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What are community perspectives and experiences around GLP-1 receptor agonist medications for weight loss? A cross-sectional survey study in the UK

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ABSTRACT

Introduction Obesity is a critical public health challenge globally. Glucagon-like peptide-1 receptor agonists (GLP-1RAs) have demonstrated significant efficacy in weight loss; however, their adoption is influenced by various individual and societal factors. This study sought to examine awareness, motivations and barriers to adoption of GLP-1RAs in the UK, with a focus on demographic differences.

Methods A cross-sectional survey of 1297 UK adults was conducted using an electronic questionnaire distributed via social media, online platforms and personal networks. The survey assessed demographic characteristics, awareness, perceptions and use of GLP-1RAs. Data were analysed using $\chi 2$ and Kruskal–Wallis tests. The primary analysis method was ordinal logistic regression, with multinomial logistic regression used to estimate the relative risk ratio (RRR) if the proportional odds assumption was violated. A p-value<0.05 was considered significant.

Results Significantly higher awareness of GLP-1RAs was observed among those attempting weight loss in the past year (85.7% vs 14.3%, p<0.001). Women were more likely to report both awareness (87.2% vs 68.2%, p<0.001) and excellent understanding (20.0% vs 7.5%, p<0.001). Main information sources included news (60.1%) and social media (50.3%). Only 9.0% first learnt about GLP-1RAs from healthcare providers. Past and current users were less likely than non-users to express scepticism about safety and efficacy and 6.91 times more likely to strongly disagree (compared with being neutral) that 'risks outweigh the benefits' (RRR, 6.91; 95% CI, 4.32 to 11.05; p<0.001) and 7.33 times more likely to strongly disagree (relative to being neutral) that 'there is not enough evidence to suggest GLP-1RAs are safe' (RRR, 7.33; 95% CI, 4.05 to 13.27; p<0.001). 91.0% of current or past users indicated they would recommend GLP-1RAs to a friend struggling with weight management.

Conclusion Concerns about safety, cost and potential side effects remain significant barriers to GLP-1RA adoption. Current or past users strongly disagree with statements of scepticism; however, scepticism among non-users highlights the need for improved public education around safety and efficacy.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ The popularity of glucagon-like peptide-1 receptor agonists (GLP-1RAs) for weight management has increased significantly in recent years, as has its presence in mainstream media discourse.

WHAT THIS STUDY ADDS

⇒ Although awareness of these medications is high, concerns about safety, cost and potential side effects remain significant barriers to their adoption. Current and past users generally perceive GLP-1RAs as safe and effective and advocate for wider accessibility, highlighting the importance of equitable access. However, scepticism among non-users highlights the need for improved public education, particularly around safety and efficacy.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ A notable mismatch exists between preconceptions about the safety of GLP-1 RAs, established clinical reality and lived experience of current and past users. Addressing this disconnect is critical to promoting confidence in the use of GLP-1 RAs and informed decision-making.

INTRODUCTION

Obesity poses a critical global public health challenge, with its prevalence steadily increasing. It affects people of all ages, geographies and socioeconomic backgrounds,[1–3] and its causes are multifactorial, encompassing a combination of complex biological, genetic, environmental, economic, social and psychological factors.[4] By 2030, the number of overweight and obese adults worldwide is projected to reach 2.16 and 1.12 billion respectively.[5] Despite its global prevalence approaching epidemic levels, stigma associated with obesity persists, exacerbated by the general public's poor understanding of the disease.[6]

Current obesity prevention and treatment strategies, including lifestyle and behavioural interventions, have limited long-term success due to complex hormonal, metabolic and neurochemical adaptations.[5] However, the advent of potent incretin receptor agonists, particularly mono GLP-1 receptor agonists (GLP-1RAs) such as liraglutide (Saxenda) and semaglutide (Wegovy), and dual agonists of GLP-1 and glucose-dependent insulinotropic polypeptide (GIP) such as tirzepatide (Mounjaro), has marked a new era in obesity treatment. These pharmacotherapies have helped in achieving unprecedented weight loss outcomes of 15%–25% over 70–90 weeks and significantly reduce the risks of obesity-related complications such as type 2 diabetes mellitus (T2DM), cardiovascular disease and mortality.[7–9] The use of GLP-1 receptor agonists among individuals with overweight or obesity (but without diabetes) increased by more than 700% between 2019 and 2023, reflecting a dramatic surge in popularity.[10] However, despite the substantial increase in uptake, barriers to adherence remain.

Given the recent publication of the final draft guidance from the UK National Institute for Health and Care Excellence (NICE) approving tirzepatide as a treatment for obesity,[11] understanding attitudes around GLP-1RAs is critical, as it could help inform strategies to attain fair and effective roll-out. Adherence to pharmacological treatments is influenced by a complex interplay of personal attitudes, social and cultural beliefs, as well as self-efficacy.[12] This growth in GLP-1RA popularity has been accompanied by a notable rise in media coverage, highlighting various aspects of their effectiveness, usability, availability, risks, and costs.[13] Such media attention has undoubtedly influenced patients' knowledge and attitudes toward GLP-1RAs and towards obesity itself.

Self-carers' understanding of obesity and their knowledge of and attitudes towards available management options are critical factors in shaping their treatment decisions.[14] Having concerns about potential adverse effects has been linked to reduced adherence, whereas confidence in a medication's efficacy and trust in healthcare providers has been shown to improve adherence.[15 16] Additionally, the growing emphasis on socio-legal frameworks that promote personal autonomy has further highlighted the importance of incorporating the patient's voice and their preferences in healthcare decision-making.[17] This shift reflects the broader recognition of the patient as an active self-carer and active participant in their health and well-being journey, influencing both treatment choices and outcomes.

