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Eating Freely: assessing the feasibility of an online group intervention to improve emotional eating amongst adults with lived experience of obesity.

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Disclaimer

Eating Freely is private company founded by Psychotherapist and Disordered Eating Specialist Emma Murphy. Eating Freely and Leeds Beckett University are collaborating on this project to evaluate the feasibility of the programme in the UK. No money has exchanged hands and authors declare no conflict of interest.

Abstract

This protocol describes the planned delivery and analysis of the Eating Freely programme to a group of 15 UK based adults living with obesity and emotional eating. The intervention will be delivered online with weekly group meetings facilitated by 2 Eating Freely Practitioners. The intervention uses a combination of second and third wave CBT approaches to help adults overcome emotional eating. The analysis is a mixed methods approach involving a process evaluation. A basic study design and overview has been previously published (https://aspredicted.org/S52_GS2), whilst this protocol provides a more in-depth description the theoretical underpinnings of the programme and how it has been adapted to a UK audience.

Materials

Table 1 Eating Freely programme and BCTs

Client Program	Handouts	BCTs
Session 1 - HALT – Breaking the cycle of emotional & binge eating	Introductions, questionnaires Commitment Contract HALT Chart Meditation 1 Confidence to Change	2.3 Self-monitoring of behaviour 4.2 Information about antecedents 5.4 Monitoring of emotional consequences 4.1- Information on how to perform behaviour
Session 2 - Nutritional Rehabilitation - Resetting your relationship with food	Challenging your food rules	4.1 Instruction on how to perform behaviour 5.1 Information about health consequences 5.6 Information about emotional consequences
Session 3 - Nutrition Basics	The blood sugar cycle Balancing your blood sugars A Balanced Plate Daily food and feelings worksheet	5.4 Monitoring of emotional consequences 4.1- Information on how to perform behaviour 5.1 Information about health consequences

Session 4 - Neuroscience of binge eating – breaking unhelpful patterns of behavior	The Chimp Paradox Delay Distract Decide Habit Interruption Strategies	8.2 Behavioural substitution 12.4 Distraction. 4.1 Instruction on how to perform the behaviour 4.2- Information on antecedents 5.1 Information about health consequences 5.3 Information about social and environmental consequences 5.4 Information about emotional consequences 12.2 Restructuring the social environment	
Session 6 - When/Then – stop putting your life on hold!	When Then vs Even Though	13.5 Identity associated with changed behaviour 13.2 Framing/ Reframing	
Session 5 - Attuned Eating	Eating awareness journal Hunger/Fullness Awareness Meditation 2 - Attuned Eating	Self monitoring 11.2 reduce negative emotions	
Session 7 - Mirror Mirror – separating the past from the present.	Mirror Mirror 1 & 2 Two Letters from the Future	9.3 Comparative imagining of future outcomes 13.2 Framing/ Reframing	

Session 8 - Exploring Cravings(Name changed from 'Vitamin P')	Questionnaires Exploring my Cravings Meditation 3 - Restorative Sleep	4.2 Information about antecedents 5.4 Monitoring of emotional consequences 4.3 Reattribution pf blame away from self, understanding biological and psychological processes underpinning emotional eating 5.1 Information about health consequences 5.3 Information about emotional consequences	
Session 9 - Barriers to Change (see also week 8 training)	Barriers to Change Fear vs Truth Values 1 & 2	13.2 Framing/ Reframing	
Session 10 Payoffs for not Changing - what's keeping you stuck?	Barriers to Change worksheet Fear vs Truth Payoffs Worksheet Jamie Catto Exercise	13.2 Framing/ Reframing 13.4 Valued Self-identity 9.2 Pros and Cons 1.4 Action planning	
Session 11: Three Audits – Checking in on progress and how to stay on track	Food Environment Audit Food Audit Weekly Eating Plan Relationship Environment Audit	2.3 Self-monitoring of behaviour 8.3 Habit Formation	

		Support Person Questionnaire Lifestyle Environment Audit	1.2 Problem solving 1.1 Goal setting (behaviour) 1.3 Goal setting outcome 1.4 Action planning 3.1 Social Support unspecified	
	Session 12: Self-Care and Boundaries	Self-Care Activities 1 & 2 Weekly Self Care Checklist How are my boundaries? Boundaries Worksheet Signals of boundary testing Communicating my boundaries The Feelings Wheel Where do I feel in my body What can I do for myself?	1.1 Goal setting behaviour 1.4 Action planning 13.4 Valued self-identity 11.2 Reduce negative emotions	
	Session 13 - All about body Image	Body Image Quiz Body Image Workbook Meditation 4 Embodied Self massage techniques What my body does for me "Chakras and Emotions Chinese Medicine Clock Feeling Sensations in our Body"	13.4 Valued self-identity 11.2 Reduce negative emotions	
	Session 14: True change – the power of self-compassion	Letter to your Younger Self Meditation 5 - Self-Compassion Model of Choice to Change Prochaska and Di Clemente Readiness to Change Choice to Change Worksheet	11.2 Reduce negative emotions 8.3 Habit formation 13.2 Framing/ re-framing	
	Session 15: The power of forgiveness – for YOU.	Forgiveness Worksheet Jack Kornfield Meditation Transcript	11.2 Reduce negative emotions	

Session 16: Bringing it all together!	Final questionnaires		

Table 2. Quantitative Outcome measures

Outcome measures			
Domain	Outcome	Measure	Time point
Clinical Outcome	Height	Self-measured	Baseline (Time point 1)
	Weight	Self-measured	Baseline (Time point 1) Week 9 (Time point 2) Week 18 (Time point 3) On month follow up post completion (Time point 4)
Psychological Factors	Emotional Eating	TFEQ-R21	Baseline (Time point 1) Week 9 (Time point 2) Week 18 (Time point 3) On month follow up post completion (Time point 4)
	Impulsivity	UPPS-P	Baseline (Time point 1) Week 9 (Time point 2) Week 18 (Time point 3) On month follow up post completion (Time point 4)

