

Original article

Professional Knowledge, Clinical Practices, and Regulatory Alignment Regarding GLP-1 and Dual GIP/GLP-1 Therapies Among Pharmacists and Physicians in Tripoli, Libya

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Corresponding Email. e.derbi@uot.edu.ly**Abstract**

GLP-1 receptor agonists and dual GIP/GLP-1 receptor agonists have changed the management of type 2 diabetes and obesity, while rapidly expanding demand has intensified the need for professional knowledge, appropriate prescribing, prescription-controlled dispensing, and regulatory oversight. This study was conducted to assess pharmacists' and physicians' knowledge and professional practices regarding semaglutide and tirzepatide in Tripoli, Libya, and to interpret these findings in relation to current international regulatory frameworks. A cross-sectional descriptive-analytic study was conducted from January to May 2026 among 72 pharmacists and 25 physicians recruited from community pharmacies, hospitals, and clinics. Structured questionnaires assessed professional background, self-reported knowledge, dispensing or prescribing practice, clinical assessment, safety perceptions, and patient-use patterns. Moderate knowledge predominated among pharmacists (73.6%), whereas 52.0% of physicians reported high knowledge. Most pharmacists perceived increasing use (86.1%), yet 36.1% reported dispensing without a physician prescription. Among physicians, 88.0% requested HbA1c before treatment, 84.0% requested renal and liver function tests and fasting blood glucose, and 76.0% assessed BMI. Physicians frequently encountered appetite loss (84.0%) and nausea (80.0%), while 88.0% considered patient information insufficient before use. Professional practice in Tripoli shows a marked contrast between generally cautious physician assessment and a substantial prescription-control gap at the pharmacy level. The findings support stronger professional education, consistent prescription-only dispensing, structured counseling, pharmacovigilance, and alignment with WHO, FDA, EMA, ANSM, and MHRA principles for medically supervised GLP-1 and dual GIP/GLP-1 therapy.

Keywords. GLP-1, GIP, Semaglutide, Tirzepatide, Pharmacists, Physicians, Prescribing, Dispensing, Regulation.

Introduction

Incretin-based pharmacotherapy has become a clinically dominant force and altered the discourse of obesity and type 2 diabetes among patients, prescribers, pharmacists, and regulators. The major incretin hormones that play a role in postprandial metabolic regulation are glucagon-like peptide-1 (GLP-1) and glucose-dependent insulintropic polypeptide (GIP). GLP-1 increases insulin-dependent glucose secretion, inhibits glucagon in the presence of glucose, slows gastric emptying, and promotes satiety; GIP also exhibits strong glucose-dependent insulintropic effects and is also involved in energy and adipose-tissue signaling. These complementary physiological pathways furnish the biological foundation to selective agonism of GLP-1 receptors and for more recent dual agonism of GIP and GLP-1 receptors [1,2].

Semaglutide is a GLP-1 receptor agonist of long-acting type. The difference in the mechanism of action is that tirzepatide has an integrated effect on the GIP and GLP-1 receptors, unlike GLP-1, which causes selective receptor activation [3]. These mechanisms were translated into significant increases in glycemic control and bodyweight in clinical development. Semaglutide 2.4 mg induced clinically significant weight loss in adults with overweight or obesity in the STEP program, and tirzepatide induced dose-dependent weight loss in the SURMOUNT program [4,5]. A subsequent direct comparison reported greater mean weight reduction with tirzepatide than semaglutide at 72 weeks, reinforcing the clinical relevance of dual GIP/GLP-1 agonism [6]. These medicines, however, and their therapeutic value cannot be divorced from the circumstances in which they are prescribed, dispensed, monitored, and acquired. The high demand rate poses a risk of brand recognition exceeding awareness of indication, contraindications, dose escalation, adverse effects, and long-term follow-up. The role of physicians and pharmacists as professionals is thus at the core: it is the prescribers who decide whether treatment is clinically justified, and it is the pharmacists who offer the ultimate controlled level of medicine supply and strengthen safe use. In the case of semaglutide and tirzepatide, this professional stewardship has been further enhanced by the international agencies intensifying the guidelines on medical supervision, prescription-only supply, product authenticity, pharmacovigilance, and prevention of unassessed cosmetic use.