This study aimed to explore the knowledge and perceptions of GLP-1RAs among adults in the UK, including factors shaping treatment attitudes and barriers to adoption. It also examined the experiences of current and past users of GLP-1RAs for weight management, focusing on motivations for use and beliefs about benefits, risks and overall health effects.

MATERIALS AND METHODS

A cross-sectional study was conducted among community-dwelling adults in the UK to explore their knowledge, attitudes and perceptions regarding GLP-1 agonist medications for weight loss. The study adopted a quantitative methodology using an electronic survey. Only the quantitative component is reported in this analysis, with the qualitative component to be reported as a separate analysis. The survey used adaptive questioning and comprised a total of 45 questions. The online tool was accessible using a personal computer or smartphone.

Consent and data protection

The Participant Information Sheet included information regarding the study's aims, protection of participants' personal data, their right to withdraw from the study at any time, which data were stored, where and for how long, who the investigator was, purpose of the study and survey length. Participants were informed that this was a voluntary survey without any monetary incentives but were offered the possibility of accessing findings at a later stage. Data collected were stored on a secure database at Imperial College London, and only the research team could access the eSurvey results. All responses were pseudo-anonymised to ensure confidentiality by assigning each respondent a unique study ID. Only the participants' demographic data including age in years, sex, ethnicity, residence, education and employment status were recorded.

Participant recruitment

The link to the electronic survey was published and made available on the Imperial College Qualtrics platform between 10 October and 12 November 2024. The open survey, which used convenience sampling, could be accessed by anyone with a link and took approximately 10 min to complete. Survey participants were recruited through affiliates' mailing lists, such as partnering organisations and community groups; online media channels, such as Meta, X and LinkedIn; and Prolific Academic panel, an online platform where researchers can make their surveys available to participants with specific demographic backgrounds. In addition, researchers' personal and professional networks were mobilised to disseminate the eSurvey.

Electronic survey setup

The survey consisted of a structured questionnaire designed to assess knowledge, attitudes and behaviours around GLP-1 agonist medications for weight loss. The survey comprised a total of 45 items distributed over 26 pages (ranging from 1 to 4 questions on each page). The survey is available to review in online supplemental file 1.

The survey was designed to capture opinions from a diverse cross-section of UK adults. Respondents were able to review their answers before submitting them (through a back button). The usability and technical functioning of the online survey were tested before publishing.

All survey items were conditional and required a response. Respondents were prompted to complete outstanding items before leaving the survey page on which the item was contained. Items were not randomised or alternated, and most items included a 'None of the above/prefer not to say' option. Branching logic was used to prevent questions being shown to participants to which the question would not apply. To minimise the risk of participants from completing the survey more than once, Qualtrics XM places a browser cookie on response submission, barring repeat attempts. Similarly, Prolific uses digital fingerprinting and traps based on individuals' geographical internet protocol (IP) address to enforce single survey completion in sessions from the same Prolific account.

Respondents were not excluded from the survey if they completed the items too quickly; the minimum completed survey was timed at approximately 4 min. Only non-duplicate and completed responses from adults aged 18 or above were included in the analysis dataset.

Data analysis

Medians and IQR were calculated for continuous patient characteristics, and N (%) was calculated for categorical variables. Attitudes and behaviours were examined by age group and awareness of GLP-RAs using $\chi 2$ and Kruskal–Wallis tests. Associations between GLP-RA use and attitudes toward treatment were assessed using crude and adjusted models: initially for each attitude, an ordinal logistic regression (OLR) model was fitted. If the proportional odds assumption was violated (Brant test, $p<0.05$), multinomial logistic regressions were then used as the main analysis to assess the extent of agreement with each statement. Potential confounders (age, sex, body mass index (BMI), employment, education, ethnicity and duration of weight loss) were included in adjusted models. A p-value<0.05 was considered statistically significant.

All analyses were performed using STATA version 18 (StataCorp LP, College Station, TX, USA).[18] The Checklist for Reporting Results of Internet E Surveys was used to guide reporting[19] (online supplemental file 2). The Strengthening the Reporting of Observational studies in Epidemiology cross-sectional checklist was used when authoring our report.[20]

Ethics approval

This study received a favourable opinion from Imperial College Research Ethics Committee (ICREC#7363051). All experimental protocols (online supplemental file 3) were approved by ICREC. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.[21] All participants provided consent by selecting the relevant tick box at the start of the online survey (online supplemental file 4).

Patient and public involvement

No patients were involved. The public were involved as research participants. The study protocol and online survey was developed in collaboration with Menwell Ltd, which included input from a patient and public involvement group and lay members. The survey was reviewed during beta testing to improve usability and wording of questions.

RESULTS

Demographic profile of respondents

4840 potential participants were contacted using affiliate mailing lists and personal and professional networks, and 869 participants were recruited successfully using the Prolific Academic panel. A total of 1453 community-dwelling adults completed the survey, 136 responses were incomplete, 6 did not consent to participation and 14 response sets were duplicates. 1297 responses were included in the analysis (completion rate, 89.2%). Of these, 428 were recruited via mailing lists (response rate, 8.8%). The Prolific platform only collects data on those that access and complete the survey, so an overall response rate is not calculable for this recruitment stream. Complete demographic characteristics of the study participants are displayed in table 1.

The main survey findings are detailed in online supplemental file 5. The median age of the survey respondents was 44.0 (IQR 37.0, 55.0) years, and the median BMI was 28.4 (24.8, 33.7) kg/m^2. Most of the respondents self-identified as White (n=1082, 83.4%), 15.2% identified as non-White (n=196), 80.7% were employed full or part-time and 65.2% had partners or were married. Over a third (35.2%) identified as male, 61.8% as female, 0.3% selected other and 0.3% opted not to disclose.