	Emotional Regulation	DERS-SF	Baseline (Time point 1) Week 9 (Time point 2) Week 18 (Time point 3) On month follow up post completion (Time point 4)
	Wellbeing	WEMWBS	Baseline (Time point 1) Week 9 (Time point 2) Week 18 (Time point 3) On month follow up post completion (Time point 4)
Health Status	Perceived health	SF12	Baseline (Time point 1) Week 9 (Time point 2) Week 18 (Time point 3) On month follow up post completion (Time point 4)

Table 3. MCR

Framework, process evaluation

MRC Framework Components	Key Questions	How measured
1. Impact	What was delivered? How was it delivered? Any unexpected changes to delivery? If so, did this undermine fidelity? Were the intended audienc	Post session evaluation forms (how easy is the website to use, any technical issues) Interviews with participants. Demographic

	e reached by this intervention?	data
2. Mechanisms of impact: How does the delivered intervention produce change?	What impacts were observed? How did the intervention cause these effects? Were there any other unexpected outcomes?	Quantitative score changes in questionnaires Interviews with participants
3. Context: How does context affect implementation and Outcome?	Was there any contextual factors which influenced programme uptake, delivery and outcomes?	Post session evaluation forms Interviews with participants

Appendix 1
Participant Information Sheet- *Eating Freely feasibility study.*

My name is Dawn Power. I am a PhD student at Leeds Beckett University and a registered dietitian. As part of my PhD research, I am exploring interventions which help people living with obesity and emotional eating to regain control of their eating.

We are testing a programme, called Eating Freely, which is normally delivered in the USA and Ireland, to see how well it works in the UK. There is usually a fee for accessing the programme, however participants will receive it for free in return for taking part in this research.

What is Eating Freely?

Eating Freely was developed by Psychotherapist and Disordered Eating Specialist, Emma Murphy who has been supporting people to regain control of their eating for over 12 years. The programme is based on 4 key pillars:
1. Cognitive Behavioural Therapy (CBT) which provides tools to help reduce emotional and overeating.

2. Nutritional Rehabilitation: letting go of food rules, improving relationship with food and working on improved gut health.

3. Neuroscience: education on how the brain works, the autopilot of unhelpful eating, and how to stop this from happening.
4. Mindfulness and Self- compassion: steps to increase good self-care and how to become more present.
These pillars aim to provide the skills needed to reduce emotional eating and to live a healthier life.

Who is the study not suitable for?
This study is not suitable if you have an eating disorder, a complex mental health diagnosis, are currently being prescribed weight loss medications or have been diagnosed with advanced liver, heart, or kidney disease. Additionally, it is not suitable if you have undergone bariatric surgery within the last 12 months, are accessing a weight loss programme, or if you are pregnant or breastfeeding.

What will be involved?
The programme will run weekly, starting in April 2024 for 14 weeks with a four week break before the final session in week 18. The weekly sessions will take place on MS teams and as part of a group, lasting up to 60 minutes at a time. Sessions will be co-delivered by myself and Victoria Webster, a qualified psychologist.

Following completion of the intervention you will be interviewed about your experience. Your information will be kept anonymous to protect your identity. By taking part you will gain access to a fantastic programme and have the chance to improve your relationship with food. Participation is voluntary.

During the programme**,** there will be access to online content and activities to complete between sessions. These activities may take between 1-2 hours a week. There will be an option to join a WhatsApp group to meet other people on the programme who are also living with obesity and emotional eating.

What information will I need to provide?

You will be asked to provide information such as your age, ethnicity, height, weight, religion, employment status and gender. This allows us to know if the programme is helpful to people from different backgrounds. This is not a weight loss programme; we ask about weight to see if the programme is acceptable to people living at different weight. We will also collect your GP contact details; this is to allow us to contact your GP should you become distressed during the study period. This data will be kept securely and confidentially.

Your information will be collected at 4 points during the intervention at week 1, 7, 18 and 1 month following completion of the intervention. Fifteen minutes will be allocated to form completion at the beginning of the relevant sessions to allow for this.

Following completion of the programme, you will be invited to attend a one-to-one online interview on MS Teams. In the interview we will discuss your views on the programme, what aspects you enjoyed and what you feel needs to be improved. The interview will last about 30 to 60 minutes. With your permission, your interview will be recorded to gain

an accurate record of what is being said. I will delete the recording once the interview has been transcribed. All personal information will be removed so that information provided is anonymous.

What are the possible benefits of taking part?

The Eating Freely programme has been running for over 10 years and provides expert, evidence-based support to help adults regain control of their eating. You will learn more about triggers of emotional eating, you will be given tools to help reduce emotional eating episodes and will be supported to improve your relationship with food. You will receive access to the programme free of any charge.

What are the possible risks of taking part?

The intervention may prompt you to reflect on the past and may bring up painful memories. If you feel concerned about this, please see the list of important contacts where you can get further support. If you feel the intervention is causing you distress you can contact me to explore signposting to other services. Should you become upset during a session you can exit the video call without needing to explain, you are also welcome to send me a private message or email to arrange a call to discuss anything if needed.

Do I have to take part in the study?

Your participation in this project is voluntary which means you do not have to take
part. If you do decide to take part in this project, I will ask you to complete and sign a Consent Form indicating that you agree to participate. At any point throughout the intervention, you have the right to stop without giving a reason. You can withdraw any information you do provide at any point up to the 30/06/24, the analysis and summarising of the information will have begun after this date and it will not be possible to identify the information which came from you.

Confidentiality

All information which is provided to the study by you will be kept strictly confidential. All data will be stored in a secure manner on an encrypted computer that is password protected. All information provided within the end of intervention interview will remain confidential in line with the 2018 data
protection act and GDPR. **However, please note:** any information shared within the interview relating to anything that may be considered harmful to you or others will be disclosed to the appropriate
authorities**.**

What will happen to my information?

