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Evaluation of the experience of people referred under the NHS enhanced service incentive for obesity to the NHS digital weight management programme: a mixed method study

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Abstract

Background Internationally, guidelines recommend clinicians identify patients living with obesity and offer referral to weight management programmes, especially patients with related co-morbidities. In 2021, NHS England introduced the NHS Digital Weight Management Programme for people living with obesity and a diagnosis of hypertension or diabetes or both. The programme is offered at three levels of intensity with people triaged to the appropriate level determined through age, sex, ethnicity, and deprivation. The aim of this study was to assess the experiences of people referred to the programme.

Methods A mixed methods evaluation, involving questionnaires and semi-structured interviews with patients. Questionnaires were sent to everyone who registered and chose a preferred service Provider between March 2022 and June 2023, and responses are reported as proportions. Differences in health status, demographic characteristics and experience on the programme were assessed using ordinal logistic regression. A sample of patients were interviewed, and data were analysed using a framework.

Results 17,553 questionnaires were distributed, with 3885 (22.1%) completed. We interviewed 24 patients (27 to 79 years of age; 15 females, 9 males), who had various levels of support and rates of completion. The programme was reported to be easy to use, and around half of survey respondents felt the programme helped them change their diet or activity or improved their wellbeing, regardless of the level of support received. Participants from minority ethnic groups were less likely to describe the programme or the coaching as helpful in terms of changing behaviour. Interview participants valued weight tracking, goal setting, and meal planning, but some felt the service was too generic for their individual needs. Some participants reported they did not receive sufficient in-person or group

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support, and that online forums were not a suitable alternative. Around half of participants found coaching helpful, but some described the coaches as unresponsive or scripted.

Conclusion The NHS Digital Weight Management Programme was moderately well received by most participants, and facilitated weight loss, behaviour change, and continued engagement. It was less helpful for people from minority ethnic groups, and some participants wanted more frequent contact and greater personalization in interactions with health coaches.

Keywords Tier 2 adult weight management, Digital intervention, Obesity, NHS, Patient experience, Mixed methods, Public health, Prevention

Background

Many countries' national guidelines recommend that general practitioners (GPs) intervene to prevent disease when body weight is high enough to present a substantial risk to health. In England, intervention by referral to behavioural weight management programmes (WMP) is recommended for people with a body mass index (BMI) of ≥ 30 kg/m² (adjusted to 27.5 kg/m² for people from Black, Asian, and ethnic minority groups) and with weight-related comorbidities [1]. However, GP referrals to WMP are much less common than guidelines suggest [2].

Responding to the high risk that obesity posed for serious complications of COVID-19 and the nation's health generally [3], the then United Kingdom Prime Minister launched the 2020 Obesity Strategy. This was partly enacted in September 2021 when the National Health Service (NHS) created a national enhanced service for weight management services. This financially rewarded general practices, which are independent contractors to the NHS, for referring eligible patients to WMPs [4]. It also coincided with the launch of the NHS Digital Weight Management Programme, the first nationally available, digitally delivered weight management intervention, accessible via software program applications (apps) and web-based platforms, which was commissioned by NHS England (NHSE) [5]. The programme provided 12 weeks of support and information on healthy eating, physical activity and behaviour change to promote weight loss. The programme was made available for people living with obesity and with a diagnosis of hypertension and/or diabetes, two conditions where weight loss is likely to bring health benefits. After receiving a referral from their GP, individuals accessed a digital hub and were asked to select their preferred service Provider. Participants were offered different levels of support depending on their socioeconomic status and ethnicity, intended to reduce disparities in programme completion previously observed in other NHS provided programmes [6]. Level 1 provided self-guided digital content, alongside optional participation in group peer support sessions or chatrooms; Level 2 additionally offered up to 50 minutes of

one-to-one online coaching; Level 3 provided up to 100 minutes of one-to-one online coaching.

The NHS Digital Weight Management Programme (DWMP) is delivered through a nationally commissioned model, with services provided by a number of commercial digital health providers rather than by local NHS staff. These contracted providers included Liva Healthcare, Morelife, Oviva UK, Second Nature, Slimming World, and Xyla Health and Wellbeing, and were selected through a formal NHS procurement process. Providers are responsible for the operational delivery of the programme, including the provision of lifestyle coaching to service users.

Each provider is required to ensure that coaching staff meet minimum qualification standards, as defined in the procurement requirements and service contract. These include relevant health coaching or behaviour change experience or qualifications in delivering lifestyle interventions and a Health and Care Professionals Council registration is required. The coaching delivered through the programme adopts a behavioural approach to lifestyle change, aiming to support improvements in diet, physical activity, and overall health behaviours. Importantly, coaching is delivered within the boundaries of the nationally agreed service specification, but with flexibility to tailor support to the differing needs and goals of individual participants, aiming for a holistic but structured approach. Providers had an obligation to deliver to NHSE approved service specifications but used a variety of outward facing designs to engage users.

Between April 2021 and March 2022, 63,937 referrals were made from general practices, and 31,861 (50%) took up the 12-week programme. There were 31,718 participants for whom at least 12 weeks has elapsed at the time of data collection; of those, 14,268 completed the programme (defined as attending $\geq 60\%$), a 45% completion rate. Mean weight change for those who completed the programme (attending $\geq 60\%$) was -3.9 kg (95% CI: -3.99 to -3.84), and for those who had time to finish the programme but failed to complete 60% was -0.74 kg (95% CI: -0.79 to -0.70). The early outcomes of the programme have previously been reported [7] but it is also important to understand individuals' experiences

Table 1 The questionnaire for people who completed the programme at all three levels

Questions asked to all participants on each of the three intervention levels. Response options were strongly disagree, disagree, neither agree nor disagree, agree, strongly agree

My healthcare professional (e.g. my GP, nurse, pharmacist etc.) was supportive during my consultation and when referring me to the Programme (or for NHS staff who self-referred: It was easy for me to sign up to the Programme)
There was enough information about each weight management Provider on the Programme Selection Hub to allow me to choose a programme that was right for me
I was glad to have a choice in which programme I could join
The programme I selected was easy to access on the app/website
The weight management Provider app/website was easy to use
I liked how the information was presented on the weight management Provider app/website
The advice I received about physical activity reflected my cultural needs and traditions
The dietary advice I received reflected my cultural needs and traditions
The programme helped me increase my physical activity
The programme helped me eat a healthier diet
I feel more positive in myself as a result of taking part in the programme
Questions asked only to people who had coaching and were on intervention Level 2 or 3.
The coaching I received made a positive difference to my experience of the programme
The coaching I received helped me to keep going with the programme
The coaching was at a time that worked for me
The coaching encouraged me to change my diet and/or my physical activity
How was your experience of the Programme overall? Responses were very good, good, neither good nor poor, poor, very poor, don't know

of using the programme which is likely to be related to effectiveness and can inform service improvement. Here, we address this in a mixed method study to examine the experiences of people using the NHS Digital Weight Management Programme with various levels of support.

Methods

Design

This is a mixed methods study involving questionnaires and semi-structured qualitative interviews. Our approach is an explanatory sequential design, where a qualitative analysis is used to help interpret results from, and provide context to, quantitative findings [4].

Survey methods

Individuals were sent a questionnaire via email 12 weeks after accessing the digital hub. This included NHS staff living with obesity who, during the early rollout of the programme, were able to refer themselves regardless of co-morbidities.

The referral process, the experience of the hub enabling participants to select a provider, and the services provided as part of the programme were of significant

Table 2 The questionnaire for people who did not complete the programme (same for NHS staff and patients)

	Response options
The first three questions were the same as those in Table 1	
2. Did you start a 12-week weight management programme?	Yes, go to question 3 No go to question 4
3. What was your main reason for not starting the programme? (Select all that apply)	I had difficulty getting set up or logging in. I didn't understand what the programme would involve. I didn't think the programme would help me to achieve my aims. I wasn't ready to start the programme at this time. Other.
4. The programme I selected was easy to access on the app/website (as in Table 1, strongly disagree to strongly agree)	
5. What was your main reason for leaving the programme before the end? (Select all that apply)	I didn't have enough time. I didn't feel that I was making enough progress. I found the app/website difficult to use. I wanted a professional to help me in-person, not through a website or app. I wanted something else other than a weight management programme to help me achieve my goals. Other

interest. A group of individuals with lived experience of obesity was consulted to provide insights on aspects to be included in the questionnaire. Successive drafts were presented to this group until final agreed versions of the questionnaire were reached.

There were two versions of the questionnaire. One that asked people who completed the weight management programme about their experiences (Table 1), and one that asked people who did not complete the programme, their reasons for not pursuing or leaving before programme completion (Table 2). Only participants who had Level 2 or 3 support (with individual coaching as part of the programme) were asked questions about this aspect. The questionnaires were sent to all participants 12 weeks after they selected a Provider.

In addition to the questionnaires, we collected data on participants' health conditions and their demographic characteristics. For NHS staff who participated, this was self-reported and for participants referred by their GP, this was included in the referral.