Nearly two-thirds (61.8%) reported a formal diagnosis of obesity, whereas 73.4% had a BMI of >25 kg/m^2 calculated from height and weight data provided. The most common comorbidities reported included hypertension (34.8%), high cholesterol (20.3%), anxiety (22.4%) and depression (19.8%), and 7.9% self-reported being diagnosed with T2DM.

The characteristics of the study participants who were current or past users of GLP-1RAs are displayed in table 2. Over a third (34.7%) were current users, 8.2% reported prior use, 46.4% indicated they had never used these medications and 10.7% indicated they had never used but were interested in using. Most current users were female (82.5%). Of those using GLP-1RAs, the majority (91.0%) reported using exclusively for weight loss, whereas 1.4% used them solely for managing T2DM, and 7.5% reported using for both purposes. Tirzepatide (Mounjaro) emerged as the most commonly used GLP-1RA. The duration of use varied, with 74.4% of users reporting usage for 0–6 months and 21.7% indicating 6–12 months.

Table 1 Demographics and characteristics of the 1297 study respondents

Characteristic	Total (N=1297)	Characteristic	Total (N=1297)
Sex		Co-morbidity*	
Male	487 (37.5%)	Hypertension	451 (34.8%)
Female	802 (61.8%)	High cholesterol	263 (20.3%)
Other	4 (0.3%)	Obesity	802 (61.8%)
Prefer not to say	4 (0.3%)	Type 2 diabetes mellitus	103 (7.9%)
Age group (years)		Angina	10 (0.8%)
<30	121 (9.6%)	Stroke	7 (0.5%)
31–39	316 (25.0%)	Peripheral artery disease	3 (0.2%)
40–49	362 (28.7%)	Chronic kidney disease	14 (1.1%)
50–59	265 (21.0%)	Heart failure	2 (0.2%)
60+	198 (15.7%)	Depression	257 (19.8%)
Body Mass Index (BMI) Grouping		Anxiety	290 (22.4%)
<25	338 (26.6%)	Other	96 (7.4%)
25–30	405 (31.9%)	Eating disorder*	9 (0.7%)
30+	528 (41.5%)	Anorexia	9 (0.7%)
Ethnicity		Bulimia	15 (1.2%)
Asian	80 (6.2%)	Binge-eating disorder	3 (0.2%)
Black	66 (5.1%)	Avoidant restrictive disorder	3 (0.2%)
Mixed	37 (2.9%)	Pica	0 (0%)
White	1082 (83.4%)	Rumination disorder	8 (0.6%)
Other	13 (1.0%)	Eating habits	
Prefer not to say	19 (1.5%)	Very unhealthy	32 (2.5%)
Education level		Somewhat unhealthy	262 (20.2%)
Primary/secondary	146 (11.3%)	Neither	235 (18.1%)
A levels	350 (27.0%)	Somewhat healthy	697 (53.7%)
Uni +	801 (61.8%)	Very healthy	71 (5.5%)
Marital status		Weight loss goals in last 12 months	
Single	346 (26.7%)	Gain	42 (3.2%)
Married/partnered	845 (65.2%)	Lose	942 (72.6%)
Widowed	26 (2.0%)	Maintain	313 (24.1%)
Divorced	63 (4.9%)	Length of weight loss attempt	
Separated	17 (1.3%)	<1 y	144 (11.1%)
Employment status		1–3	252 (19.4%)
Ful- time employed	805 (62.1%)	3-5 y	152 (11.7%)
Part-time employed	241 (18.6%)	5-10 y	157 (12.1%)
Unemployed	68 (5.2%)	>10 y	432 (33.3%)
Retired	127 (9.8%)	Not trying	160 (12.3%)
Student	21 (1.6%)	GLP-1RA usage†	
Prefer not to say	35 (2.7%)	Yes current	359 (34.7%)
Heard of GLP-1RA		Yes past	85 (8.2%)
No	261 (20.12%)	No, thinking	111 (10.7%)
Yes	1036 (79.9%)	Never	481 (46.4%)

*Multiple choice question (any unit of interest is the number of answers and not the number of respondents).
†Follow-up questions for those who answered, 'Yes, I am currently using them' or 'Yes, I used them in the past', to the question, 'Do you have experience with GLP-1RA medications such as exenatide (Byetta), liraglutide (Saxenda), semaglutide (Ozempic and Wegovy) and tirzepatide (Mounjaro)?'

Table 2 Characteristics of GLP-1RA use among current users (n=359) or have used previously (n=85)

GLP-1RA use status	Current	Past
Total	**n=359**	**n=85**
GLP-1RA used		
Liraglutide	2 (0.6%)	3 (3.5%)
Exenatide	2 (0.6%)	2 (2.4%)
Semaglutide	54 (15.0%)	33 (38.8%)
Tirzepatide	301 (83.8%)	47 (55.3%)
GLP-1RA usage length		
<3 months	74 (20.6%)	31 (36.5%)
3–6 months	193 (53.8%)	43 (50.6%)
6–12 months	78 (21.7%)	8 (9.4%)
1–2 years	9 (2.5%)	2 (2.4%)
>2 years	5 (1.4%)	1 (1.2%)
Reason for using GLP-1RA		
Diabetes mellitus	5 (1.4%)	4 (4.7%)
Weight loss	327 (91.1%)	77 (90.6%)
Both	27 (7.5%)	4 (4.7%)
Healthcare access		
NHS	188 (52.4%)	58 (68.2%)
Private	31 (4.7%)	4 (4.7%)
Both	140 (39.0%)	23 (27.1%)

GLP-1RA, glucagon-like peptide-1 receptor agonist; NHS, National Health Service.

