Diabetes, Obesity and Metabolism

WILEY

ORIGINAL ARTICLE

Treatment Patterns and Experienced Effects of Semaglutide for Weight Management Among Adult Users in Denmark: A Community Pharmacy-Based Cross-Sectional Survey

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Received: 17 March 2026 | **Revised:** 1 July 2026 | **Accepted:** 2 July 2026

Handling Editor: Richard Donnelly

Keywords: obesity | overweight | semaglutide | weight loss | weight management

ABSTRACT

Aims: Users of semaglutide for weight management (SEMA-WM) may not follow the recommended treatment regimen. We investigated SEMA-WM treatment patterns among Danish adult users.

Methods: A questionnaire-based survey was conducted across 28 Danish community pharmacies between March and May 2025. Adults redeeming a SEMA-WM prescription were invited to participate, with first-time users invited to a follow-up survey after 6 months.

Results: Of 1470 individuals invited, 767 (52%) completed the questionnaire. Forty-five percent used 1 mg as their current dose, and 8% expected to reach 2.4 mg. Ten percent reported dosing SEMA-WM by "counting clicks" on the injection pen, in contrast with official prescribing guidelines. Users treated for 1–3 months reported a median weight loss of 6% (IQR 3–7), increasing to 12% (IQR 9–14), 17% (IQR 12–21), and 20% (IQR 15–26) for those treated for 3–6 months, 6–12 months, and > 1 year, respectively. Weight loss by treatment duration was similar among 1 mg users. Twenty-four percent reported reduced/discontinued concomitant medication use following SEMA-WM initiation, especially for muscle/joint pain (30%) and antihypertensives (24%). Reduced/discontinued medication use was similar among 1 mg users. Among 42 first-time users, 83% were still using SEMA-WM after 6 months, usually 1 mg (60%). Among users who had discontinued treatment (17%), side effects were the most reported reason.

Conclusions: Many SEMA-WM users remained on 1 mg and reported weight loss and medication reductions similar to the overall cohort. Findings indicate that some users appear to obtain the desired effect at 1 mg, underscoring the need for better guidance on individualized treatment trajectories.

1 | Introduction

The global demand for injectable semaglutide for weight management (Wegovy; SEMA-WM) has increased substantially since its launch [1]. SEMA-WM is a glucagon-like peptide-1 (GLP-1) receptor agonist used for weight management in adults with overweight (body mass index [BMI] ≥ 27) and at least one weight-related comorbidity, or with obesity (BMI ≥ 30) alone [2]. According to guidelines, SEMA-WM is administered once weekly, starting at 0.25 mg, with dose titrations

every 4 weeks until reaching a recommended maintenance dose of 2.4 mg [2, 3]. However, a recent nationwide cohort study found that approximately half of all Danish adult users of SEMA-WM continued with the 1 mg dose from the fourth prescription onward. At the same time, only 13% reached the guideline-recommended 2.4 mg dose [4]. Further, a recent qualitative study found that Danish users often adopt personalized dosing strategies, referred to as "counting clicks" on the injection pen. These strategies are generally not in accordance with official prescribing guidelines, yet may be employed by users due to a perceived sufficient effect of lower doses for achieving their desired rate or amount of weight loss; experienced side effects with higher doses; or cost concerns [5]. Also, a recent survey of more than 550 Danish real-world users reported a median weight loss of 17% among those treated for > 5 months [6], similar to results of the STEP trials [7, 8]. The study did, however, not include information on dosing, leaving it unclear whether the weight losses were achieved with doses lower than the recommended maintenance dose.

There is a clear need for studies on the real-life use of SEMA-WM to examine how users adjust their doses and the effects they experience at different dose levels—information that not only supports appropriate prescribing and treatment guidance but also provides insights specifically on first-time users. Beyond weight loss, there is also growing interest in other treatment effects of SEMA-WM, including its potential impact on reducing concomitant medication use [9]. In addition, understanding users' experienced effects and reasons for treatment discontinuation is essential to inform safe and effective use for clinicians and health authorities.

With this study, we aimed to explore treatment patterns and experienced effects of SEMA-WM among Danish adult users. Specifically, we mapped dosage, treatment duration, weight loss, changes in concomitant medication use, and reasons for discontinuing treatment.

2 | Methods

We conducted a questionnaire-based cross-sectional survey to explore treatment patterns and experienced effects among adults redeeming prescriptions on SEMA-WM at 28 Danish community pharmacies between March and May 2025.

2.1 | Setting and Participants

We recruited community pharmacies through the Danish Network for Research and Development in Pharmacy Practice, currently including 100+ member pharmacies [10]. An e-mail invitation was sent to the pharmacies, while an open invitation was posted on the network's Facebook page. Pharmacies interested in the study were encouraged to contact the project group. Additionally, one pharmacy outside of the network was recruited through the project group's network.

Participating pharmacies were asked to designate a staff member as project manager, responsible for practical tasks such as introducing colleagues to the project and data collection. To support implementation, an online video meeting with the project manager and author KK was conducted to clarify project details and expectations. Project managers received a set of documents, including a link to an online video that introduced the staff to the questionnaire and guidelines for extracting daily sales statistics from the pharmacy's IT system. In the introduction on the use of the questionnaire, no specific instructions were given to the staff on how individual questions should be read aloud, meaning that standardization of questionnaire administration relied on the local project managers disseminating the information and materials at each pharmacy.