GLP-1 and GIP: Physiological and Pharmacological Context

GLP-1 is released by intestinal L cells following the intake of nutrients. It has glucose-dependent actions, thereby facilitating good glycemic control at a relatively low inherent risk of hypoglycemia with no insulin or insulin secretagogue use. On top of the pancreatic effects, GLP-1 signaling has been shown to mediate the gut-brain axis and inhibit hunger and energy consumption. This reduction in gastric emptying rate and satiety increase is clinically important in weight management, but is also associated with other common gastrointestinal side effects. GIP, which is the work of intestinal K cells, stimulates postprandial insulin release and acts in relation to metabolic tissues. It is not that GIP has been

reconsidered in modern pharmacology as an independent anti-obesity agonist, but rather as a complementary receptor pathway which can enhance the clinical effect when used in combination with GLP-1 receptor agonists [1-3]. This is a significant difference to professional education. Semaglutide and tirzepatide frequently appear in everyday discussions as weight-loss injections, but they are not pharmacologically similar.

Semaglutide is a selective GLP-1 receptor agonist, whereas tirzepatide is a dual GIP/GLP-1 receptor agonist. Their brand names also differ by indication and jurisdiction. In the United States, Ozempic is an FDA-approved semaglutide product for type 2 diabetes and related cardiovascular and kidney-risk indications, while semaglutide for chronic weight management is marketed as Wegovy. Mounjaro is tirzepatide for type 2 diabetes, while Zepbound is the tirzepatide product approved for chronic weight management. These distinctions matter because use of a familiar brand name should not be assumed to represent an approved weight-management indication.

Table 1. GLP-1 and GIP physiology and therapeutic translation

Domain	GLP-1 pathway	GIP pathway / dual GIP-GLP-1 relevance
Principal physiological role	Glucose-dependent insulin secretion, glucagon suppression, delayed gastric emptying, satiety	Glucose-dependent insulin secretion and complementary metabolic signaling
Appetite/energy effect	Strong satiety and reduced energy intake through gut-brain signaling	May complement GLP-1-mediated appetite and metabolic effects when co-activated
Representative therapy	Semaglutide: selective GLP-1 receptor agonist	Tirzepatide: dual GIP and GLP-1 receptor agonist
Clinical translation	Glycemic improvement and substantial weight reduction	Glycemic improvement with substantial weight reduction; direct trials show greater average weight loss than semaglutide in obesity
Professional implication	Requires indication-specific prescribing, dose escalation, counseling, and monitoring	Requires the same safeguards plus understanding that dual receptor activity does not remove the need for medical supervision

International Regulatory Frameworks for GLP-1-Based Medicines

International regulation increasingly treats GLP-1 and dual GIP/GLP-1 medicines as high-value therapies that require controlled, medically supervised use rather than unrestricted consumer access. In September 2025, the World Health Organization (WHO) added GLP-1 receptor agonists - including semaglutide - and the dual GLP-1/GIP agonist tirzepatide to the Model List of Essential Medicines for selected adults with type 2 diabetes and major cardiovascular, kidney, or obesity-related risk. This was not a general recommendation to use unsupervised weight loss, but it prioritized the patients with significant clinical requirement, and focused on access, affordability, rational use, and quality-guaranteed supply [7]. In December 2025, WHO issued its first guideline on GLP-1 therapies for adults living with obesity. The guideline made conditional recommendations for long-term use in adults with obesity, excluding pregnant women, and positioned pharmacotherapy within comprehensive chronic obesity care that also includes healthy diet, physical activity, behavioral support, and professional follow-up [8]. WHO has subsequently emphasized the risks of obtaining GLP-1 medicines outside approved indications or medical settings and the importance of pharmacovigilance and qualified professional supervision [9].