Knowledge

Levels of understanding and agreement with statements regarding selected knowledge topics, attitudes and weight loss behaviours among respondent stratified by GLP-1RA usage category are displayed in table 3. Most (79.9%) reported being aware of GLP-1RAs, whereas awareness was significantly higher among those reporting trying to lose weight in the last 12 months than among those who were not (85.7% vs 14.3%, p<0.001). From this majority, only 16.0% rated their understanding of how GLP-1RAs work for weight loss as excellent (rated 5 out of 5) or good (24.8%), whereas 11.0% reported a very poor understanding. When asked about how GLP-1RAs work for weight loss, 65.8% of the participants selected three out of the possible six mechanisms of action listed. Semaglutide and tirzepatide were the most well-known GLP-1RAs (known to 71.9% and 49.1% of respondents, respectively). Current and past users were more likely to have excellent knowledge of how GLP-1RAs worked than individuals who had never used (33.4% vs 28.2% vs 2.9%, p<0.001). Women were also both more likely to have heard of GLP-1RAs than men (87.2% vs 68.2%, p<0.001) and to report an excellent understanding of how the medication worked (20.0% vs 7.5%, p<0.001). The most common source of information for individuals who had heard about GLP-1RAs was the news (60.1%), followed by social media (50.3%) and friends and family (28.5%). Only 9.0% reported having first heard about GLP-1RAs from their healthcare provider. Women were more likely to have first heard about GLP-1RAs from social media than men (59.9% vs 34.9%, p<0.001).

Attitudes

More than a third (33.8%) of the respondents believed that a balanced diet was the best method to achieve weight loss, followed by physical activity (21.8%) and prescription weight loss medications (15.0%). Women were more likely to believe that prescription weight loss medications were the most effective method than men (21.3% vs 4.9%, p<0.001). Conversely, more men reported that physical activity is the most effective means of weight loss than women (31% vs 16%, p<0.001). Current users were more likely to report that prescription weight loss medications were the best method than non-users (41.5% vs 7.6%, p<0.001). Non-users were more likely to report that a balanced diet is the best method than current users (40.5% vs 22.3%, p<0.001).

When asked about their main motivations for managing their weight, 87.9% emphasised wanting to 'improve their overall health', 81.7% selected 'looking and feeling better' and 80.3% identified 'enhancing mood and well-being' as very to extremely important. Other key motivators included being more active (77.9%), improving sleep and energy levels (72.9%) and avoiding or managing specific health conditions (59.6%). Compared with men, women were more likely to report improvements in every domain as an extremely important motivator.

The most frequently reported obstacle to weight loss was difficulty maintaining consistency (66.9%), followed by loss of motivation (52.9%) and struggles with weight regain (44.6%). Additional barriers reported included lack of time (33.8%), financial constraints (13.7%) and uncertainty about how to approach weight loss (5.9%). Women were more likely to report not having enough time as a barrier to weight loss than men (36.9% vs 28.7%, p<0.001).

Barriers and motivators to GLP-1RA use

The factors influencing individuals' decisions to start GLP-1RA use most ranked as very and extremely important were understanding the side effects they may experience (80.5%), effectiveness of the medication for weight loss (79.3%), fully understanding the benefits of using the medication (75.8%) and using them as a tool to help people stay consistent (67.4%). Non-White respondents were more likely than White respondents to consider support from family and friends (very important, 28.4% vs 21.1%; extremely important, 15.3% vs 11.4%; p=0.019) and from their general practitioner (very important, 38.1% vs 28.4%; extremely important, 22.8% vs 19.1%; p=0.001) as key factors in deciding to start medication. Barriers to seeking out GLP-1RAs included safety (67.1%), risk of side effects (65.2%), risk of weight gain after stopping the medication (65.4%) and the medication being

Table 3 Levels of understanding and agreement with statements regarding selected knowledge topics, attitudes and weight loss behaviours among respondents, stratified by GLP-1RA usage category