2.2 | Questionnaire Development

The questionnaire was developed based on existing literature [3–5, 9] and the project group's expertise and experience from previous questionnaire development at Danish community pharmacies [6, 11–13]. In our previous survey of SEMA-WM users, the initial pilot testing was conducted in private consultation rooms to ensure participant discretion [6]. However, since users did not express discomfort answering at the pharmacy counter, we initiated our pilot testing there, using paper-based versions of the questionnaire read aloud by author KK. All pilot tests took place at a community pharmacy in Southern Denmark. During the first pilot test, four participants were asked whether the questions were understandable and if they felt comfortable answering them at the counter. The questionnaire was revised based on their feedback and observed challenges with longer questions. A second pilot test with eight participants led to the addition of a new question, which was then tested with one participant. The questionnaire was also reviewed by researchers and clinical pharmacists within the project group's network. Based on the third pilot test and professional feedback, the questionnaire was adjusted into a final version, including questions related to dosage, weight-loss, side effects, concomitant medication use, and first-time use (Appendix S1). An electronic version of the questionnaire was conducted in the Research Electronic Data Capture system (REDCap) [14].

A follow-up questionnaire was subsequently developed for users redeeming a SEMA-WM prescription for the first time. This questionnaire was intended to be completed by first-time users 6 months after the initial questionnaire. This follow-up questionnaire underwent two separate rounds of pilot testing and was conducted in REDCap. The questionnaire included questions about dosage, weight loss, and reasons for discontinuation (Appendix S2).

2.3 | Data Collection

Pharmacy staff, including pharmacists, pharmaconomists, and students, invited consecutive customers to study participation. Eligible participants were individuals aged ≥ 18 years who redeemed a prescription for SEMA-WM for themselves. If a prescription was redeemed on behalf of a relative, the questionnaire was ended. First-time users were asked for consent to be contacted for a follow-up questionnaire 6 months later and to provide their contact information (e-mail, phone number, or both). Pharmacy staff read each question aloud to the customer at the counter and recorded their responses directly into REDCap. Data collection at each pharmacy was conducted over a two-week

period (10 business days, excluding weekends) during the pharmacy's regular opening hours. At the end of each week, the local project manager sent a summary of their SEMA-WM sales data to author KK. This information, combined with their questionnaire responses, enabled the project group to estimate the proportion of customers invited. Given the exploratory and descriptive nature of this study, no formal a priori power calculation was performed. Instead, the planned sample size was based on feasibility considerations. Based on previous studies, we expected each pharmacy to be able to invite an average of five customers per day. We aimed to involve 20 pharmacies, which was anticipated to result in approximately 1000 SEMA-WM users being invited.

First-time users who had provided their e-mail address were contacted via e-mail 6 months after redeeming their initial SEMA-WM prescription, including a link to the follow-up questionnaire for self-administration. Non-responders received a first reminder e-mail after 7 days and a second after 14 days. First-time users who had provided their phone number were contacted by telephone by author KK, who read the questionnaire aloud and recorded their responses directly into REDCap; up to three call attempts were made. The same procedure of up to three contact attempts applied to users who did not respond to the emailed questionnaire.

2.4 | Analysis

Data on user characteristics, dosing behaviour, and experienced effects were analysed using descriptive statistics. Weight loss was assessed as percentage weight change (based on self-reported current body weight in kg compared with body weight before SEMA-WM initiation) stratified by treatment duration using boxplots. The same analysis was repeated in a subgroup of participants who reported using the 1 mg dose, stratified by treatment duration since starting using this dose. Changes in concomitant medication use (reduction or discontinuation) following SEMA-WM treatment were analysed similarly, both in the full cohort and in the 1 mg subgroup. All questionnaire responses were grouped into categorical variables and summarised in tables and accompanying text to present the data in a clear and interpretable format.

2.5 | Ethics

The study was registered with the repository of Region of Southern Denmark (approval 25/6666). The Regional Committees on Health Research Ethics waived registration (case number S-202520000-11). Patient inclusion was based on informed and verbal consent. Study participants were given a written patient information sheet outlining their rights as participants.

3 | Results

Based on sales statistics from the 28 community pharmacies, 2579 individuals redeemed a prescription for SEMA-WM during the study period. Of these, 1470 individuals (57%) were invited to participate in the study, of whom 807 (55%) accepted. Forty individuals were excluded because they collected the prescription on behalf of someone else, resulting in a total of 767 (52%) SEMA-WM users completing the questionnaire. Of these, 59 were first-time users and were included in a separate analysis, leaving 708 current users included in the main analysis. Of the 59 first-time users invited for a six-month follow-up questionnaire, 54 (92%) initially accepted, and 42 (71%) completed the questionnaire. The participant flow is outlined in Appendix S3, Figure S1.

3.1 | User Characteristics

More than half of SEMA-WM users were in the 48–67 years range (52%), and most were women (75%). Participants reported a median pre-treatment BMI of 35 (IQR 32–40) at SEMA-WM initiation, based on self-reported weight and height. Sixty-five percent ($n = 461$) reported having used SEMA-WM for more than 6 months, while 39% ($n = 274$) had used SEMA-WM for more than 1 year (Table 1).

