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RESEARCH ARTICLE

Adapting an online guided self-help intervention for the management of binge eating in adults with type 2 diabetes: The POSE-D study

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Abstract

Aims: People with type 2 diabetes (T2D) are more likely to experience binge eating than the general population, which may interfere with their diabetes management. Guided self-help (GSH) is the recommended treatment for binge-eating disorder, but there is currently a lack of evidenced treatment for binge eating in individuals living with T2D. The aims of the current study were to adapt an existing evidence-based GSH intervention using the principles of co-design to make it available online, suitable for remote delivery to address binge eating specifically in adults living with T2D. The Working to Overcome Eating Difficulties GSH intervention comprises online GSH materials presented in seven sections delivered over 12 weeks, supported by a trained Guide.

Methods: In order to adapt the intervention, we held four collaboration workshops with three expert patients recruited from diabetes support groups, eight healthcare professionals and an expert consensus group. We used thematic analysis to make sense of the data.

Results and Conclusions: The main themes included; keeping the GSH material generic, adapting Sam the central character, tailoring the dietary advice and eating diary. The length of Guidance sessions was increased to 60 min, and Guide training was focussed around working with people with diabetes.

KEYWORDS

binge eating, eating control, guided self-help, psychological treatment, type 2 diabetes

1 | BACKGROUND

An estimated 3.9 million people in the United Kingdom (UK) live with type 2 diabetes (T2D)[1] and a further 940,000 remain undiagnosed.[2] Diabetes is described as one of the fastest-growing health conditions in the UK, with the prevalence of T2D almost doubling over the last decade.[3]

Diabetes UK identified diabetes and eating disorders as a priority area for research.[4] This was raised following a priority-setting exercise reported by Wylie et al.[5] that

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highlighted the need to develop complex interventions for people with diabetes and eating disorders.

There are well-established links between disordered eating, particularly binge eating, obesity and T2D. While the direction of these relationships is not well understood, people with T2D are three to six times more likely to have obesity.[6] In turn, those with T2D are more likely to struggle with binge eating. A systematic review of studies of eating disorder prevalence within samples of patients with T2D confirms that there is substantial variation in prevalence rates of binge-eating disorder (BED) between studies (1.2%–25.6%).[7]

Binge-eating disorder is characterised by episodes of overeating, that is, consuming unusually large amounts of food in a short space of time, and these are accompanied by feelings of 'loss of control' overeating. Importantly, there is no compensation by purging or other means for these binges. BED is one of the most common forms of eating disorders, after other specified eating or feeding disorder (OSEFD), with an estimated lifetime prevalence of 1.9% for women and 0.3% for men in Europe.[6] However, it is likely underdiagnosed. A person may exhibit bingeing behaviours but not be diagnosed with BED if their eating behaviours or frequency of bingeing does not satisfy the above criteria, they may be viewed as subclinical or diagnosed with OSEFD. Subclinical binge eating as a symptom of BED can be problematic and is thought to be much commoner than clinically diagnosed cases. Binge eating is a secretive eating problem and therefore, people find it more difficult to seek help.

Binge eating is known to potentially impair the physical health of people with T2D. It is associated with an increased risk of raised HbA1c, raised blood pressure, higher body mass inedx and poorer response to weight loss interventions.[8,9] All of these increase the risk of long-term vascular complications of diabetes. Binge eating is also associated with significant psychological costs such as co-morbid mental health problems, reduced quality of life and poorer social functioning.[6]

The National Institute for Health and Care Excellence (NICE) recommends Guided Self-Help (GSH) as the first line of treatment for adults with BED. This should use cognitive behavioural self-help materials, focus on adherence to the self-help programme and should be supplemented with brief supportive sessions.[10] A systematic review and meta-analysis of 30 randomised controlled trials of GSH for eating disorders showed significant effects of GSH on reducing global eating disorder psychopathology (overall relative risk −0.46) and binge abstinence (−0.20).[11] The main moderator of binge abstinence was a diagnosis of BED, affirming the value of GSH in managing this disorder. And whilst it is a recommended first line of treatment, our previous research shows GSH can be effective for a range of severity but is not suited to individuals with very low weight or with co-morbid severe mental illness.[11,12]

What's new

- Diabetes UK has identified eating disorders in diabetes as a priority research area, in particular, there is a need to develop complex interventions for people with diabetes and eating disorders.
- At present, there is no evidence-based treatment for binge eating specifically in people with type 2 diabetes (T2D). This paper describes the adaptation process to develop an existing guided self-help treatment for binge eating to be tailored for people with T2D.
- The adapted intervention will place an emphasis on training healthcare professionals to work with people with T2D.

