Kate Tudor, Susan A Jebb, Indrani Manoharan and Paul Aveyard

Brief interventions for obesity when patients are asked to pay for weight loss treatment:

an observational study in primary care with an embedded randomised trial

Abstract

Background
A brief intervention whereby GPs opportunistically facilitate an NHS-funded referral to a weight loss programme is clinically and cost-effective.

Aim
To test the acceptability of a brief intervention and attendance at a weight loss programme when GPs facilitate a referral that requires patients to pay for the service.

Design and setting
An observational study of the effect of a GP encouraging attendance at a weight loss programme requiring self-payment in the West Midlands from 16 October 2018 to 30 November 2018, to compare with a previous trial in England in which the service was NHS-funded.

Method
Sixty patients with obesity who consecutively attended primary care appointments received an opportunistic brief intervention by a GP to endorse and offer a referral to a weight loss programme at the patient's own expense. Participants were randomised to GPs who either stated the weekly monetary cost of the programme (basic cost) or who compared the weekly cost to an everyday discretionary item (cost comparison). Participants were subsequently asked to report whether they had attended a weight loss programme.

Results
Overall, 47% of participants ($n = 28$) accepted the referral; 50% ($n = 15$) in the basic cost group and 43% ($n = 13$) in the cost comparison group. This was significantly less than in a previous study when the programme was NHS-funded (77%, $n = 722/940$; $P<0.0001$). Most participants reported the intervention to be helpful/very helpful and appropriate/very appropriate (78%, $n = 46/59$ and 85%, $n = 50/59$, respectively) but scores were significantly lower than when the programme was NHS-funded (92% $n = 851/922$ and 88% $n = 813/922$, respectively; $P = 0.004$). One person (2%) attended the weight loss programme, which is significantly lower than the 40% of participants who attended when the programme was NHS-funded ($P<0.0001$).

Conclusion
GP referral to a weight loss programme that requires patients to pay rather than offering an NHS-funded programme is acceptable; however, it results in almost no attendance.

Keywords
behaviour change; funding; general practice; obesity prevention; primary care.

INTRODUCTION

The Brief Intervention for Weight Loss trial (BWeL)[1,2] showed that a GP-led 30-second opportunistic intervention offering referral to an NHS-funded community weight loss programme is highly acceptable to patients and leads to weight loss at 1 year. Modelling suggests that GPs offering such referrals would save costs over 20 years compared with weight loss advice alone;[3] however, these services are not universally available and community (tier 2) adult weight management services have been decommissioned in some areas of the UK, leaving patients underserved and GPs with no referral options.[4] Implementing brief interventions at the population level would require a substantial investment to increase the provision of publicly funded weight management programmes across the country.

An alternative approach to public provision would be for GPs to encourage patients to attend community weight loss programmes at their own cost; however, there is no evidence to indicate whether this would be acceptable or effective. In public involvement work, the authors surveyed 57 people with lived experience of managing their own weight to gauge their opinions: two-thirds, (66%, $n = 38$) said it was reasonable for GPs to do this and only 16% ($n = 9$) believed that a recommendation to self-pay was inappropriate. More than half, (58%, $n = 33$) said that they would be willing to pay the weekly cost out of their own money if the programme was recommended by their doctor. Accordingly, this observational study aimed to test the acceptability and attendance at a weight loss programme when GPs make a brief intervention to endorse and facilitate a referral that requires patients to pay for the service; hereafter termed BWeL-B.

In BWeL, when GPs referred patients to an NHS-funded programme, the lexical features, such as framing the referral as good news, were related to patients' subsequent action.[5] Accordingly, it was proposed that the way in which GPs frame the cost of the weight loss programme may affect the outcome of the intervention. The current trial (BWeL-B) sought to test whether reframing the cost could increase attendance. Reframing the price of a product from the absolute cost to a daily equivalent cost, or the cost of a discretionary item, can increase purchasing and it was hypothesised that this reframing might increase attendance at a weight loss programme.[6,7] In the authors' survey of people trying to manage their weight, most stated that it would be acceptable for the doctor to compare the cost of a weight loss programme with another optional item, with suggestions including alcoholic drinks or takeaway coffees.

