications (6-8).

Many issues regarding the role of GLP-1 among different patients were discussed. For stroke and brain injury, Hyperglycemia is associated with poor clinical outcomes in stroke including hemorrhagic transformation, degree of neurological debility, and death (9, 10). For cardiac patients, GLP-1 has a role in glycemic control that makes them attractive for use in the immediate aftermath of AMI as they may act directly on the cardiac muscle to improve

Some patients may not prefer injectable medicines at be cleared and the patient should be informed about its drug-related information and awareness. The current study aimed to assess the population awareness level regarding GLP-1 prescribing in PHCC in Abha City, the most prescribed GLP-1 medications, the main indications for prescribing GLP-1 medications, and determinants of population awareness level regarding GLP-1.

Methodology

A descriptive cross-sectional study was conducted to assess public awareness of GLP-1 and its related side effects in Aseer region, Southern Saudi Arabia. All residents aged 18 years or more and who live in Aseer region using GLP-1 medications who consented to participate in the study, were included in the study. Persons who declined to consent, those who were less than 18 years, or spoke a language other than Arabic and the study. An online questionnaire was developed by the study researchers after an intensive literature review and applicability were assessed independently by a panel of HÁ c@Á , }æ!Á

platforms from 2022 to 2023 and participants were encouraged to participate in this study by clarifying the of this research to the community. The questionnaire of this study included participants' demographic data (Age, Gender, medical history, employment, education, and work). Part 2 covered participants' awareness regarding GLP-1 use and related side effects in the form of general awareness, side effects, and source of their information. The third section covered participants use and pattern of using steroids. The last section covered the role of healthcare staff in providing information regarding GLP-1. All questions had one correct answer. The questionnaire was uploaded online by the researchers and their friends and relatives till no more new answers were obtained.

Data analysis

The data were collected, reviewed and then fed into Statistical Package for Social Sciences version 21 (SPSS: An IBM Company). All statistical methods used were two value was less than or equal to 0.05. Overall awareness level regarding GLP-1 was assessed through summing up discrete scores for different correct knowledge items. score and good level of awareness was considered if the Descriptive analysis was done by describing frequency distribution and percentage for study variables including participants' personal data, awareness items, and use of GLP-1 while participants overall awareness level was graphed. Cross tabulation for showing distribution of participants' overall awareness level by their personal data and health care staff role in providing information was distributions.

Results

A total of 160 participants who used GLP-1 completed the study survey. Participants' ages ranged from 18 to more than 50 years with mean age of 34.8 ± 13.9 years old. obese (Table 1).

Table 2. GLP-1 use with effects among study participants,

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Table 3. Participants' awareness regarding GLP-1 in
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participants reported that Cholecystitis is one of the most
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most reported sources of information about GLP-1 were
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Figure 1. Overall participants' awareness regarding GLP-
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had an overall poor awareness level regarding GLP-1
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Table 4. Role of health care staff and participants'
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told said they write the instructions on the medication, 32
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information provided to them when dispensing these
medicines from pharmacy.

Table 5. Factors associated with participants' awareness
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females had good awareness about GLP-1 compared
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(P=.049). Also, all participants with high income know
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income level (P=.009). Good awareness about GLP-1 was
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Table 1: Bio-demographic data of study participants using GLP-1, Abha, Saudi Arabia

Bio-demographic data`	No	%
Age in years		
18-25	21	13.1%
26-35	53	33.1%
36-45	58	36.3%
46-50	17	10.6%
> 50	11	6.9%
Gender		
Male	71	44.4%
Female	89	55.6%
Marital status		
Single	46	28.8%
Married	96	60.0%
Divorced / widow	18	11.3%
Number of children		
None	12	10.5%
1-2	21	18.4%
2-3	49	43.0%
4-5	18	15.8%
> 5	14	12.3%
Work		
Not working / retired	38	23.8%
Student	15	9.4%
Governmental sector	52	32.5%
Private sector	55	34.4%
Monthly income		
< 5000 SR	48	30.0%
5000-10000 SR	64	40.0%
>10000-15000 SR	37	23.1%
>15000-20000 SR	9	5.6%
> 20000 SR	2	1.3%
Educational level		
Below secondary	9	5.6%
Secondary	54	33.8%
University graduate	82	51.3%
Post-graduate	15	9.4%
Body mass index		
Normal weight	54	33.8%
Overweight	51	31.9%
Obese	55	34.4%