There are currently no evidenced treatments that address binge eating in people with T2D. The published evidence that exists comprises small pre-post studies conducted outside of the UK.[13]

Most people with T2D see their GP and only a small number of people with more complicated problems are referred to a secondary care service. Services include Diabetes Structured Education[14] and the Diabetes Remission Pilot (low-calorie formula diet),[15] but these do not offer support for eating disorders. The Increasing Access to Psychological Therapies (IAPT) service offers self-help resources,[16] and the weight management service offers some psychological therapy, but these are not tailored to the needs of people with T2D.

Based on available evidence, people with eating disorders who access evidence-based treatment within the first 3 years, have better treatment outcomes.[17,18] Primary care staff play a key role in detecting and managing both T2D and eating disorders. Therefore, they appear well placed to offer medical and psychological support for both conditions.

2 | AIM

This project aims to adapt an existing evidence-based GSH intervention using the principles of co-design, so that it can be delivered remotely and is suitable specifically for the management of binge eating in adults living with T2D. Specifically;

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1. Adapting the content and usability of the online platform, and
2. Adapting the structure of guidance and training.

3 | METHODS

The study was approved by the University of Leeds Medicine and Health Ethics Committee (MREC 19-090) and received Health Research Authority (HRA) approval (21/HRA/0072) for delivery within the UK National Health Service (NHS).

3.1 | The Working to Overcome Eating Difficulties GSH intervention

The Working to Overcome Eating Difficulties GSH intervention was developed for use with adults (aged 16+). In a randomised controlled trial of people presented with disordered eating, we found a reduction in eating disorder psychopathology, key behaviours and global distress, with treatment gains maintained at 3 and 6 months.[19] A qualitative process study showed the value of assessing service user's readiness to change at the start of the intervention and the importance of Guide's qualities and skills.[12] More recently, we have shown that GSH can be used effectively when delivered within a weight management service in Leeds for helping people with obesity to manage their binge-eating problems.[20]

The intervention is comprised of three components: the GSH materials, the Guidance and the Guide training and supervision.

3.1.1 | GSH materials

The intervention is divided into seven sections (Table 1.): (1) an introductory session followed by sections titled; (2) What are eating disorders, (3) Physical and psychological health, (4) Food, health and unwanted behaviours, (5) Negative thoughts: identifying and challenging, (6) Learning to feel good about you and (7) Relapse prevention: preparing for the future. The intervention takes place over a 12-week period. Chapters 1–4 are made available a week apart, with gaps of 2 weeks between chapters 4, 5 and 6 and longer between 6 and 7. Service users are required to engage

TABLE 1 Summary of the POSE-D: Working to Overcome Eating Difficulties workbook/online platform.

Session	Title	Key topics
1	Introduction: Working to Overcome Eating Difficulties	Introduction to the programme; Readiness for change; Introduction to guided self-help (GSH)
2	Chapter 1: Eating Disorders and this Treatment Approach	Background on eating disorders and their causes; Cognitive Behavioural Therapy (CBT) and the Transdiagnostic Approach
3	Chapter 2: Physical and Psychological Health	Impacts of restriction and binge-restrict cycle; Compensatory behaviours; Keeping an eating diary
4	Chapter 3: Food and Health, and Unwanted Behaviours	Determinants of body weight; Role of different nutrients in the body; Eating for health with diabetes; Recognising hunger and stopping compensatory behaviours
5	Chapter 4: Thoughts	Identifying unhelpful thoughts; Psychological flexibility; Mindfulness
6	Chapter 5: Learning to Feel Good About Yourself	Emotions in Cognitive Behavioural Therapy; Self-soothing when stressed; Improving relationships; The role of mobile apps in eating problems
7	Chapter 6: Planning for the Future	Meeting goals and maintaining change; Building resilience

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with cognitive-behavioural tasks in the relevant sections prior to each appointment.