By closely following the procedures used in the BWeL, the aim of this study was to generate indirect evidence of the relative effectiveness of opportunistic interventions whereby the patient has to pay for a weight

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How this fits in

A previous randomised controlled trial showed that a GP-led 30-second opportunistic referral to a free 12-week community weight loss programme resulted in 40% of patients attending a programme and achieving weight loss at 1 year. However, weight management services have been decommissioned in some areas of the UK leaving GPs with no referral options. In the present study, when GPs deliver the same opportunistic intervention, but offer a referral to a weight loss programme that requires patients to pay for the service themselves, this leads to almost no attendance. Therefore, large-scale public provision of weight-loss programmes is essential to ensure the benefits of opportunistic GP interventions to treat obesity.

loss programme compared with one that is funded by the NHS.

METHODS

Study design and participants

This was an observational feasibility study of a brief intervention to treat obesity in primary care with an embedded, two-arm, parallel group randomised trial termed BWeL-B. The intervention was delivered by two GPs at one primary care practice in the West Midlands in England, where the local authority did not provide a weight loss programme.

A researcher in the practice asked to weigh and measure every adult waiting to see the participating GPs. Height was measured in metres using a stadiometer, weight in kilograms, and body fat percentage with a Tanita SC-240 MA Body Composition Analyser. Patients aged ≥18 years, with a raised body fat percentage judged according to published reference curves,[8] and a body mass index (BMI) of at least 30 kg/m^2, or 25 kg/m^2 if they were of Asian ethnicity,[9] were eligible for participation in the trial.

Patients who had participated in a weight loss programme (including pharmacotherapy or bariatric surgery) in the previous 3 months, who were seeing the GP to discuss their weight, who were pregnant, and/or who could not speak sufficient English to provide informed consent were excluded. Informed consent, including informed consent to publish, was gained from all participants.

Patients who were eligible and consented to participate were given a randomisation envelope to give to the GP at their appointment. The envelope signalled that the patient had consented to the trial and contained instructions to the GP to frame the recommendation to the patient to attend a programme in one of two ways. GPs were able to exclude patients before randomisation if, during the consultation, they believed that the opportunistic intervention would be clinically inappropriate.

Randomisation and masking

An independent researcher used an online randomisation plan generator (http://www.randomization.com) to produce a randomisation list, with random permuted blocks of two and four in a 1:1 ratio. The list was used to prepare randomisation cards placed in opaque sealed envelopes.

The researchers and GPs enrolling participants were not aware of the allocation for each potential participant. Once a GP opened the envelope, the randomisation card contained a two letter code showing the assignment to either 'basic cost' or 'cost comparison'.

Procedures

GPs were trained using the same online video and face-to-face training used in the BWeL. The training covered the rationale of the trial, the medical benefits of weight loss, and the logistics of running the trial. In BWeL, GPs were trained to deliver the 30-second intervention by saying:

'While you're here, I just wanted to talk about your weight. Did you know the best way to lose weight is to go to a weight loss programme, such as Slimming World or Rosemary Conley, ***and that's available for free on the NHS?*** *I can refer you now if you are willing to give that a try?'*

The BWeL-B intervention closely followed the BWeL script but GPs were asked to replace the statement about the referral being free on the NHS with the cost of the weight loss programme.

They encouraged attendance at Weight Watchers and Slimming World, which provided ample programmes locally with evidence that they are effective.[10,11]

In the basic cost group, GPs were asked to say:

'While you're here, I just wanted to talk about your weight. You know the best way to lose weight is to go to a weight loss programme, such as Slimming World or Weight Watchers. ***It costs about £5/6 per week.*** *I can refer you now if you are willing to give it a try?'*

In the cost comparison group, GPs were asked to say:

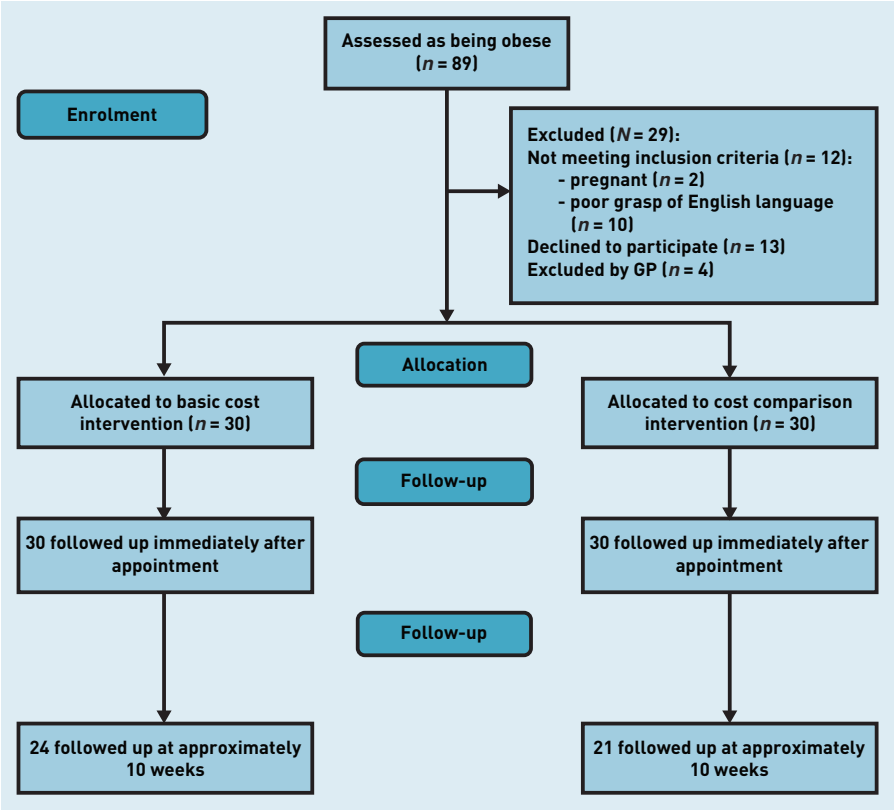


Figure 1. Study flow diagram.

'... It costs about the same amount as a couple of cups of coffee per week ... '

The GPs were asked to audio-record all consultations where participants consented. After each session, the researcher listened to the recordings and provided feedback to encourage high fidelity in the delivery of the intervention.

Immediately after the consultation, the participants rated the appropriateness and helpfulness of the intervention on a 5-point Likert scale, from 'not at all appropriate' to 'very appropriate', and 'not at all helpful' to 'very helpful'. Participants who agreed to attend a weight loss programme were 'booked' into a particular local group by the researcher, who gave details of the date, time, and venue, as had occurred in BWeL. Around 10 weeks later, a researcher telephoned participants to ask if they had attended the weight loss programme and to elicit their thoughts and feelings about the intervention. A text message was sent to assess attendance if participants could not be reached by telephone.

Outcomes

The primary outcome was the proportion of all participants who attended a weight loss programme, which was also compared with the proportion who attended a weight loss programme when it was offered free in BWeL.[1] Secondary outcomes were the proportion of all participants who accepted the referral in BWeL-B, also compared with the proportion in BWeL, and the 'appropriateness' and 'helpfulness' of the intervention, again comparing the two trials. Secondary outcomes also included a comparison of the proportion of participants who accepted and attended the referral in each treatment arm (basic cost versus cost comparison).

Sample size

In BWeL, 40% of participants attended a weight loss programme, and a lower proportion was expected in BWeL-B when self-payment was required. If attendance in BWeL-B was one-third, then 95% confidence intervals (CIs) around the proportion would be ±12%. The authors considered that if the 95% CI for attendance was <15% it would not be warranted to proceed to a definitive trial.

Analysis

The proportions of patients accepting and attending the referral were compared using a χ^2 test. In BWeL, appropriateness and helpfulness scores were highly correlated; therefore, these scores were combined and compared across the two trials using *t*-tests. Follow-up interviews were recorded, transcribed, and analysed using framework analysis. Data were summarised to reflect the range and diversity of attitudes and experience expressed by participants.

RESULTS

A total of 169 patients were screened between 16 October 2018 and 30 November 2018. Of these, 89 patients (53%) had a BMI defined as obese with raised body fat percentage and were invited to take part in the study. Thirteen declined, two were ineligible because of pregnancy, and 10 were unable to give informed consent because of difficulties with the English language. GPs excluded four participants; one did not attend the consultation, weight loss advice was considered inappropriate for two patients, and there was no record of the reason for exclusion for one patient.