	GLP-1RA usage				
	Current user	Past user	Not used but interested	Never used	
n	359	85	111	481	P value ‡
Sources of information regarding GLP-1RA*†					
Healthcare provider	82 (22.8%)	12 (14.1%)	11 (9.9%)	12 (2.5%)	<0.001
In the news	258 (71.9%)	63 (74.1%)	81 (72.9%)	377 (78.4%)	0.165
Social media	254 (70.8%)	54 (63.6%)	81 (72.9%)	263 (54.7%)	<0.001
Online forum	155 (43.2%)	28 (32.9%)	36 (32.4%)	57 (11.9%)	<0.001
Literature	106 (29.5%)	18 (21.2%)	12 (10.8%)	39 (8.1%)	<0.001
Friends/family	168 (46.8%)	34 (40.0%)	39 (35.1%)	129 (26.8%)	<0.001
Total number of weight loss methods tried					<0.001
0	5 (1.4%)	5 (5.9%)	13 (11.7%)	206 (42.8%)	
1	7 (1.9%)	1 (1.2%)	3 (2.7%)	14 (2.9%)	
2	27 (7.5%)	5 (5.9%)	20 (18.0%)	67 (13.9%)	
3	54 (15.0%)	14 (16.5%)	31 (27.9%)	105 (21.8%)	
Tried 3+ weight loss methods	320 (89.1%)	74 (87.1%)	75 (67.6%)	194 (40.3%)	
Perceived most effective weight loss method					<0.001
Physical activity	41 (11.4%)	8 (9.4%)	25 (22.5%)	124 (25.8%)	
Balanced diet	80 (22.3%)	20 (23.5%)	37 (33.3%)	195 (40.5%)	
Calorie counting	33 (9.2%)	9 (10.6%)	22 (19.8%)	94 (19.5%)	
Intermittent fasting	10 (2.8%)	2 (2.3%)	10 (9.0%)	14 (2.9%)	
Mindful eating	8 (2.2%)	4 (4.7%)	0 (0.0%)	26 (5.4%)	
Weight loss supplements	1 (<0.1%)	1 (1.2%)	0 (0.0%)	1 (0.2%)	
Prescription weight loss medication	149 (41.5%)	35 (41.2%)	8 (7.2%)	2 (0.4%)	
Healthcare professional support	10 (2.8%)	3 (3.5%)	2 (1.8%)	6 (1.2%)	
Surgery	7 (1.9%)	3 (3.5%)	4 (3.6%)	2 (0.4%)	
Challenges to losing weight†					
Lose motivation	214 (59.6%)	42 (49.4%)	71 (64.0%)	231 (48.0%)	0.001
Difficult to be consistent	252 (70.2%)	53 (62.4%)	83 (74.8%)	320 (66.5%)	0.184
Not enough time	155 (43.2%)	33 (38.8%)	45 (40.5%)	126 (26.2%)	<0.001
Regain weight	243 (67.7%)	53 (62.4%)	61 (55.0%)	150 (31.2%)	<0.001
Unsure of how	22 (6.1%)	5 (5.9%)	10 (9.0%)	21 (4.4%)	0.258
Finances	49 (13.6%)	20 (23.5%)	27 (24.3%)	47 (9.8%)	<0.001
Importance in managing one's weight: looking/feeling better					<0.001
Not at all important	0 (0.0%)	0 (0.0%)	0 (0.0%)	9 (1.8%)	
Slightly important	11 (3.1%)	0 (0.0%)	6 (5.4%)	19 (4.0%)	
Moderately important	30 (8.4%)	7 (8.2%)	11 (9.9%)	79 (16.4%)	
Very important	133 (37.0%)	36 (424%)	48 (43.2%)	204 (42.4%)	
Extremely important	185 (51.5%)	42 (49.4%)	46 (41.4%)	170 (35.3%)	
Importance of barriers to starting GLP-1RAs: concerns about safety					<0.001
Not at all important	18 (5.0%)	9 (10.6%)	3 (2.7%)	21 (4.4%)	
Slightly important	69 (19.2%)	11 (12.9%)	15 (13.5%)	19 (4.0%)	
Moderately important	121 (33.7%)	23 (27.1%)	20 (18.0%)	43 (8.9%)	
Very important	112 (31.2%)	29 (34.1%)	42 (37.8%)	188 (39.1%)	
Extremely important	39 (10.9%)	13 (15.3%)	31 (27.9%)	210 (43.7%)	

Continued

Table 3 Continued

	GLP-1RA usage				
	Current user	Past user	Not used but interested	Never used	
n	359	85	111	481	P value ‡
Decision to start using GLP-1RAs: concerns it might worsen other health issues I have					<0.001
Not at all important	87 (24.2%)	14 (16.5%)	19 (17.1%)	51 (10.6%)	
Slightly important	67 (18.7%)	12 (14.1%)	22 (19.8%)	45 (9.4%)	
Moderately important	103 (28.7%)	26 (30.6%)	18 (16.2%)	87 (18.1%)	
Very important	74 (20.6%)	22 (25.9%)	30 (27.0%)	157 (32.6%)	
Extremely important	28 (7.8%)	11 (12.9%)	22 (19.8%)	141 (29.3%)	
Importance in decisions to start using GLP-1RAs: my GP's recommendation or support					<0.001
Not at all important	132 (37%)	27 (32%)	5 (5%)	41 (9%)	
Slightly important	59 (16.4%)	10 (11.8%)	13 (11.7%)	42 (8.7%)	
Moderately important	71 (19.8%)	10 (11.8%)	29 (26.1%)	125 (26.0%)	
Very important	62 (17.3%)	25 (29.4%)	42 (37.8%)	161 (33.5%)	
Extremely important	35 (9.7%)	13 (15.3%)	22 (19.8%)	112 (23.3%)	
Would not try GLP-1RAs due to the following side effects†					
Nausea	69 (19.2%)	25 (24.9%)	42 (37.8%)	325 (67.6%)	<0.001
Vomiting	64 (17.8%)	29 (34.1%)	60 (54.1%)	354 (73.6%)	<0.001
Loose stools	14 (3.9%)	11 (12.9%)	30 (27.0%)	218 (45.3%)	<0.001
Difficulty opening bowels (constipation)	28 (7.8%)	19 (22.4%)	36 (32.4%)	288 (59.9%)	<0.001
Loss of appetite	5 (1.4%)	4 (4.7%)	6 (5.4%)	100 (20.7%)	<0.001
Changes to face appearance due to rapid weight loss	28 (7.8%)	9 (10.6%)	17 (15.3%)	165 (34.3%)	<0.001
Inflammation of the pancreas (pancreatitis)	256 (71.3%)	52 (61.2%)	79 (71.2%)	397 (82.5%)	<0.001
Slowed emptying of the stomach	11 (3.1%)	3 (3.5%)	16 (14.4%)	156 (32.4%)	<0.001
Blockage of the big intestine	224 (62.4%)	46 (54.1%)	77 (69.4%)	380 (79.0%)	<0.001
Allergic reactions at the injection site	62 (17.3%)	16 (18.8%)	46 (41.4%)	282 (58.6%)	<0.001
Importance in decision to start using GLP-1RA: risk of side effects					<0.001
Not at all important	17 (4.7%)	5 (5.9%)	1 (0.9%)	12 (2.5%)	
Slightly important	75 (218.9%)	19 (22.4%)	18 (16.2%)	19 (4.0%)	
Moderately important	141 (39.3%)	24 (28.2%)	23 (20.7%)	44 (9.1%)	
Very important	100 (27.9%)	24 (28.2%)	43 (38.7%)	192 (39.9%)	
Extremely important	26 (7.2%)	13 (15.3%)	26 (23.4%)	214 (44.4%)	