At the end of the questionnaire, participants were asked if they would be willing to share their views during an interview with a researcher.

Interview methods

The interview schedule (Supplementary Material 1) was developed alongside the survey and was designed to elicit more in-depth information on people's experiences. It was co-designed by the researchers, colleagues from NHS England, and a patient and public involvement panel comprised of those with lived experience of obesity. We also piloted the interview schedule with other members of this panel.

Potential interview participants were identified via the survey. We purposively recruited survey respondents from those who had provided consent to be contacted by the University research team, aiming for a diverse sample based on age, gender, ethnicity, deprivation, programme completion, Provider, and support level. A sub-sample ($n = 62$) of participants who had completed the survey and agreed to a follow-up contact were approached via email and provided with an information sheet and opportunities to ask questions before they decided whether to participate in an interview. Of these, 24 people decided to take part in an interview. Ongoing, informed, written consent was captured online, and verbal consent was taken at the outset of interviews. Interviews were arranged at a time to suit participants, and they were given the choice of online videocall or a telephone call. Fifteen interviews were online videocalls, and 9 by telephone, and the mean duration was 26 min. All interviews were conducted by the first author, an experienced qualitative researcher, with no prior involvement with the Digital Weight Management Programme. At the outset of each interview participants were assured that the researcher was not employed by the NHS or any of the Providers, and that their comments would be reported anonymously. Each patient who took part in an interview received £25 in digital high street vouchers as a thank you for their involvement and were also sent a debrief sheet which included signposting for further support.

Ethics

Analysis of anonymized data for evaluation purposes is in accordance with the programme data usage information provided at the point of intervention access. As such, the use of survey data did not require ethics committee approval. The qualitative interview component of the study was approved by the Health Research Authority Queen Square Research Ethics Committee (23/PR/0910). All participants were informed of the purpose of the survey and agreed to participate and share their data anonymously. They were asked for additional consent to leave their contact details for the interview study, and all interview participants gave informed consent for anonymized data to be recorded and shared.

Analysis

Survey data

We calculated the proportion of participants selecting responses and presented this in a graph. Where appropriate, we separated NHS staff who self-referred from patients with diabetes and hypertension referred by the health professionals and those who completed versus those who did not complete the programme because they answered different questions. We then used ordinal logistic regression to assess whether there were differences in responses by participants' demographic and health characteristics for participants that completed the programme. We adjusted for differences by level of intervention, by Provider, and by whether participants were NHS staff or patients. Participants who did not start or did not complete the programme were asked about their reasons for this. We examined associations between these responses and demographic and health characteristics using binary logistic regression. Data are presented as odds ratios and 95% confidence intervals without p-values as there were no hypotheses tested. We originally intended to do the regression separately for each programme level but did not do so as there were no meaningful differences in the responses, and because there were relatively few participants at Levels 2 and 3 for the regression models including many variables to converge.

Interview data

To understand participants' experiences, including challenges and facilitators to programme adherence, we followed a framework analysis approach [8]. The framework method is suited to applied or policy research, especially where the objectives of the study are shaped by the information requirements of the funding body [9]. The framework approach is systematic and designed for transparency [9].

The framework analysis was informed by the research questions and information requirements of NHS England. The analysis followed five steps: familiarisation with interview transcripts; identifying a thematic framework (drawn inductively from the aims and objectives of the study); indexing (applying the framework to the textual data); charting (rearranging distilled summaries of views and experiences); and finally mapping and interpretation [9]. Interviews were transcribed verbatim and checked against the audio recordings for accuracy, and data were indexed and charted using NVivo software. The first author indexed and charted all of the transcripts, and six transcripts were also second coded by other members of the team. Data were then discussed with the wider research team and refined in an iterative process.

Data integration

We used an explanatory sequential design, where we connected the quantitative and qualitative phases during the intermediate stage in the research process by selecting the participants for the qualitative interviews from those who responded to the survey in the first, quantitative, phase. We then integrated the results from the quantitative and qualitative phases during the interpretation of the outcomes of the study, using qualitative analysis to help interpret results from, and provide context to, quantitative findings [10].

Results

Surveys

17,553 questionnaires were distributed between Jan 2023 and Aug 2023 and 3885 (22.1%) completed questionnaires were received and analysed quantitatively. Of these, 3515 (90.5%) participants were referred by a health professional and 370 (9.5%) were NHS staff who self-referred to the programme. Nine-hundred and twenty-seven participants (23.9%) did not complete the programme of which 170 (4.4%) did not start it. There were 3120 (80.3%) allocated to intervention Level 1, 491 (12.6%) to Level 2, and

274 (7.1%) to Level 3. There were no major differences in characteristics of participants by the level of intervention, except, as intended, the triage algorithm was more likely to assign participants from more deprived backgrounds and people in minority ethnic groups to Levels 2 and 3 (Table 3).

Interviews

We interviewed 24 people, sampling for diversity in terms of ethnicity, age and sex, among survey respondents who agreed to be contacted. Interview participants ranged from 27 to 79 years of age (mean age, 56 years, SD 15), 15 were female and 9 were male. Fourteen had completed the programme, and 10 had not; 15 were assigned to Intervention Level 1, 4 to Level 2 and 5 to Level 3. Eighteen participants identified as White, 1 Asian, 1 Black, 1 as Other and 1 Mixed.

In each of the following sections, we outline the findings from the survey data before going on to describe the contextual, qualitative findings.

Participants' views of referral and sign-up to the programme

Survey

For this analysis, all three levels of support were combined because the sign-up process was the same regardless of level of intervention assigned. The first survey question was different for NHS staff and patients, so those data are presented separately.

Six in 10 participants reported in the questionnaire that the healthcare professional was supportive when making the referral and 9 in 10 NHS staff found the sign-up easy. Seven in 10 participants were pleased to have a choice of programme Provider but only around half stated there was enough information about the service offered to make the choice (Fig. 1). There were no clear patterns of survey response to the questions on referral and sign up for different groups of participants (Table 4).

Interviews

Most of those interviewed were referred after annual check-ups, where GPs and nurses carried out health checks and referred participants during the consultation as part of a conversation about weight management. In several cases referrals were made because participants had approached their healthcare practitioners for support with weight loss, but in other cases the referral came unexpectedly, and participants were contacted by their GP practice indicating that they may be eligible for a weight loss programme. In these cases, although the referral was welcomed, the lack of conversation or follow up by the referrer was often a disappointment to participants.

Table 3 Characteristics of participants who responded to the questionnaire, by level of intervention (number (%) or mean (SD))

Category	Level 1	Level 2	Level 3
Age	37.1 (6.1)	39.3 (7.5)	38.3 (6.6)
Gender			
Female	1987 (63.7)	362 (73.7)	204 (74.5)
Male	1133 (36.3)	129 (26.3)	70 (25.5)
Ethnicity			
Asian	46 (1.5)	28 (5.7)	62 (22.6)
Black	115 (3.7)	36 (7.3)	16 (5.8)
Mixed	21 (0.7)	10 (2.0)	26 (9.5)
Other	27 (0.9)	12 (2.4)	33 (12.0)
White	2911 (93.3)	405 (82.5)	137 (50.0)
Socioeconomic status			
IMD1 (Most deprived)	395 (12.7)	206 (42.0)	90 (32.8)
IMD2	601 (19.3)	107 (21.8)	76 (27.7)
IMD3	646 (20.7)	74 (15.1)	61 (22.3)
IMD4	693 (22.2)	74 (15.1)	42 (15.3)
IMD5 (Least deprived)	785 (25.2)	30 (6.1)	5 (1.8)
Baseline BMI	37.1 (6.1)	39.3 (7.5)	37.9 (6.6)
Comorbid conditions			
Hypertension	2488 (79.7)	311 (63.3)	113 (41.2)
Type 1 diabetes	46 (1.5)	10 (2.0)	10 (3.6)
Type 2 diabetes	1300 (41.7)	199 (40.5)	107 (39.1)
Serious mental illness	39 (1.3)	11 (2.2)	2 (0.7)
Physical disability	169 (5.4)	43 (8.8)	29 (10.6)
Learning disability	24 (0.8)	9 (1.8)	5 (1.8)
Vulnerable ¹	109 (3.5)	17 (3.5)	8 (2.9)

¹ Defined by the GP and implying the person may need additional help with services, covering conditions such as language barrier, infirmity, or a learning disability