Sixty participants were enrolled and evenly assigned to the 'basic cost' or 'cost comparison' intervention scripts. The mean age of participants was 55.1 years and 43% (*n* = 26) were from minority ethnic groups. The mean BMI was 34.7 kg/m^2. Characteristics were well matched between the basic cost and cost comparison treatment groups. The mean age, height, weight, BMI, and percentage body fat were similar in BWeL

Table 1. Baseline characteristics of participants

Variable[a]	Basic cost group (*n* = 30)	Cost comparison group (*n* = 30)	Total self-payment (*n* = 60)	NHS-funded[b] (*n* = 940)
Age, years	54.6 (16.1)	55.5 (17.9)	55.1 (16.9)	55.8 (16.5)
Sex				
Male	16 (53)	13 (43)	29 (48)	401 (43)
Female	14 (47)	17 (57)	31 (52)	539 (57)
Weight, kg	95.8 (17.3)	98.7 (20.5)	97.3 (18.9)	97.1 (15.5)
Body mass index, kg/m²	33.9 (5.4)	35.6 (5.4)	34.7 (5.4)	34.8 (4.6)
Body fat, %	39.2 (7.5)	41.9 (7.8)	40.6 (7.7)	40.4 (7.5)
IMD score	30.4 (11.5)	31.5 (13.8)	30.7 (13.1)	16.4 (12.6)
Ethnic origin				
White	16 (53)	18 (60)	34 (57)	884 (94)
Black	2 (7)	2 (7)	4 (7)	22 (2)
South Asian	12 (40)	8 (27)	20 (33)	18 (2)
Other Asian	0 (0)	2 (7)	2 (3)	10 (1)
Other	0 (0)	0 (0)	0 (0)	6 (1)

[a]Data for continuous variables are given as mean (standard deviation) and for binary variables as number (%). [b]Brief Intervention for Weight Loss trial.[1] IMD = Index of Multiple Deprivation.

and BWeL-B trials (Table 1); however, there was a greater proportion of individuals from ethnic minority groups and a higher mean deprivation score in BWeL-B than in BWeL. A total of 45 (77%) participants were followed up by telephone/text.

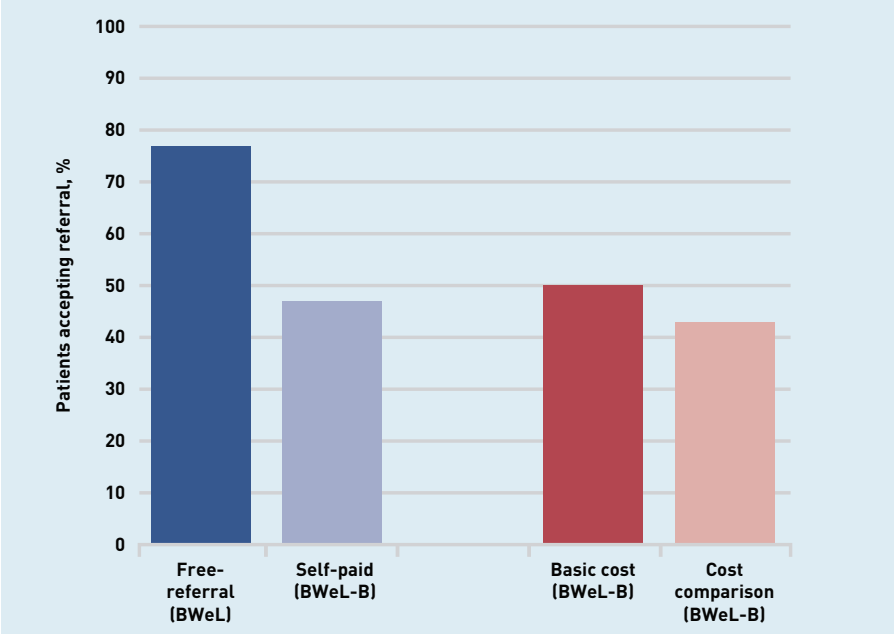
Acceptance and attendance of the referral

During the consultation, 28 participants (47%, 95% CI = 35% to 59%) indicated they accepted the referral to a weight loss programme, significantly lower than the 77% acceptance (*n* = 722/940) when the referral was funded by the NHS (*P*<0.0001 for difference in proportions) (Figure 3).

