EJPMR, 2026, 13(9), 535-546 **Research Article** **Impact Factor: 8.158**

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

ISSN (O): 2394-3211
ISSN (P): 3051-2573
Coden USA: EJPMAG

TELEPHARMACOTHERAPY IN OBESITY CARE: INTEGRATING TELEMEDICINE, ANTI-OBESITY MEDICATION, AND AI-ENABLED CLINICAL SUPPORT

Nabanit Kumar Jha[1*], Marlene Zharan[2], Tan Phung[3], Merna Kirolos[4], Chika Ekezie[5], Gabriela Sosa[6]

[1]Associate Professor, Department of Pharmacology, Trinity School of Medicine, St. Vincent and Grenadines.
[2,3,4,5,6]MD Student, Trinity School of Medicine, St. Vincent and the Grenadines.

***Corresponding Author: Nabanit Kumar Jha**

Associate Professor, Department of Pharmacology, Trinity School of Medicine, St. Vincent and Grenadines.

DOI: https://doi.org/10.5281/zenodo.22723779

How to cite this Article: Nabanit Kumar Jha[1]*, Marlene Zharan[2], Tan Phung[3], Merna Kirolos[4], Chika Ekezie[5], Gabriela Sosa[6]. (2026). Telepharmacotherapy In Obesity Care: Integrating Telemedicine, Anti-Obesity Medication, And Ai-Enabled Clinical Support. European Journal of Pharmaceuticaland Medical Research, 13(9), 535–546.

Article Received on 18/08/2026 **Article Revised on 09/09/2026** **Article Published on 11/09/2026**

ABSTRACT

Obesity is a complex, chronic, relapsing condition associated with significant cardiometabolic morbidity, reduced quality of life, and increased healthcare use. Access to comprehensive obesity care remains limited by geographic barriers, a shortage of qualified healthcare providers, cost, stigma, and the need for frequent longitudinal follow-up, despite advances in lifestyle therapies, medications, and metabolic-bariatric surgery. Telemedicine has emerged as a key strategy for overcoming many of these constraints by enabling remote clinical assessment, behavioral counseling, dietary support, physical activity interventions, medication management, and longitudinal monitoring.

The scope of telemedicine-based obesity management has expanded with the rapid development of digital health technologies, including wearable devices, mobile health apps, videoconferencing, connected weighing scales, patient portals, and AI-assisted platforms. The growing use of highly effective anti-obesity drugs has increased the need for frequent evaluation of treatment response, dose titration, adverse-effect monitoring, adherence support, and long-term weight-maintenance measures, thereby expanding the potential role of telemedicine. An emerging model, telepharmacotherapy, supports the remote initiation, titration, and monitoring of anti-obesity medications while integrating lifestyle interventions and long-term weight management. Although results vary by intervention intensity, duration, level of clinician involvement, and patient characteristics, the available evidence indicates that telemedicine and e Health interventions can yield clinically meaningful improvements in body weight, body mass index, waist circumference, lifestyle behaviors, and patient engagement. Hybrid models that combine digital technology with frequent communication with medical specialists are particularly interesting. However, the digital gap, data privacy, fragmented care, pharmaceutical safety, regulatory variability, patient attrition, and uncertainty about long-term efficacy and cost-effectiveness remain significant obstacles. With a focus on multidisciplinary care, remote monitoring, behavioral interventions, anti-obesity medications, and new AI-enabled methods, this narrative review examines the development, clinical applications, efficacy, benefits, drawbacks, and future directions of telemedicine in obesity management.

KEYWORDS: Weight management, Anti-obesity drugs, Telemedicine, Telehealth, Digital health, eHealth, Obesity, Telepharmacotherapy.

I. INTRODUCTION

The World Health Organization (WHO) defines obesity as a body mass index (BMI) of 30 or higher. Obesity is the leading cause of many diseases and health conditions that reduce life expectancy and lower quality of life. In the broader sense, obesity is defined as excess body fat or adipose tissue (AT) resulting from excessive nutrient intake and/or decreased energy expenditure, and it remains a universal health concern. Body mass index (BMI), calculated as weight in kg divided by height in m2, is the widely accepted measure to define overweight (BMI 25 to 29.9 kg/m^2) and obesity (BMI 30 kg/m^2).[1,2] Globally, more than 1 billion people are currently living with obesity, and the number of adults affected is projected to reach approximately 1.13 billion by 2030, representing more than a twofold increase from 524 million in 2010.[3]

Obesity has emerged as one of the prime public health problems facing the world today. Therefore, obesity has to become a primary challenge for society as a whole. The 1998 WHO report on global obesity was arguably the first major public document to use the term "epidemic" to refer to obesity. Milestones in recognizing obesity as a disease include declarations by the National Institutes of Health in 1998, the American Obesity Society in 2008, and the American Medical Association (AMA) in 2013. Since 2013, recognition of obesity as a disease has grown, leading to a growing scientific, social, and political interest. Currently, overweight and obesity are the fifth leading risk factor for global deaths. Obesity is one of the most significant chronic illnesses affecting modern healthcare systems. The risks include type 2 diabetes mellitus, hypertension, dyslipidemia, cardiovascular disease, metabolic dysfunction-associated steatotic liver disease, obstructive sleep apnea, osteoarthritis, multiple cancers, and early mortality. These clinical consequences extend well beyond being overweight. Therefore, rather than a short-term strategy focused solely on weight loss, effective obesity therapy requires a chronic illness approach.[4-7]

Current obesity management includes dietary therapy, exercise, lifestyle changes, medication, management of obesity-related issues, and, when necessary, metabolic and bariatric surgery. Pharmacotherapy for obesity includes FDA-approved medications for long-term weight management, including orlistat, phentermine–topiramate, naltrexone–bupropion, liraglutide, semaglutide, tirzepatide, and orforglipron. Orforglipron (Foundayo™), a once-daily non-peptide oral GLP-1 receptor agonist, received FDA approval on April 1, 2026, expanding obesity pharmacotherapy with an oral GLP-1–based treatment option. These medications differ in efficacy, mechanisms of action, dosing, contraindications, and safety profiles. Adverse effects range from common and generally manageable symptoms to uncommon but potentially serious complications, emphasizing the importance of individualized drug selection, appropriate dose titration, and ongoing clinical monitoring. The withdrawal of medications such as Fenfluramine, Dexfenfluramine, Sibutramine, and Rimonabant from the market due to their potential adverse effects has raised reservations about the use of medication in obesity. Nonetheless, delivering comprehensive obesity treatment remains challenging. Patients often require multiple visits and extended follow-up, yet access to obesity specialists, dietitians, mental health professionals, and organized weight-loss programs varies widely by location and cost. The key concept is that weight loss alone is not enough to judge the success of therapy. Follow-up should simultaneously assess efficacy, tolerability, and safety. Monitoring allows clinicians to evaluate weight trajectory, BP/HR, glycemic changes, renal/hepatic status when appropriate, nutritional deficiencies, psychiatric effects, pregnancy risk, and potentially serious complications such as pancreatitis or gallbladder disease. This becomes particularly important with GLP-1–based drugs, because adverse effects are often greatest during dose escalation. For example, orforglipron trials found GI adverse events to be predominantly mild-to-moderate and more prominent during titration.[8-12]

Telemedicine offers a potential solution to many of these obstacles. Generally, telemedicine involves delivering clinical services via telecommunications technologies when the patient and healthcare provider are in different locations. In obesity management, this can include live video consultations, phone counseling, asynchronous messaging, mobile apps, digital tracking of diet and exercise, remote weight checks, wearable devices, and technology-assisted medication management.[13,14]