3.1.2 | Guidance

A Guidance session with a trained Guide accompanies each of these sessions. Guides are healthcare professionals (HCPs) such as dietitians, psychologists and nurses. During these contacts, the Guide discusses the task completions with the service user and helps troubleshoot any difficulties encountered. Like the chapters, the Guide sessions are staggered so that there is more Guide contact at the beginning of the intervention.

3.1.3 | Guide training

Guide training has previously been conducted as a 1-day, face-to-face session. It covers the rationale for GSH, role of the guide, key skills to elicit behaviour change and sections of the manual. Guides are provided with the GSH materials. This is supplemented with at least two, 1-hour supervision sessions to discuss case studies.

3.2 | Intervention adaptation

The Working to Overcome Eating Difficulties GSH intervention was adapted using the principles of co-design to make it available online, suitable for remote delivery to address binge eating specifically in adults living with T2D. We followed the ADAPT guidance for adapting interventions to new contexts.[21] The ADAPT guidance provides a framework and checklist outlining the key stages for intervention adaption. Components of the intervention that are agreed on are reported in line with the TIDieR (Template for Intervention Description and Replication)[22,23] and FRAME checklists.[24]

Four remote, interactive 2-h collaboration workshops were conducted; two with HCPs who work with people living with T2D, from a range of professional backgrounds and experience of eating disorders. The other two were with expert patients recruited from a local diabetes support group run in collaboration with academic researchers. The expert patients were individuals living with T2D and binge eating. The workshops were conducted via Zoom, recorded and transcribed using the autotranscribe function.

Data were analysed using thematic analysis[25] and key themes were documented. Any areas of contention between patients and HCPs were presented to an independent Expert Consensus Group to reach agreement on the final draft intervention to be evaluated. The group consisted of academics and clinicians (endocrinologists, diabetologists and diabetes dietitians). We also sought Patient Public Involvement throughout the process.

3.3 | Recruitment

Healthcare professionals were recruited for the collaboration workshops through diabetes, weight management and eating disorders services within Yorkshire. Expert patients living with T2D were recruited through a local Diabetes-UK support group, posters in primary care and social media. Expert patients were not required to have a clinical binge-eating diagnosis or a specific severity. The presence of binge-eating behaviour was assessed using the first two questions of the BED-7 Scale[26] confirming experience of episodes of excessive overeating in the past 6 months and associated distress. Expert patients who answered "no" to either question were excluded. Those who expressed an interest were required to provide informed consent and then a time was arranged for the group collaboration workshops. Seven expert patients consented, but due to constraints of the Covid-19 pandemic, only three attended the workshop, compared to eight HCPs. Those who did not attend, were emailed the proposed changes and invited to comment.

3.4 | Collaboration workshops (content)

The sessions followed the principles of co-design outlined by INVOLVE.[27] The sessions were held remotely and were 2 h in duration. In all workshops, we gave an overview of the study. We then demonstrated features and activities within the intervention and obtained feedback; verbally, via chat, using polls and surveys. The first workshop was focussed on adapting (1) the Content and usability of the online platform and the second on (2) the Structure of guidance and training. Expert patients were reimbursed for their time in line with INVOLVE.[27]

3.5 | Thematic analysis

The six stages of thematic analysis[28] included: (1) familiarisation with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes and (6) producing a report. During the familiarisation stage, the focus group recordings were listened to, and initial codes were generated in relation to adapting the intervention. This initial coding framework

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was applied to the focus group transcripts and revised using an iterative process, considering whether certain factors were deemed more salient than others based on frequency, whether the experiences of patients and HCPs were similar or different. The analysis process was conducted, and consensus was reached by three researchers (G.T.-T., J.R. and E.C.) and themes were fed back to the group for accuracy as a way of confirming their validity. Finally, themes were organised and presented in a Venn diagram to demonstrate the similarities and differences between the groups. A detailed account of all themes will be reported in Section 4, illustrated using excerpts from the focus group transcripts.

