Portfolio for the Professional Doctorate in Health Psychology.

The integration of Health Psychology within nutrition

Joe O'Brien

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Declaration

I, Joseph O'Brien, do solemnly declare that not an iota of this work has been the subject of a submission in support of an application for another degree or qualification in this or any other institute of learning.

Acknowledgements

It is so important for me to write this section because without the contributions of others, I would certainly not have been able to complete this doctorate and be where I am today. I am so grateful for the people I have in my life.

Firstly, to my family, who have supported me for as long as I can remember. Together we went from choosing what was the right undergraduate degree, to dropping out, to trying again, to deciding to go to Bath for my MSc, to deciding to commute to Liverpool for a doctorate, they have without fail supported me with every single decision no matter how wild or eccentric the idea. I don't think many people in the world have that level of unbridled support in their lives, and I am so fortunate to be someone who does. You literally never doubted me, you always believed and trusted in me, and that for me is like a superpower. Mum, Dad, and Clare, you're the best.

To my girlfriend, I didn't know people like you existed. You went out of your way to give me the time and space to complete this mammoth piece of work, even when it meant compromising yourself or compromising something else, and for that I don't have words to say how thankful I am. I don't know anyone who's ever cared about another person that much, and you show me that every single day. *And* you do it with a smile (mostly!). Even beyond the doctorate, you've listened to me vent about the challenges and frustrations of the past two and a half years, which extended far beyond academia. You're my rock, and you've given me so much support to make sure I stayed on track. I cannot thank you enough, because you made this process feel easy, even when it wasn't. You push me constantly to find balance, and look after myself, even in the midst of one of the hardest periods I've ever encountered. Thank you.

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on a paper is unprecedented! And as someone who likes getting things done efficiently, that was a massive help. Thank you for being so supportive.

I want to also thank Dr. Sarah O'Neill. She probably doesn't know she'll be mentioned in this, but she gave me an opportunity when I didn't know what I wanted to do in life. She took me under her wing and, with the whole Spectrum team, taught me so much about psychology that I had never learned in formal education. When I went to Sarah and asked would she allow me to keep my job and use it as a placement for my doctorate, she said yes before I got the chance to even explain what it would entail. That kind of unwavering support gave me so much confidence and enthusiasm to keep learning, and I can't really put into words what that meant to me at the time. Thank you Sarah.

I don't have enough space to continue but thank you to Lauren and Megan, who kept me sane and really helped me feel at home. It's not often you just click with people, but I definitely clicked with both of you from the moment we started together! Thank you also to Mark and Helen, who have been ever present whenever I needed them. Helen for stepping in as my second supervisor whenever she was needed, and Mark for running a great course with a fantastic team who have taught me so much since I've started. You've both been invaluable.

And my apologies to anyone I forgot…

Preface

This portfolio is a depiction of over two years of work for the purposes of fulfilling the five competencies to meet the criteria for Stage 2 Training as a Health Psychologist. These competencies are set out by the British Psychological Society and the Health and Care Professions Council, and they include; Professional Skills (Chapter 1, p. 11), Research (Chapter 2, p. 83) Behaviour Change Interventions (Chapter 4, p. 186), Teaching and Training (Chapter 4, p. 223), and Consultancy (Chapter 5, p. 266). This portfolio contains both descriptive, and reflective practice examples in addition to empirical research.

The portfolio is based on my work as a Trainee Health Psychologist across three different placements including a primary care mental health service, private practice, and working for a health technology company. Each competency was met whilst following the BPS/HCPC code of conduct, and adhering to the highest professional and ethical standards. My roles have spanned across the UK and Ireland, and given the Covid-19 pandemic, some of the work was conducted online.

My area of interest is the psychology of nutrition-related behaviour change, however my work spanned a lot further than that. I have had the chance to work across different domains within eating behaviour such as group and 1-1 work, digital and online interventions, and in-person interventions. I have also had the chance to work with different types of behaviours, age groups, and presentations. My work allowed me to work as part of different multi-disciplinary teams, such as within a team of mental health professionals and within a team of dietitians and nutritionists. I have also had the chance to run my own business, train health professionals, work as a consultant for other businesses, and conduct research.

My behaviour change interventions (p. 186) outline how I have had the chance to work with a range of clients of all ages, backgrounds, and presentations. These presentations include emotional eating, chronic dieting, food addiction, body image concerns, emotional dysregulation, sleep issues, smoking, and other health behaviours. I also worked in group settings, 1-1 settings, online, and in person. I worked with clients from all over Ireland and the UK at different points, and also had the opportunity to work with corporate clients. I was

able to draw on different techniques in psychotherapeutic modalities (ACT, CBT, EFT) to integrate with health psychology models, in order to promote the psychological capability of my clients, while maintaining professional boundaries within scope of practice.

In order to fulfil the competency of teaching and training, I designed and implemented a psychology training for health professionals (p. 223). This training supported health professionals understanding the complexities of behaviour change, and how to design psychologically informed interventions to better support their clients. I was fortunate to have many opportunities to teach and train different people across my placements, including mental health training for corporate clients. My consultancy opportunities (p. 266) stemmed from my work with health professionals, and I had the opportunity to consult on an online course titled "Mood and Food". I also had multiple other opportunities which are detailed in Chapter 5.

In this portfolio I have included a quantitative research study (p.111), a qualitative research study (p. 84), and a systematic review (p. 134). The area of focus within my research is the contribution of psychology to understanding eating behaviour and behaviour change. Although there are a plethora of dietary intervention options, few consider the importance of psychology when making changes. The research presented in this portfolio explores service users' experiences of weight loss interventions through a qualitative analysis. A quantitative analysis explores if psychological variables can be effective in predicting rates of change for those pursuing weight loss. The systematic review explores how a contemporary theory of behaviour change is utilised in designing nutritional behaviour change interventions. These studies aim to enhance our understanding of how health psychology could be used in health behaviour change interventions more widely.

The portfolio evidences how my work over the past two years meets the criteria for becoming a Health Psychologist (p. 11). My learning over the past two years has been steep, and although I feel competent, I am aware that I will hopefully continue to learn over the course of my career. I believe I am now a reflective, scientific practitioner who possesses the necessary skills to practice as a Health Psychologist, in different domains.

Chapter 2 - Research Competency

CHAPTER 2 INDEX

Summary

This competency outlines my work on three research studies. The first paper is a qualitative paper investigating people's perspectives on the use of psychology in weight loss interventions. The second paper is a prospective quantitative investigation into the psychological variables that impact weight loss over a 12 week period. The third paper is a systematic review to explore the use of theoretical frameworks in designing nutrition-related behaviour change interventions. I have included a reflective research commentary which details some of my key learnings over the course of my research. This research was primarily conducted between March 2021 and March 2022, as detailed in the practice log.

Qualitative Research Paper 1

Psychology, Behaviour Change and Weight Loss

For submission to the British Journal of Health Psychology

Abstract

Objective: Eating-related behaviour change intervention outcomes are poor. Theoretical models of behaviour change, in addition to government guidelines, suggest using a multi-faceted approach that addresses behavioural, environmental, social, and psychological barriers to change. To date, it is unclear how well psychology is addressed in behaviour change interventions. This research investigates participants perspectives on how psychology is used in eating-related behaviour change interventions and psychology's value in changing eating behaviour.

Design: A qualitative exploratory approach gathered data through semi-structured interviews with 20 participants actively pursuing weight loss. Participants ranged from 24 to 59 years old, and self-reported BMI ranged from 'normal' to 'obese'. The interviews addressed the following research questions: (i) How do psychological barriers impact behaviour change, and (ii) is psychological support in behaviour change interventions adequate?

Methods: 20 interviews were conducted online via Zoom. Each was transcribed and anonymised before analysis. The data was analysed by the research team by using Thematic Analysis (TA).

Results: Four themes were developed from data: 1) A Lack of Psychological Consideration and Comprehension; 2) Emotions and Food; 3) Body Image and Weight; 4) Early Experiences of Weight Loss. Participants reported that psychology was a crucial factor in behaviour change, but they did not feel adequately supported in past or current interventions.

Conclusions: Psychology plays a significant role in eating behaviour change. Participants reported psychology was not used appropriately in interventions. At present,

recommendations and guidelines are not evident in practice. Recommendations for clinical practice are discussed.

Key terms: Behaviour change, health psychology, obesity, weight loss, qualitative.

Statement of Contribution

Where does the research currently stand on this topic?

- A minority of people who attempt weight loss are successful long term
- People who struggle with changing health behaviours related to weight loss may also struggle with emotional regulation.
- People who are successful with behaviour change and achieve weight loss report that psychological factors are important in the process of change.

What does this study contribute?

- This study supports the idea that people lack psychological insight into their eating behaviour and struggle to understand why change is difficult.
- This study shows that weight management service users want psychological input and recognise it is important, but are not accessing appropriate support.
- This study suggests why many weight management services may not work optimally.

Word Count: 5810 (Excluding abstract, statement of contribution, and references)

Background

The World Health Organisation have referred to obesity as a global epidemic (World Health Organisation, 2021) and obesity has long been considered a major public health issue. Previous research has reported a correlation between being overweight and health risks, such as diabetes, cardiovascular disease and cancer (Pi-Sunyer, 2009). In the UK, 28% of adults are classified as obese, statistics which have been on the increase for at least the last two decades (Baker, 2021). Pursuing weight loss through behavioural, commercial interventions, has traditionally been seen as the solution to these issues. However, traditional weight-loss interventions have not been particularly successful in reducing weight at the individual or the population level (Langeveld & de Vries, 2013). Average Body Mass Index (BMI) has risen consistently despite government health policies, public health interventions, food-taxation schemes and weight management supports (Theis & White, 2021). There remains a fundamental challenge in supporting people to change their health behaviour at an individual and population level, to have a meaningful impact on obesity rates.