The COVID-19 pandemic accelerated the use of remote healthcare, and telemedicine has evolved from a temporary stand-in for in-person consultations into a potentially lasting aspect of chronic disease management. Obesity aligns well with this model because effective management requires ongoing behavioral reinforcement, continuous monitoring, treatment adjustments, and prolonged interactions between patients and clinicians rather than periodic clinical visits. Additionally, the development of highly successful anti-obesity medications has established a new role for telemedicine. Remote obesity clinics can offer patient assessment, treatment initiation, dosage adjustments, monitoring of therapeutic responses and side effects, nutritional guidance, and strategies for sustainable weight maintenance. Nonetheless, the rapid growth of commercial telehealth models has also raised concerns about fragmented care, inappropriate prescribing, inadequate clinical evaluation, medication safety, and continuity of care.[15,16]

Thus, the crucial question has shifted from whether obesity treatment can be delivered remotely to how telemedicine can be integrated safely and efficiently into comprehensive, evidence-based obesity care. In obesity care, telepharmacotherapy combines virtual consultations with anti-obesity medications, behavioral interventions, remote physiologic monitoring, electronic prescribing, and asynchronous communication. This model goes beyond simply issuing a prescription online; it provides a structured system through which clinicians can evaluate treatment eligibility, select an appropriate medication, monitor effectiveness and safety, support adherence, and adjust therapy without frequent in-person visits. This review outlines the current evidence on telemedicine in obesity treatment, assesses its key clinical uses and drawbacks, and explores its potential integration with drug therapy, remote patient monitoring, wearable devices, and artificial intelligence, with telepharmacotherapy as an emerging model.

Table 1: Clinical Monitoring of Pharmacological Therapies for Obesity.

Drug	Important potential adverse effects	Monitoring Required
Orlistat	Steatorrhea, oily stools, fecal urgency; ↓ absorption of fat-soluble vitamins A, D, E, K; rare liver injury; oxalate nephropathy	Monitor nutritional status/vitamins, GI tolerance, renal risk in susceptible patients, and drug interactions
Phentermine–topiramate	↑ HR, palpitations, insomnia, anxiety; paresthesia; cognitive impairment; metabolic acidosis; nephrolithiasis; fetal toxicity/teratogenicity	Monitor HR/BP, mood/cognition, bicarbonate/electrolytes and renal function; pregnancy testing is especially important
Naltrexone–bupropion	Nausea, constipation, headache, insomnia; ↑ BP/HR; seizures; neuropsychiatric effects; potential hepatotoxicity	Monitor BP/HR, mood/behavior, seizure risk and hepatic function when clinically indicated; also, important to identify opioid use because naltrexone blocks opioid effects
Liraglutide	Nausea, vomiting, diarrhea; gallbladder disease; pancreatitis; dehydration/AKI; hypoglycemia with insulin/secretagogues; ↑ HR	Monitor GI tolerance, hydration/renal function, glucose when relevant, gallbladder/pancreatitis symptoms and HR
Semaglutide	Similar GLP-1 effects: nausea, vomiting, diarrhea/constipation; gallbladder disease; pancreatitis; dehydration/AKI; hypoglycemia with certain diabetes drugs; possible worsening of diabetic retinopathy in susceptible patients	Monitor during dose escalation, particularly GI symptoms, hydration/renal function and glucose; assess severe abdominal symptoms and retinopathy risk when relevant
Tirzepatide	Nausea, vomiting, diarrhea, constipation; gallbladder disease; pancreatitis; dehydration/AKI; hypoglycemia with insulin/secretagogues	Monitor GI tolerance, hydration/renal function, glucose, and symptoms suggesting pancreatitis or gallbladder disease
Orforglipron	Predominantly GI effects: nausea, vomiting, diarrhea, constipation, dyspepsia, and decreased appetite	Monitoring is particularly important during dose initiation and escalation to assess tolerability, hydration, nutritional intake, and metabolic response

*BP- Blood pressure, HR- Heart rate, AKI- Acute Kidney Injury, GI-Gastrointestinal, GLP-1- Glucagon-like peptide-1

II. METHODOLOGY

This narrative review was conducted through a comprehensive literature search of PubMed/MEDLINE, Scopus, Web of Science, and Google Scholar, covering publications available through August 2026. Search terms comprised combinations of telemedicine, telehealth, digital health, eHealth, obesity, weight management, remote patient monitoring, mobile health, wearable devices, lifestyle intervention, anti-obesity medications, and telepharmacotherapy. Additional relevant studies were identified through manual screening of the reference lists of eligible articles and recent reviews.

Studies published in English from January 2005 through August 2026 were considered for inclusion. Eligible publications included randomized controlled trials, observational studies, systematic reviews, and meta-analyses evaluating telemedicine-based approaches to obesity management, including lifestyle and behavioral interventions, mobile health applications, remote patient monitoring, telepharmacotherapy, hybrid care, and emerging AI-supported interventions. Studies not directly relevant to obesity or telemedicine, conference abstracts without full text, editorials, letters, and duplicate publications were excluded.

Relevant studies were narratively synthesized to evaluate the clinical effectiveness, benefits, limitations, safety considerations, and emerging applications of telemedicine in obesity management. Because this study was designed as a narrative review rather than a systematic review, no formal assessment of study quality or risk of bias was conducted. Particular emphasis was placed on recent evidence, while landmark studies that contributed to the development and evolution of telemedicine-based obesity care were retained.

Evolution of Telemedicine in Obesity Care

The use of technology for weight management predates modern telemedicine. Telephone counseling, text messaging, web-based educational programs, and computerized food diaries were the mainstays of early therapies. These methods eventually evolved into interactive smartphone apps that track physical activity, body weight, sleep, calorie intake, and behavioral goals. Modern telemedicine goes beyond simply providing information. Thanks to the bidirectional connection modern platforms enable between patients and medical experts, clinicians can assess patients' progress and adjust treatment remotely. An important conceptual shift is evident in the evolution from passive educational websites to interactive and personalized platforms: digital technology is becoming more than just a source of information; it is also an infrastructure that enables long-term obesity care. Telemedicine-based obesity interventions can therefore be conceptualized across several levels.[17-19]

1. **Telephone-based interventions**
2. **Video consultations**
3. **Web-based programs**
4. **Mobile health applications**
5. **Remote patient monitoring**
6. **Asynchronous communication**
7. **Telepharmacotherapy**
8. **Hybrid obesity care**
9. **AI-supported care**

These nine approaches represent the primary modalities through which telemedicine can support comprehensive obesity management. Telephone-based interventions provide counseling, education, and follow-up without requiring internet access. Video consultations enable real-time interaction with physicians, dietitians, psychologists, and multidisciplinary teams. Web-based programs deliver structured educational and behavioral weight-management interventions online. Mobile health applications facilitate tracking of diet, physical activity, medication adherence, and body weight. Remote patient monitoring uses connected scales and wearable devices to continuously monitor weight, activity, and other health indicators. Asynchronous communication, including secure messaging and patient portals, allows communication outside scheduled appointments. Telepharmacotherapy enables remote initiation, dose titration, and monitoring of anti-obesity medications. Hybrid obesity care combines necessary in-person assessments with ongoing digital follow-up. Finally, AI-supported care can leverage predictive analytics, automated coaching, personalized recommendations, and clinical decision support systems to enhance individualized obesity management.[20-22]