The United States Food and Drug Administration (FDA) regulates semaglutide and tirzepatide through product-specific approved indications and prescribing information. Ozempic is approved for type 2 diabetes and defined cardiovascular and kidney-risk indications, while obesity treatment is associated with the semaglutide product Wegovy. Tirzepatide is marketed as Mounjaro for type 2 diabetes and Zepbound for chronic weight management. FDA prescribing information includes dose-escalation requirements, contraindications and warnings, and post-marketing safety requirements [10,11]. FDA also ended temporary enforcement discretion that had permitted broader compounding of semaglutide and tirzepatide during shortages once the respective shortages were resolved, narrowing routine access back toward approved products and legally permitted individualized compounding [12].

In the European Union, the European Medicines Agency (EMA) also classifies such agents as prescription drugs that need medical guidance. EMA has particularly reminded the population that Ozempic is licensed to treat diabetes, Wegovy to control weight, and Mounjaro to treat diabetes and control weight in the EU, and has cautioned against self-prescription or buying products online, which are not regulated [13]. France demonstrates how access may be expanded without foregoing prescription control: since 23 June 2025, ANSM has allowed any physician to prescribe or renew Wegovy, Mounjaro, or Saxenda as part of its marketing-authorised indications, but has retained its prescription-only status and heightened safety oversight [14].

According to the Medicines and Healthcare Products Regulatory Agency (MHRA) in the United Kingdom, all GLP-1 medicines that are used to treat diabetes or weight management are prescription-only and must only be provided after evaluation by a certified healthcare professional. MHRA guidance also emphasizes the dangers of illicit or counterfeit products, their use as quick weight-loss cosmetics, and adverse-event reporting. The UK product information was reinforced in January 2026 to highlight the known but rare risk of acute pancreatitis, including very rare severe cases [15,16]. These frameworks are unified into a set of principles, which are approved indication, legitimate prescription, qualified evaluation, controlled supply, patient guidance, follow-up, pharmacovigilance, and defense against counterfeit or inappropriate products.

Table 2. Regulatory agencies across borders pertaining to semaglutide and tirzepatide.

Authority	Regulatory position	Practical professional implication
WHO	Essential-medicine prioritization for selected high-risk T2DM populations; conditional long-term obesity guidance	Comprehensive chronic care; qualified prescribing; access, equity, product quality, pharmacovigilance
FDA - United States	Product-specific approved indications for semaglutide and tirzepatide; prescription labeling; compounding constrained after shortages resolved	Use approved products when available; follow indication, titration, contraindications, warnings, and post-marketing safety requirements
EMA - European Union	Prescription medicines; indication-specific authorization; medical supervision	Avoid unregulated online supply and use outside appropriate medical supervision; preserve supply for indicated patients
ANSM - France	From 23 June 2025, any physician may initiate or renew obesity-indicated GLP-1 medicines within marketing authorization	Access broadened, but products remain prescription-only and subject to strengthened surveillance
MHRA - United Kingdom	Prescription-only medicines with clinical assessment before supply	Counsel on adverse effects and misuse; avoid illegal/falsified products; report suspected adverse reactions

Regulatory Context in Libya

The pharmaceutical regulatory system in Libya is based on the registration of drugs as stipulated in Law No. 5 of 1981 and is controlled by the National Center of Drug Control and Research (NCDCR) of the Ministry of Health [17]. Even though this framework provides the overall legal framework of medicine registration and control, it has been questioned due to the lack of regulatory capacity and inconsistent enforcement. Notably, the current system lacks certain stipulations specifically targeting GLP-1 receptor agonists or dual GIP/GLP-1 therapies, even though semaglutide- and tirzepatide-based products are rapidly increasing in clinical and community application.

Legislation reform has been proposed to modernize pharmacy-practice standards, enhance oversight of the importation and storage of pharmaceuticals, and enhance overall drug oversight, but has not been fully implemented yet [18]. These regulatory gaps are significant in the context of incretin-based medicines since safe use is determined by the existence of clear prescription requirements, verified supply chains, professional counseling, the adequacy of patient selection, and effective pharmacovigilance. Adherence to these principles would assist in translating international standards of regulation into a system that would fit the Libyan health system.

