

Brief interventions for obesity when patients are asked to pay for weight-loss treatment: an observational study with an embedded randomised trial.

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

Nuffield Department of Primary Care Health Sciences, University of Oxford, Oxford, OX2 6GG, UK

NIHR Biomedical Research Centre, Oxford University Hospitals NHS Foundation Trust, OX2 6GG, Oxford, UK

Correspondence to: Dr Kate Tudor kate.tudor@phc.ox.ac.uk

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Key words

Behavior change, funding, general practice; primary obesity prevention; primary care,

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 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 offered 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.

Abstract

Background A brief intervention in 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 their 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 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.

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Background

The Brief Intervention for Weight Loss trial (hereafter described as 'BWeL') showed that a physician-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 one year.(1,2) Modelling suggests that physicians offering such referrals would be cost-saving over twenty 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, 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 physicians 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](#), we surveyed 57 people with lived experience of managing their own weight to gauge their feelings; two thirds (66%) said it was reasonable for physicians to do this and only 16% felt a recommendation to self-pay was inappropriate. More than half (58%) said 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 physicians 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 physicians 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 we hypothesised that the way in which physicians frame the cost of the weight loss programme may affect the outcome of the intervention. [In this trial \(BWeL-B\) we 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 we hypothesised that this reframing might increase attendance at a programme.](#)(6,7) In our survey of people trying to manage their weight, the majority stated that it would be acceptable for the doctor to compare the cost of a weight loss programme with another optional item and suggestions included alcoholic drinks or take-away coffee.

[By closely following the procedures used in BWeL, we aimed to generate indirect evidence of the relative effectiveness of opportunistic interventions where the patient has to pay for a weight loss programme her/himself compared with one 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 physicians at one primary care practice in the West Midlands, UK, where the local authority did not provide a weight loss programme. The trial was approved by the NHS Research Ethics Service Committee.

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-240MA Body Composition Analyser. Patients aged at least 18 years, with a raised body fat percentage judged according to published reference curves(8) and a body-mass index (BMI) of at least 30kg/m², or 25kg/m² if they were of Asian ethnicity,(9) were eligible for the trial. People who had participated in a weight loss programme (including pharmacotherapy or bariatric surgery) in the last three months, people who were seeing the physician to discuss their weight, women who were pregnant, and people who could not speak sufficient English to provide informed consent were excluded.

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

Randomisation and masking

An independent researcher used 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 physicians enrolling participants were not aware of the allocation for each potential participant. Once the physician opened the envelope, the randomisation card contained a two letter code showing the assignment to either 'basic cost' or 'cost comparison'.

Procedures

We trained physicians using the same online video and face-to-face training used in BWeL. The training covered the rationale of the trial, the medical benefits of weight loss, and the logistics of running the trial. In BWeL physicians 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 physicians 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 who provided ample programmes locally with evidence they are effective.(10, 11)

In the basic cost group, physicians 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, physicians were asked to say, “....**It costs about the same amount as a couple of cups of coffee per week...**”

We asked physicians 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 scale, from very inappropriate/unhelpful to very appropriate/helpful. Participants who agreed to attend a programme were ‘booked’ into a particular local group by the researcher who gave details of the date, time, and venue, as occurred in BWeL. Around 10 weeks later, a researcher telephoned participants to ask if they had attended the programme and to elicit their thoughts and feelings about the intervention. We sent a text to assess attendance if participants could not be reached.

Outcomes

The primary outcome was the proportion of all participants who attended a weight-loss programme, which was also compared to the proportion that 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 to 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 vs cost comparison).

Sample size

In BWeL, 40% of participants attended a weight-loss programme, and we expected a lower proportion in BWeL-B when self-payment was required. If attendance in BWeL-B was one third, then 95% confidence intervals around the proportion would be +/-12%. We considered that if the 95% confidence interval for attendance was below 15% it would not be warranted to proceed to a definitive trial.

Analysis

We compared the proportions accepting and attending the referral using a chi-squared test for the difference between proportions. In BWeL, helpfulness and appropriateness scores were highly correlated so we combined these scores and compared across the two trials using t-tests. Follow-up interviews were recorded, transcribed and analysed using framework analysis. Data was 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 30 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 due to 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 (Figure 1).

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. Mean BMI was 34.7kg/m². 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 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 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% confidence interval (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 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; $P=0.004$).

Outcomes by physician 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:

[P24] 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.

The remaining participants said that they did not attend for reasons unrelated to self-payment, for example, concerns that the 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.

[P37] 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.

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 as overweight and obesity 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:

[P10] People should pay themselves if they can afford it. The Dr 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.

[P19]: 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?

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:

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

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.

Discussion

Summary

An opportunistic intervention by a GP to encourage attendance at a weight loss programme was acceptable to patients but when they were required to pay to attend the programme uptake was very low and markedly lower than when funded by the NHS and thus a future trial of this approach is unfeasible. All patients who took part in the qualitative interviews stated that their doctor should advise weight-loss but opinions were divided about whether support to attend a weight loss programme should be provided by the NHS.