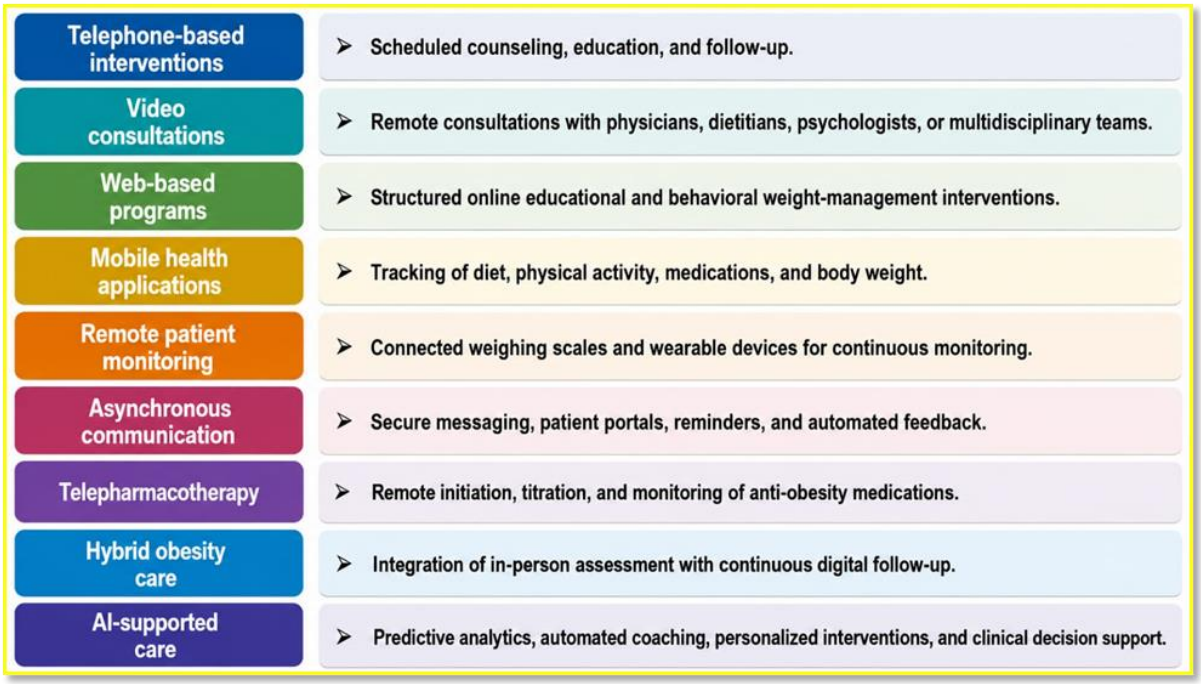

Figure 1: Levels of Telemedicine-Based Obesity Interventions.

Components of Telemedicine-Based Obesity Management

A) Nutritional Intervention

A key element of managing obesity remains dietary change. Telemedicine enables dietitians and other qualified medical specialists to provide customized nutritional assessments, meal planning, calorie or macronutrient recommendations, behavioral therapy, and follow-up without frequent clinic visits. Smartphone apps and digital food diaries can provide more detailed information on eating habits and compliance. Automated nutrient-analysis technology and photographic food records could further reduce reliance on retrospective dietary recall.[23,24]

B) Physical Activity

Smartphones and wearable devices enable objective, continuous monitoring of physical activity in telemedicine-based obesity care. They can track daily steps, activity duration and intensity, sedentary time, heart rate, estimated energy expenditure, and sleep patterns. Compared with self-reported activity, these technologies provide more consistent longitudinal data and allow clinicians to assess progress toward individualized exercise goals. Integrating wearable data into telemedicine consultations helps clinicians identify inactivity, prolonged sedentary behavior, or declining engagement early. This facilitates timely motivational support, adjustment of activity targets, and personalized exercise recommendations, creating a continuous feedback loop among monitoring, clinical review, and behavioral intervention.[25,26]

C) Behavioral Therapy

A key component of long-term obesity treatment is behavioral therapy. Goal-setting, motivational

interviewing, stimulus control, self-monitoring, problem-solving, relapse prevention, and cognitive-behavioral techniques can all be delivered via telemedicine. Crucially, digital interventions shouldn't be seen as a substitute for face-to-face communication. A 2023 systematic review of systematic reviews by Kupila et al. indicates that meaningful human support in eHealth therapies may yield better outcomes than fully automated technologies.[27,28,32]

D) Remote Weight Monitoring

Bluetooth or internet-connected weighing scales enable the automatic transmission of body weight measurements to telemedicine platforms, allowing clinicians to monitor weight trends between scheduled consultations. Unlike measurements obtained only during clinic visits, connected scales provide longitudinal data that can reveal early weight regain, weight-loss plateaus, inadequate treatment response, or unusually rapid weight changes. These trends allow clinicians to intervene promptly by reviewing dietary intake, physical activity, medication adherence, behavioral factors, or pharmacotherapy. Regular remote weight monitoring also improves patient accountability and facilitates individualized goal setting, treatment adjustments, and assessment of the overall effectiveness of obesity-management interventions.[29,30]

Evidence for the Effectiveness of Digital Weight-Management Interventions

Research supporting digital methods for weight management has increased significantly over the past decade. In general, systematic reviews indicate that eHealth and telemedicine programs can produce meaningful improvements in weight-related outcomes, especially when compared with no treatment, waiting-list controls, or minimal-intervention options. Nevertheless, the extent of these benefits varies considerably across studies, as digital interventions differ in factors such as duration, intensity, behavioral components, technology platforms, communication frequency, and the level of involvement from healthcare professionals.[22,31,32]

A 2023 systematic review of systematic reviews by Kupila et al. evaluated the effectiveness of eHealth interventions for weight loss and maintenance in adults with overweight or obesity. The review included 26 systematic reviews encompassing 338 original studies and found that eHealth interventions were generally more effective than no intervention or minimal control conditions and could achieve weight-loss outcomes comparable to conventional or face-to-face approaches. Across the included reviews and comparator conditions, reported differences in weight loss varied considerably. Importantly, intervention characteristics appeared to influence effectiveness. eHealth programs that incorporated professional contact and personalized feedback generally produced better outcomes than those without such support or those relying solely on automated feedback. For example, reviews evaluating personalized feedback from healthcare professionals reported greater weight loss than interventions using no feedback or machine-generated feedback, while web-based interventions incorporating professional contact also outperformed self-help websites. These findings suggest that eHealth interventions may be most effective when digital delivery is complemented by individualized support and behavioral engagement strategies rather than functioning solely as automated self-management tools.[32]

These findings are complemented by a 2024 umbrella review and meta-meta-analysis by Singh et al., which synthesized 47 meta-analyses comprising 507 randomized controlled trials and 206,873 participants. The interventions included eHealth and mHealth approaches targeting physical activity, sedentary behavior, diet, and sleep across diverse populations. Overall, these interventions were associated with a mean body weight reduction of 1.89 kg (95% CI, −2.42 to −1.36 kg). They were also associated with approximately 1,329 additional steps/day, 55 minutes/week of additional moderate-to-vigorous physical activity, and 45 minutes/week of additional total physical activity. Furthermore, the interventions reduced sedentary behavior by approximately 7 hours/week (≈426 minutes/week) and energy intake by 103 kcal/day, while increasing fruit and vegetable consumption by approximately 0.6 servings/day. Collectively, these findings provide broad evidence that eHealth and mHealth interventions can produce modest but clinically relevant improvements across multiple lifestyle behaviors and body weight.[33]

More recent evidence further supports the role of telemedicine in obesity management. A 2025 systematic review and meta-analysis by Colaone et al. evaluated nursing-led telemedicine interventions for adults with overweight or obesity. Compared with traditional approaches, telemedicine nursing interventions were associated with mean reductions of 2.59 kg in body weight (95% CI, −3.09 to −2.08 kg), 1.05 kg/m² in BMI (95% CI, −1.50 to −0.60 kg/m²), and 2.52 cm in waist circumference (95% CI, −2.96 to −2.09 cm). However, the review included only four moderate-quality studies, limiting the certainty and generalizability of the findings. The authors therefore emphasized the need for additional high-quality research to establish the long-term effectiveness of these interventions.[34] Collectively, these results indicate that telemedicine should be viewed primarily as a means of delivering evidence-based obesity treatment rather than as a stand-alone therapy. Its effectiveness depends not only on the technology used but also on the outcomes it delivers—structured behavioral strategies, expert support, tailored feedback, self-tracking, treatment adjustments, and continuous patient involvement.