Forty-five percent of users ($n = 317$) reported using 1 mg as their current dose, and 8% ($n = 49$) expected to reach the maximum dose of 2.4 mg at a later point (Table 1). The most common reason for staying at 1 mg was that the desired amount of weight loss had been achieved already (48%, $n = 227$), due to costs of higher doses (21%, $n = 101$), and/or due to perceived sufficient effect of the lower dose for delivering the desired rate of weight loss (17%, $n = 81$). Most users reported taking SEMA-WM once weekly (96%), while a few were taking it every other week (3%). One percent took SEMA-WM more than once weekly or did not wish to disclose the frequency. Sixty-one percent ($n = 431$) expected to take SEMA-WM for a limited time period, and 23% ($n = 163$) were unsure of their expected duration. Sixteen percent ($n = 114$) expected to take SEMA-WM for the rest of their lives (data not shown).

3.2 | Dosing Behaviours

Among non-first-time users, 22% ($n = 139$) reported previous use of a higher dose of SEMA-WM than their current (Table 2). Among these, the reasons for using a lower dose included perceived sufficient effect at a lower dose (40%); side effects (30%), most often nausea, headache, and stomach pain; restart of treatment (15%); and/or costs (13%). Fifty-eight percent ($n = 408$) had heard about the possibility of dosing SEMA-WM by click counting. The most common sources of this information were social media (41%), general practitioners (25%), and friends and family (22%). Among participants who had heard about this method, 18% ($n = 75$) were currently click counting, and 17% ($n = 69$) had done so previously. Among users using this method or who had done so previously, the main reasons were the price (42%, $n = 61$), sufficient effect at a lower dose (37%, $n = 53$), and side effects experienced at higher doses (15%, $n = 22$).

3.3 | Experienced Effectiveness

Self-reported weight loss was greater among users with longer treatment duration up to 1 year, with no further increase observed in those treated for longer than 1 year (Figure 1). The median weight loss was 6% (IQR 3–7) among individuals treated 1–3 months, increasing to 12% (IQR 9–14) after

TABLE 1 | Characteristics of Danish adult users of SEMA-WM.

	Participants ($n = 708$)
Sex, *n* (%)	
Women	574 (75%)
Men	193 (25%)
Age, *n* (%)	
18–27 years	40 (5%)
28–37 years	113 (15%)
38–47 years	132 (17%)
48–57 years	206 (27%)
58–67 years	191 (25%)
68–77 years	75 (10%)
≥ 78 years	10 (1%)
BMI (kg/m^2) at treatment initiation, median (IQR)[a]	35 (32–40)
Duration of treatment, *n* (%)	
1–3 months	132 (19%)
> 3 months (≤ 6 months)	115 (16%)
> 6 months (≤ 1 year)	187 (26%)
> 1 year (≤ 1.5 years)	125 (18%)
> 1.5 years (≤ 2 years)	110 (16%)
> 2 years	39 (6%)
Current dose, *n* (%)	
0.25 mg	38 (5%)
0.5 mg	130 (18%)
1 mg	317 (45%)
1.7 mg	143 (20%)
2.4 mg	76 (11%)
Other	< 5
Expect to reach target dose of 2.4 mg (among users currently using 0.25 mg, 0.5 mg, 1 mg, or 1.7 mg, $n = 632$)	
No	477 (76%)
Yes	49 (8%)
Do not know	106 (17%)
Current dose treatment duration	
< 1 month	180 (25%)
1–3 months	241 (34%)
> 3 months (≤ 6 months)	120 (17%)
> 6 months (≤ 1 year)	118 (17%)
> 1 year (≤ 1.5 years)	39 (6%)
> 1.5 years (≤ 2 years)	8 (1%)
> 2 years	< 5
Reasons for not reaching 2.4 mg (among users not expecting to reach target dose, $n = 477$; multiple responses possible)	
Desired weight loss achieved	227 (48%)
Costs	101 (21%)
Sufficient weight loss rate at lower dose	81 (17%)
Side effects	67 (14%)
Do not know	33 (7%)
Other[b]	22 (5%)

Abbreviations: BMI, body mass index; IQR, interquartile range.
[a]BMI is calculated based on self-reported weight loss. Nine percent of users did not respond to this question.
[b]Other reasons included use of other medications that reduce the appetite or other conditions.

3–6 months, 17% (IQR 12–21) after 6–12 months, 20% (IQR 15–26) after 1–1.5 years, 20% (IQR 16–25) after 1.5–2 years, and 21% (IQR 21–29) after > 2 years. For users currently treated with 1 mg, the median weight loss was 9% (IQR 6–14) after < 1 month of treatment (time since initiating the 1 mg dose), 13% (IQR 10–18) after 1–3 months, 18% (IQR 15–24) after 3–6 months, 19% (IQR 14–26) after 6–12 months, and 21% (IQR 17–25) after > 1 year (Figure 2). In a post hoc analysis, we assessed weight loss stratified by time since SEMA-WM initiation (instead of time since initiating 1 mg), which yielded largely comparable results to the preplanned analysis although as expected with lower weight loss for shorter treatment duration (Appendix S3, Figure S2). Further, in an additional post hoc sensitivity analysis, we compared weight loss (overall and among 1 mg users) between users recruited at pharmacies with higher invitation rates (≥ 70% of eligible customers invited; 10 pharmacies) and those recruited at pharmacies with lower invitation rates (< 70% of eligible customers invited; 18 pharmacies). Pharmacies with higher invitation rates accounted for approximately two thirds of participants. Overall, weight loss patterns were broadly similar across the two pharmacy groups, both when considering all users and when restricting the analyses to 1 mg users (Appendix S3, Figures S3–S6). Although small differences were observed in the longest treatment duration strata, these were likely driven by the limited number of participants in these categories.