There is growing support in the health industry for weight-neutral approaches (where health behaviours are prioritised as an outcome rather than weight) as an alternative to weight-focussed interventions. For example, Mensinger and colleagues (2016) argue that weight-neutral approaches can improve health outcomes equivalent to weight-focussed interventions and outline how a weight-neutral approach could be another valid pathway to health. This contrasts with the one-size-fits-all approach that the UK currently implements in weight management interventions, where the focus on BMI and weight is part of assessment and intervention (National Institute for Health and Care Excellence, 2014). Historically, this has been the way obesity or overweight has been managed, and evidently, there are movements away from that approach (Tribole & Resch, 2020). The focus on weight can lead to weight bias and stigma that can impact an individual's healthcare and how they are treated in wider society (Major et al., 2014). It is indeed noteworthy to consider that stigmatizing people for their weight or size may lead to weight gain and increased calorie consumption through lower self-regulation (Major et al., 2014; Schvey et al., 2011), which is counterintuitive to what we might be seen on TV shows or in the media, which are shame-based approaches (Kukla, 2018).

The rise of weight-neutral approaches might be seen as a symptom of the failings of the previous approaches. The outcome data for weight loss interventions is relatively poor (Greaves et al., 2017; Spreckley et al., 2021). Greaves et al. (2017) and Spreckley et al. (2021) outline how traditional weight-loss interventions are sub-optimal at best and not fit for purpose at worst. For example, Spreckley et al. (2021) outline how emotions, stress, identity and boundaries are crucial in maintaining weight loss. Similarly, Greaves et al. (2017) highlight the importance of meeting individuals psychological needs, challenging unhelpful beliefs and thinking styles, food being used as a comfort for internal tension, and types of motivation. These findings suggest that the factors which contribute to health-related behaviour change in the long term have deep roots in psychology that are typically not addressed in weight management interventions. In addition, Ingels & Zizzi (2018) evidenced the importance of emotional regulation in weight loss maintenance and show that it is also a predictor of regain after initial weight loss. When we consider people who present to weight management interventions, between 23% and 46% report symptoms of binge eating (Bulik et al., 2003). Many of these aforementioned research findings suggest that psychological factors are crucial to consider as part of weight management interventions. The UK's NICE guidelines for weight management services state that weight management services should be designed with psychological input (NICE, 2014), yet it is unclear how well this has been applied into practice. According to the same guidelines, psychologist input should be reserved for "complex" cases. When considering the prominence of psychological barriers to behaviour change, there is an argument that many people outside of "complex" cases would benefit from psychologically informed interventions or psychologist practitioner input. Psychological barriers to change are present across the full spectrum of individuals accessing weight management services, not just in complex or severe cases.

Previous research often tends to focus on the behaviours that are important in weight loss – for example, in Spreckley's research (2021), some of the prominent behaviours important when maintaining weight loss include self-monitoring, planning and managing external challenges. However, there is little focus on the mechanisms for action regarding the psychological change required to assist the subsequent behaviour change. It is unclear *why* some people struggle with changing health behaviours such as eating habits and exercise, or if there are psychological barriers that exist towards engaging in these behaviours. Systematic reviews (Greaves et al., 2017; Spreckley et al., 2021) reveal the behaviours of people who

successfully manage their weight, and this behavioural approach is traditionally used in interventions. However, the reviews also outline psychological changes that may be required for change, yet psychological support is only prioritised for 'complex' cases. Psychology could help explain and address some of the challenges for people wanting to change their health behaviour.

There is much debate in the field about the "right" approach when it comes to improving health behaviour. One argument is that traditional dieting and intentional weight loss does not work most of the time, and even when it does, weight is often regained. The alternative argument is that weight-neutral approaches can improve physical and psychological health markers. Regardless of the approach to improving health, it is evident that psychological factors explain some of the difficulties people encounter when changing their health behaviour. However, of the research that exists, few publications have explored people's perceptions of the role of psychology in behaviour change and weight-loss interventions. This study explores participants' experiences of behaviour change and weight loss interventions from a psychological perspective to understand how psychology might impact an individual's potential to change their health behaviour.

Methods

Design

This research used qualitative semi-structured interviews to collect data. The data was analysed using Thematic Analysis (TA) (Braun & Clarke, 2019) to explore participants' experiences of weight loss and behaviour change, focusing on the role of psychology. TA was used as it is an accessible way to offer insight into the participants' experiences of the role of psychology in behaviour change, while recognising the researcher's contribution to the interpretation of the dataset.

Participants

Participants were pursuing weight loss or had experiences of pursuing weight loss. Participants were excluded if they had been diagnosed with an eating disorder or had an

active eating disorder. In total, 20 participants completed the interviews (19 women and one man) aged between 24 and 59 years old. Participants self-reported BMI ranged from 'normal' to 'obese'.

Recruitment & data collection

Following ethical approval from LJMU, this study recruited directly from a connected quantitative study utilising a participant pool of 715. The quantitative study had been advertised widely on social media. Participants signed up online, and following the completion of the quantitative study, 60 people consented to participate in a qualitative study and agreed to be contacted for an interview. The participants self-selected a time to complete an online semi-structured interview and received a link to log onto a private online meeting room at their designated timeslot.

At the start of the interview, the qualitative study was explained, and the participant had an opportunity to seek clarification and ask the interviewer any questions prior to the interview commencing; verbal consent was given at the being of this process. The researcher (first author) used his prior training in clinical interventions to ensure participants felt as comfortable as possible when answering questions. Interviews lasted approximately 40-60 minutes. The interview schedule included questions to explore participants' reasons for weight loss, the factors that may have made their experience difficult, the role of their emotions in change, their opinions on what could be improved for future weight-loss interventions, and insights on the role of psychology. These open questions were followed-up with probing and exploratory questions to encourage the participants to expand on their answers (such as can you tell me more about that? What does xx mean to you?); the interview schedule was designed to consider the psychological factors that could contribute to behaviour change. The researcher (first author) remained neutral throughout the interview and did not offer opinions or clinical insight to participants during the process; this allowed participants to express their opinions without fear of judgment or criticism. The first author was a young male mainly asking women about weight loss, body image, emotions, self-esteem, and challenging experiences. Hence supervision was sought throughout to

ensure the researcher remained reflexive of his approach (via third author) and that participants felt able to share their experiences without any pressure from the researcher.

The interviews were digitally recorded and transcribed to anonymise the participants. At the point of reaching 20 interviews, the data did not produce any new themes within the sample, and therefore no new interviews were scheduled, although it is recognised that the sample was homogenous and a more diverse sample may have produced more themes. One participant was deemed unsuitable for the research analysis as they had a history of purging behaviour, therefore the interview was stopped and they were offered further specialised support. Participants were debriefed at the end of the research and given further avenues of support should they wish to use them.

Analysis

The process of TA followed Braun and Clarke's (2019) Handbook and comprised the following six steps; Familiarizing yourself with the data, generating initial codes, searching for themes, reviewing potential themes, defining and naming themes and producing the report. Analysis was initially completed by hand and then transferred for further refinement into NVivo (Jackson & Bazeley, 2019). For examples of the initial themes and codes, see Appendix A.

In order to ensure objectivity and validity, transcripts were independently analysed by all authors, seeking to gain familiarisation, to conduct initial coding and later analytical triangulation through research team discussion to agree on codes and, subsequently, consider how those codes developed into themes. Ninety-eight codes were initially identified, of which six themes were provisionally formed (Appendix B). Upon discussion, these themes were revised finally into four themes outlined in Figure 1.

Researcher Description and Methodological Rigour

It is important to recognise what the researchers bring to the dataset (Braun & Clarke, 2019) and when using a deductive approach to coding, the research team bring a series of concepts or ideas that are used to help code the data. For example, the research team have a background in Health Psychology which may lead to a different interpretation of the dataset

than a researcher with a nutrition background. The lead researcher was a male Trainee Health Psychologist who worked one-to-one and group settings delivering behaviour change interventions focusing on weight management and disordered eating practices. The third author and Director to the Trainee was a female Reader in Applied Health Psychology, a HCPC Registered Practitioner and Chartered Health Psychologist with 20-years' experience working in both clinical and public health settings delivering various interventions for people living with, or at risk of, obesity and diabetes, and has extensive qualitative and academic research expertise. The second supervisor was also a female Professor in Applied Health Psychology, HCPC registered, Chartered Health Psychologist with research expertise in mixed methods research and significant experience working with clinical populations. Her research focuses on the psychosocial impact of long-term conditions.

The research team maintained the process of triangulation and discussion at every stage of the research to ensure quality. This paper includes raw data quotes as extracts of evidence to support the findings. Unfortunately, full transcripts of the raw data are not available as participants have not given their consent to be shared publicly.

Findings

Figure 2 captures the findings of TA on the dataset. The themes explain how psychological factors influence the participant's weight loss, eating behaviours and capacity to change. These themes are independent but also inform each other. For example, Theme 4 (Early Experiences of Weight Loss) could inform Theme 3 (Body Image & Weight). Theme 1 can be seen as the foundation for understanding each of the other themes. In this context Theme 1 is considered the central and anchoring theme. Braun et al., (2019) specifically mentioned that good TA means each theme has a singular focus, each theme is related, but does not overlap, while also answering the research question.