*Follow-up questions for those who answered, 'Yes, I am currently using them' or 'Yes, I used them in the past', to question, 'Do you have experience with GLP-1RA medications such as exenatide (Byetta), liraglutide (Saxenda), semaglutide (Ozempic and Wegovy) and tirzepatide (Mounjaro)?'
†Multiple choice question (any unit of interest is the number of answers and not the number of respondents).
‡p value refers to the χ^2 test or Fisher's exact test for categorical variables, or the Kruskal–Wallis test for continuous variables.
GLP-1RA, glucagon-like peptide-1 receptor agonist ; GP, general practitioner.

too expensive (62.4%). The two possible side effects that would most prevent individuals from trying GLP-1RAs were pancreatitis (74.9%) and intestinal obstruction (70.2%).

A minority (7.9%) strongly believed that GLP-1RAs represented 'an easy fix for weight loss', with 31.2% somewhat agreeing and 10.9% strongly disagreeing with this statement. Opinions on the risk–benefit profile of GLP-1RAs are similarly varied, as 11.0% strongly believe the 'risks outweigh the benefits', whereas 37.7% remain neutral, and 12.2% strongly disagree. 4.3% strongly advocated for making GLP-1RAs 'available to everyone irrespective of BMI', whereas 38.2% strongly disagreed with this sentiment.

Levels of understanding and agreement with statements regarding selected knowledge topics, attitudes and weight loss are shown in table 3. Attitudes towards statements of scepticism around GLP-1RAs differed between users and non-users.

Table 4 Crude and adjusted results from ordinal (OLR) or multinomial logistic regression (MLR) models of attitudes around GLP-1RA use among GLP-1RA users in comparison with non-users*

Attitude towards GLP-1RA		Crude			Adjusted†		
		OR from OLR	95% CI	P value	OR from OLR	95% CI	P value
There is not enough evidence to suggest GLP-1RA are safe‡		0.15	0.11 to 0.19	<0.0001	0.14	0.11 to 0.18	<0.0001
	Level of agreement	Relative risk ratio from MLR	95% CI	P value	Relative risk ratio from MLR	95% CI	P value
There is not enough evidence to suggest GLP-1RA are safe‡	Neutral	1 (Ref)			1 (Ref)		
	Strongly Disagree	6.92	3.99, 12.03	<0.0001	7.33	4.05, 13.27	<0.0001
	Disagree	3.39	2.37 to 4.84	<0.0001	3.3	2.23 to 4.88	<0.0001
	Agree	0.33	0.23 to 0.48	<0.0001	0.35	0.23 to 0.52	<0.0001
	Strongly agree	0.18	0.09 to 0.36	<0.0001	0.15	0.08 to 0.31	<0.0001
GLP-1RA risks outweigh their benefits	Neutral	1 (Ref)			1 (Ref)		
	Strongly disagree	7.69	4.99 to 11.87	<0.0001	6.91	4.32 to 11.05	<0.0001
	Disagree	2.69	1.86 to 3.89	<0.0001	2.31	1.55 to 3.43	<0.0001
	Agree	1.59	1.09 to 2.30	0.015	1.32	0.89 to 1.97	0.17
	Strongly agree	4.51	2.92 to 6.96	<0.0001	4.26	2.64 to 6.87	<0.0001
GLP-1RAs are an easy fix to weight loss	Neutral	1 (Ref)			1 (Ref)		
	Strongly disagree	1.57	1.0 to 2.46	0.05	1.26	0.77 to 2.05	0.36
	Disagree	1.36	0.93 to 1.97	0.112	1.26	0.84 to 1.90	0.27
	Agree	1.01	0.71 to 1.45	0.942	1.01	0.68 to 1.49	0.06
	Strongly agree	2.64	1.60 to 4.38	<0.0001	3.51	1.99 to 6.17	<0.0001

ORs are exponentiated coefficients from an OLR model. RRRs are exponentiated coefficients from an MLR model.
*GLP-1RA users are either active or past users; non-users are those who have never used but are interested in using in the future or are never users.
†Adjusted for age, sex, body mass index, employment, education, ethnicity and duration of weight loss.
‡This statement was analysed first using OLR; it was analysed with an MLR model as well for comparison with the results for models for other statements. In the OLR model, the reference group included GLP-1RA non-users, and the 1–5 Likert scale (5=strongly agree, 1 was the base category) was used.
GLP-1RAs, glucagon-like peptide-1 receptor agonists ; MLR, multiple logistic regression; OLR, ordinal logistic regression.

Online supplemental file 6 summarises the results of assumptions tests for each OLR model. The proportional odds assumption was violated for models (p<0.0001) for all statements other than 'there is not enough evidence to suggest GLP-1RA are safe'. For this statement, the OLR-estimated OR was 0.15 (95% CI 0.11 to 0.18), that is, GLP-1RA users were significantly less likely than non-users to be in higher levels of agreement that there is insufficient evidence for the safety of these medications. Adjusted models illustrated in table 4 indicated that past and current GLP-1RA users were 6.91 times more likely to strongly disagree (relative to being neutral) that the 'risks outweigh the benefits' than non-users (relative risk ratio (RRR), 6.91; 95% CI, 4.32 to 11.05; p<0.0001). Current and past users were also 4.26 times more likely to strongly agree (relative to being neutral) with this statement (RRR, 4.26; 95% CI, 2.64 to 6.87; p<0.0001) and were 7.33 times more likely to strongly disagree (relative to being neutral) that 'there is not enough evidence to suggest GLP-1RAs are safe' (RRR, 7.33; 95% CI, 4.05 to 13.27; p<0.0001).