3.4 | Experienced Effects

Among individuals using medications for muscle/joint pain prior to SEMA-WM initiation, 30% ($n = 38$) reported reduced or discontinued use of these medications following treatment (Table 3). For users of antihypertensive medication, 24% ($n = 43$) reported reduced or discontinued use. Reduced or discontinued use was also observed in 25% ($n = 6$) for diabetes medication,

TABLE 2 | Experiences with and knowledge about dosing of SEMA-WM among Danish adult users.

	Participants ($n = 708$)
Previously used a higher dose (among users currently using 0.25 mg, 0.5 mg, 1 mg, or 1.7 mg, $n = 632$)	
Yes	139 (22%)
No	490 (78%)
Do not know	< 5
Reason for reduced dose (among users who had previously used a higher dose, $n = 139$; multiple responses possible)	
Sufficient effect (weight loss amount or rate) at a lower dose	55 (40%)
Side effects	41 (30%)
Restarted treatment	21 (15%)
Costs	18 (13%)
Other[a]	13 (9%)
Have heard about dosing SEMA-WM by "counting clicks", *n* (%)	
Yes	408 (58%)
No	294 (42%)
Do not know	6 (1%)
Currently dosing SEMA-WM by "counting clicks", *n* (%) (asked among those who have heard about click counting, $n = 408$)	
No, never tried it	263 (65%)
Yes, doing it now	75 (18%)
Yes, done it previously	69 (17%)
Do not know/prefer not to disclose	< 5
How did the user become aware of "counting clicks", *n* (%) (asked among those who have heard about click counting, $n = 408$; multiple responses possible)	
Social media	168 (41%)
General practitioner	101 (25%)
Friends	66 (16%)
Online websites	63 (15%)
Family	23 (6%)
Other[b]	25 (6%)
Reasons for "counting clicks", *n* (%) (asked among those who are currently doing it and those who have done it previously, $n = 144$; multiple responses possible)	
Costs	61 (42%)
Sufficient effect at a lower dose	53 (37%)
Side effects	22 (15%)
Other[c]	23 (16%)

[a]Other responses included discontinuation of treatment.
[b]Other responses included a registered nurse and pharmacy staff.
[c]Other responses included supply shortage.

15% ($n = 8$) for asthma medication, and 13% ($n = 17$) for hypercholesterolemia medication. Less than five people reported any reduction or discontinuation of use of medication for fungal skin infections and mental health disorders. When restricting the analysis to users taking 1 mg, the same pattern was observed (Appendix S3, Table S1). A detailed overview of concomitant medication use can be found in Appendix S3, Table S2.

Seventy-one percent ($n = 500$) reported spending less money on food after initiating SEMA-WM treatment (Table 3). Among

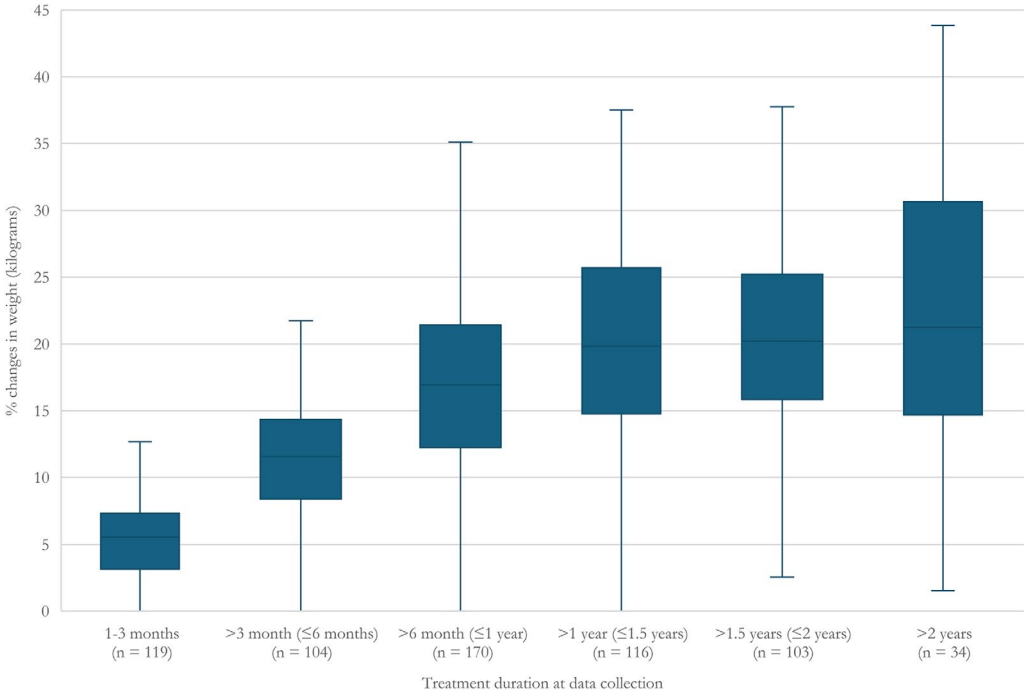

FIGURE 1 | Self-reported weight loss (% changes in weight) among users of SEMA-WM for 1–3 months, > 3 months (≤ 6 months), > 6 months (≤ 1 year), > 1 year (≤ 1.5 years), > 1.5 years (≤ 2 years), and > 2 years. The figure includes weight loss for all participants in the study, regardless of the dose they are using. Weight loss is calculated based on self-reported weight at treatment initiation and at the time of data collection. $n = 646$.