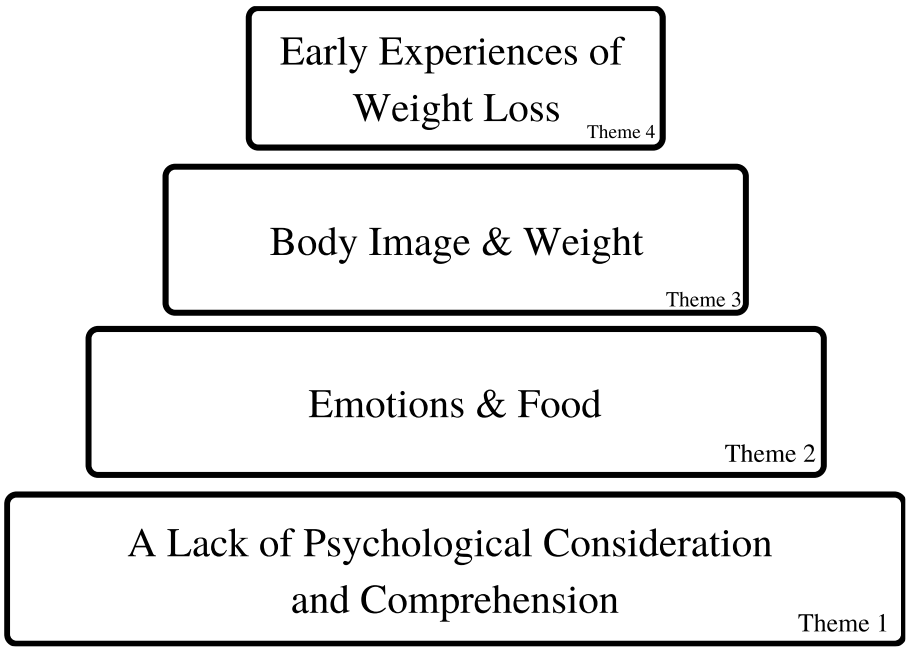


Figure 2 - Themes from qualitative research

Theme 1 – A Lack of Psychological Consideration and Comprehension

This theme is the foundation for understanding all other themes and is central to understanding what underpins the whole dataset. Across the data, participants consistently reported that interventions they had partaken in lacked psychological input, both past and present. Participants described how psychological factors (outlined below) influence their eating behaviour but could not explain in-depth how those processes worked or how they might address them. Psychological concepts such as emotions, thinking styles, past experiences, self-esteem, and motivation were described throughout the interviews, though further exploration of how these concepts influenced behaviour was relatively poorly understood. Typically, participants resorted to self-blame when finding change difficult, and these negative labels were not acknowledged as influencing the success of the intervention itself. There was a disconnect between the participants understanding their problem and understanding their own psychological needs. Participants were generally unaware that their barriers to behaviour change may require psychological support. Instead, these barriers were considered personal flaws (rather than a lack of psychological support in the intervention).

"Well, obviously, it must be me, not these plans… I didn't have that resilience" Interview 12

Participants expressed a need to focus on psychology in behaviour change and weight loss interventions and to move away from solely focussing on behaviour. On numerous occasions, participants mentioned a knowledge-application gap - explicitly that they were aware of what health behaviours they needed to do but struggled to apply that to their lives.

"I think all the weight loss interventions aim to tackle the weight as such, not the source of the harm. You're tackling your weight, but you're not tackling why you've put on weight, and I do think the mental health side of it, the sort of reasoning behind why people eat and why people won't exercise, is a big factor." Interview 13

Participants who did not typically have psychological insight (an understanding of how their thoughts/feelings related to their behaviour) tended to blame themselves or perceive that they were at fault for not being successful with change. The reality might be that the interventions they have tried had not supported them adequately with the psychological side of behaviour change therefore, it was inevitable that change did not occur. According to the Behaviour Change Wheel (Michie, van Stralen & West, 2011), psychological capability is an essential factor for interventions to consider. Of the minority who had psychological insight, they also reported attending some form of therapy. Participants tended to agree that psychological support was necessary for weight loss interventions and that the approaches and interventions that exist now are not sufficient, suggesting that they are too behaviour-focussed.

This theme shows the discrepancy between recognising psychology as an important intervention tool and its lack of use in practice. One participant mentioned how coaches try and cover psychology by working outside their scope of practice.

"I want to know the emotion side of things. And they [previous interventions] cover probably everything except that - Like they will ask you, how's your mood, but then nothing is done with that information. Coaches [are] covering topics that are, in my

opinion, out of their remit, covering topics that are really sensitive, covering topics that require specific intervention, covering topics that need specific people who are qualified." – Interview 20

Participants almost exclusively attended behavioural (primarily non-psychological) interventions, yet capably describe how their barriers to change relate to psychological factors (e.g. emotions, thinking styles, motivation, self-esteem, and past experiences). There may be a situation where people can identify psychological factors as barriers to change but are unsure how to address them. There was also evidence from the interviews that people may think it is not changeable or a personal flaw. It might also be the case that those factors are not considered worthy of support. It is evident that participants can describe the psychological factors that impact their eating behaviour but do not receive appropriate psychological support.

Theme 2 – Emotions & Food

The relationship between emotional regulation and participants eating patterns was a repeated pattern across the dataset and is in line with other research in this field (Ingels & Zizzi, 2018). Participants reported coping with emotions through eating, and in response to internal feelings or difficult life circumstances that bring up emotion. However, some participants reported that when they improved emotional regulation (often through therapy), they had less dependence on food as a way of coping. One explanation might be that learning new ways of coping with difficult things can facilitate less dependence on food as a way of coping.

"I'm still trying to figure out why I don't stick to it. I know, there's definitely the emotional aspect of it. Eat when I'm stressed or bored. I eat my emotions. So if I'm feeling stressed, I'll eat, and I know I need to find a better way to manage my emotions" Interview 18

This theme highlights the role of emotions and life circumstances, which directly impacted the participants' eating behaviour, which in turn influenced their weight and weight

management efforts. A repetitive pattern across the dataset was that participants acknowledged that overeating and weight gain occurred when feeling emotional or going through difficult life circumstances. Participants who had worked on improving coping strategies recognised that their eating behaviour had improved. Participants who had not found new ways to cope tended to continue to rely on food. This suggests that people can change and find new ways to manage emotions. This is interesting when considering the current research, which suggests that finding new ways to manage internal distress is important for behaviour change maintenance (Greaves et al., 2017).

> *"I think if you're expressing how you actually feel and somebody hears and validates it, I suppose there's not that void to fill with food" Interview 7*

There were many similarities within participants across the data set. One prominent similarity is that participants who reported being unsuccessful with weight loss reported changes in eating habits during internal or external difficulties, either in the past or present.
Only two participants reported being 'successful' at weight loss. In contrast to most participants (who could be considered 'unsuccessful at weight loss'), they did not report changing their eating habits in response to emotions or difficult life circumstances. Instead, they explained how they manage difficult internal or external experiences without using food as a coping mechanism. They also reported continuing health behaviours regardless of changes in weight or shape. Comparing this to the rest of the group is interesting because those who reported a long history of unsuccessful dieting and weight loss attempts reported a significant negative relationship between emotions and food, compared to 'successful' ones who appear to be more aware of and manage their emotions in different ways.

> *"I went to the gym three times a week, and if I saw changes, I saw changes. If I didn't, I didn't… I never got myself down about it" Interview 4, who reported successfully losing weight, mentioned that their health behaviours did not change even if they were not seeing physical changes.*

This theme is important because many weight loss interventions do not appear to include psychological or emotional support. Participants consistently described being told what

behaviours to change but were not supported with any cognitive or psychological change that may facilitate the behavioural change. Psychological support tends to be reserved for complex cases in public health services (NICE, 2014). The participants have mentioned that emotions impact eating but being appropriately supported in managing emotions means a lesser dependence on food used to cope, which can impact weight. Emotional regulation is vital to consider when supporting weight loss, yet there has been little evidence in these interviews that much has changed on the front line of nutrition interventions.

Theme 3 – Body Image & Weight

Participants reported that body image and concerns with weight were factors that impacted their decision making and relationship with food. Part of this theme explains how feelings about body image and weight is of significant value and plays a role in impacting participants mood and eating habits in unhelpful ways.

People reported feeling uncomfortable in their bodies and that they were looking to achieve weight loss to improve how they felt about themselves and their appearance. Restricting food was identified as a trigger for binge eating and overeating, leading to weight gain for some people. The desire to change body image, appearance, or weight, can sometimes lead to a situation where people engage in a binge-restriction cycle.

> *"I'm very good at like, I guess being really restrictive. And then eventually, it just is too much. And I end up bingeing like crazy" Interview 11*

One participant explicitly outlined how, despite losing weight, the discomfort with their appearance was still present, which would suggest that the discomfort with body image is an internal experience and is not solely dictated by weight. There is also an assumption that weight loss will improve how someone feels about their body, contrary to the research that shows that "feeling fat" is dictated by more than just weight (Tiggemann, 1996).

> *"I found a picture of me when I was about 16 recently, just wearing like a long sleeve top and a pair of jeans. And I looked really like just totally normal, slim, fine. Didn't*

have like a stomach or big arms or anything like that. But I can remember wearing that top and thinking like- 'I'm so fat'." Interview 9

This belief that weight loss will bring body satisfaction might be unhelpful, as the drive for a change in appearance may lead to a disordered relationship with food or unhealthy eating habits. When reflecting on people who report being unsuccessful, those who had body image or weight concerns tended to have a long history of dieting and reported more extreme/restrictive diets. Those who were successful had motivations beyond body image and mentioned that their approaches were slow and balanced. Successful participants reported engaging in health behaviours regardless of changes to scale weight. This was different to those who were unsuccessful, who reported that without improvements in body image or weight, it could lead to giving up on the process or lower motivation to continue. This would suggest that when people have a significant value placed on scale weight, it may be counterproductive to use as a sole measure of success.

"… and then you go to scales and you've gone up, you're like why am I bothered?... When it doesn't move it demotivates you" Interview 5, on how seeing no weight changes could lead to being demotivated.

It is evident that many participants believe weight loss will fix their discomfort with their body. However, it also can be the case that when people manipulate their food to elicit change, and if nothing changes, people may be demotivated to continue engaging in health behaviours. It may also lead to bounce-back eating behaviour.

"It [weight loss] was all about looks and I wanted to be like my friends, wanted to attract the right man… I was always trying to lose weight because I didn't feel comfortable in my own skin" Interview 13

Theme 4 – Early Experiences of Weight Loss

Most participants reported that they had early experiences of pursuing weight loss (in childhood or teenage years), as well as a long history of dieting and parents valuing weight

loss. People reported that their old habits were difficult to break and that some of their beliefs formed in childhood are still present.

> *"I can remember I was 13 and my mom was like – 'we'll put you on a little diet and it'll help'. And, that stuck with me because I remember thinking, I'm 13… literally two thirds of my life have been on a diet." Interview 9*

Participants mentioned attempting weight loss as young as eight years old and mentioned that it could cause friction between their parents and themselves because of the importance that was placed on weight. Those experiences may contribute to how participants view themselves - namely, feeling valued when losing weight but feeling like a failure when not losing weight or being bigger. Again, this may lead to someone valuing weight loss above other things, which can create challenges for psychological wellbeing.

> *"I think I've had a lot of pressure put on me. I think the relationship with my mother can be strained at times, related to weight. She would place a great deal of emphasis on how people look, their appearance, and it would be very stigmatising… I was taken as a teenager UniSlim, when I was probably 13… 13 being brought along to a slimming group was pretty tough" Interview 6*

Some participants also wished for the body they had as a teenager, which is a time when the body has not finished growing or changing. Many participants described how their happiness depended on their weight being conditioned to want an "ideal" weight and that anything less brought disappointment and dissatisfaction.