4 | RESULTS

4.1 | Participants

A total of eight HCPs and three individuals living with T2D participated in the workshops (Table 2).

4.2 | Intervention adaptations

The collaboration workshops for both individuals living with T2D and HCPs focussed on two key areas. The first, on the content and usability of the online platform and the second on the support/guidance and Guide training. The themes are presented diagrammatically (Figure 1) and then described using quotes from the workshops.

4.2.1 | Length of sessions

The Guidance sessions were originally planned to last 30 min. Feedback from HCPs was that this length of time would be insufficient to review service users' work, have a discussion and plan for the session. Those with a background in eating disorders reported that hour-long sessions were typical in eating disorder treatment.

> "I was just going to say from an eating disorders perspective that an hour long for quite a few numbers of sessions [provides us] a really good handle on what's going on for the participant. [...] when you were saying half an hour, there's no time, that's my feeling"-HCP5.

> "I do find that half an hour is definitely not long enough for most of the people."-HCP3.

4.2.2 | "Sam"—the central vignette character

Sam was a gender-neutral cartoon avatar used as a case study throughout the workbook. In previous versions of the GSH intervention, Sam had included references to school

TABLE 2 Co-production participant characteristics.

Participant	Age (years)	Profession	Ethnicity	Years working with (HCP) or lived experience (EPT) of	
				T2D	ED
HCP 1	35–44	Nutritionist	White	2	<5
HCP 2	45–54	Diabetes dietitian	Asian -Pakistani	13	<5
HCP 3	25–34	Diabetes dietitian	White	1	<5
HCP 4	35–44	Psychological therapist	White	7	>5
HCP 5	35–44	Diabetes dietitian	White	17	>5
HCP 6	55–64	Dietetic assistant	White	12	<5
HCP 7	35–44	Diabetes dietitian	White	19	>5
HCP 8	35–44	Bariatric dietitian	White	12	>5
EPT 1	65+			15	10
EPT 2	65+			15	10
EPT 3	65+			15	12

Abbreviations: ED, eating disorder; EPT, expert patient; HCP, healthcare professional; T2D, type 2 diabetes.

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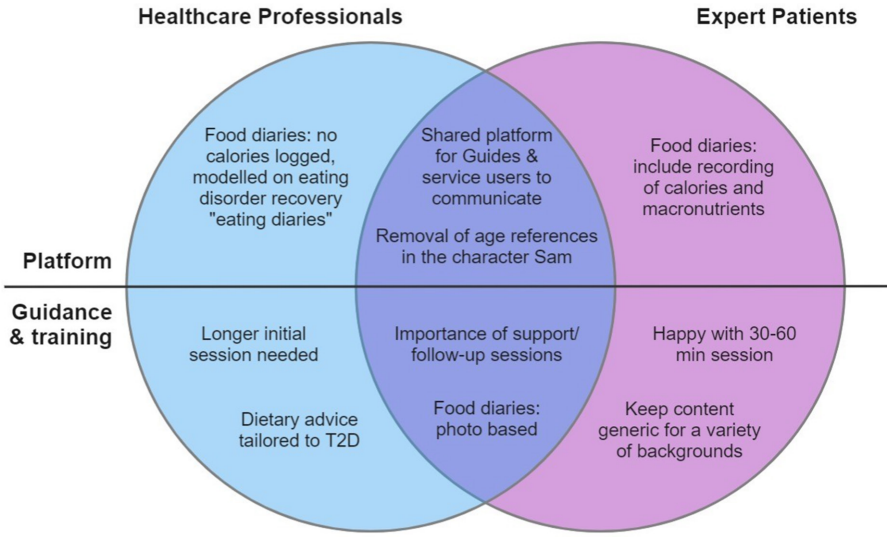

FIGURE 1 Themes of agreement and incongruence between Healthcare Professionals and Expert Patients.

and exams. Both expert patients and HCPs considered Sam to be cartoon-like and too young to relate to, as people with type 2 diabetes are typically older than school age.