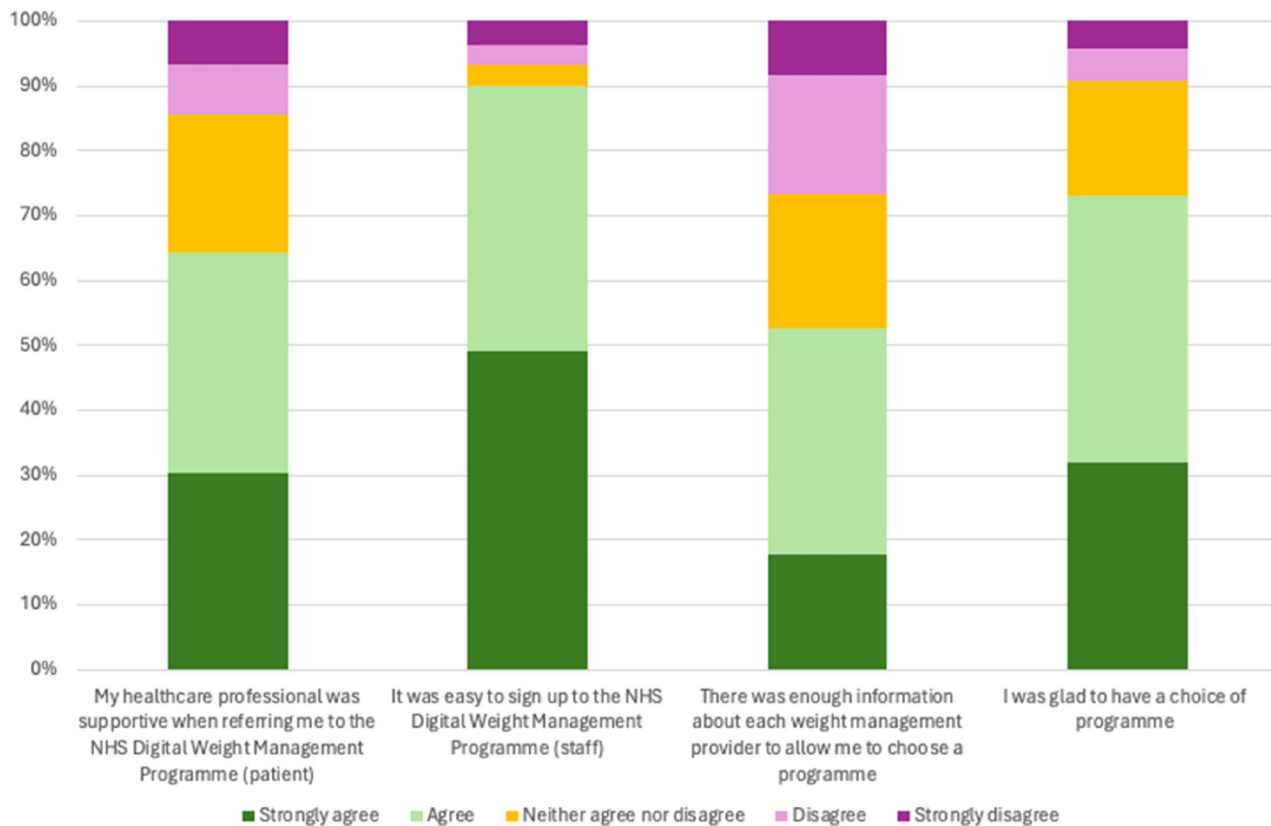


Fig. 1 Response of participants to the referral and sign-up to the programme

They sent me the text. I didn't mind...but no-one talked to me about it. I just assumed... they're just pinging it out to all those that could benefit from losing some weight. I didn't like that there was no follow-up... nothing. [Pt 06, F, 71, White, Completer, L1].

Receiving links and signing up to the programme via the referral hub was, for most people, a straightforward process, with very few technical issues or difficulties in understanding the process.

When choosing a Provider, most participants stated they had sufficient information regarding each of the digital programme options to make an informed choice. Several participants did, however, report difficulties in deciding upon a Provider, largely because the offers all sounded the same. This was described as 'arbitrary' [pt08], 'confusing' [pt14], and often resulted in participants just randomly selecting a programme. This was exacerbated in some cases by the inability to talk to professionals to get advice:

You had to make your own decision, there was no one to talk to, to ask advice, so you just had to make your own choices, and I clearly made the wrong one. [Pt 02, M, 57, White, Non-Completer, L1].

While some reported they were able to find further information from reviews or directly from service Providers, choices were often based on familiarity. Nine of those interviewed opted for a Provider that provides commonly used in-person programmes, describing this as 'popular' or, 'familiar', the only option that they had heard of, or a programme with which friends or family had previously had success. Conversely, several participants chose an alternative to this Provider as they felt they already knew that plan well and wanted to try something else.

People typically described downloading the Provider apps and signing up as 'easy'. However, several participants reported issues navigating apps and finding content and described the platforms as 'confusing' [pt14], 'clunky' [pt10] and 'glitchy' [pt20]. Other issues included apps resetting and lost log-in credentials.

Participants' views of programme content and helpfulness Survey

Everyone who started the programme was asked in the questionnaire about ease of access but only those who completed were asked for views on the programme itself.

Level 1 participants who completed the questionnaire generally found the Provider programme and websites and apps easy to use and most were positive about the way that information was presented (Fig. 2a). However,

Table 4 Odds ratios (95% confidence intervals) showing likelihood of agreeing with each question by participants' characteristics from ordinal regression

Category	My healthcare professional was supportive when referring me to the NHS Digital Weight Management Programme (patient)	It was easy to sign up to the NHS Digital Weight Management Programme (NHS staff)	There was enough information about each weight management Provider to allow me to choose a programme	I was glad to have a choice of programme
Age ¹	1.04 (0.96 to 1.13)	1.78 (1.13 to 2.81)	1.04 (0.95 to 1.12)	1.23 (1.13 to 1.34)
BMI ²	0.98 (0.93 to 1.03)	1.34 (1.13 to 1.59)	1.10 (1.05 to 1.15)	1.07 (1.02 to 1.12)
Female (vs. male)	1.17 (1.03 to 1.33)	0.30 (0.13 to 0.69)	1.14 (1.00 to 1.29)	0.94 (0.83 to 1.07)
Ethnic group (reference white)				
Asian	0.96 (0.68 to 1.37)	1.30 (0.36 to 4.63)	0.89 (0.64 to 1.24)	1.34 (0.96 to 1.89)
Black	0.61 (0.45 to 0.83)	0.62 (0.18 to 2.08)	0.63 (0.47 to 0.84)	0.81 (0.60 to 1.08)
Mixed	0.72 (0.42 to 1.25)	1.12 (0.32 to 3.92)	0.67 (0.41 to 1.08)	0.88 (0.53 to 1.45)
Other	1.00 (0.63 to 1.58)	1.17 (0.21 to 6.42)	0.93 (0.60 to 1.45)	1.22 (0.78 to 1.91)
Socioeconomic status (reference least deprived)				
IMD1 (Most deprived)	1.31 (1.07 to 1.61)	0.59 (0.25 to 1.38)	1.05 (0.87 to 1.28)	1.16 (0.95 to 1.41)
IMD2	1.22 (1.01 to 1.47)	0.84 (0.44 to 1.62)	1.01 (0.84 to 1.20)	1.06 (0.88 to 1.27)
IMD3	1.08 (0.90 to 1.31)	0.72 (0.37 to 1.40)	0.93 (0.77 to 1.11)	0.96 (0.80 to 1.16)
IMD4	1.11 (0.92 to 1.34)	0.81 (0.42 to 1.57)	1.02 (0.86 to 1.22)	1.04 (0.87 to 1.25)
Hypertension	1.04 (0.87 to 1.25)	0.74 (0.44 to 1.27)	1.09 (0.94 to 1.26)	1.17 (1.00 to 1.36)
Type 1 diabetes	1.29 (0.82 to 2.03)	No participants	1.42 (0.91 to 2.20)	1.40 (0.90 to 2.20)
Type 2 diabetes	0.94 (0.81 to 1.08)	0.81 (0.37 to 1.78)	0.95 (0.84 to 1.08)	1.06 (0.93 to 1.21)
Serious mental illness	0.92 (0.51 to 1.66)	No participants	1.00 (0.57 to 1.74)	1.27 (0.72 to 2.24)
Vulnerable	0.98 (0.71 to 1.36)	No participants	0.73 (0.53 to 1.01)	0.76 (0.54 to 1.05)
Physical disability	0.73 (0.50 to 1.08)	1.19 (0.77 to 1.83)	0.79 (0.62 to 1.01)	0.78 (0.60 to 1.00)
Learning disability	0.76 (0.34 to 1.72)	1.16 (0.31 to 4.44)	1.22 (0.64 to 2.35)	1.16 (0.59 to 2.28)

¹ Coefficients are per 10-year age bands

² Coefficients are per 5 kg/m²

fewer than half felt that the advice reflected their needs on physical activity and diet and around a third reported that the programme had helped them increase their activity, and around half improved the healthiness of diet. Slightly fewer than half felt more positive because they took part in the programme.

Participants allocated Level 2 had similar questionnaire responses to those at Level 1 (Fig. 2b). Most agreed the programme was easy to use and information presentation was good but fewer than half felt the programme met their needs, helped them change diet or physical activity, or feel more positive by the end of the programme.