With your consent, the information you provide will help us to understand whether the programme is suitable for people living with obesity and emotional eating in the UK, and how it could be improved further. The interviews will be transcribed (typed out word for word) and analysed to establish the main ideas that have been shared. Only my supervisors and I will have access to these data. The results will be summarised and written up in a report, including quotes from the interviews, and may also be suitable for publication in a research paper. No names or other identifying material will be used in the report to protect your anonymity. The data will be held until I have completed the PhD

programme (January 2026), and after this I will ensure all data is permanently deleted. Data will be stored for this time to ensure all the information has been adequately analysed and presented. If you would like to have a copy of the findings, please let me know during the study or get in touch using the details below. Leeds Beckett University processes data in line with the UK General Data Protection Regulation (GDPR). To understand how we collect, look after and share your data you should read this **Research Participant Privacy Notice**.

Ethical approval

The study has been given ethical approval by the Local Research Ethics Coordinator, School of Health, Leeds Beckett University. The legal basis for the processing of personal data/special category data is `public interest task'.

Thank you for reading this information sheet. If you are interested in taking part, or have further questions, please contact me via email.

Contact details

Researcher details:

Dawn
Power**,** Email: **d.power8932@student.leedsbeckett.ac.uk**

Supervisor details:

Jamie Matu**,** Email: **j.matu@leedsbeckett.ac.uk**
Louisa Ells **l.ells@leedsbeckett.ac.uk**
If you would like to speak with someone who is not involved in the study please contact Angela Hill, Email: **a.hill@leedsbeckett.ac.uk**

Please see next page for further support and information.

Further Information/ Support

If you feel that you need additional support for any issues raised by the study, then you may find the following details useful:

Accessing Mental Health Services – NHS Choiceshttps://www.nhs.uk/mental-health/social-care-and-your-rights/how-to-access-mental-health-services/

Find a local NHS urgent mental health helpline in England https://www.nhs.uk/service-search/mental-health/find-an-urgent-mental-health-helpline

Mind
information line: 0300 123 3393 https://www.mind.org.uk/need-urgent-help/using-this-tool/

Samaritans
telephone number: 116 123 https://www.samaritans.org/how-we-can-help/contact-samaritan/talk-us-phone/

BEAT
Eating Disorders information and support https://www.beateatingdisorders.org.uk/get-information-and-support/get-help-for-myself/i-need-support-now/helplines/

Please
note you can also contact your GP for a referral to local mental health support
and/or eating disorder services.

Introduction

1 **1.0 Introduction**

Emotional eating has been identified as a potential target in weight management interventions due to its link to poorer outcomes in weight loss interventions [1; 2]. People who emotionally eat are half as likely to achieve the 10% weight loss targets of standard interventions and have higher risk of developing heart disease and diabetes [3]. Despite this, many weight management interventions focus predominantly on attempts to address energy imbalances in the diet without addressing psychological drivers of eating behaviour. Both qualitative and quantitative research suggests emotional eating is a barrier to long term success of weight loss interventions and when treated effectively can lead to improved outcomes [4; 5]. A further concern is the scarcity of psychologists specialising in obesity[6] to deliver interventions and dietitians report lacking confidence and skills in supporting patients to manage disordered eating[7]. Therefore, there is need for effective emotional eating interventions which can be delivered by other members of the MDT.

This study will involve delivery of an adapted online group intervention, Eating Freely, to 15 adults who meet the inclusion criteria and who have consented to taking part. The intervention will be delivered by a Qualified Psychologist and a Registered Dietitian who have both been trained and received accreditation to deliver the Eating Freely programme. The Eating Freely programme can be delivered by registered healthcare professionals who have undergone the training and does not require
delivery by a psychologist. The intervention is trauma informed and has been developed by a qualified Psychotherapist who specialises in disordered and emotional eating. Trauma informed care is recognised as an important area of obesity research [8]. The intervention will support participants in understanding how past experiences impact current health and eating behaviours, whilst providing the necessary skills to live more mindfully, enabling healthier lifestyle, and reduced emotional eating.

This research provides important evidence to support a trauma informed weight management intervention and pilots the feasibility and efficacy of training that plugs a significant gap in emotional eating support. The intervention has been adapted for a UK audience through PPIE workshops and a systematic review of evidence (**crd.york.ac.uk/PROSPERO/display_record.php?RecordID=413966**). This intervention study includes the
following aims and objectives:

Aim: To assess the
feasibility of an online group intervention to improve emotional eating amongst
adults with lived experience of obesity.

Objectives:
To evaluate the adapted intervention
through a feasibility study to assess the recruitment and delivery of the intervention in addition to preliminary changes in emotional eating, wellbeing and weight. Secondly, to explore
participants experience of receiving the intervention through qualitative interviews.

2.0 Background

2 The Eating Freely programme is a trauma-informed approach to treat disordered and emotional eating. Childhood trauma has been associated with maladaptive eating behaviours[9] and obesity[10] with adverse childhood experiences, PTSD and other traumas associated with eating disorder development[11]. A recent systematic review[10] found the odds of developing obesity increased by 46% following exposure to multiple ACEs. Potential pathways linking ACEs to obesity include direct biological pathway involving chronic stress, glucocorticoid levels and fat deposits[12] and appetite changes associated with stress such as desire for more palatable and calorie dense foods [13]. ACEs are also associated with other obesity related behaviours such as reduced impulse control[14], poor sleep[15], binge eating[16] and depressive symptoms[17]. It has been postulated that the relationship between traumatic childhood experiences and disordered eating involves several mechanisms which interact in complex ways, including genetics and epigenetics, social context, neurological development disruption and emotional and cognitive impairment[18]. Although significant, the impact of trauma exposure is not limited to childhood, evidence suggests exposure in adulthood may also impact disordered eating patterns[19]. There is a heightened sense of threat and reactivity to subsequent trauma amongst individuals with eating disorder (ED) pathology which perpetuates maladaptive eating patterns[20]. A reduced distress tolerance [21]as well as a heightened disgust sensitivity found in ED patients[22] appears to be a maintaining factor for maladaptive eating behaviours. According to the
transdiagnostic theory of eating disorders[23], all eating disorders share a distinctive core psychopathology and can move from one to another. Therefore, it could be argued that subclinical disordered eating, such as emotional eating, is somewhere on a spectrum of eating disorder behaviour and likely shares similar mechanisms.
A trauma informed approach to treating eating difficulties takes these mechanisms into account. Effective trauma informed care recognises the neurological, biological, psychological and social impact of trauma on the person as well as the impact on families and wider communities[20], whilst emphasises survivors' resources and resilience in the healing process[24].