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 us to test two different ways of framing the cost of the programme. A limitation to our comparison of the two trials is that the population enrolled in BWeL-B were more deprived and included a greater proportion of patients from ethnic minority groups compared to BWeL. However, in BWeL there was no association between deprivation score or ethnicity and the likelihood of patients attending the programme,(1,12) suggesting these factors are unlikely to account for such large differences in uptake of the programme.

By using a mixed-methods approach we were able to investigate the reasons for lower acceptability and attendance and explore participants' views about NHS funding for weight loss programmes. We attempted to contact participants by telephone, but only 37% ($n=22/60$) people were willing to be interviewed. It is possible that the sample that 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 conversations about weight-loss are rare in primary care.(13,14) A systematic review of qualitative research found that physicians perceived 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 physician-patient relationship, and lead to time-consuming consultations. These concerns mirror those reported by physicians dating from a time when the current UK smoking cessation service did not exist, nor were pharmacotherapies reimbursed, and therefore raising the issue of smoking was uncommon.(16) However, medical culture has changed over time and now conversations about smoking have become common, not least because the UK pay for performance scheme prompts them. A recent global survey has shown that 68% of people surveyed who were overweight would like their physician to initiate a conversation about their weight, however many patients reported feeling uncomfortable raising the issue themselves.(17) This study provides a script for GPs to initiate such conversations in a manner which has been shown to be acceptable to patients.

Here, we trained physicians to make a brief opportunistic intervention to motivate a weight-loss attempt and as previously shown, physicians 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 As approach (ask, assess, advise, agree, and assist) adapted from smoking cessation training, this 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) we are not aware of other studies which have examined the willingness of people to pay when prompted by a health professional to do so. The lack of uptake reported here 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 research and practice

Guidelines recommend that physicians should deliver brief opportunistic interventions to patients with obesity and recommend attendance at behavioural weight loss programmes.(24,25) The acceptability of the intervention, even when patients are required to pay for the treatment themselves, suggests physicians should be reassured that patients value such interventions. Our previous trial shows that weight loss one 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 programme, so that active referral is crucial. Here, where the patients were required to pay for the the programme themselves there was almost no uptake of the service, greatly limiting the value of the GP intervention. We also found that some participants felt that people (like them) 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. 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 physicians and 'normalise' weight-loss interventions as occurred when smoking cessation services became widely available and adopted into routine medical practice.

Conclusion

Primary care referral to a weight loss programme that requires patients to pay rather than offering an NHS-funded programme lowers agreement to attend and leads to almost no attendance, even though it is acceptable. NHS funding is crucial to support successful opportunistic interventions for weight loss.

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Ethical approval

The trial had approval from the NHS Research Ethics Service and is registered [ISRCTN72298614](#). Informed consent was gained from all participants. Informed consent to publish was gained by all participants.

Competing interests

PA and SAJ 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. PA 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. PA did half a day's consultancy for Weight Watchers but received no personal income from this. Both other investigators declare no competing interests.

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Table 1. Baseline characteristics

	Basic-Cost (n=30)	Cost-Comparison (n=30)	Self-payment Total (n=60)	NHS-Funded (2016; n=940)
Age	54.6(16.1)	55.5(17.9)	55.1(16.9)	55.8(16.5)
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/m ²)	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)

Data for continuous variables are mean (standard deviation) and for binary variables are number (percent)

Table 2. Participant ratings of appropriateness and helpfulness of brief intervention

	Self-payment (n=60)	NHS-funded(1) (n=940)
Appropriateness		
Patients included in analysis	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	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)

Data is n(%) unless stated otherwise. Patients who did not return to the researcher to complete the assessment were not included in the analysis (NHS-funded column only). *Ordinal logistic mixed-effect models with fixed effects for randomised group and random effects for physicians.