Participants allocated the most support at Level 3 had similar questionnaire response patterns to Levels 1 and 2 (Fig. 2c). They felt somewhat more positively that the advice met their needs, but they were just as likely to say that the programme had changed their diet or activity or made them feel more positive. Assessed together with support level, there was little evidence that responses to the support that participants were offered differed much by demographic group, except for two characteristics (Table 5). First, people with a higher BMI were more likely to agree that the support met their needs and that it helped them change their diet and activity and feel more

positive. Second, while participants from minority ethnic groups were as likely to feel that the support to change diet and physical activity met their cultural needs as white participants, they were less likely to agree that the programme had helped them improve diet or increase physical activity.

Interviews

Interview participants described several useful and positive aspects of the programme, and responses were similar for those who completed the 12-week programme and those that did not, as well as across each level of support. Most frequently cited was the flexibility of the programme, being able to do it at home and at a time that suited, and participants also described how they liked the recipes and regular weigh-in features, which allowed them to track their weight.

Although some interview respondents felt there was a lot of information, and sometimes 'too much' [pt12], they did appreciate having all this information in one place and 'in your face' [pt04] and were more likely read and action than if it required them to search elsewhere for it. Several participants appreciated the alternative sources of information that were made available, such as the links

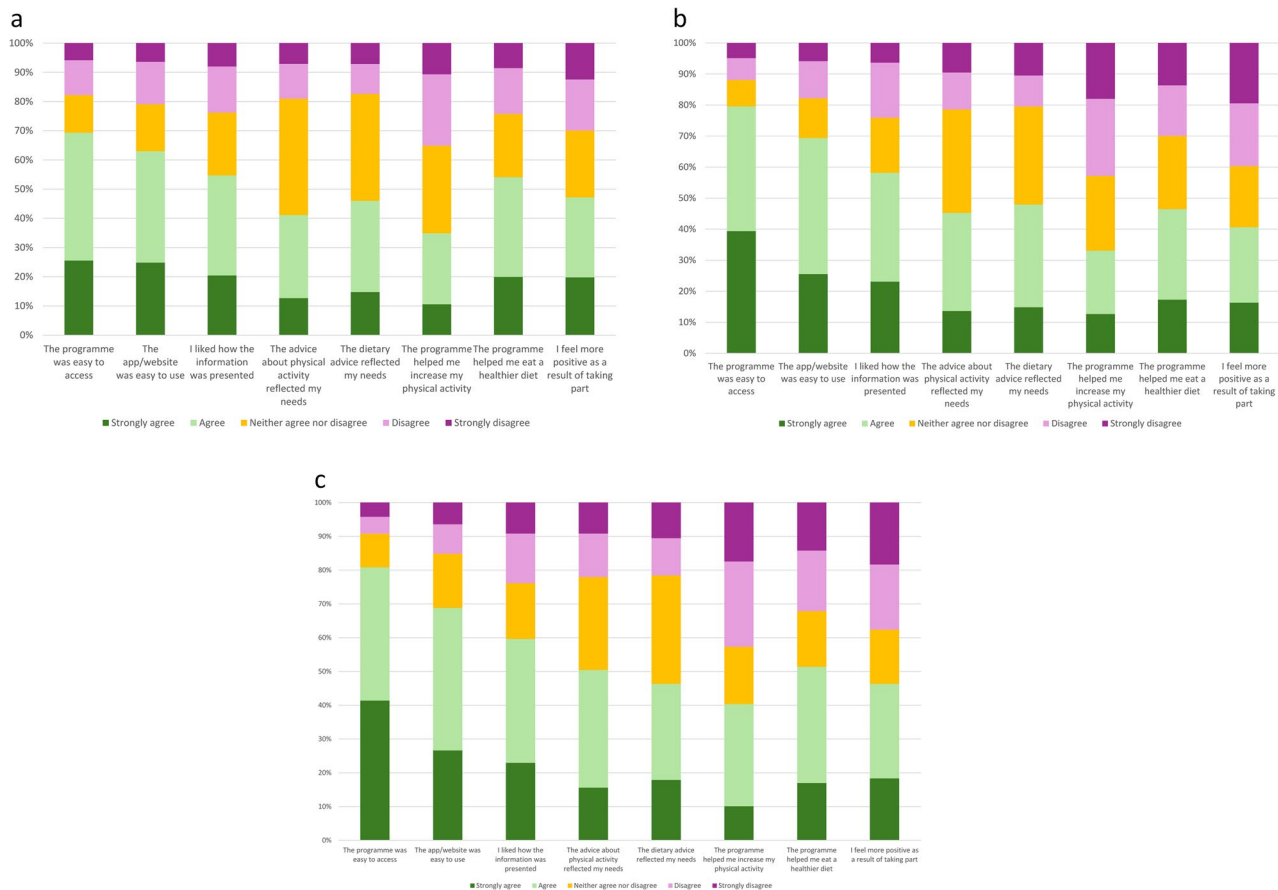


Fig. 2 **A** Responses of participants at Level 1 to the programme and its helpfulness **B** Responses of participants at Level 2 to the programme and its helpfulness **C** Responses of participants at Level 3 to the programme and its helpfulness

to online presentations and podcasts and hard copies of literature posted to them. Some participants described learning new information, and new ideas for the types of food they should be eating, while most often the information was not new to them but presented in such a way as to make them more conscious of the choices they were making and the food they were eating and provided an impetus or ‘turning point’ for example.

People frequently remarked positively on the value of support related to meal planning, which was felt to reduce stress, enable healthier choices, and establish routines.

I think the app made me more conscious, but now... it's just embedded. It's day to day now. [Pt 15, M, 27, White, Completer, L3].

The opportunity to set goals within the app and the feeling of being accountable (to themselves or to the app) were also described as positive, motivating factors. Others appreciated being able to link the app to fitness and physical activity trackers, and several participants described how they had become more physically

active during their time with the programme. Many of these participants also felt they had been able to sustain these positive changes to their diet and lifestyle after the 12-week programme.

All participants described some aspects of the programme that they did not like, or why it was not as helpful as it could be. For some, the content was ‘patronising’ or ‘basic’, food choices were ‘restrictive’ and too much emphasis was placed on calorie counting with insufficient focus on physical activity and exercise. Several participants found the information to be poorly organised or not engaging. Some described the amount of information as ‘overwhelming’ and demotivating.

The most frequently identified issue was the lack of a personal interaction, and the absence of in-person classes or meetings. As well as feeling more supported and encouraged by attending group classes in-person than completing a programme online, several participants cited the absence of personal interaction via the app was demotivating:

[I]f you go in to one of their meetings personally, they will ask you why you have not lost weight, what have

Table 5 Odds ratios (95% confidence intervals) showing likelihood of agreeing with each question on the support programme by participants' characteristics from ordinal regression