Problem Statement and Rationale

Obesity is a significant public-health problem in Libya, where one out of every four adults is obese (28.9), with a significant difference in prevalence between women (36.3) and men (22.0) [19]. Nevertheless, published studies examining the understanding of semaglutide and tirzepatide by pharmacists and physicians, their prescription, dispensing, and monitoring have been limited in number despite this high burden. This gap in evidence becomes all the more relevant as the demand for such medicines is becoming more prominent and potentially influenced by exposure to social media, the promise of fast weight loss, and cosmetic reasons as opposed to a clearly defined medical necessity. Pharmacists and physicians in such an environment are placed in a pivotal role between demand and safe, evidence-based access to treatment by the population.

The current investigation was thus aimed at evaluating professional knowledge, dispensing and prescribing behaviors, perceptions towards safety, and clinical attitudes towards GLP-1 receptor agonists and dual GIP/GLP-1 therapies among pharmacists and physicians in Tripoli, Libya. The results are discussed through the prism of international regulatory practices to establish the areas of agreement, possible gaps in professional practice, and regulatory and educational areas of improvement in Libya.

Methods

Study design and setting

The study was a cross-sectional, descriptive-analytic study carried out in January-May 2026 in Tripoli, Libya. This research was limited to healthcare practitioners whose practice put them in direct contact with either semaglutide or tirzepatide-related questions, prescribing, dispensing, or follow-up. The sample was obtained in community pharmacies, hospitals, independent clinics, and health centers.

Participants and sampling

The researchers recruited 97 health care workers: 72 pharmacists and 25 physicians. Convenience sampling was employed due to the lack of any city-wide sampling frame of professionals who encountered these medicines in practice. Pharmacists were allowed to participate provided they were licensed, had a minimum of three months of professional experience, and had been exposed to inquiries or prescriptions of Ozempic or Mounjaro. Doctors were required to be licensed to practice in Libya and at least one patient had been administered these injections or had requested them. The criteria used in the source study were to exclude incomplete questionnaires.

Data collection instrument

Pharmacists and physicians were given self-administered questionnaires. Professional characteristics, self-reported knowledge, attitudes to the use of GLP-1-based medication, dispensing and prescribing practices, prescription requirements, attitudes towards safety and effectiveness, clinical assessment procedures, perceived adverse effects, and patient motivation to use the drug were evaluated in the questionnaires. Five pharmacists and five physicians tested the questionnaires to determine the level of clarity, cultural suitability, wording, and time taken to complete the questionnaires. Before the final administration of the questionnaires, some minor adjustments were made.

Ethics and data collection.

Pharmacist survey questionnaires were provided at the community pharmacies and in professional pharmacist organizations, whereas physician survey questionnaires were provided in clinics and hospitals with an optional electronic route. The Ethics Committee of the Department of Public Health, Faculty of Medical Technology, University of Tripoli gave ethical approval. The informed consent was written and anonymity and confidentiality were assured.

Statistical analysis

IBM SPSS Statistics was used to analyze the data with version 26.0 on Windows. The current article highlights the descriptive professional outcomes obtained in the source manuscript since they are directly related to the samples of pharmacists and physicians. Knowledge, dispensing practice, clinical assessment, and professional observations are provided as frequencies and percentages. The source study had a statistical significance of $\alpha = 0.05$.

Results

Pharmacist profile and knowledge

Of the 72 pharmacists, 56.9% had professional experience of over three years, 18.1% had one to two years of experience, and 25% of the pharmacists had professional experience of five to twelve months. The most common place of work (68.1%) was community pharmacies. The knowledge was most often rated as moderate (73.6%); only 18.1% rated their knowledge as high, and 8.3% chose do not know. This distribution suggests that exposure to increasing demand has not necessarily been accompanied by high confidence in the clinical and regulatory dimensions of GLP-1 and dual GIP/GLP-1 therapy.