This theme is important because participants seem to have internalised the belief that being bigger is "bad" and being smaller is "good" – a belief they stated they first encountered in childhood. In these interviews, participants who have had value or importance placed on weight or appearance in childhood appear to want to manipulate food to change their body shape or weight, even in adulthood. This can have a psychological impact and a physical impact, as participants reported dissatisfaction in themselves.

Discussion

This study is one of the few to investigate participants' psychological insight into behaviour change and weight loss and their psychological experiences when engaging in weight loss programmes. Previous literature has outlined how the brain predicts the regulation of appetite and eating behaviour (Guyenet & Schwartz, 2012), which in turn impacts behaviour change and weight loss (Greaves et al., 2017); however, few researchers have considered whether participants have psychological insight or whether recommendations to incorporate psychology into weight-loss interventions are implemented. In addition, previous literature tends to focus on what to do (behaviour focused techniques) (Michie et al., 2011) rather than *why* people are engaging in health-harming behaviours and what cognitive or emotional changes may facilitate change (psychology focused techniques).

Theme one suggests that there is a lack of consideration for the importance of psychology from the perspective of intervention content and delivery, and that of the participant. There is compelling evidence suggesting that psychology is vital to understand and change behaviour (Greaves et al. 2017; Spreckley et al., 2021), yet according to the participants, interventions have shown little intention to address psychology. There has been consistent documenting of the need for psychology in behaviour change interventions both in the research and part of the UK's clinical guidelines (NICE, 2014). However, the participant's lived experience reports a significant variation between the recommended guidelines, the research, and the implementation of interventions. Participants reported almost no psychological input in any behaviour change or weight management programme they have taken part in to date, including multiple different interventions over many years. The gap between research and implementation ultimately impacts the effectiveness of the support and users' experiences. Health professionals may also have some conservatism because, traditionally, psychology services have been utilised with clinical populations. Yet, the participants in this study had no diagnosed eating disorder and yet still struggled with the psychological and emotional components of change.

There has been a historical belief that the brain is separate from the body and behaviour and that they do not interact (Crane & Patterson, 2012). This goes back to ideas proposed by philosopher Rene Descartes in the 17th Century. However, there is abundant

evidence to support a link between brain and behaviour and that improving psychological wellbeing through psychotherapy can promote health-related behaviour change (Lawlor et al., 2020). There are a plethora of behaviour change resources available for practitioners and weight management providers, such as the Taxonomy of Behaviour Change Techniques (Michie et al., 2013). However, these evidence-based techniques are primarily behavioural, despite the evidence that addressing how we think and feel impacts behaviour also. The current findings provide evidence that focussing on psychological change is vital for the future of weight loss behaviour change interventions.

The findings also outlined a mismatch between the participants' recognising the importance of psychology and getting psychological support. Participants described how different feelings and thoughts would impact their eating behaviour, adherence to interventions and a surfeit of other behaviours, yet they attended non-psychological, primarily behavioural support interventions. Although the current research did not explore why this occurred, there are a few potential interpretations. Participants sometimes described psychological factors as personal failings or unchangeable personality traits. In context, psychological support is often inaccessible for many reasons, including stigma, cost, lack of services (Mohr et al., 2007). However, the analysis within this study identified that although participants can describe how psychology impacts their behaviour, they are not accessing appropriate psychological support to address it within the interventions they had attended. It is unclear why this might be the case.

The second theme found that emotional wellbeing can impact behaviour and a person's ability to change behaviour. Participants described that food could provide a way of coping during difficult experiences, even for those without a diagnosed mental health issue. As with the clinical guidelines (NICE, 2014), psychological support is recommended for complex cases or for those with diagnosed psychological disorders. However, the current findings suggest that even in the absence of a formal mental health diagnosis, emotions have a significant role to play in eating behaviour; this is consistent with previous research, which suggests that emotional wellbeing is a crucial component of behaviour change and that emotional regulation skills can be important components of interventions (Ingels & Zizzi, 2018). This is part of the rationale for including psychologically focussed techniques as part of behaviour change interventions alongside other evidence-based techniques, such as Michie's behaviour change taxonomy (Michie, 2013). Participants repeatedly reported a lack of

support from both current and past interventions regarding psychology, despite its well-recognised importance. The inclusion of psychologically focused techniques would be quite a distance from traditional weight management interventions and would embrace the evidence base to support change (Castelnuovo et al., 2017).

Addressing psychological barriers to change would also be important for those who have difficulty with their appearance and weight, as mentioned in both the third and fourth themes. The data supported that all participants experienced discomfort with their weight or appearance. In addition, there is evidence to suggest body image concerns are not solely because of weight, and people of any weight may experience body image concerns (Tiggemann, 1996). This would suggest that body image concerns should be part of intervention assessment and support in weight management services. There is also evidence that "feeling" fat without being fat can predict weight gain in the future (Cuypers et al., 2012), this is particularly interesting when considering Theme Four, which suggests that many participants had the experience of 'feeling fat' in childhood, independent of body weight. Body image concerns are important to recognise as participants reported it negatively impacted their health behaviours, motivation and adherence. These are concerns that should be considered when designing, implementing, and assessing behaviour change programmes, as they have the potential to impact adherence.

Themes three and four are intrinsically linked, as all participants had early experiences of weight loss that potentially shaped their behaviour and perception of themselves. Some previous evidence suggests that early introduction to dieting or weight loss can impact adherence to behaviour change or weight loss interventions (Dalle Grave et al., 2005). The analysis would suggest that weight loss beliefs and behaviours begin at an early age, and many of the participants reported continuing those beliefs and behaviours since childhood. The participants suggested that the beliefs and behaviours they learned as a child are unhelpful to psychological well-being and negatively impact motivation for physical health behaviours. If weight management services want to prevent people from some of these difficulties, it might be important to focus on health rather than weight or remove the significance placed on weight as the sole measure of value or success in interventions.

Recommendations

Current behaviour change interventions continue to focus primarily on behaviour rather than psychology, despite the evidence supporting the use of psychology alongside behavioural techniques. Participants have clearly identified that psychological barriers to change are prominent and this research further evidences the need for psychological support. There is a disconnect between the clinical guidelines, previous research recommendations, and the level of psychological support in practice. Future research could explore why psychology is not being utilised in behaviour change interventions. Some of the reasons might include the lack of psychologically qualified practitioners, a lack of awareness about the most suitable support, or other common barriers to psychological services. Psychological resources are limited and are often reserved for complex cases or higher risk services (NICE, 2014), so one way of supporting future users of behaviour change services is to train the practitioners to support psychology appropriately.

Strengths & Limitations

This research benefited from having an experienced research team from a Health Psychology background with varied academic and clinical experience, which allowed the data to be analysed and interpreted with a psychological focus. This research did not investigate why people did not attend psychology services despite the fact that they could identify that psychology was important, which could be important to understand in the future. The results were also based on the lived experience of participants, and how they interpreted success. If there had been a more diverse sample, it may have yielded more themes, and may not be generalisable to a wider population as the sample was relatively homogenous. An interesting area of future research is how these qualitative results compare with the evaluation of a services' clinical outcomes. This research also identified how guidelines and research recommendations are not being delivered adequately in behaviour change interventions, which is a cause for concern.

Conclusion

In summary, our research evidenced the importance of psychology in behaviour change and weight-loss interventions. We reported that although participants identify psychological barriers to change, they are not getting enough psychological support. Participants reported thoughts, feelings and body image as primary areas of concern. This research proposes that we need to further implement psychology into behaviour change interventions through the appropriate training of the Health Care Professionals who deliver said interventions.

References

Baker, C. (2021). Obesity Statistics. *House of Commons Library*, *3336*, 21. https://commonslibrary.parliament.uk/research-briefings/sn03336/

Braun, V., & Clarke, V. (2021). To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative Research in Sport, Exercise and Health*, *13*(2), 201–216. https://doi.org/10.1080/2159676X.2019.1704846

Braun, V., Clarke, V., Hayfield, N., & Terry, G. (2019). Thematic Analysis. In P. Liamputtong (Ed.), *Handbook of Research Methods in Health Social Sciences* (pp. 843–860). Springer Singapore.

Bulik, C. M., Sullivan, P. F., & Kendler, K. S. (2003). Genetic and environmental contributions to obesity and binge eating. *International Journal of Eating Disorders*, *33*(3), 293–298. https://doi.org/10.1002/eat.10140

Castelnuovo, G., Pietrabissa, G., Manzoni, G. M., Cattivelli, R., Rossi, A., Novelli, M., Varallo, G., & Molinari, E. (2017). Cognitive behavioral therapy to aid weight loss in obese patients: Current perspectives. *Psychology Research and Behavior Management*, *10*. https://doi.org/10.2147/PRBM.S113278

Crane, T., & Patterson, S. (2012). History of the Mind-Body Problem. Routledge.

Cuypers, K., Kvaløy, K., Bratberg, G., Midthjell, K., Holmen, J., & Holmen, T. L. (2012). Being Normal Weight but Feeling Overweight in Adolescence May Affect Weight Development into Young Adulthood—An 11-Year Followup: The HUNT Study, Norway. *Journal of Obesity*, *2012*, e601872. https://doi.org/10.1155/2012/601872

Dalle Grave, R., Calugi, S., Molinari, E., Petroni, M. L., Bondi, M., Compare, A., Marchesini, G., & QUOVADIS Study Group. (2005). Weight loss expectations in obese patients and treatment attrition: An observational multicenter study. *Obesity Research*, *13*(11), 1961–1969. https://doi.org/10.1038/oby.2005.241

Greaves, C., Poltawski, L., Garside, R., & Briscoe, S. (2017). Understanding the challenge of weight loss maintenance: A systematic review and synthesis of qualitative research on weight loss maintenance. *Health Psychology Review*, *11*(2), 145–163. https://doi.org/10.1080/17437199.2017.1299583

Guyenet, S. J., & Schwartz, M. W. (2012). Regulation of Food Intake, Energy Balance, and Body Fat Mass: Implications for the Pathogenesis and Treatment of Obesity. *The Journal of Clinical Endocrinology & Metabolism*, *97*(3), 745–755. https://doi.org/10.1210/jc.2011-2525

Ingels, J. S., & Zizzi, S. (2018). A qualitative analysis of the role of emotions in different patterns of long-term weight loss. *Psychology & Health*, *33*(8), 1014–1027. https://doi.org/10.1080/08870446.2018.1453511

Jackson, K., & Bazeley, P. (2019). *Qualitative Data Analysis with NVivo*. SAGE.