	The programme was easy to access	The app/website was easy to use	I liked how the information was presented	The advice about physical activity reflected my needs	The dietary advice reflected my needs	The programme helped me increase my physical activity	The programme helped me eat a healthier diet	I feel more positive as a result of taking part
Age ¹	1.24 (1.14 to 1.36)	1.14 (1.03 to 1.25)	1.03 (0.93 to 1.13)	1.05 (0.95 to 1.16)	0.96 (0.87 to 1.06)	0.96 (0.87 to 1.05)	0.91 (0.83 to 1.00)	0.85 (0.78 to 0.94)
BMI ²	1.04 (0.99 to 1.10)	1.10 (1.04 to 1.16)	1.08 (1.03 to 1.14)	1.12 (1.06 to 1.18)	1.09 (1.03 to 1.15)	1.17 (1.10 to 1.23)	1.09 (1.03 to 1.15)	1.13 (1.07 to 1.19)
Female (vs. male)	1.14 (1.00 to 1.30)	1.14 (0.99 to 1.32)	1.07 (0.93 to 1.24)	1.09 (0.94 to 1.26)	0.98 (0.85 to 1.13)	1.07 (0.93 to 1.23)	1.07 (0.92 to 1.23)	1.19 (1.03 to 1.37)
Ethnic group (reference white)								
Asian	1.28 (0.89 to 1.84)	0.95 (0.65 to 1.39)	0.85 (0.58 to 1.24)	1.00 (0.68 to 1.46)	1.11 (0.76 to 1.62)	0.49 (0.33 to 0.71)	0.62 (0.43 to 0.91)	0.60 (0.42 to 0.88)
Black	1.16 (0.86 to 1.57)	0.83 (0.60 to 1.14)	0.71 (0.52 to 0.97)	1.00 (0.73 to 1.37)	1.05 (0.77 to 1.45)	0.57 (0.41 to 0.77)	0.66 (0.48 to 0.90)	0.56 (0.41 to 0.77)
Mixed	0.75 (0.44 to 1.27)	0.66 (0.37 to 1.17)	0.84 (0.48 to 1.47)	1.16 (0.66 to 2.03)	1.01 (0.57 to 1.76)	0.79 (0.45 to 1.37)	0.85 (0.49 to 1.49)	0.99 (0.57 to 1.72)
Other	1.34 (0.84 to 2.13)	1.30 (0.79 to 2.13)	1.47 (0.90 to 2.40)	1.38 (0.84 to 2.27)	1.34 (0.81 to 2.19)	0.93 (0.57 to 1.52)	1.19 (0.73 to 1.95)	1.33 (0.82 to 2.17)
Socioeconomic status (reference least deprived)								
IMD1 (Most deprived)	1.34 (1.09 to 1.65)	1.17 (0.93 to 1.47)	1.15 (0.92 to 1.44)	1.05 (0.84 to 1.32)	1.12 (0.89 to 1.40)	1.05 (0.84 to 1.31)	1.14 (0.91 to 1.43)	1.19 (0.95 to 1.48)
IMD2	1.13 (0.93 to 1.37)	1.11 (0.90 to 1.38)	1.14 (0.92 to 1.40)	1.05 (0.85 to 1.30)	1.13 (0.91 to 1.39)	1.10 (0.89 to 1.35)	1.11 (0.90 to 1.37)	1.17 (0.95 to 1.44)
IMD3	1.03 (0.85 to 1.25)	1.00 (0.81 to 1.23)	1.00 (0.82 to 1.23)	1.05 (0.85 to 1.29)	0.99 (0.80 to 1.22)	0.98 (0.80 to 1.21)	0.99 (0.81 to 1.22)	1.05 (0.86 to 1.29)
IMD4	1.16 (0.96 to 1.40)	1.02 (0.83 to 1.25)	1.02 (0.83 to 1.25)	0.92 (0.75 to 1.14)	1.02 (0.83 to 1.25)	1.05 (0.86 to 1.28)	1.07 (0.87 to 1.31)	1.09 (0.89 to 1.34)
Hypertension	0.97 (0.81 to 1.16)	1.03 (0.85 to 1.25)	1.02 (0.84 to 1.23)	1.03 (0.85 to 1.25)	1.14 (0.94 to 1.38)	0.97 (0.80 to 1.17)	0.96 (0.79 to 1.16)	1.03 (0.85 to 1.24)
Severe mental illness (SMI)	1.72 (0.95 to 3.14)	1.40 (0.72 to 2.72)	1.32 (0.68 to 2.56)	1.77 (0.91 to 3.46)	1.72 (0.89 to 3.36)	0.94 (0.49 to 1.82)	1.20 (0.62 to 2.32)	1.48 (0.77 to 2.85)
Vulnerable	1.04 (0.74 to 1.46)	0.77 (0.54 to 1.11)	0.72 (0.50 to 1.03)	0.72 (0.50 to 1.03)	0.76 (0.53 to 1.09)	0.66 (0.46 to 0.93)	0.86 (0.60 to 1.23)	0.77 (0.54 to 1.10)
Physical disability	1.06 (0.79 to 1.42)	0.99 (0.72 to 1.37)	1.04 (0.76 to 1.43)	1.13 (0.82 to 1.55)	1.06 (0.77 to 1.46)	1.08 (0.79 to 1.47)	0.93 (0.68 to 1.27)	1.04 (0.76 to 1.42)
Learning disability	0.66 (0.32 to 1.35)	0.93 (0.42 to 2.07)	0.79 (0.36 to 1.75)	0.71 (0.32 to 1.57)	0.70 (0.31 to 1.55)	0.68 (0.31 to 1.50)	0.61 (0.27 to 1.34)	0.52 (0.24 to 1.14)

¹ Coefficients are per 10-year age bands

² Coefficients are per 5 kg/m²

you been doing, and, you know, they make you think what you've done, so you know where you are going wrong. But if no one's going to ask you any questions [on the app], then I'm not going to bother as well. [Pt 10, F, 63, Asian, Completer, L1].

Others also missed “turning up and weighing in and being responsible to somebody” [pt07]. One participant was dismissive about online programs from the outset:

I found out its online and it's self-monitoring. I said, "For God's sake, you're joking, aren't you?" For me, it's like being a heroin addict and somebody saying "We're going to help cure it. Go online and somebody is just going to say to you 'You need to pack it in. You need to stop.' It's just a waste of time. [Pt 01, M, 68, White, Non-Completer, L1].

Around a third of interview respondents expressed disappointment at the generic nature of the programme. These participants felt that often the information provided did not give sufficient guidance on managing weight-loss alongside other conditions, such as diabetes, heart conditions, and did not consider other issues which were connected to their overweight such as physical and mental health, medications, ethnicity, and cultural relationships with food:

I know my condition inside out, I knew all that stuff already. It wasn't very helpful, and, obviously, I've got various issues going on. But there was no real help or understanding on how to tailor it to what I needed - it wasn't very good. [Pt 23, F, 34, Mixed, Completer, L3].

Some participants did not value online group meetings and peer support chatrooms. Several participants indicated that they did not have time to engage with the online meetings and forums. Others reported that they were not looking for that kind of engagement and it was not ‘their thing’, while some read the forums but were not motivated to post or contribute as they felt they were uninviting and ‘awkward’. The absence of moderators or professionals on the forums to give advice was also a disappointment for some, and the forums were described as ‘just people like me’ [pt08] who were non-experts or weight management professionals. This absence of expertise also underscored the lack of trust some participants had in the content of the forums, and the people who were contributing:

The forums are just full of people with their own axe to grind or their own...soap box. [Pt 04, M, 60, White, Non-Completer, L1].

For others, their lack of weight loss was also a barrier to their engagement with the online forums:

I felt I didn't have anything to contribute if I wasn't losing any weight. [Pt 10, F, 63, Asian, Completer, L1].

Participants' views of the online coaching

Survey

Participants assigned to Level 2 and 3 support were offered personal, online coaching, arranged at a suitable time, as well as a self-access behavioural change syllabus, and four questions were asked of these 629 participants who completed the support programme in the questionnaire (Fig. 3). A slight majority thought the coaching happened at a convenient time and around four in ten believed that the coaching made a positive difference, improved persistence, and resulted in behaviour change.

As with the online elements of the programme, people from minority ethnic groups were less likely to find the coaching convenient or helpful. Likewise, people with a learning disability and people who were vulnerable were less likely to report that the coaching was helpful (Table 6).

Interviews

Interview participants who were offered coaching had varied experiences. Several participants reported positive experiences with their coach, including scheduled weekly calls, in-app messages, sharing of ‘good’ tailored advice, and explanations of weight loss which motivated patients and helped them understand issues in new ways. However, other patients described coaches as ‘well-meaning but ineffective’ [pt14], and who were slow to respond and then ‘patronising’ when they did. In some cases, coaches were entirely unresponsive:

I did ask someone to contact me, but no one did... They would send me reminders that I hadn't weighed in, but no one asked me why you're still the same weight. [Pt 10, F, 63, Asian, Completer, L1].

Coaching sessions were felt to be largely information-giving, and this information was too ‘generic’ to be useful and felt ‘scripted’:

There was a lot of information they had to provide from their end and there wasn't that much space... to fully get out everything from my side. I think there is quite a lot of stuff that they probably have in their list of things that they have to say. [Pt 14, F, 30, White, Non-Completer, L3].

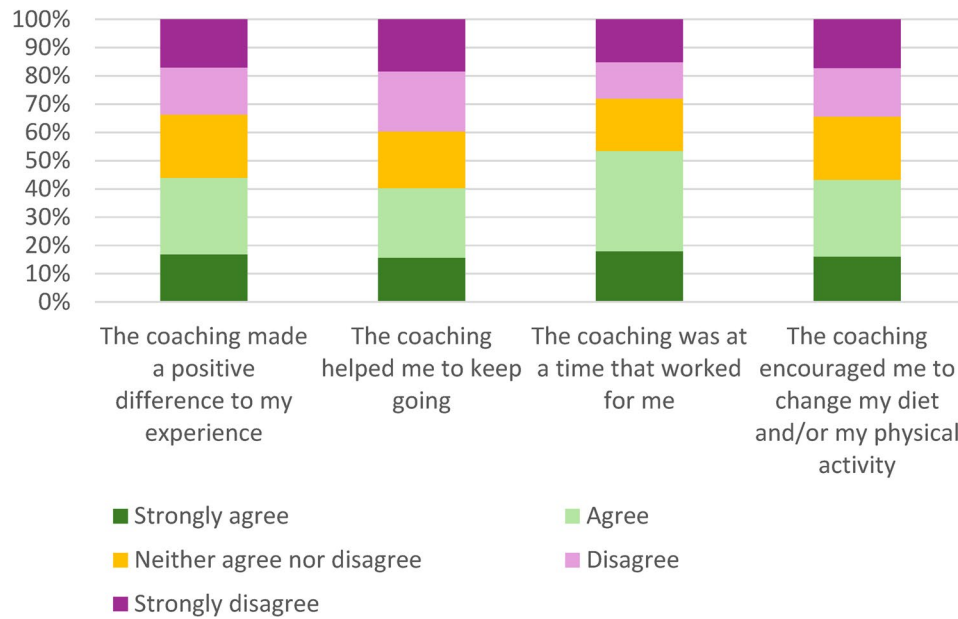


Fig. 3 Responses to coaching by participants given Level 2 and 3 support

Table 6 Odds ratios (95% confidence intervals) showing likelihood of agreeing with each question on in-coaching support by participants' characteristics from ordinal regression