Table 3. Pharmacist professional profile and self-reported knowledge (n = 72)

Variable	Category	n	%
Years of experience	5-12 months	18	25.0
Years of experience	1-2 years	13	18.1
Years of experience	>3 years	41	56.9
Workplace	Community pharmacy	49	68.1
Workplace	Hospital	11	15.3
Workplace	Private clinic	6	8.3
Workplace	Health center	6	8.3
Self-reported knowledge	High	13	18.1
Self-reported knowledge	Moderate	53	73.6
Self-reported knowledge	Do not know	6	8.3

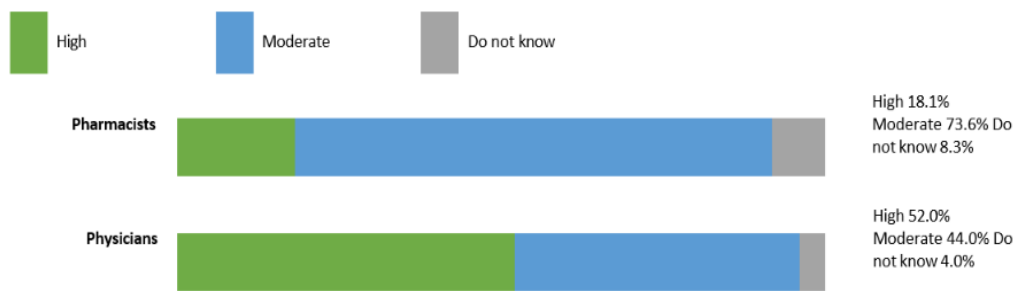


Figure 1. Self-reported knowledge profile among pharmacists and physicians

Pharmacist perceptions and dispensing practice

Most pharmacists (86.1%) perceived that community use of these medicines had increased, and 55.6% believed that use was often random or insufficiently informed. Although 87.5% accepted use in people without diabetes only when medically supervised and 84.7% opposed pharmacist-led prescribing, a substantial prescription-control gap remained: 26 pharmacists (36.1%) reported dispensing weight-loss injections without a physician prescription. Only 63.9% reported prescription-only dispensing. This is the clearest practice finding when the local results are compared with international regulatory standards.

Table 4. Pharmacist perceptions and dispensing practice

Finding	n	%
Perceived increased community use	62	86.1
Believed use was random/without adequate awareness	40	55.6
Accepted non-diabetic use only with medical supervision	63	87.5
Did not believe long-term use was safe	50	69.4
Identified people with obesity as the main requesting group	64	88.9
Opposed pharmacist-led prescribing	61	84.7
Dispensed only with physician prescription	46	63.9
Dispensed without physician prescription	26	36.1