Regarding prevailing attitudes, GLP-1RA users were 3.51 times more likely to strongly agree (relative to being neutral) with the statement 'GLP-1RAs are an easy fix for weight loss' (RRR, 3.51; 95% CI, 1.99 to 6.17; p<0.0001). Additionally, current and past users were 3.98 times more likely to agree (relative to being neutral) that they 'should be made widely available to everyone, regardless of their BMI' (RRR, 3.98; 95% CI, 2.85 to 8.57; p<0.0001), and 5.66 times more likely to feel (relative to being neutral) that 'people who cannot access or afford' GLP-1RAs 'will be worse off' (RRR, 5.66; 95% CI, 3.65 to 8.79; p<0.0001).

Behaviours

Nearly three-quarters (72.6%) reported that they had been trying to lose weight in the last 12 months, with 76.5% of this group having tried to lose weight for ≥1 year, and 33.3% having tried to lose weight for ≥10 years (table 1). GLP-1RA users were more likely to have been trying to lose weight for ≥10 years than non-users (56.0% vs 22.9%, p<0.001). Of those trying to lose weight, 57.1% had tried three or more different methods, the

most common being physical activity (61.6%), adopting a balanced diet (57.6%) and calorie counting (52.7%) (table 2). The mean number of weight loss methods tried was 2.8 (SD=2.26). Current (89.1%) and past (87.1%) users of GLP-1RAs were more likely to have tried three or more weight loss methods than those who had never used GLP-1RAs (40.3%, p<0.001).

When asked about seeking further information about GLP-1RAs, most respondents indicated they would consult a doctor or healthcare provider (70.9%) or visit medical websites (64.7%) (table 2). Additional sources of information included patient education materials from drug manufacturers (29.7%), pharmacists (28.7%) and online patient support groups (26.8%). Fewer respondents cited social media/blogs (26.1%) or friends and family (24.5%) as preferred sources. Men were more likely to talk to a doctor or their healthcare provider to learn more about GLP1-RAs than women (79.9% vs 65.2%, p<0.001). Non-White respondents were more likely to consult with a pharmacist to learn more (40.5% vs 26.3%, p<0.001).

Regarding willingness to pay for GLP-1RAs privately, 34.2% would 'definitely not' pay, 19.7% indicated they would 'probably not' pay and 13.4% and 21.4% stated they would 'probably yes' and 'definitely yes' respectively. Women were more likely to report willingness to pay than men (44.6% vs 18.7%, p<0.001). When asked about their likelihood of using GLP-1RAs if the medication were free, 26.9% said they would still not use them, 26.9% were uncertain and 46.3% expressed willingness to use them. Notably, 91.0% of the respondents indicated they would recommend GLP-1RAs to a friend struggling with weight.

DISCUSSION

Summary of key findings

This study analysed data collected from 1297 UK adults aged 18–86 years. The findings indicate that concerns about the safety profile and potential side effects of GLP-1RAs were the primary barriers preventing non-users from initiating treatment. Similarly, confidence in understanding the side effects they might experience was ranked as an extremely important factor in influencing decision to initiate treatment. 91.0% of the current users reported that they would recommend GLP-1RAs to a friend struggling with weight management. Therefore, despite the initial scepticism regarding safety and side effects among non-users, users generally perceived it as effective and trustworthy, demonstrating sufficient confidence in its benefits to endorse it to others.

Regression analyses demonstrated that current and past users strongly disagreed with statements expressing scepticism about risks and/or the lack of evidence and concerns regarding accessibility, indicating that individuals with lived experience of GLP-1 RAs generally have positive perceptions of their use. This perspective was further emphasised by their strong agreement with statements advocating for the widespread availability of these pharmacotherapies and the belief that individuals unable to access this class of medication would be at a disadvantage. Again, this suggests that users may value equitable access, likely influenced by their positive experiences. In contrast, non-users may likely remain sceptical or unaware of the evidence supporting the safe and effective use of GLP-1RAs for weight loss, potentially due to limited exposure to reliable information, susceptibility to misinformation on social media, or a general mistrust of new treatments and medications.

Interestingly, current and past users exhibited polarised views on whether the risks of GLP-1-RAs outweigh their benefits, with regression analyses indicating a higher likelihood of both strong agreement and strong disagreement with this statement. These divergent perspectives may stem from individual variations in experiences with GLP-1RA use, including differences in side effects, unmet expectations or a lack of understanding about their mechanism of action, which could lead to unrealistic expectations. Conversely, some users may have experienced positive and transformative outcomes, further contributing to the polarisation.

Study findings highlight significant sex and ethnic differences in awareness, attitudes and behaviours related to information-seeking about GLP-1RAs. Social media and news outlets emerged as prominent sources of both initial exposure and continued learning about GLP-1RAs, particularly for women, whereas respondents of White ethnicity more commonly relied on social media and news sources. In contrast, respondents of non-White ethnicity were more likely to have learnt about GLP-1RAs through healthcare providers and placed greater emphasis on familial and professional support for gathering information and making decisions. These findings highlight the complex interplay of demographic factors in shaping trusted sources of health information, particularly in the context of weight loss and chronic disease management. They also shine a spotlight on the importance of social media and mainstream media as potentially unreliable sources of health information in the contemporary setting.