Table 2: Evidence Supporting Telemedicine and eHealth Interventions for Weight Management.

Study	Evidence base	Key findings	Interpretation
Kupila et al., 2023[32]	Systematic review of 26 systematic reviews; 338 original studies	eHealth interventions were generally more effective than control/no care and broadly comparable to face-to-face care. Weight-loss differences ranged from −0.12 kg (95% CI −0.64 to 0.41) vs face-to-face care to −4.32 kg (95% CI −5.08 to −3.57) vs no care; interventions incorporating human contact generally performed better than fully automated approaches.	E Health is a viable approach to weight management, particularly when professional support and personalized feedback are incorporated.
Singh et al., 2024[33]	Umbrella review/meta-meta-analysis: 47 meta-analyses; 507 RCTs; 206,873 adults	eHealth/mHealth reduced body weight by −1.89 kg (95% CI −2.42 to −1.36), increased steps by +1,329/day and MVPA by +55.1 min/week, and reduced sedentary time by −426.3 min/week.	Large-scale evidence supports eHealth/mHealth for improving body weight and multiple lifestyle behaviors, although populations were not restricted to adults with obesity.
Colaone et al., 2025[34]	Systematic review and meta-analysis of 4 moderate-quality studies	Nursing-led telemedicine reduced weight by −2.59 kg (95% CI −3.09 to −2.08), BMI by −1.05 kg/m² (95% CI −1.50 to −0.60), and waist circumference by −2.52 cm (95% CI −2.96 to −2.09) compared with traditional approaches.	Nursing-led telemedicine can improve short-term anthropometric outcomes, although evidence remains limited and longer-term studies are needed.

*BMI, body mass index; CI, confidence interval; eHealth, electronic health; mHealth, mobile health; MVPA, moderate-to-vigorous physical activity; RCT, randomized controlled trial.

Advantages and Limitations of Telemedicine in Obesity Management

Telemedicine offers numerous benefits for obesity treatment, especially because obesity requires ongoing, multidisciplinary care and consistent follow-up. It expands access to obesity specialists across locations, reduces travel and appointment-related challenges, and provides greater convenience and flexibility. Digital platforms can improve communication between patients and clinicians and enable ongoing monitoring via connected scales, wearable devices, and mobile apps. Telemedicine may facilitate multidisciplinary teamwork, behavioral guidance, medication adherence, and the remote adjustment and tracking of anti-obesity drug treatment. Its scalability could enhance access for rural and underserved communities and might lower some healthcare delivery costs. Some patients might also experience less weight-related stigma when accessing care remotely.[20,21,35,36]

Despite these advantages, significant restrictions persist. The digital divide could limit access for those without reliable internet, appropriate devices, financial means, or sufficient digital skills, potentially exacerbating healthcare inequalities. Sustained engagement may decline due to app fatigue, repeated data entry, overwhelming alerts, or a lack of tailored interaction. Remote consultations also limit physical assessment and may rely on less precise self-reported data. Privacy, cybersecurity, and data management are further concerns, as digital platforms collect sensitive health and behavioral data. Fragmentation may occur when commercial telehealth services operate separately from primary healthcare teams. Ultimately, secure telepharmacotherapy requires appropriate patient selection, screening for contraindications, laboratory evaluations, monitoring for adverse effects, and dosage adjustments. Consequently, telemedicine should enhance rather than entirely replace suitable in-person obesity treatment.[37-39]

Telemedicine and Anti-Obesity Pharmacotherapy: Telepharmacotherapy as an Emerging Model

One of the most important emerging applications of telemedicine in obesity management is the remote delivery and monitoring of pharmacotherapy. Effective anti-obesity treatment requires long-term lifestyle support, dose titration, monitoring of adverse effects and treatment response, and strategies to prevent weight regain.[40,41] Telepharmacotherapy is an emerging model that supports the remote initiation, titration, and monitoring of anti-obesity medications while integrating lifestyle intervention and long-term weight management. During virtual consultations, clinicians can assess obesity severity, comorbidities, previous weight-management attempts, current medications, contraindications, and patient preferences to determine eligibility and select appropriate pharmacotherapy.[42-44]

Telepharmacotherapy can provide a structured pathway from initial assessment to long-term treatment, as shown in Figure 2. The figure outlines a 10-step longitudinal clinical workflow for telepharmacotherapy in obesity management, progressing from initial remote assessment to long-term maintenance therapy. It emphasizes that telepharmacotherapy extends beyond virtual prescribing to include medication selection, titration, safety surveillance, treatment-response assessment, metabolic monitoring, and ongoing lifestyle support.

1. Remote evaluation: The process begins with a structured virtual consultation. Clinicians assess obesity severity and weight trajectory, prior weight-management attempts, obesity-related comorbidities, current medications, dietary and physical activity patterns, relevant psychosocial factors, and patient treatment goals. Home measurements, including body weight, BMI, blood pressure, and heart rate, can supplement the assessment. Laboratory testing and an in-person examination should be arranged when clinically indicated.[43,44,48]

2. Eligibility for treatment: Information from the initial evaluation determines whether pharmacotherapy is appropriate. Clinicians assess BMI and obesity-related complications while screening for contraindications, drug interactions, pregnancy considerations, eating disorders, secondary causes of obesity, and other factors that may influence treatment. Patients with complex comorbidities or potential indications for metabolic and bariatric surgery may require multidisciplinary or in-person evaluation before treatment.[8,9,43,44]

3. Drug selection: Anti-obesity medication is individualized based on expected efficacy, comorbidities, contraindications, prior treatment response, adverse-effect profile, route of administration, patient preferences, affordability, insurance coverage, and medication availability. This individualized approach is particularly important because currently available anti-obesity medications differ substantially in efficacy, safety, dosing, and monitoring requirements.[8,9,43]

4. Patient education: Before prescribing, patients receive counseling on treatment goals, medication administration, expected benefits, dose-escalation schedules, common adverse effects, warning symptoms, adherence, and the importance of continuing dietary, physical-activity, and behavioral interventions. For injectable therapies, virtual demonstrations and pharmacist or nurse support can help ensure proper administration technique.[43,49,50]

5. Treatment initiation: Once eligibility is established and education is completed, pharmacotherapy can be initiated via secure electronic prescribing. Telepharmacotherapy should be integrated into comprehensive obesity management rather than used as an isolated medication treatment. Nutrition counseling, physical activity, behavioral modification, sleep optimization, and management of obesity-related complications should continue throughout therapy.[40-44,49,50]

6. Dose titration: Virtual follow-up is especially useful for medications that require gradual dose escalation, such as GLP-1 receptor agonists and dual GIP/GLP-1 receptor agonists. During titration, clinicians assess adherence, tolerability, appetite and satiety, weight trajectory, and clinical response before advancing the dose. Dose escalation may be delayed, reduced, or modified in response to clinically significant adverse effects.[9,40,42–44]