Kukla, R. (2018). *Shame, Seduction, and Character in Food Messaging* (A. Barnhill, M. Budolfson, & T. Doggett, Eds.; Vol. 1). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199372263.013.15

Langeveld, M., & De Vries, J. H. (2013). The mediocre results of dieting. *Nederlands tijdschrift voor geneeskunde*, *157*(29), A6017-A6017.

Lawlor, E. R., Islam, N., Bates, S., Griffin, S. J., Hill, A. J., Hughes, C. A., Sharp, S. J., & Ahern, A. L. (2020). Third-wave cognitive behaviour therapies for weight management: A systematic review and network meta-analysis. *Obesity Reviews: An Official Journal of the International Association for the Study of Obesity*, *21*(7), e13013. https://doi.org/10.1111/obr.13013

Major, B., Hunger, J. M., Bunyan, D. P., & Miller, C. T. (2014). The ironic effects of weight stigma. *Journal of Experimental Social Psychology*, *51*, 74–80. https://doi.org/10.1016/j.jesp.2013.11.009

Mensinger, J. L., Calogero, R. M., Stranges, S., & Tylka, T. L. (2016). A weight-neutral versus weight-loss approach for health promotion in women with high BMI: A randomized-controlled trial. *Appetite*, *105*, 364–374. https://doi.org/10.1016/j.appet.2016.06.006

Michie, S., Ashford, S., Sniehotta, F. F., Dombrowski, S. U., Bishop, A., & French, D. P. (2011). A refined taxonomy of behaviour change techniques to help people change their physical activity and healthy eating behaviours: The CALO-RE taxonomy. *Psychology & Health*, *26*(11), 1479–1498. https://doi.org/10.1080/08870446.2010.540664

Michie, S., Richardson, M., Johnston, M., Abraham, C., Francis, J., Hardeman, W., Eccles, M. P., Cane, J., & Wood, C. E. (2013). The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: Building an international consensus for the reporting of behavior change interventions. *Annals of Behavioral Medicine: A Publication of the Society of Behavioral Medicine*, *46*(1), 81–95. https://doi.org/10.1007/s12160-013-9486-6

Michie, S., van Stralen, M. M., & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science*, *6*(1), 42. https://doi.org/10.1186/1748-5908-6-42

Mohr, D., Hart, T., Howard, I., Julian, L., Vella, L., Catledge, C., & Feldman, M. (2007). Barriers to Psychotherapy among Depressed and Nondepressed Primary Care Patients. *Annals of Behavioral Medicine : A Publication of the Society of Behavioral Medicine*, *32*, 254–258. https://doi.org/10.1207/s15324796abm3203_12

National Institute for Health and Care Excellence (NICE). (2014). Weight management: Lifestyle services for overweight or obese adults. *Weight Management*, 66.

Pi-Sunyer, X. (2009). The Medical Risks of Obesity. *Postgraduate Medicine*, *121*(6), 21–33. https://doi.org/10.3810/pgm.2009.11.2074

Schvey, N. A., Puhl, R. M., & Brownell, K. D. (2011). The impact of weight stigma on caloric consumption. *Obesity (Silver Spring, Md.)*, *19*(10), 1957–1962. https://doi.org/10.1038/oby.2011.204

Spreckley, M., Seidell, J., & Halberstadt, J. (2021). Perspectives into the experience of successful, substantial long-term weight-loss maintenance: A systematic review. *International Journal of Qualitative Studies on Health and Well-Being*, *16*(1), 1862481. https://doi.org/10.1080/17482631.2020.1862481

Theis, D. R. z., & White, M. (2021). Is Obesity Policy in England Fit for Purpose? Analysis of Government Strategies and Policies, 1992–2020. *The Milbank Quarterly*, *99*(1), 126–170. https://doi.org/10.1111/1468-0009.12498

Tiggemann, M. (1996). "thinking" versus "feeling" fat: Correlates of two indices of body image dissatisfaction. *Australian Journal of Psychology*, *48*(1), 21–25. https://doi.org/10.1080/00049539608259501

Tribole, E., & Resch, E. (2020). *Intuitive Eating, 4th Edition: A Revolutionary Anti-Diet Approach*. St. Martin's Publishing Group.

World Health Organisation. (2021). *Controlling the Global Obesity Epidemic*. https://www.who.int/activities/controlling-the-global-obesity-epidemic

Qual Project

Themes List

Emotions and Food
The relationship between emotional regulation and eating patterns has come up multiple times. Participants reported eating in response to internal feelings or in response to difficult life circumstances. They also reported that when they improved emotional regulation, that eating behaviour improved. Participants also noted a significant neglect of psychology in weight management programmes.

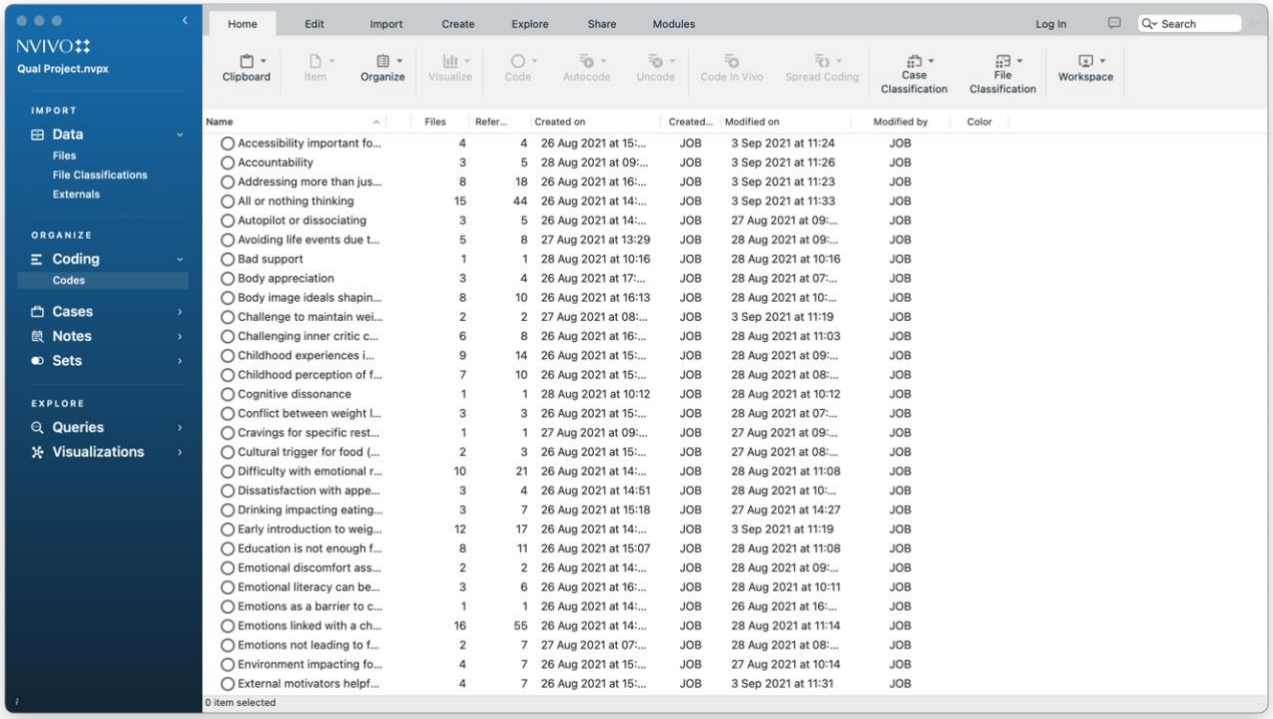
Body Image, Appearance & Weight
Participants reported that body image, appearance and weight, were factors that impacted their decision making around food. When considering eating pathologies, we know preoccupation with these things can promote disordered eating. In addition, some participants reported that these types of behaviours were encouraged in some weight loss approaches.

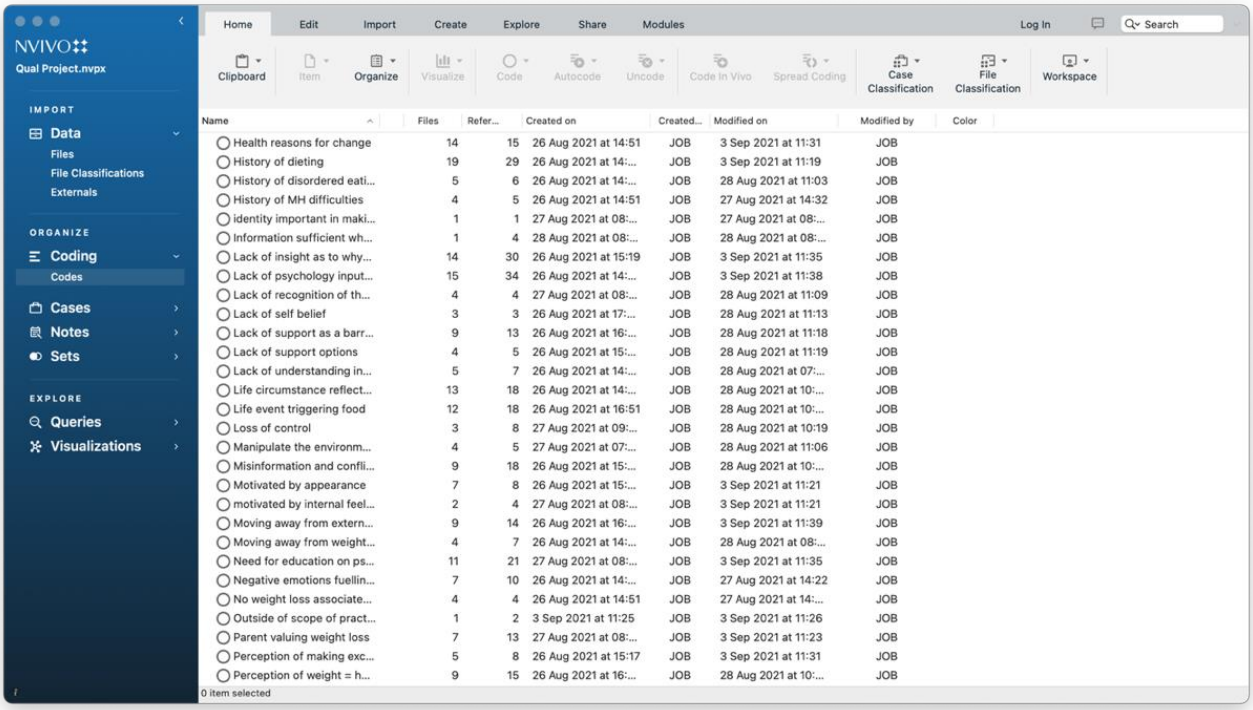
Thinking Styles
Based on prior research, we know that thinking styles impact eating behaviour. Some common traits that came up were perfectionism, all or nothing thinking and a restrictive mindset. (I'm not sure how much this adds to the research field as it is fairly established, but it was also prominent).