3.0 Theoretical underpinnings

3 **3.0 Theoretical Underpinnings**

Eating Freely uses a trauma informed approach by teaching individuals about the neurological and biological processes which drive eating behaviour whilst providing the skills and techniques needed to make more mindful and purposeful decisions. The programme is based on the following 4 pillars:

1) CBT

CBT has been recommended as a first-line approach in treatment of trauma[25], obesity [26]and disordered eating[27] with the following approaches being regarded as the 'safest' to begin with: psychoeducation about trauma, anxiety and stress management, cognitive restructuring, regulation of

emotions and development of interpersonal and social skills[20]. For this reason, CBT is the foundation of the Eating Freely programme and the above approaches have been incorporated into the training content. However, the long-term effectiveness of e-CBT treatment (a form of CBT which has been especially developed for treatment of EDs) is questionable[28]. Therefore, other psychological approaches have been incorporated into the Eating Freely programme to enhance its long-term effectiveness.

2) Nutritional rehabilitation

Recent therapeutic approaches to trauma and disordered eating suggest it is imperative to introduce nutritional rehabilitation early on[29]. Individuals are encouraged to be flexibly adherent to improved nutritional practices (progress over perfection) and should be medically stable. As disordered eating is associated with a high prevalence of gut disorders[30] and irregular eating patterns which exacerbate emotional and binge eating[31], this needs to be addressed through promotion of regular and adequate nutritional intake. This enables the individual to begin to stabilise internal processes and therefore allows them to proceed with deeper emotional and cognitive development work[29]. For this reason, education on practical and effective nutritional strategies to managing hunger and cravings as well as improved gut health is taught early in the Eating Freely programme. There is no focus on weight loss or caloric restriction, individuals are taught about their nutritional requirements and are supported to develop an understanding of the value of all foods. There is emphasis on understanding that no foods are inherently 'good' or 'bad', and all foods have a place in the diet, whilst also encouraging participants to start to tune in to their hunger and fullness cues. Some of the principles of Intuitive Eating are incorporated into the course, specifically around rejecting restrictive diets, making peace

with food, and gentle nutrition[32]. However, participants are taught about the importance of re-establishing structure in the form of regular eating and aiming for nutritionally balanced meals as a first step in inner wisdom development.

3) Neuroscience.

Psychoeducation is considered the cornerstone of all CBT and trauma-focused therapies[29]. The Eating Freely programme teaches individuals how the brain responds to trauma, how trauma influences automatic habits and reward driven eating[33] and importantly what kinds of strategies can be implemented to help manage automated behaviours and move towards more deliberate and goal oriented behaviours. Participants are taught behaviour interruption strategies such as distraction techniques and mood regulation strategies.

4) Mindfulness and Self-compassion

Interest in third wave CBT interventions is growing, especially their application to emotional eating and obesity treatment[34]. They have shown promise in long term weight loss maintenance [35]. Third wave interventions equip people living with obesity with mindfulness and acceptance skills to navigate the difficulties posed by external cues (such as highly palatable foods) and internal cues (cravings for high calorie foods)[36]. Through honing these skills, individuals can choose to align their behaviours to personal goals and values[36]. It has been suggested that the long-term effectiveness of these approaches may stem from their ability to reduce anxiety and depression through increased use of psychological coping skills such as mindfulness and psychological flexibility[34]. Furthermore, these interventions tend to enhance self-compassion, reduce stigma and shame and increase quality of life[37].Therefore, Eating freely has incorporated specific elements of third wave CBT interventions such as mindfulness and self-compassion. The Eating Freely programme has incorporated other recommendations[29] for treating disordered eating related to trauma: conducting a comprehensive assessment and ensuring participant suitability which includes assessing participant safety and stability to take part; assessment of readiness to change: participants are taught about the stages of change so they can identify what stage they identify with and how to move forward; behaviour monitoring and response prevention: participants are asked to record instances of certain behaviours such as emotional eating episodes and/or instances of planned intake and any accompanying feelings, triggers and thoughts; Adaptive function: participants begin to identify what purpose emotional eating serves, for example avoidance or numbing, through engagement in reflective activities; maintenance and relapse management: participants learn that relapse is part of the behaviour change process and does not equal failure, they are encouraged to see relapse as part of the learning process. Although the EF programme supports people with subclinical disordered eat, certain elements of the NICE guidelines for BED treatment[38] have been incorporated into the programme content, for example a focus on helping individuals to identify and change negative beliefs about their body.