7. Adverse-effect assessment: Regular virtual encounters and asynchronous communication enable early recognition of medication-related adverse effects. Monitoring is tailored to the selected therapy and may include gastrointestinal symptoms, dehydration, abdominal pain, changes in blood pressure or heart rate, neuropsychiatric symptoms, and hypoglycemia risk in patients receiving concomitant glucose-lowering medications. Significant or persistent adverse effects should prompt dose modification, treatment interruption, medication switching, laboratory testing, or direct clinical assessment.[9,40,42-44,50]

8. Weight monitoring: Serial body-weight measurements provide an objective measure of treatment response and can be transmitted via connected scales, mobile applications, or patient portals, or reported manually from home. Weight trajectory should be interpreted alongside adherence, dose exposure, lifestyle behaviors, tolerability, and, when available, changes in waist circumference or body composition. Inadequate response should prompt reassessment rather than automatic dose escalation.[29,30,40,42,43]

9. Metabolic monitoring: Treatment effectiveness extends beyond weight reduction. Follow-up may therefore include assessments of blood pressure, glycemic indices, lipid profile, hepatic and renal parameters, and changes in obesity-related complications. Laboratory testing should be performed locally or in person as needed. Digital monitoring can facilitate longitudinal assessment, but it does not eliminate the need for conventional investigations and physical examinations when clinically indicated.[9,42-44,47]

10. Maintenance therapy: Patients who demonstrate clinically meaningful benefit with acceptable tolerability transition to long-term maintenance. Follow-up can become less frequent once treatment and weight trajectories stabilize, while continued attention is given to adherence, lifestyle interventions, metabolic outcomes, adverse effects, and prevention of weight regain. Because obesity is a chronic, relapsing disease, effective pharmacotherapy often requires sustained treatment rather than short-term medication use.[9,42,43]

Importantly, multidisciplinary collaboration occurs throughout this pathway rather than as a separate step. Physicians or other authorized prescribers oversee clinical assessment and pharmacotherapy; pharmacists can support medication reconciliation, interaction screening, adherence, injection education, and adverse-effect management; dietitians provide individualized nutritional interventions; behavioral health professionals address eating behaviors and psychological barriers; and nurses, exercise specialists, primary care clinicians, endocrinologists, and bariatric specialists can participate as needed. Shared digital platforms can facilitate

communication and continuity among these professionals. Once treatment is initiated, telemedicine supports regular follow-up to assess weight loss, medication adherence, tolerability, adverse effects, and metabolic outcomes. This approach is particularly valuable for medications requiring gradual dose escalation, including GLP-1 receptor agonists and dual GIP/GLP-1 receptor agonists, for which tolerability and therapeutic response should be reassessed during titration.[43,46-48] However, Telepharmacotherapy should complement, not replace, appropriate in-person medical care. Physical examinations, laboratory testing, and multidisciplinary evaluation remain necessary when clinically indicated. Direct assessment may be particularly important for patients with complex comorbidities, suspected secondary causes of obesity, significant medication-related adverse effects, eating disorders, or potential indications for metabolic and bariatric surgery.[20,49-50]

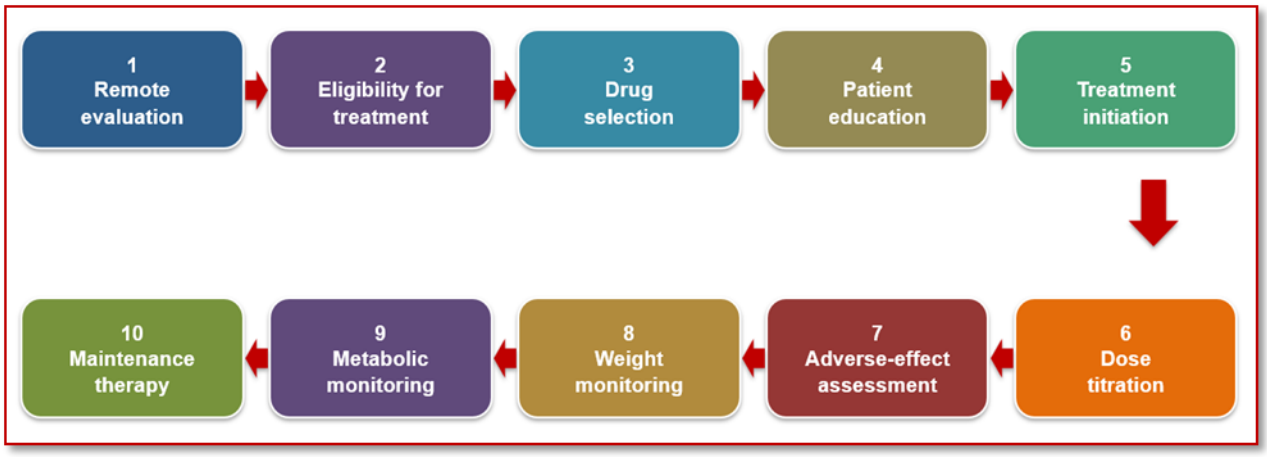

Figure 2: Telepharmacotherapy Pathway for Obesity.

[Figure 2 illustrates how telepharmacotherapy creates a continuous cycle of remote evaluation → treatment eligibility → individualized drug selection → patient education → treatment initiation → dose titration → safety assessment → weight and metabolic monitoring → maintenance therapy. Telepharmacotherapy extends telemedicine beyond virtual prescribing by enabling a longitudinal obesity care model that integrates pharmacological treatment, behavioral support, digital monitoring, and individualized treatment adjustments.]

Artificial Intelligence in Tele-Obesity Care

Artificial intelligence (AI) has the potential to enhance tele-obesity care by integrating data from connected scales, wearable devices, dietary records, medication adherence, laboratory results, sleep patterns, and physical activity. AI-enabled systems may help predict treatment response and weight trajectories, personalize dietary and behavioral interventions, identify poor medication adherence or adverse-effect patterns, and support clinical decision-making.[51–54] Rather than replacing healthcare professionals, AI could automate routine monitoring and help clinicians identify patients who need timely intervention.

Current evidence is promising but remains preliminary. In an observational study of 70 adults, a fully automated conversational AI health coach was associated with a mean weight loss of 2.38% over about 15 weeks, and greater engagement and meal logging were linked to better outcomes.[55] Machine-learning approaches have also been developed to predict dietary lapses during weight-loss treatment.[56] The OnTrack smartphone application extended this concept by using machine learning to anticipate dietary lapses and deliver just-in-time interventions.[57] However, evidence that AI-supported interventions consistently produce greater weight loss than established digital programs remains limited. Reviews of conversational agents similarly suggest potential feasibility and acceptability for weight management, while emphasizing heterogeneity, small study samples, and the need for stronger clinical evidence.[58]

In telepharmacotherapy, AI could integrate weight trajectories, medication adherence, vital signs, glucose measurements, physical activity, and patient-reported adverse effects to identify individuals who require earlier clinical review or treatment adjustment. However, inaccurate recommendations, algorithmic bias, data privacy concerns, unequal digital access, limited transparency, and inadequate representation of culturally diverse dietary practices remain important concerns.[51–54] Therefore, AI should complement rather than replace clinicians. Its most appropriate role is to personalize routine care, detect clinically relevant patterns, and help prioritize patients for intervention while preserving human oversight and clinical judgment.

II. DISCUSSION

The findings of this narrative review indicate that telemedicine is evolving from a convenient alternative to in-person visits into a broader platform for longitudinal obesity management. Digital obesity care now

encompasses nutritional counseling, physical activity monitoring, behavioral interventions, remote weight monitoring, telepharmacotherapy, time-independent communication, hybrid care, and emerging AI-supported approaches. This expansion is particularly relevant because obesity is a chronic, relapsing condition that requires sustained behavioral support, repeated assessments, treatment adjustments, and long-term follow-up.