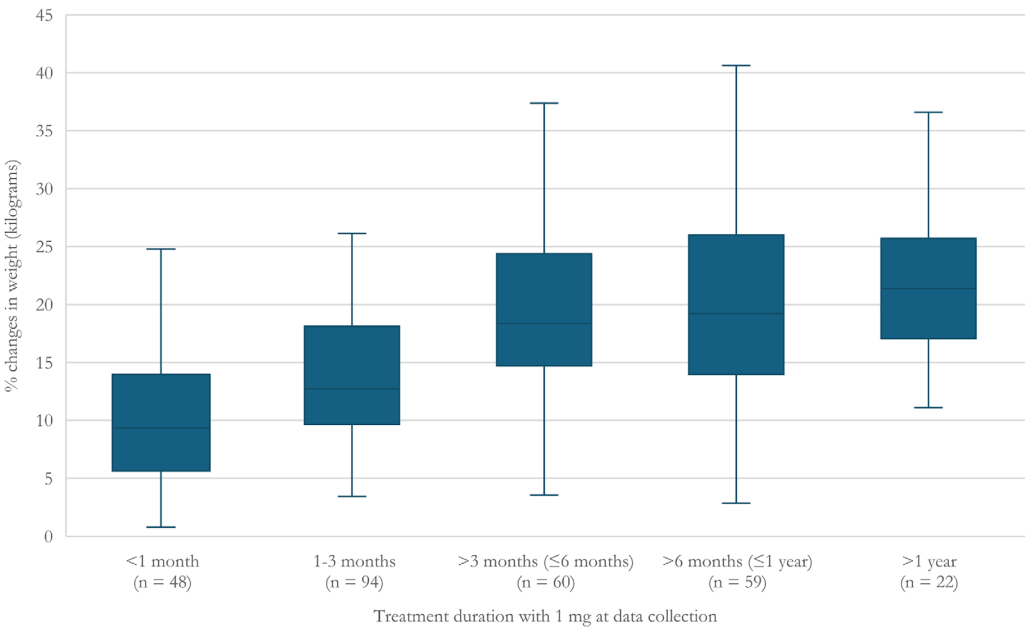

FIGURE 2 | Self-reported weight loss (% changes in weight) among users of 1 mg SEMA-WM for < 1 month, 1–3 months, > 3 months (≤ 6 months), > 6 months (≤ 1 year), and > 1 year. The figure includes weight loss for participants using 1 mg SEMA-WM since initiating this dose. Weight loss is calculated based on self-reported weight at treatment initiation and at the time of data collection. $n = 283$.

these, the most frequently reported monthly savings were < 1000 DDK (41%) and 1000–2000 DDK (25%).

3.5 | First-Time Users

Of the 59 first-time users invited for a six-month follow-up questionnaire, 92% ($n = 54$) initially accepted, and 71% ($n = 42$) later completed the questionnaire. Eighty-three percent ($n = 35$) reported that they were still using SEMA-WM, while 17% ($n = 7$) had discontinued treatment (Appendix S3, Table S6). Among the few users who had discontinued treatment, side effects were most often reported as a reason for stopping. The majority reported that the highest dose reached before discontinuation was 0.5 mg(Appendix Table S6). Among current users, 60% ($n = 21$) were using 1 mg, and among those not currently using 2.4 mg,

TABLE 3 | Costs, use, and experienced changes of medication at treatment initiation of SEMA-WM among Danish adult users.

	Participants ($n = 708$)
Changes in the use of medication at treatment initiation with SEMA-WM for the following conditions, *n* (%)	
Muscle and joint pain	129 (18%)
No reduction	85 (66%)
Reduced usage/completely stopped	38 (30%)
Do not know/prefer not to disclose	6 (5%)
Fungal infections of the skin	6 (1%)
No reduction	5 (83%)
Reduced usage/completely stopped	< 5
Do not know/prefer not to disclose	< 5
Hypercholesterolemia	129 (18%)
No reduction	102 (79%)
Reduced usage/completely stopped	17 (13%)
Do not know/prefer not to disclose	10 (8)
Hypertension	182 (26%)
No reduction	124 (68%)
Reduced usage/completely stopped	43 (24%)
Do not know/prefer not to disclose	15 (8%)
Diabetes mellitus	24 (3%)
No reduction	17 (71%)
Reduced usage/completely stopped	6 (25%)
Do not know/prefer not to disclose	< 5
Asthma	53 (8%)
No reduction	44 (83%)
Reduced usage/completely stopped	8 (15%)
Do not know/prefer not to disclose	< 5
Mental disorders	79 (11%)
No reduction	71 (90%)
Reduced usage/completely stopped	< 5
Do not know/prefer not to disclose	< 5
No medication taken for any of the above conditions	273 (39%)
Do not know	34 (5%)
Prefer not to disclose	31 (4%)
Reduction in food expenses due to reduced appetite after starting SEMA-WM	
Yes	500 (71%)
No	136 (19%)
Do not know	69 (10%)
Does not have reduced appetite	< 5