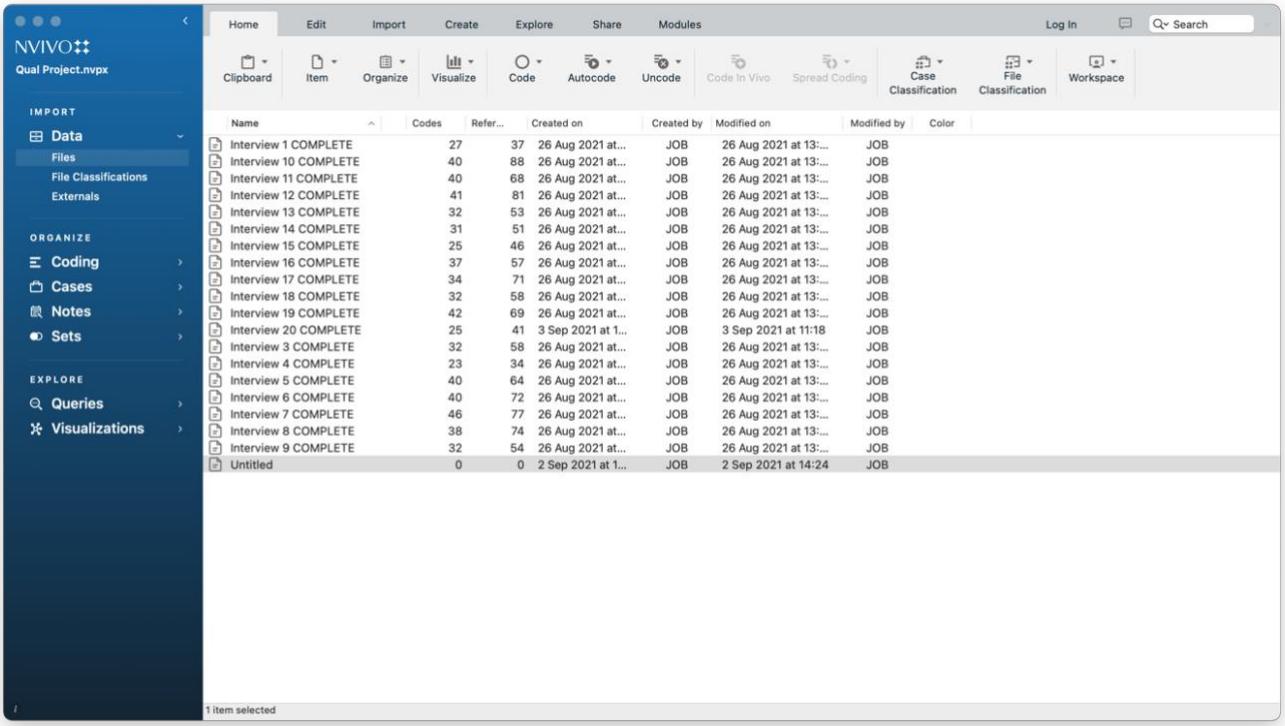
Past Experiences & Current Behaviour
Participants reported that they often had early experiences of dieting (in childhood or teenage years) as well as a long history of dieting and parents valuing weight loss. People reported that their old habits were difficult to break, and based on the neuroscience of our brains, some issues around food could formulate in those formative years.

Lack of psychological input and understanding
There were multiple occasions where participants reported that either their weight management intervention lacked psychological support, or they expressed that they had little understanding of why they engaged in their eating habits. In addition, this lead to a lot of self-blame and perceived responsibility for the lack of changes. Many participants identified that simply addressing the behaviour was unhelpful.
Perception of personal responsibility (sub-theme)

B) Thematic Analysis and Coding



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Quantitative Research Paper 2

The predictive value of psychology in weight loss interventions

For submission to the British Journal of Health Psychology

Abstract

Objective: Weight loss and dietary interventions consistently fail to achieve their desired weight-loss outcomes, and the majority of those who do lose weight, regain it in the long-term. This research investigates the psychological wellbeing of people who attempt weight-loss, and consider if psychological constructs can predict weight change across a 12 week period.

Design: A prospective design gathered data via an online questionnaire at two-time points. Six hundred and sixty-eight participants pursuing weight loss completed a questionnaire at baseline, and 322 completed follow-up 3 months later. Participants were assessed on psychological wellbeing using the CORE-GP measure (Clinical Outcomes in Routine Evaluation for General Population), and their eating behaviour and body image scores were assessed using the SWED (Stanford-Washington Eating Disorder Questionnaire). The hypotheses tested were (i) People who were pursuing weight loss were more likely to score highly on measures of psychological distress, and (ii) psychological wellbeing scores at baseline could predict a percentage of the variance in weight change at 12 weeks follow-up. Multiple regression was used to assess the predictive value of psychology measures in weight changes.

Results: The results supported the hypothesis that those pursuing weight loss also have significant psychological distress. The majority (82%) of participants were at risk of developing an eating disorder, and only 17.8% of participants scored in the healthy or low levels of psychological distress. Only 10% (n= 67) of participants reported no episodes of eating to excess in the previous three months. There was no significant change in weight from baseline to follow up, therefore the hypothesis that psychological wellbeing scores predicted change could not be appropriately tested.

Conclusions: A general population sample of people pursuing weight loss in a free-living environment have high levels of psychological distress and report eating to excess frequently. It is conceivable that those who are experiencing psychological distress are less likely to succeed with behavioural weight loss interventions. Weight loss and behaviour change interventions focusing on eating habits/diet must provide professional psychological support to meet the needs of those pursing weight loss. Individuals should also be assessed fully prior to weight loss interventions, to ensure low-risk for psychological complications. Recommendations for clinical practice and future research are discussed.

Key terms: Behaviour change, health psychology, obesity, weight loss, psychological assessment.

Introduction

An estimated 68% of men and 60% of women were overweight or obese in the UK in 2020 (National Health Service, 2020). There can be significant health risks associated with being overweight or obese (Pi-Sunyer, 2009). To date, government interventions have been unsuccessful in changing population behaviour (Theis & White, 2021). Traditional behavioural weight-loss interventions have been mediocre at best, with most people regaining considerable weight in the years following the intervention (Langeveld & de Vries, 2013). Weight-loss interventions have long been considered the solution to weight gain. However, their results have not justified their popularity. There remains a substantial public health challenge to successfully support people in improving their health behaviours at both population and individual levels. The National Institute for Health and Care Excellence, guidelines (NICE, 2014, p. 21) have outlined the importance of psychology in weight management interventions, but have yet to specify how that should look in practice. There is justification for the inclusion of psychology in weight management services, and many research papers that have outlined the importance of psychological factors in making long term changes to weight (Greaves et al., 2017; Spreckley et al., 2021). There are also significant psychological barriers to change, and psychological interventions may help overcome some of these barriers identified decades ago (Olson, 1992).

Although stress, mood, cravings, attitudes and beliefs have been identified as significant psychological barriers to weight loss (Sharifi et al., 2013), it is unclear whether these psychological factors are being integrated and assessed appropriately within weight management interventions. However, evidence suggests that psychological interventions can be beneficial for improving health behaviours and weight loss. For example, psychotherapeutic approaches, such as Acceptance and Commitment Therapy (ACT) or Mindfulness-Based Cognitive Therapy (Lawlor et al., 2020) can achieve weight loss independently of dieting or behavioural interventions. These psychologically based approaches to weight loss seek to change an individual's relationship to any unwanted thoughts, feelings, or bodily sensations, as opposed to trying to change or control them (Hayes, 2016), hence are theorised to be successful for those tend to binge eat, use food as comfort from emotions, and eat mindlessly (Lawlor et al., 2020).

Criticisms of weight-loss treatments to date include the sole focus on behaviour as the intervention to change, and weight as the sole measured outcome, with a lack of consideration for psychology. Moreover, many of the current interventions focus solely on 'what to do' and not how to do it, as the evidence-base for behaviour change techniques also tends to focus on behaviours (Michie et al., 2011, 2013). Standard weight management interventions follow these behaviour-only approaches, focusing on diet and physical activity advice, with behaviour change techniques such as goal-setting, action planning, and self-monitoring used as the tools to achieve such behaviours. However, while effective in the short term, these behavioural approaches have poor long-term outcomes (Dombrowski et al., 2014; Langeveld & de Vries, 2013), and there can be cognitive or emotional barriers in the way of making change (Skinner, 2004). In short, weight-loss interventions have lacked innovation and have not responded to the personalised needs of individuals, which may offer an explanation to the lack of long-term effectiveness of such interventions. Psychological or cognitive changes should be considered as part of the design and content of interventions in order to achieve effective health behaviour change as a primary outcome (Iturbe et al., 2021; Lawlor et al., 2020). Current UK NICE guidelines for weight management interventions (2014) recommend the inclusion of psychology in their design and implementation. However, beyond this initial statement there is limited guidance as to what such inclusion requires, and this recommendation is open to service provider interpretation. Such services may offer minimal or no psychological support and miss the opportunity to assess and support a service-user's cognitive and psychological needs. This raises the question of whether there are enough psychologists available to support the level of need, and if not, how else can psychology be incorporated into weight loss interventions.