3.1 Behaviour Change Techniques (BCTs) Analysis

To ensure the Eating Freely programme includes the most effective and evidence based BCTS, a

systematic review (PROSPERO 2023 CRD42023413966) was undertaken of psychological interventions targeting emotional eating in adults living with obesity, specifically looking at

which BCTs were most effective in reducing emotional eating levels. The BCT taxonomy[39] was used to code the presence of behaviour change techniques in included studies. The systematic review has been registered on Prospero. Searches were completed between April and May 2023. Preliminary analysis has shown there are seven BCTs ('2.2 feedback on behaviour', '1.3 goal setting outcome', '13.3 incompatible beliefs', '9.2 pros/ cons', '7.5 remove stimulus', '1.7 review outcome goals' and 'social support unspecified') which demonstrated notable efficacy to both outcomes of weight and emotional eating. BCT from the clusters, *identity*, *goals & planning*, *feedback & monitoring* and *comparison of outcomes,* demonstrated particular effectiveness for reducing emotional eating.

3.2 PPI Engagement

Findings from the systematic review were then discussed in a series of PPI workshops. Six PPI members were recruited from Obesity UK and took part in four online discussions between September and November 2023. The COM-B model[40] of intervention development was used to structure conversations regarding intervention development. Participants provided insights into lived experience of obesity and emotional eating, including barriers and facilitators to accessing support and what changes they would make to the Eating Freely programme. A thematic analysis of the meeting transcripts was completed by the lead researcher and initial findings verified by the PPI group. The following themes and specific BCTs were identified as being important to participants:

- *Social support*
  (3.1 social support unspecified and 3.3 social support emotional) PPIE members identified that connecting with people also experiencing emotional eating was important in the healing journey and helped to reduce stigma and shame.
- *Shaping knowledge*
  (4.1 skills training). PPIE members reported wanting to develop their knowledge and skills in the following areas: understanding drivers of behaviour, recognising hunger/fullness cues, understanding hormones, metabolism, psychological factors, cycle of behaviour change, body acceptance work, learning about what purpose emotional eating serves, learning new ways to self-sooth, develop self-compassion skills and self-care.
- *Natural Consequences*
  (5.4 monitoring of emotional consequences and 5.6 information about emotional consequences) PPI members expressed interest in journalling and self-monitoring their emotions and triggers to support their understanding of triggers of and consequences to emotional eating episodes and to monitor progress as improvements are made.
- *Repetition and substitution*
  (8.1 practice/ rehearsal of skills learnt). PPI members recognised that skills development may take time and that ongoing practice and rehearsal was needed.

- *Comparison of outcomes*
  (9.1 Credible source) PPI members shared that they would want to receive support only from practitioners who really understand the difficulties and shame associated with emotional eating and who demonstrate empathy and compassion.
- *Regulation*
  (11.2 Reduce negative emotions through self-acceptance and self-esteem) The PPI members wanted to engage in activities which would help reduce negative emotions such as better self-care, meditation and activities that bring them joy.
- *Antecedents*:
  The PPI group wanted to learn more about triggers, family dynamics and relationships and how that might precede maladaptive eating behaviours and how to develop strategies to manage this such as restructuring the social environment (12.1) and mood regulation (11.2).
- *Identity*
  (13.1 self as role model, 13.2 framing/ re-framing perspectives, 13.4 Valued self-identity). PPI members wished to develop their ability to recognise their own strengths and wanted support adjusting to new identity as someone with a healthier relationship with self and food.
- *Self-belief/ self-worth*
  (15.4 self-talk and feeling deserving of positive changes, 15.3 emphasising past successes) PPI members recognised the value in developing their self-belief and that an important part of this is learning to establishing boundaries and self-acceptance.

3.3

Mapping the Eating Freely BCTs

Findings from the systematic review and the PPIE work were triangulated and mapped against the Eating Freely Programme. Each session of the Eating Freely programme was coded according to the BCT taxonomy. The majority of BCTs identified by the research were already built into the programme, demonstrating how the programme content is reflective of the latest evidence in this area. Only three BCTs highlighted from the PPIE work and systematic review were not present in the original programme overview: 3.3 social support (emotional), 13.1 self as role model and 7.5 remove aversive stimulus. Therefore, the following steps will be taken to ensure their inclusion: a peer support WhatsApp group for participants will run alongside the delivery of the Eating Freely programme to provide social and emotional support to participants as they undertake the programme and discussions regarding self as role model will be incorporated into group discussions in week 6 where there is already a significant focus on self-identity. Finally, although there is no specific mention of BCT 7.5 remove aversive stimulus, sessions dedicated to using the eating awareness journal, HALT (Hunger, Anger/Avoidance, Loneliness, Tiredness) chart and goal

setting will naturally involve discussions around management of aversive stimulus. Therefore, it was felt that this BCT is covered within the context of group discussion and goal setting sessions.

4.0 Methods and Analysis

4 This is a single arm feasibility study with an included process evaluation (see Figure 1). Participants will be enrolled onto the Eating Freely platform and have access to online content for the duration of the study. Participants will complete baseline, midpoint (week 9), end of intervention (week 18) and 1 month post intervention measurements using online questionnaires. All participants will be invited to participate in a qualitative interview following completion of the intervention. Qualitative interviews will collect data that will be used to contribute to the feasibility evaluation of the intervention.

4.1 Participants

We will recruit adults (N=15) who have lived experience of obesity and emotional eating. Eligible participants will be recruited through Obesity UK and through social media site X.

Inclusion criteria

Age≥18 years.

BMI ≥30kg/m2 for individuals from white family background or ≥ 27.5kg/m2 for South Asian, Chinese,

other Asian, Middle Eastern, Black African or African-Caribbean family background.

UK resident.

Capable of providing informed consent.

Have a good understanding of the English language (Eating Freely materials are currently only available in English).

Willing to complete study measurements.

Access to a smart device such as a laptop, tablet, or smart phone to allow them to access the online materials.

Able to access scales while undertaking the study to self-weigh.