Figure 1. Study flow diagram

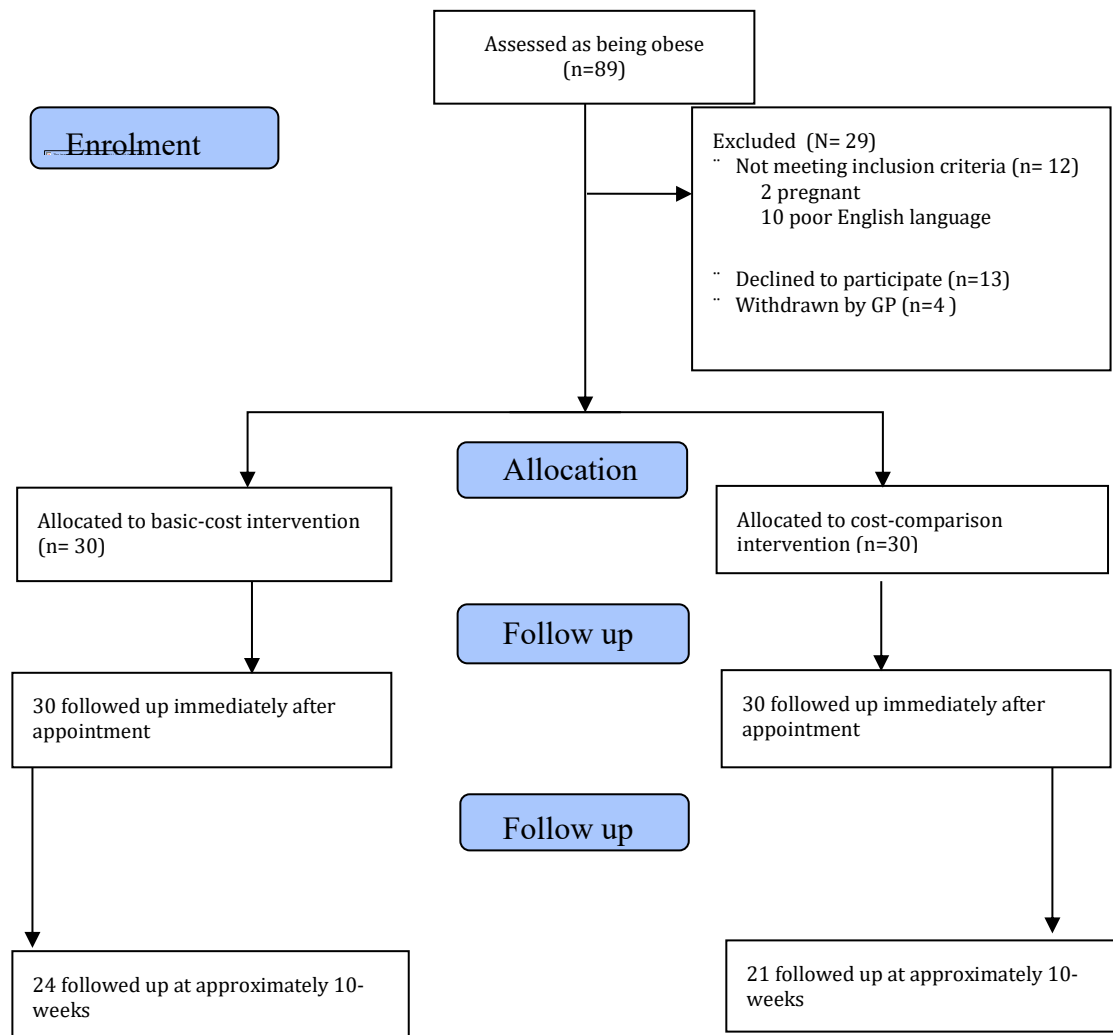


Figure 2. Percentage of patients booking an appointment at a programme in BWeL versus BWeL-B and in the Basic Cost versus Cost Comparison intervention groups.

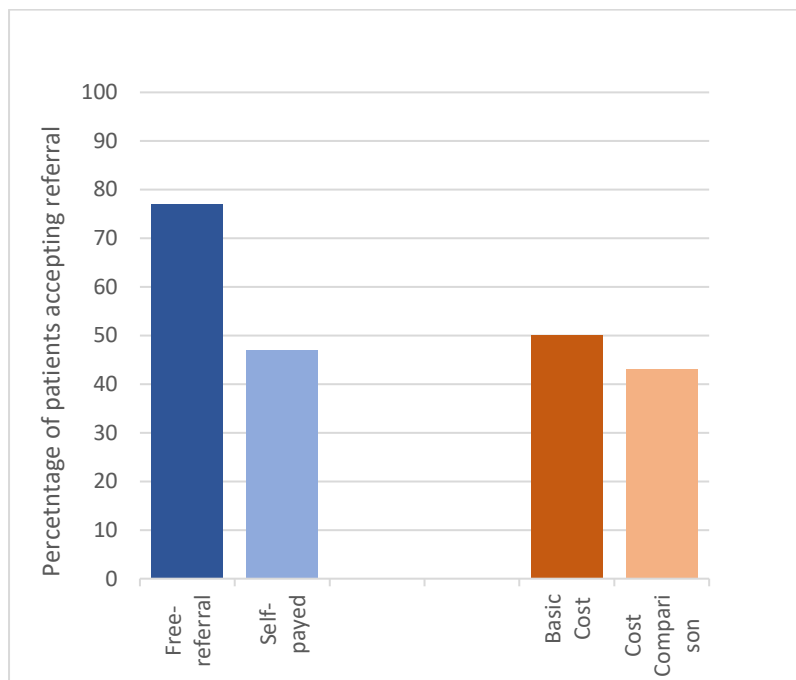


Figure 3. Percentage of patients attending a weight-loss programme in BWeL versus BWeL-B and in the Basic Cost versus Cost Comparison intervention groups.