Table 2: GLP-1 use with effects among study participants, Abha, Saudi Arabia

GLP1 use	No	%
Type of used drugs		
<i>Saxenda</i>	63	39.4%
<i>Ozempic</i>	60	37.5%
<i>Trulicity</i>	23	14.4%
<i>Combined</i>	14	8.8%
Reason for having mentioned medication		
<i>Obesity</i>	77	48.1%
<i>T2DM</i>	49	30.6%
<i>T1DM</i>	22	13.8%
<i>GDM</i>	12	7.5%
Where was it dispensed to you		
<i>Diabetic center</i>	99	61.9%
<i>General hospital</i>	28	17.5%
<i>From the pharmacy without a prescription</i>	24	15.0%
<i>Health care center</i>	20	12.5%
Reported side effects of GLP1 medications		
<i>Nausea and vomiting</i>	82	51.3%
<i>Mood swings</i>	65	40.6%
<i>Indigestion</i>	54	33.8%
<i>Dizziness and low blood sugar</i>	54	33.8%
<i>Diarrhea or constipation</i>	40	25.0%
Weight loss after having GLP1 medications		
<i>No loss</i>	10	6.3%
<i>1-3 Kg</i>	49	31.0%
<i>4-7 Kg</i>	61	38.6%
<i>8+ Kg</i>	38	24.1%
HbA1c in the last 3 months after using drugs		
<i>< 7.5%</i>	90	56.3%
<i>7.5-8.5%</i>	47	29.4%
<i>8.6-10%</i>	23	14.4%

GDM: gestational DM

Table 3: Participants awareness regarding GLP-1 in Abha, Saudi Arabia

Awareness	No	%
The most serious diseases that these drugs may cause?		
<i>Pancreatitis</i>	71	44.4%
<i>Cholecystitis</i>	73	45.6%
<i>Rare tumors of the endocrine glands</i>	39	24.4%
Mechanism of these drugs action		
<i>Reducing the movement of food from the stomach to the intestine</i>	59	36.9%
<i>Reducing blood sugar</i>	55	34.4%
<i>Appetite suppression</i>	42	26.3%
<i>All of the above</i>	43	26.9%
Source of information about the drugs		
<i>Physician</i>	74	46.3%
<i>Social media</i>	65	40.6%
<i>Pharmacist</i>	48	30.0%
<i>MOH communication center</i>	15	9.4%

Figure 1. Overall participants awareness regarding GLP-1, Abha, Saudi Arabia

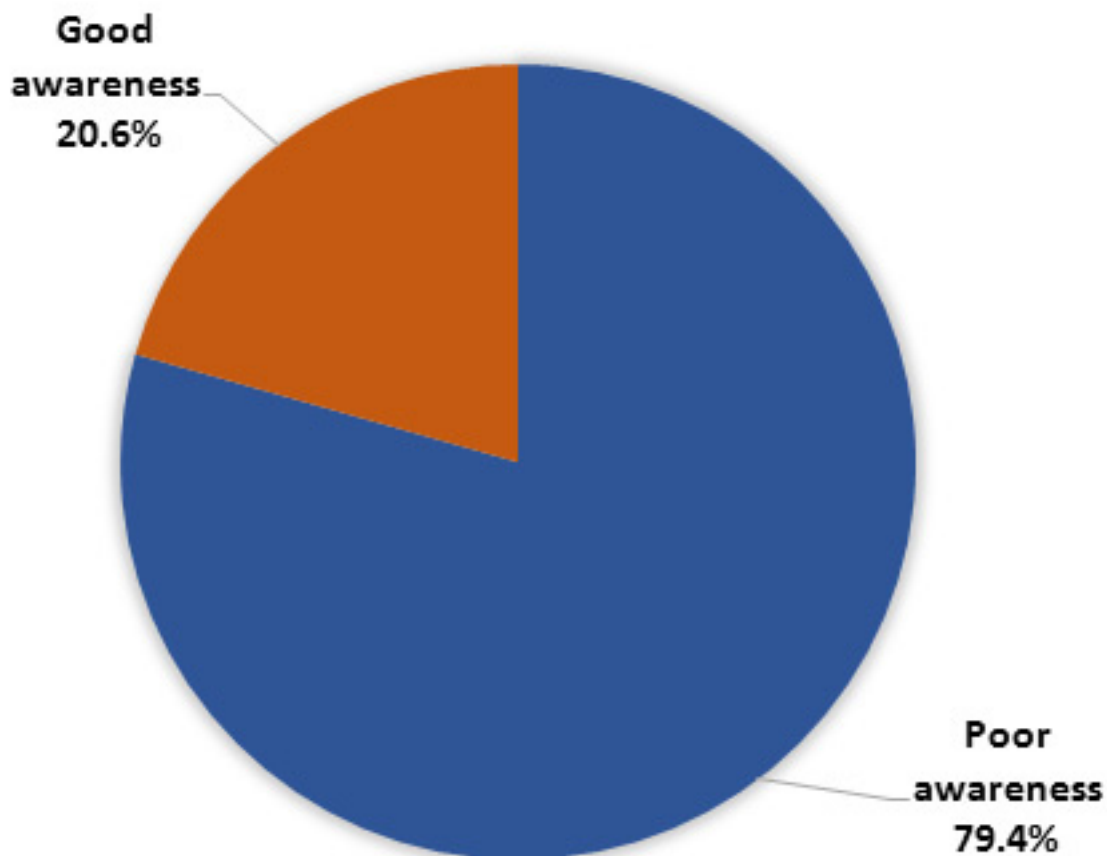


Table 4. Role of health care staff and participants' satisfaction in prescribing GLP-1