At follow-up, one person in BWeL-B (2%, 95% CI = 0.3% to 9%) reported attending the weight loss programme and was still attending. Attendance was significantly lower than the 40% attendance (379/940) in BWeL (*P*<0.0001 for difference in proportions) (Figure 3).

Overall, BWeL-B participants reported that the interventions were appropriate/very appropriate (*n* = 50, 83%) and helpful/very helpful (*n* = 46, 78%) (Table 2). Two (3%) participants reported that they were both unhelpful and inappropriate. The combined ratings for appropriateness and helpfulness in BWeL-B were significantly lower (mean = 4.0, SD = 0.9) than in BWeL (mean = 4.3, SD = 0.7; *P* = 0.004).

Figure 2. Percentage of patients accepting a referral appointment at a weight loss programme in the BWeL (free referral) versus the BWeL-B (self-paid) and in the basic cost versus cost comparison intervention groups in the BWeL-B. BWeL = Brief Intervention for Weight Loss trial.



Outcomes by intervention script

There was no evidence of an effect of the intervention script on participants' tendency to accept the referral. In the cost comparison group, 13 participants accepted the referral (43%) compared with 15 (50%) in the basic cost group (absolute difference −7%; 95% CI = −30% to +18%) (Figure 2). There was no evidence that perceived helpfulness or appropriateness of the brief intervention differed between groups (*P* = 0.89) (Table 2).

Qualitative findings

Interviews were conducted with 22 participants: one who did, and 21 who did not attend a weight loss programme. Five people said that they would have attended if the programme had been funded by the NHS:

'Yes [if it was offered for free] *I would have taken it straight away* [laughs]. *You gave me the paperwork and I had a think about it. And, er, if it was offered by the surgery I would have taken it on straight away.'* (Participant [P]24)

The remaining participants said that they did not attend for reasons unrelated to self-payment, for example, concerns that the weight loss programme was not suitable for them or having a lack of time. Many said that while they were not personally deterred by the cost, these programmes should be funded by the NHS for those that wanted to attend, and should be funded in the same way as treatment for smoking or alcohol addiction. Most participants perceived that NHS funding, at least in the first instance, would increase attendance at weight loss programmes and some felt this would save the NHS money in the longer term:

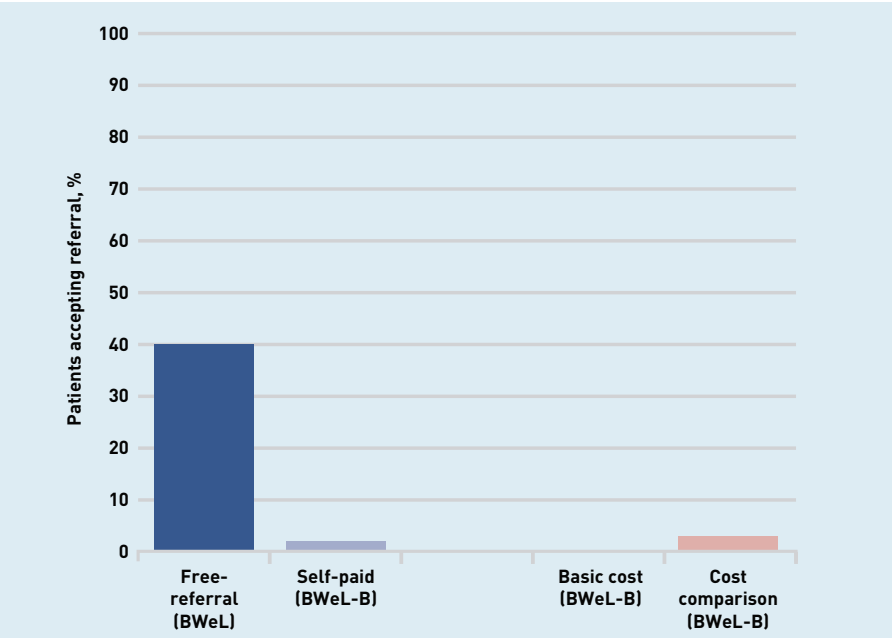


Figure 3. Percentage of patients attending a weight loss programme in BWeL (free referral) versus BWeL-B (self-paid) and in the basic cost versus cost comparison intervention groups in the BWeL-B. BWeL = Brief Intervention for Weight Loss trial.