Available evidence supports the effectiveness of digitally delivered weight- management interventions, though outcomes vary widely by intervention intensity, duration, technology, patient characteristics, and the level of healthcare professional involvement. Importantly, digital interventions appear to perform better when they incorporate human interaction, individualized feedback, self- monitoring, and structured behavioral support, rather than relying entirely on automated systems. For example, a randomized controlled trial by Vaz et al. (2021) demonstrated that an interactive smartphone-based lifestyle intervention can support weight loss by facilitating dietary self-monitoring, physical activity, and behavior modification.[61] Similarly, an umbrella review by Kupila et al. (2023), comprising 26 systematic reviews and 338 original studies, found that eHealth interventions were generally more effective than control or no-care conditions and broadly comparable with face-to-face interventions. The review also reported beneficial effects on weight- related outcomes, including body weight, BMI, and waist circumference, although effectiveness varied by intervention type and level of professional support.[32] Collectively, these findings suggest that digital technologies can serve as effective tools for delivering and supporting evidence-based obesity management, particularly by improving accessibility, self-monitoring, engagement, and continuity of care.[32,59] The growing use of effective anti- obesity medications further underscores the clinical relevance of telemedicine. Telepharmacotherapy can facilitate patient assessment, medication selection, dose titration, adherence assessment, adverse-effect monitoring, and treatment-response evaluation. This is particularly relevant for GLP-1 receptor agonists and dual GIP/GLP-1 receptor agonists, which require progressive dose escalation and ongoing assessment of tolerability and effectiveness. Thus, telemedicine may help shift obesity pharmacotherapy from episodic prescribing to a structured, longitudinal model that integrates medication with behavioral and lifestyle interventions.

Nevertheless, telemedicine should not be considered a complete substitute for conventional clinical care. Digital inequality, declining patient engagement, limitations of remote physical assessment, privacy and cybersecurity concerns, fragmented prescribing, and uncertainty about long-term effectiveness remain significant challenges. Safe telepharmacotherapy also requires appropriate patient selection, identification of contraindications, laboratory assessment when indicated, and timely transition to in-person evaluation.

Future obesity care is therefore likely to be hybrid rather than exclusively virtual or in-person. Integrating connected scales, wearable devices, mobile applications, multidisciplinary virtual care, pharmacotherapy, and appropriate face-to-face assessment could enable a more continuous and individualized treatment model. AI may further strengthen this framework by integrating longitudinal patient data, predicting treatment response, identifying adherence issues or adverse event patterns, and prioritizing patients who require clinician intervention. However, clinical validation, algorithmic bias, transparency, privacy, accountability, and regulatory oversight must be addressed before widespread implementation.

Overall, the evidence suggests that the greatest potential of telemedicine lies not in replacing clinicians but in extending obesity care beyond the traditional clinic visit. A multidisciplinary, human-supported, digitally connected, and pharmacotherapy-integrated model may offer the most practical framework for scalable and sustainable obesity management.

III. CONCLUSION

From a different perspective on clinical communication, telemedicine is emerging as an essential platform for comprehensive obesity management. Existing evidence suggests that well-structured digital interventions can facilitate behavior modification, weight reduction, remote monitoring, and sustained patient engagement. This is particularly true when digital technologies are paired with meaningful engagement from healthcare providers. The case for longitudinal treatment through telemedicine is strengthened by the growing effectiveness and complexity of anti-obesity drugs. In contrast to conventional in-person clinic appointments, remote consultations, wearable devices, mobile apps, connected scales, and asynchronous communication can allow doctors to track treatment responses and provide more frequent, tailored interventions. Nonetheless, telemedicine should not replace comprehensive clinical care. Major challenges persist, including patient drop-off, digital divides, privacy concerns, fragmented prescribing, limitations on remote assessments, and uncertainty about long-term outcomes. Consequently, it is unlikely that obesity treatment will be delivered solely through virtual means or face-to-face interactions in the future. A hybrid, multidisciplinary, data-driven model that combines telemedicine, medication, behavioral intervention, remote monitoring, and appropriate in-person evaluation may represent the most effective strategy for sustainable and scalable obesity management.

Future studies need to identify the digital elements that provide the most significant and lasting advantages, determine which patients are most appropriate for virtual

or hybrid care, examine medication adherence and weight regain, and evaluate impacts on cardiometabolic outcomes and cost-effectiveness. There is a strong need for extensive, practical randomized studies that include long-term tracking and uniform outcomes.

REFERENCES

1. World Health Organization: WHO. (2020, February 21). Obesity. https://www.who.int/health-topics/obesity#tab=tab_1
2. World Health Organization: WHO. (2025, December 8). Obesity and overweight. https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight
3. World Obesity Atlas 2025 | World Obesity Federation. (n.d.). World Obesity Federation. https://www.worldobesity.org/resources/resource-library/world-obesity-atlas-2025?utm_source=chatgpt.com
4. Aronne, L. J. (2002). Classification of obesity and assessment of Obesity-Related health risks. Obesity Research, 10(S12): 105S-115S. https://doi.org/10.1038/oby.2002.203
5. James, W. P. T. (2008). WHO recognition of the global obesity epidemic. International Journal of Obesity, 32(S7): S120–S126. https://doi.org/10.1038/ijo.2008.247
6. Funk, L. M., Jolles, S. A., & Voils, C. I. Obesity as a disease: has the AMA resolution had an impact on how physicians view obesity? Surgery for obesity and related diseases: official journal of the American Society for Bariatric Surgery, 2016; 12(7): 1431–1435. https://doi.org/10.1016/j.soard.2016.05.009
7. Westbury, S., Oyebode, O., van Rens, T. et al. Obesity Stigma: Causes, Consequences, and Potential Solutions. Curr. Obes. Rep., 2023; 12: 10–23. https://doi.org/10.1007/s13679-023-00495-3
8. Steenackers N, Toumassian J, Deleus E, Mertens A, Lannoo M, Pazmino S, van Laar ADE, Van der Schueren B and Vangoitsenhoven R. Pharmacotherapy for obesity: are we ready to select, tailor and combine pharmacotherapy to achieve more ambitious goals? Front. Endocrinol. 2025; 16: 1569468. doi: 10.3389/fendo.2025.1569468
9. Tchang, B. G., Aras, M., Kumar, R. B., & Aronne, L. J. (2026, July 9). Pharmacologic treatment of overweight and obesity in adults. Endotext - NCBI Bookshelf. https://www.ncbi.nlm.nih.gov/books/NBK279038/
10. Jha, N. K., Jha, S. K., Mishra, C., & Pandit, B. R. "Berberine" a traditional Chinese medicine (TCM): an emerging alternative in the management of obesity. In Trinity School Of Medicine, Manipal Tata Medical College, World College Of Medical Science And Research And Hospital, & The University Of The West Indies, IOSR Journal of Dental and Medical Sciences (IOSR-JDMS) 2025; 24(8): 26–38. https://doi.org/10.9790/0853-2408022638
11. Jha, N. K., Shetty, S., Anthony, L., Bruce, L., Manahan, K., & Geisler, J. Effective approaches for obesity prevention and management. IOSR Journal of Dental and Medical Sciences, 2024; 23(11): 01–10. https://doi.org/10.9790/0853-2311080110
12. Joo, J. K., & Lee, K. S. Pharmacotherapy for obesity. Journal of menopausal medicine, 2014; 20(3): 90–96. https://doi.org/10.6118/jmm.2014.20.3.90
13. Haleem, A., Javaid, M., Singh, R. P., & Suman, R. Telemedicine for healthcare: Capabilities, features, barriers, and applications. Sensors international, 2021; 2: 100117. https://doi.org/10.1016/j.sintl.2021.100117
14. Zoubi, M. a. M. A. Enhancing Patients' Health Outcomes through Telehealth and Remote Monitoring: Exploring Influential Factors on Patient Perception and Acceptance. International Journal of Multidisciplinary Comprehensive Research, 2022; 1(1): 33–42. https://doi.org/10.54660/ijmcr.2022.1.1.33-42
15. Jerjes W and Harding D (2024) Telemedicine in the post-COVID era: balancing accessibility, equity, and sustainability in primary healthcare. Front. Digit. Health, 6: 1432871. doi: 10.3389/fdgth.2024.1432871
16. Wahezi, S. E., Kohan, L. R., Spektor, B., Brancolini, S., Emerick, T., Fronterhouse, J. M., Luedi, M. M., Colon, M. A., Kitei, P. M., Anitescu, M., Goeders, N. E., Patil, S., Siddaiah, H., Cornett, E. M., Urman, R. D., & Kaye, A. D. Telemedicine and current clinical practice trends in the COVID-19 pandemic. Best Practice & Research. Clinical Anaesthesiology, 2020; 35(3): 307–319. https://doi.org/10.1016/j.bpa.2020.11.005
17. Shannon, H. H., Joseph, R., Puro, N., & Darrell, E. (2019). Use of Technology in the Management of Obesity: A Literature Review. Perspectives in health information management, 16(Fall), 1c.
18. Kozak, A. T., Buscemi, J., Hawkins, M. A., Wang, M. L., Breland, J. Y., Ross, K. M., & Kommu, A. Technology-based interventions for weight management: current randomized controlled trial evidence and future directions. Journal of behavioral medicine, 2017; 40(1): 99–111. https://doi.org/10.1007/s10865-016-9805-z
19. Khan MK, Liaqat A, Altokhais ZA, Alotaibi BA, Sadiq M, Rehman M, Allana ZA and Tahir HN Smartphones and Web 2.0. interventions for weight management. Front. Digit. Health, 2025; 7: 1497680. doi: 10.3389/fdgth.2025.1497680
20. Ufholz, K., & Bhargava, D. A Review of Telemedicine Interventions for Weight Loss. Current cardiovascular risk reports, 2021; 15(9): 17. https://doi.org/10.1007/s12170-021-00680-w
21. Shariq, K., Siddiqi, T. J., Van Spall, H., Greene, S. J., Fudim, M., DeVore, A. D., Pandey, A., Butler, J., & Khan, M. S. Role of telemedicine in the management of obesity: State-of-the-art review.