> "we do have an older client and that doesn't solve empathize with what we have come across really."-HCP2.

> "my only question mark about Sam, I am 74 and I'm not sure that a teenager can help me"-PPT3.

4.2.3 | Food diary

Healthcare professionals and expert patients held differing views on how best to incorporate a food diary into the intervention. Expert patients expressed an interest in including a more detailed food diary that would show calorie and macronutrient breakdown.

> "[I use] MyFitnessPal [a calorie- and macronutrient-tracking app] because that gives a breakdown of the nutrients in the food I've taken and I can also put in my own settings like I want to keep it under 30 carbs a day. So that's how I record my notes [...] it asks me what the volume I've had and then that gives me the breakdown, which I prefer actually; prefer that to the manual way."-PPT3.

However, HCPs suggested that a food diary may be counterproductive to ED support, as the use of food diaries increases the focus on food and can exacerbate restrictive behaviours.

> "some of the apps might have been more appropriate first and then moving through to self-compassion, you know, some people, it will be making working through those issues before you talk about the nutrition side, rather than how to eat well actually just work through those issues and then move on to that kind of you know, interesting side of it, so I think it's just sometimes knowing how to do it in the right order."-HCP1.

> "Whenever people set goals and have an eating disorder, [I tell them they] need to delete MyFitnessPal. I would feel very uncomfortable about introducing somebody to MFP and we tend to use Recovery Record if we're going to use an app."-HCP5.

4.2.4 | Diabetes advice

Like the food diary, the appropriateness of giving diabetes-specific diet and lifestyle support alongside ED support was discussed.

> "[it] might be a bit tricky when they [the service users] want to introduce some changes, [...] depending on their portion sizes, they might have to adjust their insulin doses"-HCP3.

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> "[with] erratic kind of eating patterns and sometimes you can get swings from very high to really low blood glucose levels and that's just what they're doing with their record they're eating patterns So is there anything around kind of linking that with the glucose levels in the in the guide."-HCP2.

> "if people are going to come on the program, they probably are type two diabetes anyway because it's you know it's related to them, but I can see this program being brilliant for everybody and for anybody without with or without diabetes so to me. I think it is better the way you've done it that's generating it to a lot of people are there lots of different age groups"-PPT2.

4.3 | Expert consensus group

Based on the themes outlined above, we determined areas of incongruence between expert patients and HCPs. The group discussed and reached consensus on the food diary and the central vignette character—Sam.

4.3.1 | Food diary

Whilst expert patients wanted comprehensive mobile applications to capture macronutrients and calorie intake, HCPs proposed an image-based approach for recording food. The Expert Consensus Group discussed the purpose of keeping a diary. That is, to record the context in which we eat. The group proposed that providing a simple eating and mood diary would be the most appropriate option, including signposting to applications such as Recovery Record where service users wish to use a mobile application. The food diary was renamed 'eating diary' accordingly.

4.3.2 | Vignette character—Sam

The ECG agreed with both expert patients and HCPs that the character appeared too young and cartoon like. The group acknowledged that one size does not fit all and proposed several alternative ideas including; personalised avatars, a group of diverse characters, removing the character altogether and just having wording. The latter was adopted in the first iteration of the intervention. We will obtain feedback in our qualitative work and look to personalisation in future iterations.

4.4 | Patient Public Involvement group

Throughout the process, we involved our Patient Public Involvement (PPI) group. They helped inform the recruitment materials. Key suggestions were around the language used and images. The group advocated using terms such as 'control of eating' where possible rather than 'binge eating'. And removal of images that had connotations of greed or blame. We adapted the language accordingly in both the recruitment materials and online intervention.

4.5 | The adapted intervention

The adapted intervention is reported below in line with the TIDieR checklist (Table 3).