(Continues)

TABLE 3 | (Continued)

	Participants ($n = 708$)
Monthly savings on food expense (asked among users who have a reduction in food expenses, $n = 500$)	
< 1000 DDK	206 (41%)
1000–2000 DDK	124 (25%)
> 2000 DDK	5 (1%)
Do not know	161 (32%)
Prefer not to disclose	< 5

76% ($n = 25$) did not expect to reach 2.4 mg. Forty percent ($n = 14$) of current users were aware of click counting as a self-directed dosing practice, and 71% ($n = 25$) reported that they intended to use SEMA-WM for a limited time period.

4 | Discussion

In this cross-sectional survey of 708 Danish adult users of SEMA-WM, approximately one in two users reported using 1 mg as their current dose. Only 1 in 10 expected to reach the maximum dose of 2.4 mg, with frequent reasons for staying at 1 mg being desired weight loss achieved or costs of higher doses. One in 10 were dosing SEMA-WM by click counting. Users reported a median weight loss of 20% after > 1 year of treatment with SEMA-WM, after which a plateau was reached; similar weight loss patterns were reported among 1 mg users. Many users reported reduced or discontinued concomitant medication use following SEMA-WM treatment, especially muscle/joint pain medication and antihypertensives. Reduced/discontinued medication use was similar among 1 mg users. Among 42 first-time users, seven had discontinued SEMA-WM within 6 months, most often reporting side effects as a reason for stopping.

4.1 | Strengths and Limitations

The main strength of our study is the large number of participants recruited from community pharmacies in both urban and rural areas. However, limitations should be considered. First, the response rate of 52% was similar to that observed in our previous SEMA-WM survey (55%) [6], but lower than in some of our earlier pharmacy-based surveys (77%–80%) [11, 12]. This may introduce selection bias. This could be attributed to several factors. First, the topic of the survey is likely to be perceived as sensitive due to societal stigma and media attention [5], and participation required a face-to-face interview with pharmacy staff rather than completion of a self-administered questionnaire. In this context, we consider a response rate of 52% acceptable, also since it falls within the range reported in comparable studies on weight management and use of GLP-1 receptor agonists for weight loss (14%–89%) [15, 16]. Additionally, those who accepted to participate may have felt more comfortable discussing their weight and treatment, and this may be associated with higher education and socioeconomic status, and with de facto success in having experienced the desired weight loss with minimal side effects. Moreover, early discontinuation rates of SEMA-WM have previously been reported to approach 50% in the first year [9, 17–19], and the long-term users participating in our cross-sectional study (e.g., individuals having used SEMA-WM for > 1 year) are likely to be a selected group of persistent, more motivated, and more treatment-satisfied users who tolerated treatment well and experienced good effect. As a result, our participants, many of whom had used SEMA-WM for a longer time period, may not represent the broader population of SEMA-WM users, limiting the generalizability of our findings. Specifically, the higher weight-loss percentages observed in the longest treatment-duration strata reflect a selected group of treatment survivors rather than the expected long-term outcome for all SEMA-WM initiators. Consequently, the reported weight loss after prolonged use should be interpreted as the weight loss experienced by persistent users and not the weight loss that the average initiator can expect. Second, not all consecutive users were invited to study participation. According to sales data from the participating pharmacies, 57% of individuals redeeming a SEMA-WM prescription were invited, with invitation rates varying substantially across pharmacies (range 10%–93%). Pharmacies with lower invitation rates mainly attributed this to busy periods and limited staff, which may have led staff to preferentially invite customers who appeared more resourceful, engaged, or satisfied. Our post hoc sensitivity analysis, however, suggested that this variation in invitation rates had only limited impact on the observed weight loss patterns, although selection bias cannot be excluded. Further, the face-to-face interview format may also have favoured users who were more engaged and satisfied with treatment. In the sensitivity analysis restricted to the pharmacies with higher invitation rates, invited users could still decline. We therefore expect some overrepresentation of active and treatment-satisfied users, and our estimates, particularly for long-term weight loss and persistence, should be interpreted in this light. Third, weight loss was calculated from self-reported baseline and current weight. Self-reported weight is subject to recall bias, rounding, and potential systematic underreporting, which may affect the precision of our weight-loss estimates. However, these limitations are unlikely to overturn the overall pattern of increasing weight loss with longer treatment duration. Fourth, dose was classified according to the nominal dose on the injection pen rather than the exact amount administered. A proportion of users reported dosing by click counting, meaning that some individuals classified in higher nominal dose categories may in practice have received lower or more variable doses. This introduces a risk of exposure misclassification and may have attenuated any underlying dose–response relationship