Obesity Reviews, 2024; 25(6): e13734. https://doi.org/10.1111/obr.13734
22. Marchesi, G., Rapelli, G., Semonella, M. et al. Digital Mental Health Interventions in Obesity Management: A Systematic Review and Evidence-Based Recommendations. Curr. Obes. Rep., 2026; 15: 59. https://doi.org/10.1007/s13679-026-00735-2
23. Morgan-Bathke, M., Raynor, H. A., Baxter, S. D., Halliday, T. M., Lynch, A., Malik, N., Garay, J. L., & Rozga, M. Medical Nutrition Therapy Interventions Provided by Dietitians for Adult Overweight and Obesity Management: An Academy of Nutrition and Dietetics Evidence-Based Practice Guideline. Journal of the Academy of Nutrition and Dietetics, 2023; 123(3): 520–545.e10. https://doi.org/10.1016/j.jand.2022.11.014
24. Żurawski, T., & Bartosiewicz, A. Dietary and Behavioral Strategies for Weight Loss and Weight Loss Maintenance: A Narrative Review. Nutrients, 2026; 18(1): 12. https://doi.org/10.3390/nu18010012
25. Weizman, Y., Tan, A. M., & Fuss, F. K. The Use of Wearable Devices to Measure Sedentary Behavior during COVID-19: Systematic Review and Future Recommendations. Sensors (Basel, Switzerland), 2023; 23(23): 9449. https://doi.org/10.3390/s23239449
26. Yu, S., Chen, Z., & Wu, X. The Impact of Wearable Devices on Physical Activity for Chronic Disease Patients: Findings from the 2019 Health Information National Trends Survey. International Journal of Environmental Research and Public Health, 2023; 20(1): 887. https://doi.org/10.3390/ijerph20010887
27. Koca, M., Dobbie, L. J., Ciudin, A., & Halil, M. Behaviour therapy for obesity in older adults. European Journal of Internal Medicine, 2024; 130: 3–8. https://doi.org/10.1016/j.ejim.2024.10.022
28. Chamarthi VS, Daley SF. Comprehensive Behavioral Modification and Counseling Strategies for Obesity Management. [Updated 2025 Sep 1]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2026 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK618378/
29. Guangdong Transtek Medical Electronics Co.,Ltd. (2024, November 21). Bluetooth Weight Scales vs. Traditional Scales: Why Telemedicine Providers Prefer the Wireless Option. https://www.transtekcorp.com/bluetooth-weight-scales-vs-traditional-scales-why-telemedicine-providers-prefer-the-wireless-option.html
30. Krukowski, R. A., & Ross, K. M. Measuring Weight with Electronic Scales in Clinical and Research Settings During the Coronavirus Disease 2019 Pandemic. Obesity (Silver Spring, Md.), 2020; 28(7): 1182–1183. https://doi.org/10.1002/oby.22851
31. Protano, C., De Giorgi, A., Valeriani, F., Mazzeo, E., Zanni, S., Cofone, L., D'Ancona, G., Hasnaoui, A., Pindinello, I., Sabato, M., Ubaldi, F., Volpini, V., Spica, V. R., Vitali, M., & Gallè, F. Can Digital Technologies Be Useful for Weight Loss in Individuals with Overweight or Obesity? A Systematic Review. Healthcare, 2024; 12(6): 670. https://doi.org/10.3390/healthcare12060670
32. Kupila, S. K. E., Joki, A., Suojanen, L. U., & Pietiläinen, K. H. The Effectiveness of eHealth Interventions for Weight Loss and Weight Loss Maintenance in Adults with Overweight or Obesity: A Systematic Review of Systematic Reviews. Current obesity reports, 2023; 12(3): 371–394. https://doi.org/10.1007/s13679-023-00515-2
33. Singh, B., Ahmed, M., Staiano, A. E., Gough, C., Petersen, J., Vandelanotte, C., Kracht, C., Huong, C., Yin, Z., Vasiloglou, M. F., Pan, C. C., Short, C. E., Mclaughlin, M., von Klinggraeff, L., Pfledderer, C. D., Moran, L. J., Button, A. M., & Maher, C. A. A systematic umbrella review and meta-meta-analysis of eHealth and mHealth interventions for improving lifestyle behaviours. NPJ digital medicine, 2024; 7(1): 179. https://doi.org/10.1038/s41746-024-01172-y
34. Colaone, E., Belluzzi, E., Pozzuoli, A., Roma, E., Bortolato, E., Biz, C., & Ruggieri, P. Effectiveness of Telemedicine Nursing Interventions in the Management of Overweight and Obesity in Adults: A Systematic Review and Meta-Analysis. Current obesity reports, 2025; 14(1): 63. https://doi.org/10.1007/s13679-025-00655-7
35. Obesity Action Coalition. (2023, December 30). The Future of Telehealth in Obesity Care - Obesity Action Coalition. https://www.obesityaction.org/resources/the-future-of-telehealth-in-obesity-care/
36. Kahan, S., Look, M., & Fitch, A. The benefit of telemedicine in obesity care. Obesity (Silver Spring, Md.), 2022; 30(3): 577–586. https://doi.org/10.1002/oby.23382
37. Saeed, S. A., & Masters, R. M. Disparities in Health Care and the Digital Divide. Current psychiatry reports, 2021; 23(9): 61. https://doi.org/10.1007/s11920-021-01274-4
38. Rydzewski, P. Digital inequality and sustainable development. Problemy Ekorozwoju, 2025; 20(1): 96–108. https://doi.org/10.35784/preko.6691
39. Brand, T., Herrera-Espejel, P.S., Busse, H. (2025). Digital Health Inequality. In: Zeeb, H., Maaß, L., Schultz, T., Haug, U., Pigeot, I., Schüz, B. (eds) Digital Public Health. Springer Series on Epidemiology and Public Health. Springer, Cham. https://doi.org/10.1007/978-3-031-90154-6_12
40. L. J. Heinberg, A. M. Lee, G. D. Foster, et al., " Effectiveness of Telemedicine Prescribing and a Long-Acting Obesity Medication Behavioral Program: A 24-Week Single-Arm Study," Obesity, 2026; 34, no. S1: 18–28: https://doi.org/10.1002/oby.70056.
41. Koo, T. H., Leong, X. B., Ng, J. K., Tan, N. K. B., & Mohamed, M. Emerging Trends in Telehealth and AI-Driven Approaches for Obesity Management: A New Perspective. The Malaysian journal of medical