4.5.1 | Online platform

The online intervention is hosted by the https://mytransitions.co.uk/ website and can be accessed on a laptop, tablet or smart phone using a username and password. It is divided into the same seven sections outlined in the introduction and all sections can be viewed once service users log-on. We advised Guides to unlock all chapters at once, but the platform has the functionality to unlock sequentially. The intervention takes place over a 3-month period with guidance sessions following the same pattern as outline previously. Service users are required to engage with the homework tasks in the relevant sections prior to each appointment. Tasks can be completed digitally using tick boxes and text fields. There is a scrapbook area to make notes and messaging facility for communicating asynchronously with the Guide. There is a template 'eating diary' which can be downloaded. This was changed from a 'Food diary' so that it reflects the purpose, that is, to determine the context in which people eat rather than the food they consume.

A vignette of Sam's journey appears throughout the programme. In the adapted version Sam lives with T2D. Videos of the character were removed. The text was changed to make Sam an older individual, for example, references to school were changed to work. This will make the content more relatable to service users using the intervention.

Where the content of the original intervention could be considered contraindicated to diabetes care, the text was removed or edited. Reference to managing diabetes was also added into sections where relevant. Diabetes advice can often involve food control and weight loss. Because the primary focus of the intervention is to manage binge eating, this diabetes advice was not included.

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TABLE 3 Adaptation procedure based on TIDieR checklist.

No.	Item	Details
1	Brief name	POSE-D: Providing online guided self-help (GSH) for the management of eating disorders in adults with type 2 diabetes (T2D): pilot study
2	Why	To test whether guided self-help (GSH) for binge eating (BE) is feasible to deliver and acceptable for individuals living or working with adults with T2D
3/4	What materials, procedures	Working to Overcome Eating Difficulties: An online workbook-based platform comprising seven sections based on Cognitive Behavioural principles and Transtheoretical model of eating disorders 7×1 h guidance sessions with a trained Guide Half-day Guide training and ongoing supervision
5	Who provided	Online platform developed and hosted by Making Your Mind Up (MYMUP) https://mymupdigital.co.uk/ Guidance provided by a trained Guide—a healthcare professional (HCP) with any professional therapeutic background who works with adults living with T2D Guide Training and supervision delivered by authors S.H.-E., A.H. and G.T.-T.
6/7	How, where?	All completed and supported remotely
8	When and how much	7×1 h guidance sessions delivered by trained Guide over 12 weeks Guide Training half-day June 2022 Supervision monthly
9	Tailoring	Intervention content and platform are appropriate to individuals living with T2D. However, the main tailoring comes in the form of the Guide training and guidance. The Guide is trained to tailor the intervention to individual needs
10	Modifications	Online platform: food diary changed to an eating diary, which can be accessed on the platform or downloaded. The central vignette character Sam was adapted to live with T2D. Videos of Sam have been removed and references to age have been adapted or removed to make Sam older Guidance sessions: condensed to half day, remote training. Adapted to include T2D-specific training and motivational interview training skills
11	How well planned	Adaptation was planned in accordance with ADAPT guidance
12	How well enacted	Data were analysed using thematic analysis and key themes documented. An independent Expert Consensus Group was consulted on any areas of contention between expert patients and HCPs

4.5.2 | Guidance sessions

Guidance sessions were extended to 60-min following HCP feedback. The Guide sessions act as a companion to each of the seven sections of the online manual. During these contacts, the Guide discusses the task completions with the service user and helps troubleshoot any difficulties encountered.

4.5.3 | Guide training and supervision

Guide training was condensed to a half-day's training, delivered remotely prior to seeing service users. Guide training focused on an introduction to the key aims and tasks within each section of the GSH intervention, as well as motivational interviewing skills, psychological techniques for retrieving information from individuals and basic formulation skills, with reflections on some of the common issues for people living with T2D. Guides come from a variety of professional backgrounds (dietitians, psychologists and nurses). It is not necessary for Guides to have prior experience in working with eating disorders. The final part of the training provided an overview of the research requirements (collecting outcome measures, risk) and a practical guide to using the online platform.

Post-training Guide supervision will be offered on a monthly basis. Group sessions are an hour and delivered remotely. Technical support will be provided throughout by the platform developers.

5 | DISCUSSION

This study adapted the Working to Overcome Eating Difficulties GSH intervention through co-design so that it was available online, supported remotely and was tailored to the needs of managing binge eating in adults living with T2D. The resultant intervention will be evaluated in the POSE-D pilot study. It retains its primary focus on addressing disordered eating, with Guide training being tailored to working with individuals with T2D, particularly around formulation and managing other physical health complications. The central character 'Sam' now

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depicts the journey of an adult living with T2D. The dietary advice has been updated so appropriate for people living with T2D.