	The coaching made a positive difference to my experience	The coaching helped me to keep going	The coaching was at a time that worked for me	The coaching encouraged me to change my diet and/or my physical activity
Age ¹	1.02 (0.77 to 1.35)	1.01 (0.76 to 1.33)	1.02 (0.77 to 1.35)	0.91 (0.69 to 1.20)
BMI ²	1.04 (0.93 to 1.15)	1.04 (0.93 to 1.15)	1.06 (0.95 to 1.18)	1.08 (0.97 to 1.20)
Female (vs. male)	0.98 (0.70 to 1.37)	1.06 (0.75 to 1.48)	1.04 (0.74 to 1.47)	1.05 (0.75 to 1.47)
Ethnic group (reference white)				
Asian	0.48 (0.28 to 0.80)	0.47 (0.28 to 0.79)	0.62 (0.37 to 1.05)	0.52 (0.31 to 0.87)
Black	0.39 (0.22 to 0.68)	0.41 (0.24 to 0.72)	0.43 (0.24 to 0.76)	0.34 (0.19 to 0.59)
Mixed	0.94 (0.44 to 1.97)	0.74 (0.35 to 1.56)	1.15 (0.54 to 2.44)	1.16 (0.55 to 2.45)
Other	1.13 (0.56 to 2.28)	1.05 (0.52 to 2.12)	1.00 (0.49 to 2.03)	1.19 (0.59 to 2.40)
Socioeconomic status (reference least deprived)				
IMD1 (Most deprived)	0.55 (0.25 to 1.22)	0.66 (0.30 to 1.47)	0.90 (0.40 to 2.01)	0.96 (0.43 to 2.14)
IMD2	0.48 (0.21 to 1.06)	0.62 (0.28 to 1.37)	0.72 (0.32 to 1.60)	0.88 (0.40 to 1.95)
IMD3	0.42 (0.18 to 0.94)	0.51 (0.22 to 1.15)	0.61 (0.26 to 1.38)	0.70 (0.31 to 1.58)
IMD4	0.43 (0.19 to 0.98)	0.50 (0.22 to 1.13)	0.67 (0.29 to 1.53)	0.80 (0.35 to 1.80)
Hypertension	1.10 (0.73 to 1.64)	1.11 (0.74 to 1.65)	1.10 (0.73 to 1.66)	1.07 (0.72 to 1.60)
Type 1 diabetes	2.43 (0.96 to 6.20)	2.10 (0.83 to 5.35)	1.11 (0.43 to 2.83)	1.99 (0.78 to 5.04)
Type 2 diabetes	1.15 (0.78 to 1.69)	1.15 (0.78 to 1.69)	1.16 (0.78 to 1.72)	1.13 (0.76 to 1.66)
SMI	1.05 (0.35 to 3.16)	1.20 (0.40 to 3.63)	1.63 (0.54 to 4.96)	0.71 (0.24 to 2.16)
Vulnerable	0.44 (0.20 to 0.96)	0.53 (0.24 to 1.14)	0.80 (0.37 to 1.75)	0.49 (0.22 to 1.05)
Physical disability	1.44 (0.83 to 2.50)	1.45 (0.84 to 2.51)	1.94 (1.11 to 3.39)	1.53 (0.88 to 2.64)
Learning disability	0.46 (0.14 to 1.52)	0.23 (0.07 to 0.78)	0.19 (0.05 to 0.69)	0.41 (0.12 to 1.36)

¹ Coefficients are per 10-year age bands

² Coefficients are per 5 kg/m²

Overall rating

Survey

Participants who completed the programme were asked the standard 'Friends and Family Test' question used

across NHS services, which asks for a rating from very good to very poor, and how likely they would be to recommend the service to their friends and family. About half the participants rated the service as good or very

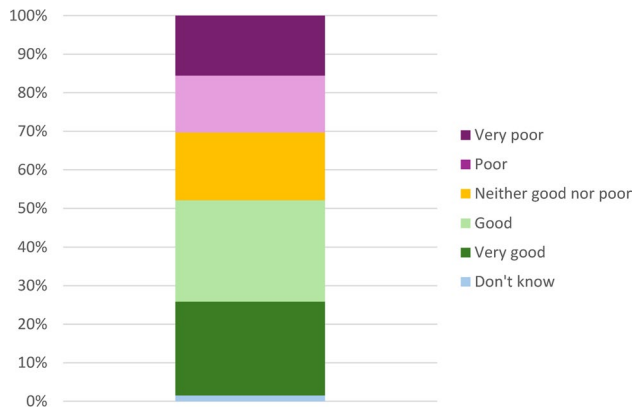


Fig. 4 Participants overall rating of the service

Table 7 Odds ratios (95% confidence intervals) showing likelihood of rating the service more positively from ordinal regression

	How was your experience of the NHS Digital Weight Management programme overall?
Age ¹	0.93 (0.84 to 1.02)
BMI ²	1.14 (1.08 to 1.20)
Female (vs. male)	1.09 (0.94 to 1.25)
Ethnic group (reference white)	
Asian	0.65 (0.45 to 0.95)
Black	0.71 (0.52 to 0.98)
Mixed	0.95 (0.54 to 1.66)
Other	1.48 (0.90 to 2.43)
Socioeconomic status (reference least deprived)	
IMD1 (Most deprived)	1.20 (0.96 to 1.50)
IMD2	1.17 (0.95 to 1.44)
IMD3	1.08 (0.87 to 1.33)
IMD4	1.11 (0.91 to 1.36)
Hypertension	1.07 (0.88 to 1.29)
Type 1 diabetes	1.41 (0.88 to 2.28)
Type 2 diabetes	1.05 (0.90 to 1.23)
SMI	1.16 (0.59 to 2.25)
Vulnerable	0.74 (0.52 to 1.06)
Physical disability	0.94 (0.69 to 1.29)
Learning disability	0.80 (0.36 to 1.76)

¹ Coefficients are per 10-year age bands

² Coefficients are per 5 kg/m²

good and about a third as poor or very poor (Fig. 4). Those with a higher BMI were more likely to be positive about the programme, while people from minority ethnic groups were less likely to rate the programme positively. No other individual characteristics were associated with rating of the programme (Table 7).

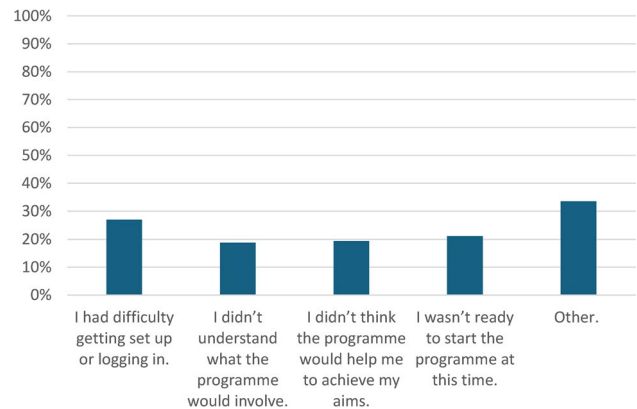


Fig. 5 Reasons participants did not start the weight management programme

Interviews

Conversely, those who were interviewed spoke positively about how the programme fitted in with their schedule and had motivated them to lose weight and make changes to their lifestyle, provided them with a sense of accountability and had given them new information that was all in one place and easy to find. Negative responses were related to the lack of in-person support, restrictive diets, or information which was overwhelming, patronising, or insufficiently tailored.

Participants who did not start or did not complete the programme

Survey

One-hundred and seventy participants who were initially referred to the programme did not start the weight management programme and were asked for reasons why they did not do so in the questionnaire; they were able to indicate more than one reason. Reasons varied (Fig. 5). We examined whether the reasons for non-completion were associated with demographic and health characteristics, but there were too few people with type 1 diabetes, serious mental illness (SMI), learning disability, or considered vulnerable to include these variables in these analyses.

There were few clear associations between participants' demographic and health characteristics and the reasons people gave for not joining the programme because the estimates were imprecise (Table 8).