Exclusion criteria

Following discussions with experts in the field of emotional and disordered eating, it was agreed that the needs of individuals belonging to the following groups were either beyond the scope of

the intervention or that the intervention could be contraindicated:

Current diagnosis of an eating disorder of other complex mental health condition

Bariatric surgery within the previous 12 months or planned surgery during the intervention

Pregnant or breastfeeding or planning to become pregnant

Being prescribed weight loss injections or accessing weight loss intervention

Advanced liver, renal or heart disease

4.2 Recruitment

Participants will be recruited by advertising the intervention on social network site X and via targeted emails. The Obesity Institute has a register of email addresses of Obesity UK members who have expressed interest in taking part in obesity and emotional eating related research and who have consented to receiving communications related to this. Therefore, these members will be contacted. Participants who express interest will be invited to speak directly with the lead researcher over the telephone. This will provide an opportunity for participants to ask questions and for the lead researcher to ensure participant's suitability. During the triage call, the lead researcher, who is a registered dietitian will collect appropriate background information on the prospective participant and will determine suitability. Where the participant does not meet the eligibility criteria, or the programme is deemed unsuitable, they will be sign posted to appropriate services or referred to their GP. Eligible participants will receive the Participant Information Sheet (Appendix 1) and will complete and return the consent form (Appendix 2) following the triage call.

4.3 Planned intervention

The Eating Freely intervention is being delivered as a group based online intervention with web-based modules and activities to complete between group meetings. It aims to support participants to overcome emotional eating. The programme enables participants to understand how earlier trauma affects current eating behaviours, and provides participants with skills to stop automated habit loops and develop healthier coping strategies. Participants are taught a range of second and third-wave CBT skills to manage antecedents of emotional eating. The intervention includes access to an online web platform with 16 sessions delivered over 18 weeks. Modules consist of psychoeducational content and reflective exercises. The programme will be delivered consecutively for the first 8 weeks, followed by a week break, then will continue consecutively from week 10 until 15 and then a 4 week week break before the final meeting. This is to allow participants to embed their newly developed skills, build confidence in their ability to continue positive changes whilst adjusting to the programme coming to the end. Each online session will last approximately 60 minutes. Between sessions, participants will be expected to complete online modules and activities where they will be encouraged to reflect and engage in positive behaviour change. On the Eating Freely web platform, intervention content is divided into 12 sessions, which are each divided into subsections. Weekly content will be revealed to participants one week at a time to prevent participants reading information ahead of schedule. However, participants will be able to access previous week sessions for the duration of the programme. The weekly online meetings will provide an opportunity for participants to share their experiences and ask questions. Each session will begin will a recap of the previous weeks key learning points before progressing onto the current week's activities and discussions. Participants will be offered the opportunity to join a WhatsApp group where they can connect with other group members to provide peer support.

4.4 Facilitator training

Sessions will be co-facilitated by a qualified psychologist and a registered specialist dietitian who are both qualified and have received accreditation to deliver the Eating Freely programme. The Eating Freely practitioner training is available to healthcare professionals working within disordered and emotional eating who are registered with the HCPC or

appropriate body. The Eating Freely practitioner training involves practitioners completing 12 weeks of online training (3 modules per week), 12 weekly online group supervision meetings, each lasting 60 minutes and working with a case study to embed learning. Once qualified the Eating Freely practitioners can choose whether to deliver the programme on a 1:1 basis or group-based format.

5.0 Feasibility and acceptability

5 **Evaluation**

The feasibility of the Eating Freely group-based intervention will be assessed quantitatively and qualitatively. Participants will complete online assessments at baseline, midway, completion and 1 month post completion. Details of which measures will be taken at each time point are described in table 2.

Quantitative Assessment Surveys:

All outcomes will be assessed via online self-report questionnaires. Validated questionnaires listed in Table 2 will measure emotional eating, wellbeing, impulsivity, and emotional regulation scores at baseline, midway, upon completion and one month post completion to track changes.

BMI:

Self-reported weight and height will be collected to calculate BMI at baseline and follow-up self-reported weight will be collected at each data collection time point. Although the Eating Freely programme is not a weight loss programme, we are interested to see if the programme has any impact on weight. Participants will be asked to measure and report their height and to weigh themselves on the day that they complete the outcome assessments. Guidance will be provided on self-weighing.

Demographic data:

Postcode, age, religion, gender, employment status, highest education and ethnicity will be collected at baseline to see if the programme is feasible in diverse populations.

Attendance and Retention Rates:

Attendance at group sessions will be recorded throughout the intervention to gauge participant's engagement and commitment to the programme.

Cost analysis:

A cost analysis will be performed to estimate the cost of training staff and delivering the group intervention.

Qualitative Assessment:

In-depth Interviews

Following completion of the intervention one-one interviews will be conducted with participants to gain perspectives on facilitators, barriers, and areas for improvement.

Integration of data:

Qualitative and quantitative data will be triangulated to gain a holistic understanding of the Eating Freely group intervention's feasibility.

5.1 Quantitative Statistical analysis

As the main aim of this study is to test the feasibility of delivery, rather than a specific hypothesis, statistical analyses will likely be underpowered due to the small sample size. However, we will still undertake inferential statistics to estimate the magnitude of any directional trends. Quantitative data analysis will be descriptive in nature. The number of participants who received an email invitation will be described as well as the number who respond and the number who progress to triage and enrolment. The number of respondents from social media will also be described. We will measure the changes in scores from baseline to the subsequent timepoints. Linear regression will estimate the difference in mean changes in weight and questionnaire scores.

5.2 Economic analysis

All costs pertaining to the programme will be described. A costing analysis will be performed to estimate the cost of implementing the Eating Freely programme in a weight management service.

5.3 Process Evaluation

The process evaluation described in this protocol has been adapted from a similar feasibility study protocol[(41)] which utilised the MRC framework[(42)] to identify what worked well, what did not work well and the reasons for this. Therefore, a similar approach will be used in this feasibility study to answer the following questions: What is implemented and how? How might the intervention produce change? How might context affect implementation and outcomes? The relevant elements of the MRC framework for process evaluations of complex interventions in healthcare will be assessed using data as outlined in Table 3.