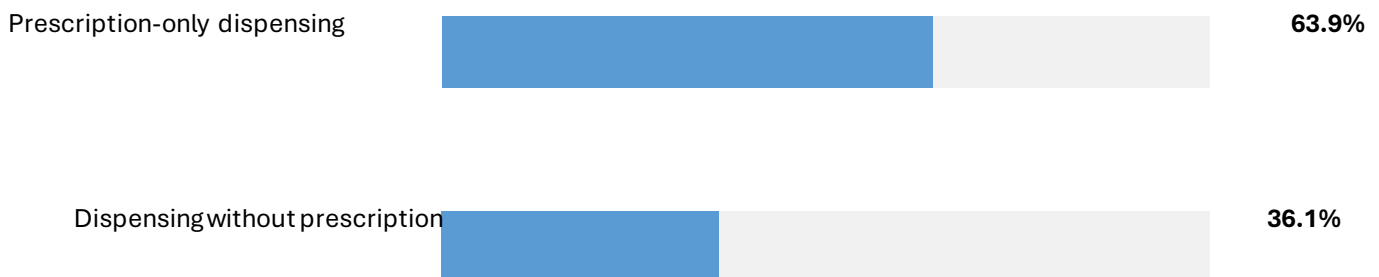


Figure 2. Pharmacist dispensing practice

Physician profile, knowledge, and clinical practice

Among the 25 physicians, 52.0% reported high knowledge and 44.0% reported moderate knowledge; 4.0% selected 'do not know'. Physicians were therefore more likely than pharmacists to place themselves in the high-knowledge category. Recommendation practice was cautious: 40.0% reported recommending these medicines, 44.0% did not recommend them, and 16.0% used a conditional or case-dependent approach. Meanwhile, a large proportion of 72.0 percent found the medicines effective (or very effective), showing that caution was not necessarily doubt of the pharmacological effect. Pre-treatment assessment was typical. Eighty-eight percent of the patients ordered HbA1c, 84% ordered renal and liver tests and functions, fasting blood glucose, and BMI each. Less common were lipid and thyroid tests. These results indicate that the majority of physicians approached the treatment as a medically evaluated intervention as opposed to a consumer weight-loss product.

Table 5. Knowledge of physicians, recommendation practice, and pre-treatment assessment (n = 25)

Assessment or practice	n	%
High self-reported knowledge	13	52.0
Moderate self-reported knowledge	11	44.0
Recommend treatment	10	40.0
Do not recommend treatment	11	44.0

Conditional/case-dependent recommendation	4	16.0
Rate treatment effective/very effective	18	72.0
HbA1c assessment	22	88.0
Renal function tests	21	84.0
Liver function tests	21	84.0
Fasting blood glucose	21	84.0
BMI assessment	19	76.0



Figure 3. Clinical assessments of physicians before treatment.

Observed safety and patient-use context

Loss of appetite (84.0%), and nausea (80.0) were the most commonly reported symptoms by physicians in patients taking these medicines. Forty-four percent of them reported vomiting; 36 percent reported headache; 32 percent reported diarrhea; 24 percent reported constipation and abdominal pain. Almost half (48.0%) reported side effects as the reason of discontinuing treatment. Such observations comply with the gastrointestinal tolerance profile of GLP-1-based therapy that has already been well-established and emphasize the importance of dose escalation, hydration recommendations, adverse-effect counseling, and follow-up [20,21].

An environment of use, which may be conflicting with prescribed medical care, was also reported by the physicians: 96.0% of physicians reported cosmetic-only requests, 100% of physicians reported that some patients viewed injections as a rapid path to an ideal body, and 88.0% of physicians reported that patient information was inadequate before use. Cost was said to have an impact on adherence of 96.0. These results do not redefine the pharmacology of GLP-1 or GIP, but they clarify the clinical significance of professional and regulatory protection in Tripoli.

Table 6. Physician-observed adverse effects and treatment-use context

Finding	n	%
Loss of appetite observed	21	84.0
Nausea observed	20	80.0
Vomiting observed	11	44.0
Headache observed	9	36.0
Diarrhea observed	8	32.0
Constipation observed	6	24.0
Abdominal pain observed	6	24.0
Treatment discontinuation due to side effects	12	48.0
Cosmetic-only requests reported	24	96.0
Patient information judged insufficient	22	88.0
Cost reported to affect adherence	24	96.0

Discussion

This paper gives a one-dimensional perspective on the way two professional groups in Tripoli perceive and manage GLP-

1 and dual GIP/GLP-1 therapies. The main finding is not merely that the physicians had better knowledge than the pharmacists, but that the local professional environment demonstrates a disproportionate mismatch between the pharmacological complexity of these medicines and the regulatory control under which their use is supposed to be. Semaglutide and tirzepatide are powerful incretin-based medications, with indication-specific brands, dose-escalation regimens, contraindications, adverse-effect profiles, and long-term management needs. They are thus always put in medical prescribing and supervised chronic disease treatment by international authorities instead of being accessible in the retail market.

Professional knowledge in the area of GLP-1 and GIP pharmacology.