Seven-hundred and fifty-seven participants who responded to the survey started but did not complete the programme, and we asked them the reasons for this in the questionnaire. Fewer than one in ten people reported that time was a barrier to completion, around two in ten selected three of the other pre-populated and non-exclusive reasons, while around four in ten reported that they wanted in-person support or other as the reason or reasons for non-completion (Fig. 6). Using binary logistic

Table 8 Demographic and health factors associated with reasons for not starting the digital weight management programme

	I had difficulty getting set up or logging in.	I didn't understand what the programme would involve.	I didn't think the programme would help me to achieve my aims.	I wasn't ready to start the programme at this time.
Hypertension	1.07 (0.39 to 2.89)	0.71 (0.25 to 2.04)	0.61 (0.19 to 1.96)	1.05 (0.37 to 2.96)
Type 2 diabetes	1.28 (0.56 to 2.90)	0.66 (0.26 to 1.70)	0.83 (0.34 to 2.05)	1.11 (0.48 to 2.58)
BMI ²	0.82 (0.60 to 1.13)	0.80 (0.57 to 1.13)	1.12 (0.83 to 1.51)	1.09 (0.83 to 1.44)
Age ¹	1.22 (0.81 to 1.83)	0.78 (0.50 to 1.21)	1.17 (0.75 to 1.83)	1.42 (0.93 to 2.17)
Disability	2.41 (0.43 to 13.57)	2.53 (0.37 to 17.45)	Not estimable	0.48 (0.12 to 1.93)
Socioeconomic status (reference least deprived)				
IMD1 (Most deprived)	2.78 (0.88 to 8.8)	7.72 (1.69 to 35.35)	0.99 (0.24 to 4.19)	1.90 (0.53 to 6.78)
IMD2	0.48 (0.14 to 1.68)	4.36 (0.97 to 19.66)	3.18 (1.02 to 9.95)	2.64 (0.83 to 8.39)
IMD3	1.38 (0.46 to 4.14)	3.47 (0.70 to 17.18)	0.32 (0.06 to 1.67)	0.79 (0.20 to 3.07)
IMD4	0.69 (0.21 to 2.24)	4.03 (0.85 to 19.09)	0.76 (0.21 to 2.72)	1.14 (0.35 to 3.77)
Ethnic group (reference white)				
Asian	2.12 (0.58 to 7.77)	1.46 (0.38 to 5.64)	0.53 (0.10 to 2.93)	1.29 (0.33 to 4.97)
Black	16.52 (1.21 to 225)	Not estimable	Not estimable	Not estimable
Mixed	Not estimable	6.08 (0.17 to 217.04)	Not estimable	Not estimable
Other	0.73 (0.08 to 7.03)	2.99 (0.41 to 21.88)	1.86 (0.27 to 13.03)	Not estimable

¹ Coefficients are per 10-year age bands

² Coefficients are per 5 kg/m²

Sex was included in the equation but not estimated because there were too few men in the relatively small group of people who responded to these questions

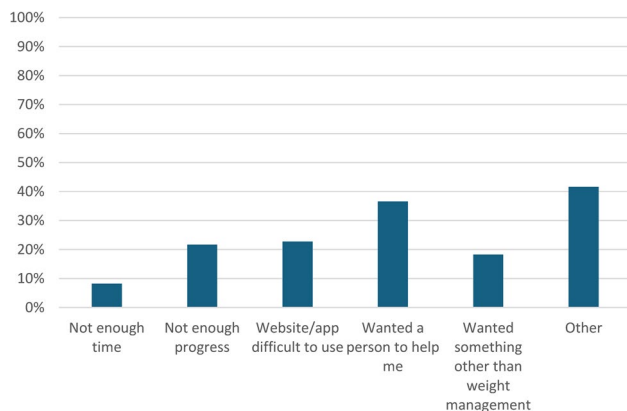


Fig. 6 Reasons participants did not complete the weight management programme

regression, we examined associations of reporting these reasons with demographic and health characteristics (Table 9). There were too few people with learning disability, SMI, or considered vulnerable to be included in the analyses. Most estimates were imprecise, but there was some suggestion that people of Asian ethnicity were more likely to find the website or app difficult to use.

Interviews

Participants we interviewed described several reasons for not completing the programme ($n=10$). For some it was because of the lack of in-person support and weight gain early in the programme ($n=2$), while others described feeling overwhelmed with information or the programme

being 'restrictive and monotonous' [pt09]. For others, they felt that they needed more support or something different to what they had previously tried:

I was given things that I've tried, many, many times, and never work...I gave up, to be honest. I gave up with this way of trying to lose weight or seeking help. [Pt 17, M, 42, Other, Non-Completer, L3].

One participant had started the programme but then discovered he was ineligible as he had an eating disorder.

The first few days I thought I was doing well...but I emailed them and said, "...I struggle, and I eat loads at night. Have you got any tips?" and then they said, "We think you've got an eating disorder. You need to be referred to the doctor." So, they kicked me off. [Pt 13, M, 40, White, Non-Completer, L3].

Several participants largely stopped engaging with the programme content but did continue to record a weight via the app, but these weights were not always recorded accurately:

I got several emails about putting my weight in when it had passed a certain point, because of the NHS obligation to do so. I have to be honest, I just put whatever in... just to get through to the next stage. [Pt 23, F, 34, Mixed, Completer, L3].

Table 9 Demographic and health factors associated with reasons for not completing the programme

	Not enough time	Not enough progress	Website/app difficult to use	Wanted a person to help me	Wanted something other than weight management
Hypertension	1.19 (0.59 to 2.41)	1.60 (1.01 to 2.52)	0.92 (0.56 to 1.49)	0.79 (0.53 to 1.20)	0.58 (0.34 to 0.98)
Type 1 diabetes	0.66 (0.08 to 5.73)	Not estimable	0.75 (0.15 to 3.85)	1.00 (0.23 to 4.30)	Not estimable
Type 2 diabetes	1.64 (0.86 to 3.13)	1.16 (0.77 to 1.74)	1.29 (0.87 to 1.92)	0.91 (0.65 to 1.28)	0.93 (0.61 to 1.42)
Physical disability	0.42 (0.19 to 0.96)	0.64 (0.33 to 1.24)	0.82 (0.41 to 1.65)	1.70 (0.87 to 3.32)	1.28 (0.57 to 2.87)
BMI ₂	0.94 (0.75 to 1.18)	0.91 (0.78 to 1.05)	1.13 (1.00 to 1.29)	1.13 (1.00 to 1.27)	1.13 (0.98 to 1.29)
Ethnic group (reference white)					
Asian	Not estimable	2.02 (0.61 to 6.64)	5.78 (1.80 to 18.50)	2.12 (0.68 to 6.63)	0.31 (0.04 to 2.48)
Black	0.89 (0.20 to 4.00)	2.27 (0.93 to 5.52)	0.78 (0.26 to 2.40)	2.02 (0.86 to 4.74)	1.83 (0.71 to 4.69)
Mixed	0.72 (0.08 to 6.27)	3.52 (1.08 to 11.52)	1.07 (0.28 to 4.15)	1.68 (0.52 to 5.37)	0.69 (0.14 to 3.29)
Other	1.01 (0.12 to 8.83)	0.86 (0.17 to 4.34)	0.49 (0.06 to 4.06)	0.42 (0.09 to 2.07)	0.85 (0.17 to 4.25)
Sex	0.73 (0.41 to 1.30)	1.20 (0.80 to 1.78)	1.10 (0.75 to 1.61)	1.04 (0.75 to 1.43)	1.02 (0.68 to 1.54)
Age ₁	0.74 (0.57 to 0.98)	0.83 (0.69 to 1.01)	1.20 (0.99 to 1.46)	0.92 (0.78 to 1.09)	0.73 (0.60 to 0.90)
Socioeconomic status (reference least deprived)					
IMD1 (Most deprived)	0.82 (0.33 to 2.05)	1.20 (0.67 to 2.17)	2.03 (1.16 to 3.55)	1.34 (0.81 to 2.24)	0.96 (0.49 to 1.88)
IMD2	0.72 (0.32 to 1.64)	1.01 (0.59 to 1.74)	1.36 (0.80 to 2.31)	1.28 (0.81 to 2.05)	1.40 (0.78 to 2.52)
IMD3	1.22 (0.59 to 2.52)	0.83 (0.48 to 1.45)	0.96 (0.56 to 1.66)	1.39 (0.88 to 2.2)	0.95 (0.51 to 1.75)
IMD4	0.62 (0.26 to 1.46)	1.15 (0.67 to 1.96)	0.89 (0.51 to 1.56)	1.47 (0.92 to 2.34)	1.84 (1.04 to 3.26)

1 Coefficients are per 10-year age bands

2 Coefficients are per 5 kg/m²

Summary of findings

Most participants found navigating the hub where they chose a service provider and the sign-up process easy. However, while they appreciated a choice, the programmes offered all seemed very similar and so they either chose to use a well-known brand name programme or actively chose to avoid that programme because of prior experience, making a somewhat arbitrary choice of the other options. Participants found navigating the programme relatively straightforward but were somewhat underwhelmed by some of the content. Many participants felt they had been able to sustain positive changes to their diet and lifestyle after the 12-week programme.