5.3.1 Data analysis

Quantitative data will be collected
through the questionnaires and retention/ attendance data. Qualitative data will be collected through the semi-structured post intervention interviews and post session feedback surveys.

5.3.2 Session Feedback questionnaire

The post session feedback questionnaire will collect qualitative feedback from participants regarding how they are finding the taught content and how accessible the online modules are, how beneficial the content and activities are and how their experience of the intervention.

5.3.3 Qualitative interviews

The semi-structured interviews will focus on perceptions around the programme, using the website, challenges, experiences of the intervention, to what extent the intervention met their expectations and whether there are any further needs which were not addressed by the study.

5.4 Analysis of process evaluation

The following data will be described and analysed as part of the process evaluation: Study population characteristics in terms of age, gender identity, employment status, religion, education level.

Average number of sessions attended by each participants.

Characteristics of participants who complete 9 or more sessions (60%).
Characteristics of participants who complete all 15 sessions.
Characteristics of participants who complete <9 sessions.
Characteristics of participants who drop out from the intervention study.
In any published materials the study will be summarised in a table according to the template for intervention description and replication (TIDieR) checklist and guide[43].

5.4.1 Reflexive Thematic Analysis

A reflexive thematic analysis[44] will be undertaken to identify themes emerging from interview transcripts. Themes will be identified by the following steps in thematic analysis : 1. Familiarisation with the data: materials will be read and re-read by lead author to enable familiarisation with its contents. 2. Coding: appropriate labels or codes will be used to identify meaningful segments of the data. 3. Generating themes: Codes will be grouped into broader themes whilst similarities and contrasting patterns are explored. Lead author will continuously reflect on the themes, ensuring their accuracy. 4. Reviewing themes: Lead author will review and refine the emerging themes, checking interpretation of the data with co-authors. 5. Defining and Naming themes: Each theme will be clearly defined in terms of what it represents 6. Create a report: The findings will be documented by describing the themes, providing illustrative examples and exploring their significance. These themes will then be used to answer the key questions as outlined in the MRC framework (Table).

6.0 Ethics and Dissemination

6 This project (Application Ref: 128620) received research ethical approval in line with the Research Ethics Policy and Procedures of Leeds Beckett University on 20th March 2024. Following completion of the study and analysis, we will present our findings to our PPI representatives and stakeholders to adapt the intervention as appropriate. All results will be written up as scientific papers and submitted for publication in peer-reviewed journals. Various members of the research team will contribute to reviewing drafts of manuscripts and reports.

Protocol references

References

1. Butryn ML, Thomas JG, Lowe MR (2009) Reductions in internal disinhibition during weight loss predict better weight loss maintenance. *Obesity (Silver Spring, Md)* **17**, 1101-1103.
2. Niemeier HM, Phelan S, Fava JL *et al.* (2007) Internal Disinhibition Predicts Weight Regain Following Weight Loss and Weight Loss Maintenance. *Obesity* **15**, 2485-2494.
3. Frayn M, Knäuper Br (2018) Emotional Eating and Weight in Adults: a Review. *Current Psychology : A Journal for Diverse Perspectives on Diverse Psychological Issues* **37**, 924-933.
4. Spreckley M, de Lange J, Seidell JC *et al.* (2022) Patient insights into the experience of trying to achieve weight-loss and future expectations upon commencement of a primary care-led weight management intervention: A qualitative, baseline exploration. *PloS one* **17**, e0270426.
5. Teixeira PJ, Silva MN, Coutinho SR *et al.* (2010) Mediators of weight loss and weight loss maintenance in middle-aged women. *Obesity (Silver Spring, Md)* **18**, 725-735.
6. Ratcliffe D, Banting E (2023) What is the role of psychology in bariatric surgery? A survey of the differing views of psychologists, the multidisciplinary team, and patients in the UK. *Clinical Obesity* **13**, e12612.
7. Trammell EL, Reed D, Boylan M (2016) Education and practice gaps of registered dietitian nutritionists working with clients with eating disorders: A qualitative study. *Topics in Clinical Nutrition* **31**, 73-85.
8. Williams DR, Chaves E, Karp SM *et al.* (2023) Clinical review: Implementation of trauma informed care to optimally impact the treatment of childhood obesity. *Obesity Pillars* **5**, 100052.
9. Legendre M, Sabourin S, Bégin C (2022) Maladaptive Eating Behaviors and Childhood Trauma: A Focus on Food Addiction. *Cureus* **14**, e26966.
10. Wiss DA, Brewerton TD (2020) Adverse Childhood Experiences and Adult Obesity: A Systematic Review of Plausible Mechanisms and Meta-Analysis of Cross-Sectional Studies. *Physiology & Behavior* **223**, 112964.
11. Brewerton TD, Gavidia I, Suro G *et al.* (2022) Eating disorder onset during childhood is associated with higher trauma dose, provisional PTSD, and severity of illness in residential treatment. *European Eating Disorders Review* **30**, 267-277.
12. Kuckuck S, van der Valk ES, Scheurink AJW *et al.* (2023) Glucocorticoids, stress and eating: The mediating role of appetite-regulating hormones. *Obesity reviews : an official journal of the International Association for the Study of Obesity* **24**, e13539.
13. Mason SM, Bryn Austin S, Bakalar JL *et al.* (2016) Child Maltreatment's Heavy Toll: The Need for Trauma-Informed Obesity Prevention. *Am J Prev Med* **50**, 646-649.
14. Shin SH, McDonald SE, Conley D (2018) Profiles of adverse childhood experiences and impulsivity. *Child Abuse Negl* **85**, 118-126.
15. Vadukapuram R, Shah K, Ashraf S *et al.* (2022) Adverse Childhood Experiences and Their Impact on Sleep in Adults: A Systematic Review. *J Nerv Ment Dis* **210**, 397-410.
16. Chu J, Raney JH, Ganson KT *et al.* (2022) Adverse childhood experiences and binge-eating disorder in early adolescents. *Journal of Eating Disorders* **10**, 168.
17. Kim Y, Lee H, Park A (2022) Patterns of adverse childhood experiences and depressive symptoms: self-esteem as a mediating mechanism. *Soc Psychiatry Psychiatr Epidemiol* **57**, 331-341.
18. Brewerton TD (2022) Mechanisms by which adverse childhood experiences, other traumas and PTSD influence the health and well-being of individuals with eating disorders throughout the life span. *Journal of Eating Disorders* **10**, 162.