The moderate level of knowledge among pharmacists is significant since it is the last stage where inappropriate access can be avoided. Knowledge of GLP-1 is no longer sufficient. Professionals need to tell the difference between selective GLP-1 receptor agonists and dual GIP/GLP-1 agonists; differentiate semaglutide and tirzepatide; and distinguish brand names like Ozempic versus Wegovy and Mounjaro versus Zepbound. This information should go beyond mechanism to encompass titration, most frequent gastrointestinal adverse effects, contraindications, warning signs, and the necessity of follow-up. The same international surveys have indicated that even the familiarity with anti-obesity pharmacotherapy varies among prescribers and thus the need to continue professional education as the area keeps on developing [22]. Physicians in the current sample reported a stronger knowledge profile, and their pre-treatment assessment patterns were generally consistent with a medicalized approach to therapy. High use of HbA1c, fasting glucose, renal and liver function testing, and BMI assessment suggests that physicians were evaluating metabolic status and treatment suitability before initiation. Although not all laboratory tests are required for all patients, the general trend is congruent with the idea that GLP-1 and GIP/GLP-1 therapies should be based on individual clinical evaluation, which is also reflected in WHO recommendations and schemes of obesity management across Europe [8,23].

Dispensing without prescription as a regulatory misalignment

The finding that 36.1% of pharmacists reported dispensing without a physician prescription is the most direct point of conflict with the international regulatory frameworks reviewed in this article. WHO emphasizes qualified professional prescription and regulated distribution; EMA identifies these medicines as prescription medicines; MHRA classifies GLP-1 medicines as prescription-only; and FDA-approved products are supplied under prescription labeling with product-specific indications [8,10-16]. It is not whether or not pharmacists can offer useful counseling that they obviously can but whether or not counseling can replace the assessment of a prescriber. It cannot under the structures studied herein.

There are a number of safeguards that can be circumvented by unsupervised access. A patient can choose the product according to brand popularity rather than an indication, fail to report comorbidities or concurrent medications, initiate an incorrect dose, or continue with therapy even when the symptoms need to be reevaluated. This risk is further increased when patients are seeking quick cosmetic weight loss instead of obesity as a chronic disease. The 2026 safety statement by WHO specifically cautioned against the acquisition of GLP-1 medicines beyond authorized indications and medical context and the significance of adverse-event reporting and qualified professional supervision [9].

Regulatory frameworks: convergence in the face of jurisdictional differences

The systems of regulation considered are not the same. WHO gives normative global recommendations, not national marketing approval; FDA regulates products in the United States; EMA orchestrates scientific assessment in the EU; ANSM provides national provisions in France, and MHRA regulates in the UK. However, their pragmatic messages meet. To begin with, the treatment must be done in accordance with an approved or clinically justified indication. Secondly, prescription and clinical evaluation are in focus. Third, authenticity of products and controlled supply chains are important since high demand provides opportunities for falsified or low-quality products. Fourth, patients need to be counseled on gastrointestinal effects, rare severe complications, dose increases, and when to seek care. Fifth, followup and pharmacovigilance are necessary as the use is long-term and safety evidence is still in progress.

A good case study on the distinction between enhancing access and deregulating access is in France. ANSM expanded the initiation of medicines indicated for obesity GLP-1 to all physicians in June 2025, but did not change these medicines to over-the-counter medications. The change in policy maintained the prescription-only supply, but lowered barriers to access by specialists [14]. This difference applies to Libya: better access to qualified prescribers and professional education can be accompanied by increased dispensing control.

Counseling and clinical safety

The observed appetite loss, nausea, vomiting, diarrhea, constipation, and abdominal pain in the physicians are in line with the well-known tolerability profile of incretin medicines [120,21]. The effects in most patients are treatable, but the regulatory issue is that frequent symptoms may sometimes result in clinically significant dehydration or lead to discontinuation of treatment. The update of the 2026 by MHRA enhanced warnings on the occurrence of acute pancreatitis, including uncommon severe presentations, which can demonstrate how product information can be modified due to pharmacovigilance after extensive use [16]. Safe professional route thus involves more than initial prescribing: it involves dose escalation, symptom severity education, explicit instruction on when to discontinue and seek

medical consultation, and reporting of potential adverse reactions.