Comparison with existing literature

A cross-sectional survey with a much smaller sample size conducted in Jordan, which examined knowledge and attitudes toward GLP-1RAs for weight loss, echoed our findings that knowledge was positively associated with the female sex and GLP-1RA use.[20] However, they found neutral perceptions of their effectiveness and safety, contrasting with our findings.[22] This discrepancy may arise from a combination of differences in societal, biological and marketing factors between the UK and Jordan. Societal pressures on women's body image, aggressive targeting by the weight loss industry and natural transitions such as menopause—which predispose women to weight gain—make them more likely to engage with content about weight loss medications. Further, women are generally over-represented in pharmacological weight

loss trials, potentially resulting in more accessible information about the effects of these drugs on women.[23 24]

An analysis of over 390 000 Reddit discussions using a large-language model identified key themes in public discourse around GLP-1RAs, including personal weight loss experiences, comparisons of side effects across GLP-1RAs and alternative therapies, challenges with access and supply and the psychological benefits of successful weight loss.[25] The sentiment was concluded to be neutral to positive but conflicted with another analysis of social media posts specifically about semaglutide for weight loss where a neutral to negative sentiment prevailed.[26] These findings highlight growing public engagement with GLP-1RAs and a desire to share and learn from others' experiences. While sentiment was not directly assessed in our qualitative study with data collected through surveys with pre-selected choice response options, the higher likelihood of GLP-1RA users to disagree with sceptical statements suggests generally positive attitudes, contrasting with non-users who were more likely to agree with such statements. We intend to explore this further in our qualitative study with UK participants.

Our findings align with existing literature indicating a higher prevalence of GLP-1RA use among women.[27 28] However, much of the prior research has focused on GLP-1RAs prescribed for T2DM rather than exclusively for weight loss. Although our results showed no significant differences in GLP-1RA use between White and non-White ethnic groups, a previous study documented notable disparities. For example, Asian patients in the USA had the lowest rates of GLP-1RA use and >40% lower odds of receiving a prescription when these medications are used to treat T2DM.[28] Similarly, a study examining racial differences in prescribing GLP-1 RAs for weight loss (specifically tirzepatide, semaglutide and dulaglutide) reported significant disparities between White and non-White populations.[29] These inequities were attributed to biases in care delivery and systemic barriers to healthcare access.[30 31] Despite these disparities not being evident in our findings, it is plausible that these biases also affect the use of GLP-1RAs for weight loss. Individual attitudes and beliefs about these medications may further compound these challenges, potentially limiting equitable access and usage across demographic groups. Future research should explore these dynamics to better understand and address the underlying drivers of such disparities.

Implications for policy, practice and research

A notable mismatch exists between preconceptions about the safety of GLP-1RAs, the established clinical reality and the lived experience of current and past users. These medications have been widely used for years in the management of T2DM, with a well-characterised safety profile.[32 33] Although their recent repurposing for weight loss represents a shift in indication, it does not fundamentally alter their safety profile. Despite this, scepticism and apprehension about their use for weight loss have emerged, raising questions about the root causes of these concerns. This hesitancy may stem from a lack of public awareness about the continuity in safety data, coupled with the novelty of their weight loss indication, misinformation on social media and general wariness towards new or rebranded treatments. Addressing this disconnect is critical to promoting confidence in the use of GLP-1RAs and informed decision-making. The recent release of the final draft guidance from NICE approving tirzepatide for obesity treatment highlights the importance of understanding perceptions and attitudes toward GLP-1RAs. In this regard, the findings of this study are timely, as they could help inform the approach of equitable and effective implementation strategies to support the self-care and weight management journey of a large number of community-dwelling adults who may be overburdened with obesity and related factors. Such an understanding may also help identify and address misconceptions, improve patient–provider communication and inform policies to ensure sustained engagement.

Collaborating with trusted healthcare organisations, medical professionals and regulatory bodies to disseminate accurate, evidence-based content can help counteract misconceptions and build trust among users. Additionally, targeted educational initiatives are essential to improve public understanding of the safety and efficacy of GLP-1RAs. These initiatives could include clear, accessible explanations of their mechanisms of action, benefits and potential risks, with quality assured bite-sized information tailored to diverse demographic groups.

Strengths and limitations

To our knowledge, this is the first quantitative study to investigate the knowledge, attitudes and behaviours pertaining to GLP-1RAs among community-dwelling adults in the UK. Other strengths of this study included the breadth of the survey topics which, combined with the analysis structure, enabled a granular assessment of the complex behaviours and attitudes around GIP/GLP-1RA use, including comparisons between users and non-users.

The principal limitation of this study is concerned with the cross-sectional nature of the survey, which precludes the determination of causality between variables. Moreover, our reliance on self-reported data may introduce bias as participants' responses may be influenced by social desirability or lack of understanding around metabolic health. The electronic distribution of the survey may also have inadvertently excluded individuals with limited digital access. We are also cognisant of the response rate (<10% from mailing lists and networks)—this could introduce 'non-response' bias to the study, thereby affecting both the representativeness of our sample relative to the target population, and the generalisability of our results to other samples and populations. Finally, although our sample is diverse, the demographic profile of the study participants largely consisted of White and university-educated adults, which may not be representative of the wider UK population.

CONCLUSION

This study provides valuable insights into community perspectives and experiences with GLP-1RAs for weight management in the UK. Despite the high awareness of these medications, concerns about safety, cost and potential side effects remain significant barriers to their adoption. Although current and past users generally perceive GLP-1RAs as safe and effective and advocate for wider accessibility, highlighting the importance of equitable access, scepticism among non-users highlights the need for improved public education, particularly around safety and efficacy.

To optimise the effect of GLP-1RAs on obesity management, future efforts should prioritise addressing financial and systemic barriers. Enhancing public understanding of these treatments and developing patient-centred and equitable healthcare strategies is also crucial. Our findings that demographic factors influenced perceptions of GLP-1RAs highlight social media's prominence as an information source and the urgency with which we must tackle common misconceptions with accurate, evidence-based content. By bridging gaps in knowledge and access, these measures can support informed decision-making, increase adherence and improve health outcomes for individuals with obesity.

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