5.1 | Strengths and weaknesses

5.1.1 | Strengths

The adaptation followed a rigorous collaboration process using the principles of co-design. This placed an importance on involving end users, HCPs and expert patients from a range of backgrounds and experiences. This enabled the research team to generate a tailored intervention based on the clinical requirements and lived experiences of people with T2D. Although the number of expert patients was low, the workshops also included researchers and provided a space and time for useful collaborative interaction.

The use of an expert consensus group enabled the team to make informed decisions where the expert patients' and HCPs' recommendations differed.

The PPI group helped to inform decision making, such as in the recruitment materials and content. This enabled us to adjust materials to be user-friendly and to use more sensitive language.

Thematic analysis of the input from expert patients, HCPs, expert consensus group and PPI group ensured that we used a well-structured approach to synthesising feedback from groups. Thematic analysis of both the platform and guidance/training and between the HCPs and expert patients enabled the research team to present clear findings to the expert consensus group.

The adaptation of the Working to Overcome Eating Difficulties GSH intervention followed the ADAPT process model[21] and was reported in line with the TIDieR checklist.

5.1.2 | Weaknesses

The COVID-19 pandemic impacted the capacity of participating NHS Trusts and relevant support groups to participate in research. This, therefore, reduced the size of the sample that we were able to recruit. Notably, the reach of expert patients. Despite remote recruitment and delivery, the sample was older than expected, and a smaller sample of three expert patients was recruited. However, these are reflective of the group we expect to access the intervention and will ensure the online platform is accessible for this group.

National lockdown restrictions and social distancing guidance meant that in-person co-design workshops and meetings could not be held. As a result, remote sessions were offered. This presented additional challenges to drive engagement with expert patients and PPI members. Of the seven expert patients who provided consent to participate in workshops, only three attended compared to eight HCPs. However, proposed changes were emailed to those who had consented to participate, but did not attend and we invited feedback. So whilst contribution at the workshops may have been weighted towards the HCPs, we felt our multi-layered, iterative approach with continual contribution from our PPI group and Expert Consensus Groups balanced this out.

Our work excluded some groups. For example, GSH is not recommended as the only intervention for those with severe mental illness, of very low weight, or rapidly losing weight.[11,12] It is intended as a first line of treatment for binge eating as part of a stepped care model and therefore some individuals may require more intensive treatment following GSH. Individuals with difficulty accessing or using the digital platform may also require additional support or a paper alternative to the online workbook in order to participate, which we will address in the pilot trial.

5.1.3 | Future steps

After a successful adaptation process, the research team will pilot the adapted intervention in a multi-site pilot trial. This will test feasibility and acceptability through trial and qualitative work in both primary and secondary care within the UK NHS. If recruitment and outcome parameters look promising, then a full-scale trial will be necessary to assess effectiveness of the intervention with this group.

This method of adaptation may be used to inform the tailoring of other brief psychological interventions and to adapt the Working to Overcome Eating Difficulties' intervention for other physical health conditions where disordered eating is known to present, that is, obesity, type 1 diabetes, cystic fibrosis, etc. This will provide further evidence on the suitability of GSH for disordered eating outside of traditional eating disorder services.

AUTHOR CONTRIBUTIONS

Eleanor Coales, Gemma Traviss-Turner, Jinan Rabbee: Writing of the manuscript. **Gemma Traviss-Turner, Andrew Hill, Clare Grace, Michael Mansfield, Suzanne Heywood-Everet:** Intellectual contribution to design and oversight of the study. **Eleanor Coales, Gemma Traviss-Turner, Jinan Rabbee, Suzanne Heywood-Everett, Ian Beeton:** Data collection. **Gemma Traviss-Turner, Ian Beeton:** Patient-public involvement group

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CONFLICT OF INTEREST STATEMENT

Andrew Hill reports receiving payment for advice given to Slimming World (UK).

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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