19. Vidaña AG, Forbush KT, Barnhart EL *et al.*
(2020) Impact of trauma in childhood and adulthood on eating-disorder symptoms. *Eating Behaviors* **39**, 101426.
20. Brewerton TD (2019) An Overview of Trauma-Informed Care and Practice for Eating
Disorders. *Journal of Aggression, Maltreatment & Trauma* **28**, 445-462.
21. Rand-Giovannetti D, Rozzell KN, Latner J (2022) The role of positive self-compassion, distress tolerance, and social problem-solving in the relationship between perfectionism and disordered eating among racially and ethnically diverse college students. *Eating Behaviors* **44**, 101598.
22. Anderson LM, Berg H, Brown TA *et al.* (2021) The Role of Disgust in Eating Disorders. *Curr Psychiatry Rep* **23**, 4.
23. Cooper Z, Dalle Grave R (2017) Eating disorders: Transdiagnostic theory and treatment. In *The science of cognitive behavioral therapy*, pp. 337-357. San Diego, CA, US: Elsevier Academic Press.
24. Health UDo, Services H (2014) SAMHSA's concept of trauma and guidance for a trauma-informed approach.
25. Paintain E, Cassidy S (2018) First-line therapy for post-traumatic stress disorder: A systematic review of cognitive behavioural therapy and psychodynamic approaches. *Counselling and psychotherapy research* **18**, 237-250.
26. Castelnuovo G, Pietrabissa G, Manzoni GM *et al.* (2017) Cognitive behavioral therapy to aid weight loss in obese patients: current perspectives. *Psychol Res Behav Manag* **10**, 165-173.
27. Atwood ME, Friedman A (2020) A systematic review of enhanced cognitive behavioral therapy (CBT-E) for eating disorders. *Int J Eat Disord* **53**, 311-330.
28. Loucas CE, Fairburn CG, Whittington C *et al.* (2014) E-therapy in the treatment and prevention of eating disorders: a systematic review and meta-analysis. *Behaviour research and therapy* **63**, 122-131.
29. Brewerton TD (2023) The integrated treatment of eating disorders, posttraumatic stress disorder, and psychiatric comorbidity: a commentary on the evolution of principles and guidelines. *Front Psychiatry* **14**, 1149433.
30. Wiklund CA, Rania M, Kuja-Halkola R *et al.* (2021) Evaluating disorders of gut-brain interaction in eating disorders. *International Journal of Eating Disorders* **54**, 925-935.
31. Q da Luz F, Hay P, Wisniewski L *et al.* (2021) The treatment of binge eating disorder with cognitive behavior therapy and other therapies: An overview and clinical considerations. *Obesity Reviews* **22**, e13180.
32. Babbott KM, Cavadino A, Brenton-Peters J *et al.* (2023) Outcomes of intuitive eating interventions: a systematic review and meta-analysis. *Eating Disorders* **31**, 33-63.
33. Schaefer LM, Hazzard VM, Wonderlich SA (2022) Treating eating disorders in the wake of trauma. *Lancet Child Adolesc Health* **6**, 286-288.
34. Lawlor ER, Islam N, Bates S *et al.* (2020) Third-wave cognitive behaviour therapies for weight management: a systematic review and network meta-analysis. *Obesity Reviews* **21**, e13013.
35. Mueller J, Richards R, Jones RA *et al.* (2023) Supporting Weight Management during COVID-19 (SWiM-C): twelve-month follow-up of a randomised controlled trial of a web-based, ACT-based, guided
self-help intervention. *International journal of obesity (2005)* **47**, 51-59.
36. Chwyl C, Sala M, Forman EM (2022) Obesity: Third Wave Case Conceptualization. In *Behavior Therapy: First, Second, and Third Waves*, pp. 437-462: Springer.
37. Stynes G, Leão CS, McHugh L (2022) Exploring the effectiveness of mindfulness-based and third wave interventions in addressing self-stigma, shame and their impacts on psychosocial functioning: A systematic review. *Journal of Contextual Behavioral Science***23**, 174-189.
38. UK NGA (2017) Eating disorders: recognition and treatment.
39. Michie S, Richardson M, Johnston M *et al.* (2013) The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: building an international consensus for the reporting of behavior change interventions. *Ann Behav Med* **46**, 81-95.

40. Campbell M, Fitzpatrick R, Haines A *et al.* (2000) Framework for design and evaluation of complex interventions to improve health. *Bmj* **321**, 694-696.
41. Ahern AL, Richards R, Jones RA *et al.* (2022) Acceptability and feasibility of an acceptance and commitment therapy-based guided self-help intervention for weight loss maintenance in
adults who have previously completed a behavioural weight loss programme: the SWiM feasibility study protocol. *BMJ open***12**, e058103.
42. Skivington K, Matthews L, Simpson SA *et al.* (2021) A new framework for developing and evaluating complex interventions: update of Medical Research Council guidance. *bmj* **374**.
43. Hoffmann TC, Glasziou PP, Boutron I *et al.* (2014) Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide. *Bmj* **348**.
44. Braun V, Clarke V, Hayfield N *et al.* (2023) Doing reflexive thematic analysis. In *Supporting research in counselling and psychotherapy: Qualitative, quantitative, and mixed methods research*, pp. 19-38: Springer.