between dose, weight loss, and tolerability. However, as 10% reported current and an additional 9% reported previous click counting, this source of misclassification is likely to influence the overall findings only to a limited extent at the population level. Fifth, pharmacy staff were not given formal, standardized interviewer training, and no detailed instructions were provided on how questions should be read aloud. Consequently, some degree of interviewer variability cannot be excluded. Sixth, almost all participating pharmacies were located in Southern Denmark, despite all members of the Danish Network for Research and Development in Pharmacy Practice across all five regions being invited. This regional concentration may limit the national generalizability of our findings, although the inclusion of both urban and rural pharmacies may partly mitigate this limitation. Finally, for the 1 mg users, the presented weight loss was stratified by treatment duration since starting using the 1 mg dose, meaning that some individuals will have used higher doses prior to this. Our post hoc analysis, however, showed prior use of higher doses to have only limited impact on the reported weight loss. This likely relates to short treatment duration with other doses, as 33%–48% of Danish users never exceed 1 mg, and only 13% reach 2.4 mg after their fifth prescription [4].

4.2 | Comparison With Existing Literature

Our finding indicating that the typical SEMA-WM user is predominantly middle-aged and woman aligns with previous research [4, 6, 20, 21] as well as the demographic profile of the STEP trials [7, 8, 22].

The median self-reported weight loss of 17% among users treated for 6–12 months in our study was slightly higher than the median weight loss of 15% observed in the STEP 1 trial [8]. A similar pattern is seen among users treated with SEMA-WM for > 1.5 years, with a median self-reported weight loss of 20% in our study compared with 15% in STEP 5 [7]. However, weight loss in our study was self-reported, and the cross-sectional design means that long-term users likely represent a treatment survivor cohort, so these comparisons are subject to selection and reporting bias and cannot be interpreted as expected effectiveness for all initiators. Taken together, our findings suggest that, among persistent real-world users, self-reported weight loss beyond approximately 12 months appears broadly similar in magnitude to that seen in STEP 5, which is consistent with the hypothesis that weight loss tends to plateau after around 1 year of treatment [7].

We found that half of users were currently using the 1 mg dose at the time of data collection, and only few expected to increase to the maximum dose. Although the follow-up sample of first-time users was small and should be considered exploratory, their treatment patterns and dose expectations were similar to those of the overall cohort, with most maintaining 1 mg and a majority not expecting to reach 2.4 mg. This result aligns with a recent Danish cohort study involving more than 100.000 adult SEMA-WM users, demonstrating that a small proportion of users increased their doses according to guidelines, with a considerable proportion (33%–48%) never exceeding 1 mg, and only 13% reaching 2.4 mg after their fifth prescription [4]. Users in our study, who maintained 1 mg for more than 6 months, reported a median weight loss of 19%. These results suggest that for some individuals weight loss, similar to the weight loss observed in the STEP trials [7, 8], can be achieved at lower-than-recommended doses. Importantly, users who remain on a lower dose without dose escalation may represent a subgroup with a favourable treatment response at 1 mg, reducing the perceived need for further titration. This finding highlights the need for further research on weight loss effectiveness at lower doses. The preference for lower doses may be linked to self-directed dosing practices, that is, click counting, a method known to more than half of the users in our study, with 1 in 10 actively using this approach, primarily due to treatment costs. This autonomous dose adjustment aligns with findings from a recent qualitative study of Danish adult SEMA-WM users [5]. Our findings indicate that financial considerations are a central factor influencing dosing decisions and treatment management, also supported by a recent qualitative study of Danish healthcare professionals [23]. Notably, some SEMA-WM users in our current study reported reduced food expenses, suggesting a more nuanced economic impact of the treatment.

A considerable proportion of SEMA-WM users who reported using medication for muscle/joint pain, hypertension, and diabetes experienced either reduction or discontinuation of concomitant medications. Similar, though less pronounced, patterns were observed with asthma and lipid-lowering treatment. These changes in medication use align with the STEP trials, which demonstrated that once-weekly SEMA-WM 2.4 mg led to significant weight loss and improvements in cardiometabolic parameters, including blood pressure, lipid profiles, and glycemic control [7, 8]. These effects are further supported by two recent real-world cohort studies from the United States, where adults treated with semaglutide 2.4 mg for 6 and 12 months demonstrated sustained weight loss and significant improvements in cardiometabolic markers, including reduced blood pressure, triglycerides, LDL cholesterol, and HbA1c [24, 25]. Further, our findings align with the Swedish SOS study, which followed more than 900 individuals with severe obesity for 6 years and showed that surgically induced weight loss was associated with a marked reduction in concomitant medication use for cardiovascular disease and diabetes, particularly among those achieving ≥ 10% weight loss [26]. This supports a weight-loss-mediated effect. However, SEMA-WM has direct effects on multiple organs, and data indicate SEMA-WM-specific effects independent of and beyond weight loss, so our findings are unlikely to be explained by weight loss alone.

In conclusion, this study provides important real-world insights into the characteristics, dosing patterns, and self-reported outcomes of SEMA-WM use among Danish adults. Users reported weight losses comparable to clinical trials, while many remained on lower-than-approved doses due to cost considerations and self-managed dosing practices. Additionally, users reported reduced use of concomitant medications for obesity-related conditions, indicating potential wider health benefits.