Many weight management interventions fail to demonstrate long-term effectiveness. Up to 95% of people who use dietary interventions regain the weight in the long-term (Langeveld & de Vries, 2013). This suggests that traditional weight management services fail to support long-term behaviour change for most, despite initial effectiveness. The small minority of people who are successful in long-term change consistently mention that psychological factors were important in the long-term maintenance of change (Greaves et al., 2017). For example, Greaves and colleagues outline how many important aspects of maintaining change involve psychological factors such as psychological/cognitive flexibility, identity, emotional regulation, and having the right kinds of motivation. Many of these

concepts are addressed within psychotherapy, yet these important factors are not part of standard behavioural interventions. Many behavioural interventions utilise the Behaviour Change Taxonomies (Michie et al., 2011, 2013), which outline behaviour change techniques, but do not address the psychological factors that Greaves identified, which is concerning.

Wing et al. (2008) are one of the few who have looked at behavioural and psychological correlates of success/failure at baseline and across time to determine whether these factors could predict someone's success on a weight loss programme. Wing et al.'s research outlines that weight regain is predicted by more considerable initial percentage weight-loss, shorter duration of weight loss maintenance, psychological variables such as negative mood, disinhibition, depressive symptoms, and changes in restraint and hunger. However, there seem to be few psychologically-informed alternatives to behavioural interventions for those who might find these behavioural interventions challenging. Wing et al's research suggests that both psychological and behavioural factors can predict weight regain, yet many interventions do not address psychological change in their approach. Similar results were found in recent research by Ross et al. (2019), who showed that mood and stress were predictors of non-maintenance of change. Together, these findings suggest that health professionals and service providers need to do more to improve the psychological wellbeing of those pursuing weight-loss, yet to date, there seems to be little evidence that many weight management services adequately support people's psychological wellbeing.

As there is evidence that those who pursue weight loss also have difficulty with emotion regulation (Sarwer & Polonsky, 2016), the current study tested the psychological wellbeing of participants and if psychological wellbeing scores at baseline were predictive of weight changes over time. Specifically, the hypotheses were; (i) People who are pursuing weight loss are more likely to score highly on measures of psychological distress than the general population, and (ii) psychological wellbeing scores at baseline could predict a percentage of the variance in weight change at 12 week follow-up.

The researchers anticipated that if psychological predictors of weight loss could be identified upon assessment, then screening people prior to starting a weight loss programme would identify if an individual would require psychological support rather than a standard behavioural intervention, as such a method of personalising an intervention to acknowledge psychological wellbeing and thus may enhance weight-loss outcomes.

Methods

Design

This was a quantitative prospective longitudinal study to test the predictive value of psychological distress and eating behaviour scores in relation to weight changes. Data was collected via an online questionnaire at two points – baseline and 12-week follow up using the online data collection platform, Qualtrics (www.qualtrics.com/uk).

Measures

Psychological distress was measured using the CORE-GP (Clinical Outcomes in Routine Evaluation for General Population; Evans et al., 2005). According to Evans and colleagues (2005), a score of moderate/severe (CORE-GP scores of 2 or more) could be a range more typically seen in a clinical population. Eating behaviours and body image were measured using the Stanford Washington Eating Disorder (SWED) questionnaire and the subscale Weight Concern Scale (WCS)(Graham et al., 2019). A WCS score of ≥47 has been identified as a threshold for being at "high risk" of an eating disorder, according to Graham et al. (2019). The CORE-GP is a 14-item validated measure of psychological distress in the general population, and the Stanford Washington Eating Disorder Questionnaire (SWED) is an 18-item validated screening tool for disordered eating and eating disorder risk. All measures were validated for use in general populations.

Participants

Inclusion criteria: participants were over 18 and intended to or were actively pursuing weight loss. Exclusion criteria: an underweight BMI (<18.5), a current eating disorder diagnosis or a person in treatment for an eating disorder. Forty-eight participants were excluded after initially expressing interest (for reasons such as the disclosure of a diagnosis of an eating disorder, a BMI < 18.5, non-completion of the questionnaires /consent forms or incorrect data). Of the initial 716 participants who expressed interest, 668 were eligible to participate in the research.

There were 668 participants included in the baseline analysis, which compromised of 637 women and 31 men, aged 18 to 61 years. The average age was 31 years. 64.8% of the sample were attempting weight loss independently (without professional support or intervention), and 31.6% were pursuing weight loss with some professional weight loss support. Three hundred thirty-two participants (49.7% attrition) submitted a follow-up weight measure after 12 weeks. A priori sample size calculation of 300 was the target for recruitment to give the study an 80% power and an alpha value of 0.05 (Peters et al., 2014). Participants pursued their own approach to weight loss and were not given a specific weight loss intervention. The study was designed to be deliberately inclusive to a wide population group to mirror the real-world pursuit of weight loss; therefore, participants in all BMI categories were included (apart from the underweight category), and this recruitment strategy allowed people to participate in the study if they were pursuing weight loss with or without professional support.

Recruitment

Following ethical approval from a UK university (Ref: 21/PSY/018), study recruitment commenced. Recruitment for the research relied on social media advertising whereby participants could sign up for the research using a hyperlink. The hyperlink took participants directly to a Qualtrics online study portal, where they read a participant information sheet and the study inclusion criteria.

Procedure

After reading the study information and completing the screening questions and the consent statement, they were directed to the survey. Each participant had a random six-digit number assigned to the dataset to allow data anonymity and security. The study took approximately 10-20 minutes to complete online. Participants were contacted by email after 12 weeks to record their follow-up weight change. Participants had the right to withdraw at any point, and at the end of taking part in the research, participants were provided with

debriefing information which informed them of further support, should they wish. Participants did not receive any incentives or compensation for participating in the study.

Data Analysis

Weight change was calculated by analysing the percentage of total bodyweight lost over the course of the study. Weight loss was deemed "significant" if it was plus or minus 5% of total body weight, which is considered a standard threshold of "significant" weight loss (Williamson et al., 2015). Body Mass Index (BMI) was measured by using the CDC formula of [weight (kg)/height (m)^2] (CDC, 2021).

Multiple regression was used to determine how much variance in weight loss at 12 weeks was predicted by the SWED and CORE-GP. A within-groups repeated measures t-test was used to measure changes in weight between baseline and 12 weeks.

Results

Baseline Data

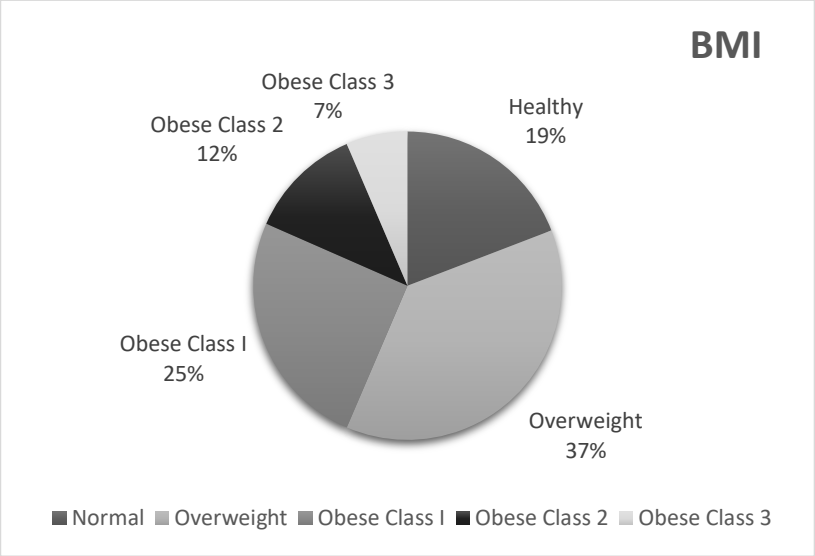
Participant characteristics are outlined in *Table 1*. Participants were identified under a range of BMI categories as outlined in *Figure 1*. Less than a fifth of participants were categorised as "normal" weight, and the majority were overweight, or obese class 1. The mean number of years participants spent dieting was ten, and ranged from 0 to 40 years (n=664, *m*=10.29).

Table 1 - Participant Characteristics

	N	%	M	Range
Age			31.61	18-61
Sex				
Male	31	4.6		
Female	637	95.4		
BMI				
Normal	128	19.2		
Overweight	249	37.3		

	N	%	M	Range
Obese	291	43.5		
No of years dieting	668		10.29	0-40

Figure 3 - Participant BMI class



Hypothesis 1 – Psychological distress is prominent in those pursuing weight loss

Table 2 - Frequency of overeating as measured in the SWED

Overeating Frequency	N	%
Not at all	67	10%
Once per month or less	156	23.3%
2-3 times per month	139	20.8%
Once per week	98	14.7%
2-3 times per week	138	20.7%
4+ times per week	70	10.5%

Table 2 (above) outlines the prevalence of self-reported overeating in the cohort. Only 10% of the participants reported no overeating episodes in the previous three months. Over 45% of participants reported at least one or more overeating episode per week.

Table 3 (below) outlines the prevalence of psychological distress in the cohort. 17.8% of the participants were considered to have healthy or low levels of psychological distress. 31.6% of the cohort scored in a range more typically seen in a clinical population. The majority of participants (84%, n=561) scored ≥47 on the WCS, which is considered 'high risk' of an eating disorder. Whilst 16% (n=107) scored below the threshold.