Professional and regulatory practice implications in Libya

The results of the study confirm the use of a regulatory approach that focuses on professional stewardship and not just public access. In the case of physicians, the focus is on regular patient selection, prescription according to indications, counseling, and follow-up. In the case of pharmacists, the focus is on checking prescriptions, awareness of product authenticity, reaffirmation of dosing and adverse-effect counseling, and referrals when patients request therapy without prior clinical evaluation. The difference between selective GLP-1 and dual GIP/GLP-1 pharmacology, the indication-specific brand differences, and the available international safety and regulatory expectations should explicitly be taught by continuing education.

The necessity of such a framework is justified by the existing Libyan regulatory environment: Law No. 5 of 1981 gives the overall foundation for drug registration; however, GLP-1-specific conditions are not explicitly defined, and pharmacy-law reform, in general, is still not fully realized [17,18]. The common grounds of WHO, FDA, EMA, ANSM, and MHRA can be utilized in a national policy framework without imitating any particular jurisdiction. This model might categorize semaglutide- and tirzepatide-containing drugs as prescription-only, define the role of the authorized prescribers and dispensers, demand the traceability of supply chains, mandate a clear channel of adverse event reporting, and offer a national professional perspective on obesity pharmacotherapy. It should not intend to limit evidence-based treatment but to ensure easier access, more appropriate treatment, and more consistent access.

Strengths and Limitations

The advantage of this study is that the authors focus on physicians and pharmacists as the main actors in the prescription and dispensing of GLP-1 and dual GIP/GLP-1 treatments. Clinical practices and knowledge were also evaluated in the study, which offers a wider perspective of actual application. Convenience sampling and the small sample size of physicians (n = 25), however, could be limiting when it comes to generalization and subgroup analysis. Moreover, the use of self-reported knowledge and practices can also create reporting bias. Lastly, the cross-sectional design indicates practice at a particular point in an ever-changing therapeutic and regulatory environment.

Conclusion

GLP-1 and dual GIP/GLP-1 are clinically significant drugs, the effectiveness of which requires proper use by the professional. Physicians in Tripoli tended to report greater knowledge and more of a pattern of pre-treatment clinical assessment, whereas pharmacists tended to report moderate knowledge and more than one-third admitted dispensing in the absence of a physician prescription. This prescription-control gap is hard to reconcile with the international regulatory consensus that semaglutide- and tirzepatide-based therapies must be assessed qualifiedly, supplied on a prescription basis, counseled, and followed up. The shift of professional education must thus not be towards general knowledge of Ozempic and Mounjaro but towards specific knowledge about GLP-1 and GIP pharmacology, indication-specific products, adverse-effect management, and regulatory obligations. Modifying local prescribing and dispensing practice along with these principles would reinforce patient safety without affecting access to effective incretin-based treatment.

Recommendations

- Introduce and implement prescription-only dispensing of semaglutide- and tirzepatide-containing medications, and pharmacy referral in case of absence of a valid prescription.
- Establish ongoing pharmacist and physician education on selective GLP-1 compared to dual GIP/GLP-1 pharmacology, product-specific indications, titration, contraindications, frequent side effects, and warning signs.
- Implement national prescribing and dispensing recommendations that embody the shared values of WHO, FDA, EMA, ANSM, and MHRA and yet are suited to the Libyan health system.
- Intensify counseling during prescription and dispensing phases, realistic expectations, long-term treatment strategy, integration of lifestyle, and the dangers of unregulated or falsified products.
- Establish a functional pharmacovigilance reporting mechanism for suspected adverse reactions, misuse, falsified products, and supply issues.
- Use validated objective knowledge instruments and probability-based sampling (where possible) to conduct larger multicenter studies in Libya.

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Conflicts of Interest

The author states that he does not have any conflicts of interest.

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