Acknowledgements

We would like to express our sincere appreciation to all users of SEMA-WM who contributed to this study by sharing their experiences. In addition, we would like to thank the dedicated staff at the participating community pharmacies for their efforts in data collection, including Apotek Dalumcentret, Apoteket Havnen Odense, Apoteket Vesterbro

Odense, Bellinge Apotek, Dalum Apotek, Egtved Apotek, Gram Apotek, Guldborgsund Svane Apotek, Humble Apotek, Kerteminde Apotek, Lunderskov Apotek, Munkebo Apotek, Nykøbing F Svane Apotek, Nyborg Apotek, Odense Apotek Ørnen, Rødding Apotek, Rudkøbing Apotek, Tommerup Apotek, Vamdrup Apotek, Vejen Apotek, and Vejen Trolde Apotek. We are further grateful to the Danish Network for Research and Development in Pharmacy Practice for their consultation and assistance with the recruitment of pharmacies. Lastly, we would like to acknowledge the Open Patient data Explorative Network (OPEN), Region of Southern Denmark.

Funding

This project is a research collaboration between the University of Southern Denmark, Odense University Hospital, and Novo Nordisk. Analysis and reporting of findings are funded by Novo Nordisk through a grant to the University of Southern Denmark. Novo Nordisk does not act as sponsor to the primary data collection.

Conflicts of Interest

A.P. reports participation in regulator-mandated phase IV studies funded by AbbVie, Alcon, Almirall, Astellas, AstraZeneca, Boehringer-Ingelheim, Bristol Myers Squibb, LEO Pharma, Novo Nordisk, Pfizer, and Servier, and on sponsor-initiated research projects with Novo Nordisk, all with funds paid to the institution where he is employed (no personal fees). R.W.T. has given occasional single lectures on medical research (no permanent affiliation) for a number of pharmaceutical companies (with and without compensation to institution or self), including AstraZeneca, Bayer, Boehringer Ingelheim, Eli Lilly, Novo Nordisk, and Sanofi. L.G.C. and M.B. are both employees of Novo Nordisk A/S and contributed to the interpretation of results and minor refinements of the analyses. Novo Nordisk had no role in the study design, data collection, access to raw data, or the decision to submit or publish the findings. The other authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Peer Review

The peer review history for this article is available at https://www.webofscience.com/api/gateway/wos/peer-review/10.1111/dom.71099.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Figure S1:** Participant flow. **Figure S2:** Self-reported weight loss (% changes in weight) among users of 1 mg SEMA-WM for 1–3 months, > 3 months (≤ 6 months), > 6 months (≤ 1 year), > 1 year (≤ 1.5 years), > 1.5 years (≤ 2 years), and > 2 years. The figure includes weight loss for participants using 1 mg SEMA-WM since initiating SEMA-WM treatment (i.e., not specifically the 1 mg dose). Weight loss is calculated based on self-reported weight at treatment initiation and at the time of data collection. $n = 286$. **Figure S3:** Self-reported weight loss (% changes in weight) among users of SEMA-WM for 1–3 months, > 3 months (≤ 6 months), > 6 months (≤ 1 year), > 1 year (≤ 1.5 years), > 1.5 years (≤ 2 years), and > 2 years. The figure includes weight loss for all participants recruited from pharmacies with higher invitation rates (≥ 70% of eligible customers invited; 10 pharmacies), regardless of the dose they are using. Weight loss is calculated based on self-reported weight at treatment initiation and at the time of data collection. $n = 431$. **Figure S4:** Self-reported weight loss (% changes in weight) among users of SEMA-WM for 1–3 months, > 3 months (≤ 6 months), > 6 months (≤ 1 year), > 1 year (≤ 1.5 years), > 1.5 years (≤ 2 years), and > 2 years. The figure includes weight loss for all participants recruited from pharmacies with lower invitation rates (< 70% of eligible customers invited; 18 pharmacies), regardless of the dose they are using. Weight loss is calculated based on self-reported weight at treatment initiation and at the time of data collection. $n = 218$. **Figure S5:** Self-reported weight loss (% changes in weight) among users of 1 mg SEMA-WM for < 1 month, 1–3 months, > 3 months (≤ 6 months), > 6 months (≤ 1 year), and > 1 year. The figure includes weight loss for participants using 1 mg SEMA-WM since initiating this dose, recruited from pharmacies with higher invitation rates (≥ 70% of eligible customers invited; 10 pharmacies). Weight loss is calculated based on self-reported weight at treatment initiation and at the time of data collection. $n = 190$. **Figure S6:** Self-reported weight loss (% changes in weight) among users of 1 mg SEMA-WM for < 1 month, 1–3 months, > 3 months (≤ 6 months), > 6 months (≤ 1 year), and > 1 year. The figure includes weight loss for participants using 1 mg SEMA-WM since initiating this dose, recruited from pharmacies with lower invitation rates (< 70% of eligible customers invited; 18 pharmacies). Weight loss is calculated based on self-reported weight at treatment initiation and at the time of data collection. $n = 98$. **Table S1:** Use and experienced changes of concomitant medication at treatment with 1 mg SEMA-WM among Danish adult users. **Table S2:** Medications where there is experienced reduced usage/completely stopped after treatment initiation of SEMA-WM among Danish adult users. **Table S3:** Treatment status, reasons for discontinuation, dosage, and use of the "counting clicks" method among Danish first-time users of SEMA-WM.