Health care staff role	No	%
When you go to the doctor in the clinic, does the doctor explain to you how the treatment works, how to use it, and its side effects?		
<i>Always</i>	38	23.8%
<i>Often</i>	48	30.0%
<i>Sometimes</i>	54	33.8%
<i>Rarely</i>	12	7.5%
<i>Never</i>	8	5.0%
When you go to the pharmacy to dispense these medicines, what is the pharmacist's role for you?		
<i>Explanation of how to use and times of use</i>	54	33.8%
<i>Try to see if you understood the given information well</i>	23	14.4%
<i>Write the instructions on the medication</i>	42	26.3%
<i>It gives you educational material about the medicine and how to use it</i>	9	5.6%
<i>Treatment dispensing only</i>	32	20.0%
How satisfied are you with all the information provided to you at the physician clinic?		
<i>Totally satisfied</i>	37	23.1%
<i>Somewhat satisfied</i>	74	46.3%
<i>Neutral</i>	30	18.8%
<i>Dissatisfied</i>	17	10.6%
<i>Totally dissatisfied</i>	2	1.3%
How satisfied are you with all the information provided to you when dispensing these medicines from pharmacy?		
<i>Totally satisfied</i>	49	30.6%
<i>Somewhat satisfied</i>	61	38.1%
<i>Neutral</i>	30	18.8%
<i>Dissatisfied</i>	16	10.0%
<i>Totally dissatisfied</i>	4	2.5%

Discussion

Proper awareness assessments allow the evaluation and treatment qualities of current therapies, besides assessing preferences for hypothetical products (13). Assessing patients' awareness regarding medications also helps in understanding their preferences which may affect patient's adherence and commitment.

The current study aimed to assess all related information regarding GLP-1 use, awareness, and related side effects among the population in Abha, Southern Saudi Arabia. The study showed that the most used GLP-1 combination of them. Obesity was the most reported reason for having these drugs (nearly half of the users) followed by type 2 DM (one-third of them), but a lesser percentage was used for type 1 DM and gestational DM. Alshaikh A et al. (14) in Saudi Arabia the injectable formula remark that the injectable formula medications. Also, many studies have documented that independently improve satiety and reduce food intake in normal subjects (15, 16). The consequence on food intake and satiety is well-maintained in obese persons (17) as well as in obese patients with type 2 diabetes (18, 19). This indicates that GLP-1 may not only be a biological controller of food intake but may also have a therapeutic likelihood. As for reported side effects, the most reported side effects among current study users were nausea and blood sugar, and diarrhea or constipation.

With regard to the reported effects, about one-third of the current study participants reported losing 4-7 Kg after failed to lose weight. Also, more than half of the diabetics duration with a conclusion that GLP-1RA treatments were associated with weight reduction and improved glycemic control for T2DM patients. Moreover, it is suggested that it consistent with previous studies (21-24). Therefore, it was found that GLP-1RAs improve beta cell functions, which improve insulin sensitivity and reduce glucagon secretion to the lowest basal level (21). Consequently, GLP-1RAs and reducing body weight. They also promote a decrease in glucosuria levels (25).

With regard to participants awareness about GLP-1, the were knowledgeable about the drugs. Less than half of the study participants reported that cholecystitis is one of the most serious diseases that these drugs may cause, and also told about pancreatitis while only one-quarter reported rare tumors of the endocrine glands. As for mechanism of actions, one-third know about reducing the movement of food from the stomach to the intestine, and also told about reducing blood sugar, while one-quarter know about appetite suppression. The most reported sources of information about GLP-1 were physician, University, Saudi Arabia found that about three-quarters of the participants gave correct answers for knowledge regarding GLP-1. Also, more than three-quarters reported knowledge was detected for some important issues such as the method of administration, precautions and possible risks associated with the therapy was lacking among the participants. Some of the demographic data such as The current study also showed that participants showed high satisfaction regarding the role of physician and with availability of all relevant information.

Conclusion and Recommendations

A portion of diabetic and obese persons use GLP-1 for reducing weight and controlling blood glucose level. On the other hand, their awareness level regarding the drugs was unsatisfactory. Participants' satisfaction regarding health care staff role in providing necessary information was high which means that other sources of information are required to improve their overall awareness regarding the medications. More effort should be paid to improve public awareness regarding this category of medications & burden.

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