'It would be helpful if it was [paid for by the NHS] *because if you look in the long-term, I have arthritis in my knees and at some point the doctor said to me I'll have to have my knees replaced so if you look at the cost of that versus the cost if we just sorted it out a bit earlier … I don't want to have diabetes or heart disease … and that will cost the NHS more.'* (P37)

In contrast, some participants thought that it was appropriate for the doctor to suggest paying for a weight loss programme for those who could afford it. Many expressed a view that patients should pay themselves because being overweight or obese is one's personal responsibility. Others did not view obesity as a medical problem or weight loss programmes as a medical treatment, and did not perceive these programmes should be provided by the NHS:

'People should pay themselves if they can afford it. The doctor should advise but it shouldn't come out of the NHS budget. The NHS is too tight for money. People who can afford to pay should pay. It's different for high blood pressure tablets, that should be free. But other things like weight loss shouldn't be free.' (P10)

'Those programmes are great but if people feel that they need to lose weight then they should pay for it to be so, to do it themselves. They shouldn't rely on the NHS to support them with it because it's a self-inflicted complaint really isn't it?' (P19)

Despite these differences in opinion regarding who should fund the referral, all participants agreed that doctors should raise the issue and advise people with obesity to lose weight:

'It would be helpful. It would be good for the doctor to guide as not everyone is aware of it [having obesity]*.'* (P14)

The one participant who attended the weight loss programme was content for the doctor to suggest paying for a weight loss programme because she believed she could afford it; however, she recognised that this might not be acceptable to everybody. This was consistent with her wider view that treatments for other conditions related to behaviour, such as smoking, should not be universally funded by the NHS:

Interviewer: *'Should the NHS pay for patches to help people stop smoking?'*
P78: *'No not necessarily … not as a general rule … it's an extra expense* [for the NHS] *then isn't it? I was fine with* [being asked to pay for a weight loss programme]. *Maybe less … erm … maybe poorer people wouldn't be happy. I guess it is different for everyone but I was fine with it, yeah.'*

Table 2. Participant ratings of appropriateness and helpfulness of brief intervention[a]

Rating	Self-payment (*n* = 60)[b]	NHS-funded[c] (*n* = 940)[b]
Appropriateness		
Patients included in analysis, *n*	59	921
Not at all appropriate	2 (3)	4 (<1)
Not appropriate	2 (3)	11 (1)
Neither appropriate nor inappropriate	5 (8)	55 (6)
Appropriate	32 (54)	400 (43)
Very appropriate	18 (31)	451 (49)
Helpfulness		
Patients included in analysis, *n*	59	922
Not at all helpful	2 (3)	5 (1)
Not helpful	0 (0)	19 (2)
Neither helpful nor unhelpful	11 (19)	85 (9)
Helpful	26 (44)	442 (48)
Very helpful	20 (34)	371 (40)

[a]Data are presented as number (%) unless stated otherwise. [b]Patients who did not return to the researcher to complete the assessment were not included in the analysis. [c]Brief Intervention for Weight Loss trial.

DISCUSSION

Summary

An opportunistic intervention by a GP to encourage attendance at a weight loss programme was acceptable to patients; however, when they were required to pay to attend the weight loss programme uptake

was low and markedly lower than when such programmes are funded by the NHS, and thus a future trial of this approach is not feasible. All patients who took part in the qualitative interviews stated that their doctor should advise on weight loss but opinions were divided about whether support to attend a weight loss programme should be provided and funded by the NHS.

Some participants believed that people with obesity, like themselves, should pay for weight loss programmes. It is plausible that the doctor suggesting that they did so reinforced notions that weight loss is a personal responsibility, or that participants felt that this was a socially desirable response in the context of the study or in society at large.

Strengths and limitations

A strength of this study is that the intervention design and procedures replicated the treatment arm of the BWeL trial, facilitating an observational comparison of outcomes. Embedding a randomised trial allowed testing of two different ways of framing the cost of the weight loss programme. A limitation to the comparison of the two trials is that the population enrolled in the current study (BWeL-B) were in areas of greater deprivation and included a greater proportion of patients from ethnic minority groups compared with BWeL; however, in BWeL there was no association between deprivation score or ethnicity and the likelihood of patients attending the programme,[1,12] suggesting that these factors are unlikely to account for such large differences in uptake of the programme.