Participants particularly missed the in-person interaction and sense of accountability that comes from in-person programmes and, perhaps as a result, only around half of the participants found the online programme content useful in helping them change their behaviour. Those who received coaching found it somewhat useful, but our qualitative research suggested that this was not as responsive to their needs or as tailored as they would have liked. Those who received coaching (Levels 2 and 3) felt much the same about the programme overall as participants who received no coaching. Participants from minority ethnic groups were a little less positive about the value of the programme even though they were as likely to feel that the advice was as tailored to their cultural needs as the White majority population.

Discussion

On average, people who joined the programme achieved meaningful weight loss [7]. Those results compared favourably to web-based weight management interventions tested in randomised trials and those delivered as face-to-face interventions [11]. In this study, by combining data collected from a large-scale questionnaire with focused interview data we were able to gain a rich picture of patient experiences of the programme. Half the participants surveyed rated the programme as good or very good, and most agreed that the programme was easy to use, and that information was well presented. Participants valued choice within the programme, and while many expressed a preference for in-person contact rather than a digital approach, our findings reflect previous studies that suggest weight loss interventions can be delivered effectively on a large scale, using digital technologies [12–14], and that the programme was effective and acceptable, which is often lacking from routine care settings [15].

The findings presented here indicate while not universally appreciated, digital weight management programmes can offer distinct advantages when compared to in-person options. Some participants liked the flexibility of the programme, being able to complete it from home and at times that suited, and for many the privacy afforded by online platforms was desirable. This bolsters findings of previous studies which have suggested that ‘technology-mediated interventions could be an

alternative to in-person programs, potentially overcoming barriers of access and allowing expanded dissemination' [12]. Given that people with a higher BMI were more positive about the programme and were more likely to agree that the support met their needs and helped them change their diet and activity, it may also indicate that such interventions are suited to those most in need of support.

Those who took part in the programme indicated that having information all in one place, access to recipes, and features which facilitated meal planning, goal setting, and weight tracking were helpful, and made them more conscious of their intake and their approach to food. These elements which facilitate health and lifestyle education and behaviour and outcome tracking have previously been highlighted as key features of effective interventions [14].

Half of those surveyed for this study reported that the programme met their needs or expectations, helped them change diet or physical activity, or feel more positive overall by the end of the programme. Many interview participants felt they had been able to sustain positive changes to their diet and lifestyle after the 12-week programme, and some would have valued continued access to the app to help sustain any changes they had made. While some participants paid for continued access, others found the cost prohibitive, which raises questions of unequal access.

As with previously reported studies, the generic nature of information and the repetition of feedback [16] were among the characteristics most disliked by participants. Personalised feedback [17], and the personal tailoring of information provided by digital interventions have been consistently identified as features valued by users [18], but were felt to be lacking by many in the programme and that are present in in-person programmes that they had experienced in the past.

Several studies [18–20] have highlighted how access to social support, via peer groups for example, are highly valued features of digital weight management interventions. Our findings, however, suggest that many potential participants may resist these aspects of online programmes, perceiving them to be inferior or less desirable than in-person groups. This may be due to the lack of a moderator or professional input.

Online health coaching is a common feature of effective digital programmes for weight loss and diabetes prevention [14], with some achieving outcomes comparable to those of robust, in-person interventions [21]. Online health coaching has been demonstrated to be effective at engaging people to take an active role in managing their health and empowering them to make changes [21–23]. However, our findings indicate that participants in the programme had mixed experiences of the Digital

Weight Management Programme coaching. When it worked well, most participants thought the coaching happened at a convenient time, and involved scheduled weekly calls, in-app messages, sharing of 'good' tailored advice; only around four in ten believed that the coaching made a positive difference, improved persistence, and resulted in behaviour change. In contrast, other participants described well-meaning but ineffective coaches, who were often unresponsive, slow to respond, or 'patronising'. In some cases, coaching sessions were felt to be largely information-giving, and this information was 'scripted' and too 'generic' to be useful. People from minority ethnic groups were less likely to find the coaching convenient or helpful. Likewise, people with a learning disability and people who were vulnerable were less likely to report that the coaching was helpful. These findings suggest that developing the coaching to be more responsive to people's perceived needs may improve engagement and thereby outcomes, but this will need to be tested. While this evaluation does not focus on the delivery of intervention content or fidelity of coaching specifically, the role and standardisation of coaching are acknowledged as important aspects of service quality and user experience. However, uniformity and adherence to core delivery principles were intended to be safeguarded through contractual obligations, onboarding processes, and routine performance oversight. Future research or evaluations could usefully explore how coaching fidelity, consistency, and user outcomes vary across providers, and how these dimensions are monitored within the DWMP framework. This may also inform the development of future iterations of questionnaire items or quality assurance indicators.

Respondents from minority ethnic groups were less likely to rate the overall programme positively, and less likely to agree that the programme had helped them improve diet or increase physical activity. It has previously been suggested that a lack of understanding of cultural norms and beliefs by programme providers may impede minority ethnic groups from accessing and adhering to digital diabetes programmes [24]. Programmes may require an understanding of social and cultural factors, use of social support, family involvement, and co-production of materials with target communities to facilitate greater engagement with these groups and improve the salience and success of the intervention [24].

As medications for treating obesity are increasingly utilised and produce substantial short- and long-term weight loss and improve obesity-related comorbidities, incorporating lifestyle modification alongside new medications to treat obesity remains advisable [25]. Healthy eating patterns, physical activity, and regular specialist counselling, as facilitated by the Digital Weight Management Programme, may offer important additional

benefits for patient health and well-being [25]. In addition, as weight is often regained once medications are stopped [26], it is important to address health behaviours alongside pharmacological management as a means of long-term weight management support.

Strengths and limitations

The survey was informed through consultation with a range of academic, practitioner and policy stakeholders and extensive iterative feedback from potential service users. The additional use of qualitative methods allowed us to explore the experiences of programme users in greater depth. As may be expected in studies such as this, limitations include the survey completion rate and diversity of the interview sample. Fewer than one in four surveys sent were completed, and due to this low completion rate, those that returned the survey may not be representative of all service users. While we attempted to recruit a varied sample of interview participants and contacted 62 people from across the range of socioeconomic deprivation, it was predominantly White and older participants who agreed to give an interview. Similarly, the participants interviewed may have been motivated by atypically positive or negative experiences.

Conclusion

The NHS Digital Weight Management Programme for people living with obesity and hypertension or type 2 diabetes was moderately well received by most respondents, with features that worked well for some participants, and facilitated weight loss, behaviour change and continued engagement among many participants. The coaching was perceived by many participants to be insufficiently tailored to their needs and evidently scripted, which undermined people's engagement, especially among participants from ethnic minority communities. Tailored, culturally sensitive digital weight management programmes may facilitate weight management support and sustained lifestyle changes on a large scale; future research could explore how coaching fidelity, consistency, and user outcomes vary across providers.

The findings from this study have been used by NHSE to implement targeted actions to address identified needs of patients and enhance the overall service experience. Improvements to the patient journey have been made in response to feedback indicating uncertainty in selecting a Provider, particularly as many are not widely recognised household names. To mitigate this, enhancements have been made to the availability and clarity of information on each Provider, including clear descriptors detailing service delivery models, app functionality, and accessibility provisions. These refinements aim to support users in making informed choices regarding the weight management programme most suited to their individual needs.

In response to user feedback, providers have also revised their approach to dietary guidance and coaching to better accommodate cultural and individual preferences. This includes expanding culturally appropriate dietary substitutions and prioritizing personalized coaching, with an increased emphasis on extended human interaction over AI-based support where preferred.

A structured programme of continuous user feedback and insight generation has been embedded within service delivery to facilitate ongoing refinements, optimize the user experience, and support improved clinical and behavioural outcomes.

Abbreviations

NHS	National Health Service
NHSE	National Health Service England
WMP	Weight Management Programme
GPs	General Practitioners

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12889-026-26203-z>.

Supplementary Material 1.

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Authors' contributions

AJA, PA, and SAJ were responsible for the study design and conduct. PA and SH undertook the quantitative analysis and prepared all figures and tables. SB undertook qualitative data collection and analysis. SB and PA wrote the main manuscript and text. All authors contributed to the manuscript, reviewing and editing successive iterations.

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Data availability

The quantitative data that support the findings of this study are available from NHS England but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of NHS England. The qualitative dataset used and analysed during the current study is available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate

The NHS Ethics Service declared that the assessment of service experience via survey data did not constitute research but service improvement and therefore was not eligible for approval.

The qualitative interview component of the study was approved by the Health Research Authority Queen Square Research Ethics Committee (23/PR/0910).

All participants were informed of the purpose of the survey and agreed to participate and share their data anonymously. They were asked for additional consent to leave their contact details for the interview study, and all interview participants gave informed consent for anonymized data to be recorded and shared.

This study adhered to the Declaration of Helsinki in respect of research conducted on humans and/or human data.

Consent for publication

Not Applicable.

Competing interests

PA and SAJ were investigators in a publicly funded trial where Nestle donated total diet replacement products to support weight loss. All remaining authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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