sciences: MJMS, 2025; 32(1): 26–34. https://doi.org/10.21315/mjms-08-2024-614
42. Ard, J. D., Hong, Y., Foster, G. D., Medcalf, A., Nadolsky, S., & Cardel, M. I. Twelve-month analysis of real-world evidence from a telehealth obesity-treatment provider using antiobesity medications. Obesity, 2024; 32(12): 2246–2254. https://doi.org/10.1002/oby.24169
43. Clark, J. M., Smith, B. J., Juusola, J. L., & Kumar, R. B. Long-Term Weight Loss Outcomes in a Virtual Weight Care Clinic Prescribing a Broad Range of Medications Alongside Behavior Change. Obesity science & practice, 2025; 11(1): e70036. https://doi.org/10.1002/osp4.70036
44. Griebeler, M. L., Butsch, W. S., Rodriguez, P., Lomeli, L., Kampert, M., Makin, V., Alwahab, U. A., Borukh, E., Daigle, E., Bena, J., Pantalone, K. M., & Burguera, B. The use of virtual visits for obesity pharmacotherapy in patients with overweight or obesity compared with in-person encounters. Obesity (Silver Spring, Md.), 2022; 30(11): 2194–2203. https://doi.org/10.1002/oby.23548
45. Moulaei, K., Moulaei, R., Bahaadinbeigy, K., & Bastaminejad, S. Effect of telemedicine interventions on weight loss: A systematic review and meta-analysis. Journal of telemedicine and telecare, 2025; 31(9): 1216–1227. https://doi.org/10.1177/1357633X241273991
46. Uengarporn, N., Maneewong, R. Y., Piriyapokin, N., Nantiwattara, B., Pongpitakdamrong, A., & Kiattimongkol, W. Effectiveness of a Telemedicine-Based Intervention for Childhood Obesity Management: A Randomized Controlled Trial. Information, 2026; 17(4): 359. https://doi.org/10.3390/info17040359
47. Zhang, K., Chen, Y., Wang, P., He, Y., Du, Y., Liang, H., Zhu, W., Long, X., Shi, L., & Zhu, J. Impact of telemedicine on chronic disease patients: An overview of systematic reviews. Intelligent Medicine, 2025; 6(2): 226–233. https://doi.org/10.1016/j.imed.2025.01.002
48. Manouchehr Saljoughian, PharmD, PhD Department of Pharmacy Alta Bates Summit Medical Center Berkeley, California & Manouchehr Saljoughian, PharmD, PhD, Department of Pharmacy,Alta Bates Summit Medical Center, Berkeley, California. (2021, August 12). The Benefits and Limitations of Telehealth. US Pharmacist. https://www.uspharmacist.com/article/the-benefits-and-limitations-of-telehealth
49. Hursman, A., Vang, C., Thooft, T., & Stone, K. The Role of Telepharmacy in the Delivery of Clinical Pharmacy Services Following the COVID-19 Pandemic: A Descriptive Report. The Journal of pharmacy technology: jPT: official publication of the Association of Pharmacy Technicians, 2024; 40(2): 66–71. https://doi.org/10.1177/87551225231222426
50. Poudel, A., & Nissen, L. M. Telepharmacy: a pharmacist's perspective on the clinical benefits and challenges. Integrated pharmacy research & practice, 2016; 5: 75–82. https://doi.org/10.2147/IPRP.S101685
51. Teke, J., Msiska, M., Adanini, O. A., Egbon, E., Osborne, A., & Olawade, D. B. Artificial intelligence for obesity management: A review of applications, opportunities, and challenges. Obesity Medicine, 2025; 58: 100657. https://doi.org/10.1016/j.obmed.2025.100657
52. Amato, A., Baldassano, S., & Musumeci, G. Applying AI Tools for Monitoring Nutrition and Physical Activity in Populations with Obesity: Are We Ready? Obesities, 2026; 6(2): 19. https://doi.org/10.3390/obesities6020019
53. Huang, L., Huhulea, E. N., Abraham, E., Bienenstock, R., Aifuwa, E., Hirani, R., Schulhof, A., Tiwari, R. K., & Etienne, M. The Role of Artificial Intelligence in Obesity Risk Prediction and Management: Approaches, Insights, and Recommendations. Medicina (Kaunas, Lithuania), 2025; 61(2): 358. https://doi.org/10.3390/medicina61020358
54. Stein, N., & Brooks, K. A Fully Automated Conversational Artificial Intelligence for Weight Loss: Longitudinal Observational Study Among Overweight and Obese Adults. JMIR diabetes, 2017; 2(2): e28. https://doi.org/10.2196/diabetes.8590
55. Goldstein, S. P., Zhang, F., Thomas, J. G., Butryn, M. L., Herbert, J. D., & Forman, E. M. Application of Machine Learning to Predict Dietary Lapses During Weight Loss. Journal of diabetes science and technology, 2018; 12(5): 1045–1052. https://doi.org/10.1177/1932296818775757
56. Forman, E. M., Goldstein, S. P., Zhang, F., Evans, B. C., Manasse, S. M., Butryn, M. L., Juarascio, A. S., Abichandani, P., Martin, G. J., & Foster, G. D. OnTrack: development and feasibility of a smartphone app designed to predict and prevent dietary lapses. Translational behavioral medicine, 2019; 9(2): 236–245. https://doi.org/10.1093/tbm/iby016
57. Chew, H. S. J. The Use of Artificial Intelligence–Based Conversational Agents (Chatbots) for Weight loss: Scoping review and Practical recommendations. JMIR Medical Informatics, 2022; 10(4): e32578. https://doi.org/10.2196/32578
58. Noh, E., Won, J., Jo, S., Hahm, D. H., & Lee, H. Conversational Agents for Body Weight Management: Systematic Review. Journal of medical Internet research, 2023; 25: e42238. https://doi.org/10.2196/42238
59. Vaz, C. L., Carnes, N., Pousti, B., Zhao, H., & Williams, K. J. A randomized controlled trial of an innovative, user-friendly, interactive smartphone app-based lifestyle intervention for weight loss. Obesity science & practice, 2021; 7(5): 555–568. https://doi.org/10.1002/osp4.503