A mixed-methods approach enabled investigation of the reasons for lower acceptability and attendance, and an exploration of participants' views about NHS funding for weight loss programmes. The researcher attempted to contact all participants by telephone, but only 37% (n = 22/60) were willing to be interviewed. It is possible that the sample of patients who were interviewed had a more positive view of being asked to pay for a weight loss programme and this may be reflected in the data, but the scores for the acceptability of the intervention were similar for those who were followed up and those who were not.

Comparison with existing literature

Research suggests that conversations about weight loss are rare in primary care.[13,14] One qualitative study reported that GPs perceived that they had insufficient knowledge and lacked confidence in implementing clinical guidelines.[15] It also reported perceptions that recommending weight loss may alienate patients, affect the GP–patient relationship, and lead to time-consuming consultations. These concerns mirror those reported by GPs at a time when the current UK smoking cessation service did not exist, nor were pharmocotherapies reimbursed, and therefore raising the issue of smoking was uncommon;[16] however, medical culture has changed over time and conversations about smoking have become common, not least because the UK pay for performance scheme prompts them. A 2019 global survey has shown that 68% of people surveyed who were overweight would like their GP to initiate a conversation about their weight; however, many of them reported feeling uncomfortable raising the issue themselves.[17] The current study provides a script for GPs to initiate such conversations in a manner that has been shown to be acceptable to patients.

In the present study, GPs were trained to make a brief opportunistic intervention to motivate a weight loss attempt and, as previously shown, the GPs were willing and able to do so.[1] Another study reporting weight management training for GPs in routine practice resulted in a small increase in GP referrals to weight management programmes, providing objective evidence of changes in practice.[18] Other evidence shows that when primary care physicians are trained to use the 5 A's approach (ask, assess, advise, agree, and assist) adapted from smoking cessation training, it leads to patients taking action to change their diet, but there is no evidence that this leads to weight loss.[19]

In almost all published clinical trials, the weight loss intervention is provided free of charge to participants. Although many people who have an intrinsic motivation to lose weight do pay for weight management services themselves,[20,21] the authors are not aware of other studies that have examined the willingness of people to pay when prompted by a health professional to do so. The lack of uptake reported in the present study suggests that for these opportunistic interventions to be effective, weight loss services need to be available and fully funded. Qualitative research suggests this may be because NHS funding signifies the value the doctor places on the importance and effectiveness of these treatments for obesity.[22] There is some evidence that after experiencing an effective weight loss programme, some patients are willing to continue to pay for the service themselves.[21,23]

Implications for practice

Guidelines recommend that GPs should deliver brief opportunistic interventions to patients with obesity and recommend

attendance at behavioural weight loss programmes.[24,25] The acceptability of this intervention, even when patients are required to pay for the treatment themselves, suggests that GPs should be reassured that patients value such interventions. The authors' previous trial shows that weight loss 1 year after referral to an NHS-funded programme is significantly greater than among patients who received advice alone;[1] however, the effect of the brief intervention on weight loss was driven entirely by uptake of the weight loss programme, so that active referral is crucial. In the present study, in which patients were required to pay for the weight loss programme themselves, there was almost no uptake of the service, greatly limiting the value of the GP intervention.

Commissioners need to recognise the need for large-scale public provision of weight loss programmes to realise the benefits of opportunistic GP interventions to treat obesity. This could lead to changes in the attitudes of GPs and 'normalise' weight loss interventions in the same way as when smoking cessation services became widely available and adopted into routine medical practice.

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Ethical approval

The trial was approved by the NHS Research Ethics Service and is registered (ref: ISRCTN72298614).

Provenance

Freely submitted; externally peer reviewed.

Competing interests

Paul Aveyard and Susan A Jebb led an investigator-initiated clinical trial testing the effectiveness of total diet replacements for weight loss part-funded by Cambridge Weight Plan but received no personal income from this work. Paul Aveyard presented a symposium on weight management at an academic conference that was sponsored by Novo Nordisk, who paid a fee to the University of Oxford. Paul Aveyard did half a day's consultancy for Weight Watchers but received no personal income from this. All other authors have declared no competing interests.

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