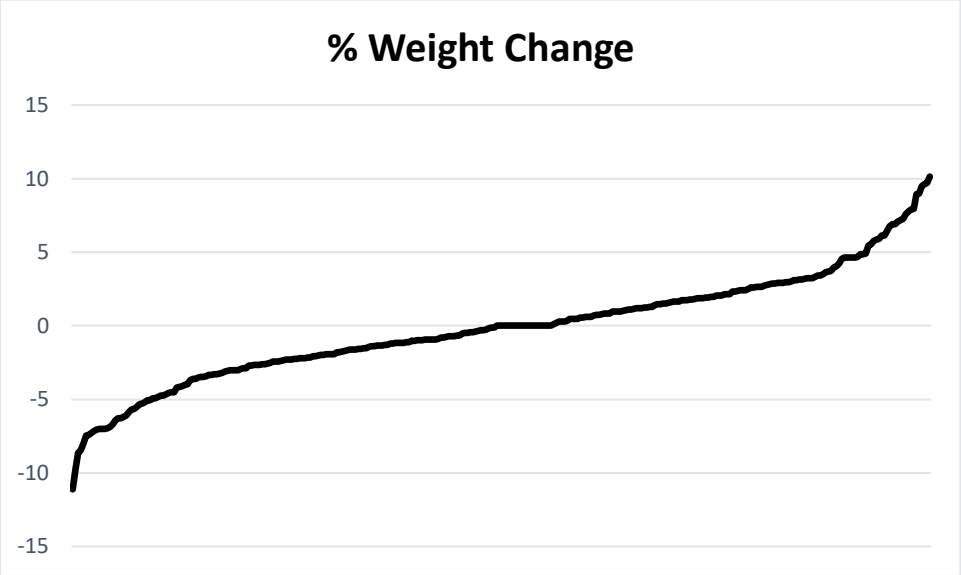
Table 3 - CORE-GP scores

Psychological Distress	N	%
Healthy/Low	119	17.8
Mild/Moderate	338	50.6
Moderate/Severe	211	31.6

Follow Up Data

Percentage of weight change at follow up

Figure 4 - Percentage of weight change (Y axis = % of weight change, X axis = participants sorted by weight loss)



The *Figure 4* plot shows the variation of weight change across participants at a 12 week follow-up. Whilst some reported some weight-loss, a similar proportion of participants reported weight gain during the same period. A paired sample t-test found no significant difference in weight between groups at baseline and follow up, M = + 0.2kg, t(321) = 1.188, p = 0.236.

Hypothesis 2 – Psychological distress could predict changes in weight

Multiple regression assessed weight-loss as the outcome variable and the CORE-GP & WCS scores as the predictor variables. The multiple regression model did not statistically significantly predict change in weight, F(2, 319) = 2.907, p = .056, R^2 = .012. This is due to the fact that no change occurred between baseline and follow up.

Discussion

This study used validated psychological distress measures to predict weight change in a population pursuing weight-loss. The results show that only 17.8% of the cohort were

identified as having healthy or low levels of psychological distress, meaning the majority of this lay weight-loss population group had considerable psychological distress. In addition, 84% of the cohort were considered "high risk" for the development of an eating disorder. Only 10% of the cohort reported no overeating in the previous three months. These results confirmed Hypothesis 1; those pursuing weight-loss have considerable psychological distress in the form of overall distress, weight concerns and overeating behaviours. These results emphasise the need for incorporating psychological support effectively into weight management services as part of standard care, rather than being reserved for complex cases.

A lack of change within groups at baseline and follow up meant that the linear regression model could not predict change. Of the 322 who completed the 12-week follow-up, only 30 (9%) had reduced their weight to a clinically significant level (i.e. >5% of initial body weight). Significant change did not occur within groups between baseline and follow-up, where a paired-sample t-test showed no difference over time, therefore the second hypothesis, that psychological distress can predict weight change, was not supported. This could be interpreted as those who are experiencing psychological distress are less likely to succeed with behavioural weight loss interventions, and that they might be more likely to drop out. This could also indicate that the behavioural interventions are not meeting their needs.

This study gives a new understanding of the psychological presentations of people who pursue weight loss. The results showed that those pursuing weight-loss have significant psychological distress, weight concerns, and overeating behaviours that could be contributing to the challenge of losing weight. These factors could explain why weight change did not occur between baseline and follow-up, and this furthers the argument for psychological interventions to be considered for those pursuing weight loss.

These findings reflect previous research, which estimates that between 20% and 60% of those with obesity also have a co-morbid psychiatric illness (Sarwer & Polonsky, 2016). The difference in the present research is that psychological distress occurred in a population which represented a range of BMI categories who are also pursuing weight loss. Current guidelines (e.g. NICE, 2014) suggest that psychology be reserved for "complex" cases, however based on the current study, a large percentage of the weight loss seeking population are experiencing psychological distress. Psychological distress is a plausible predictor of weight gain and negative changes in eating behaviour, and this has been well

evidenced (Boggiano et al., 2015; Gibson, 2012; Hemmingsson, 2014; Rehkopf et al., 2016; Wiss & Brewerton, 2020). Chronic stress and unhelpful coping mechanisms are ways that could impact eating behaviour and subsequently, the development of obesity and are plausible mechanisms of how psychological distress impacts eating. It is evident that the current cohort experience psychological distress and also engaged in unhelpful coping strategies such as binge eating. Psychological distress can cause the disruption of typical eating behaviour and self-regulation and this is the construct which has driven exploration of psychotherapy for weight management. This is why third wave CBT therapies such as ACT (Acceptance and Commitment Therapy) have been shown to be effective for weight loss (Lawlor et al., 2020). The mechanisms by which psychological distress can manifest in behaviour can be explained through the ACT formulation model. In line with Prevedini et al. (2011), eating behaviour can be considered 'experiential avoidance' – a behavioural pattern related to the unwillingness to stay in contact with particular painful experiences. If psychological distress is significant in people pursuing weight loss, it is plausible that eating could be a behaviour that enables experiential avoidance.

The number of "healthy" weight individuals pursuing weight loss is concerning as 19% of the participants in this study were of a healthy BMI and also pursuing weight loss. Research in adolescents shows that feeling fat and pursuing weight loss at a healthy BMI was predictive of weight gain in the future (Cuypers et al., 2012). One plausible mechanism is how the pursuit of weight loss in normal-weight individuals might lead to unhelpful dieting behaviours (severe restriction or skipping meals), which can trigger overeating. There is also an abundance of evidence to support the idea that weight stigma and the desire to be thin can lead to further weight gain, in addition to causing psychological distress (Alberga et al., 2016; Major et al., 2014; Schvey et al., 2011). The current research shows that some "normal" weight individuals are pursuing weight loss which might be a concern. It could be important to support those people with psychological interventions, as "feeling fat" can be seen as a psychological construct that can be predicted by mood, self-esteem and dietary restraint (Tiggemann, 1996).

In the current sample, 82% of participants were identified as "high risk" for an eating disorder. There is an abundance of evidence suggesting that dieting can contribute to eating disorders for those who are predisposed or at risk (Hilbert et al., 2014; Liechty & Lee, 2013). It is evidently unsafe for many at risk of an eating disorder to pursue dieting, and screening

for the risk of eating disorders should be standard practice in health care. As is evident from the high numbers at risk of eating disorders in this population, practices should also be psychologically safe – e.g. not overly restrictive, not rigid, and not solely weight-centric (Kluck, 2010; Krug et al., 2021; Linardon & Mitchell, 2017; O'Reilly & Sixsmith, 2012). Reducing the psychological risk of weight-loss interventions should be a primary objective given the high numbers who are at risk of developing an eating disorder, alongside the rising numbers of eating disorders in recent years (Zipfel et al., 2022).

Responsibility also lies with government and public health services, to deliver messages that portray the psychological challenges and risks of weight loss, for those who do choose to pursue weight loss without professional support. The messages of eat less, move more are reductionist when considering the psychological, environmental, social and genetic factors that can impact weight as outlined in the UK Government's Foresight report (Butland et al., 2007). 63% of the current sample were attempting weight loss without professional support, and the current discourse in public health is simply eat less and move more. This mirrors the behavioural, reductionist approaches that have failed for decades, and emphasises the 'personal responsibility' narrative which implies that everyone has equal choice in what they eat. However, no part of the public health messaging currently addresses the psychological challenges that occur for those attempting weight loss. Given that many free living individuals attempt weight loss independent of professional support, the public health messaging should also reflect the psychological challenges that impact weight. Unless the wider narrative around weight loss changes, including outside of professional interventions, many people will be left uneducated and unsupported with their attempts to improve their health.

The current study demonstrates that psychology has a vital role in weight management and behaviour change interventions. The research shows in free-living environments, both with and without support, that weight loss is unlikely in people with high levels of psychological distress, overeating behaviours and weight concern. Standard behavioural interventions, and independent attempts at weight loss that replicate real-world environments, did not cause statistically significant weight changes across 12 weeks.

Implications

Given that the current research shows poor weight loss outcomes in cohorts with high psychological distress, there must be a consideration for how this applies to practice. At present, many people who are overweight or obese are recommended behavioural weight-loss interventions, which have poor long-term, and varied short-term outcomes. If there is resounding evidence that psychological factors impact change, and many people who pursue weight loss struggle with psychological constructs, collectively, health professionals should screen people at baseline to identify which type of intervention would be most suitable for the individual. Those who score highly on psychological measures should have psychological support from a Practitioner Psychologist. Given that 82% of the participants were "at high risk" of developing an eating disorder, dieting or pursuing weight loss would be considered dangerous for those individuals as dieting has been consistently linked with the development of eating disorders (Hilbert et al., 2014; Liechty & Lee, 2013). Even those who may not meet the clinical threshold for a diagnosis of an eating disorder should be supported with psychology to facilitate health behaviour change in a psychologically safe way.

Those in healthcare need to disengage from the idea that psychology is solely for mental health disorders, as psychology can support change across the spectrum, not just in those who have clinical diagnoses. Clinical guidelines on weight management (such as NICE) need to provide more explicit recommendations to involve psychologists within weight management interventions as part of the design, assessment, and delivery of interventions, and should not solely reserve psychological support for those deemed as complex cases or with mental health diagnosis. In addition, it may be feasible to train weight management practitioners (such as dietitians) in low-intensity psychological interventions so that they can address the demand at a sub-clinical level, prior to further consultation with a psychologist. This would facilitate tailoring and personalising the interventions as required. Training non-specialist coaches in low-intensity psychological interventions has been done successfully before in the SWiM trial (Richards et al., 2021) which integrated self-guided psychological techniques with brief 1-1 support with a non-specialist coach. Given that the front-line approaches for weight-loss have been predominantly behavioural, most treatment seeking people would use commercial weight-loss services, or private dietitians, nutritionists or

personal trainers. These approaches generally do not use psychologically informed practices, however arming health professionals who deliver weight management services to administer psychologically informed interventions could be one method of improving outcomes for those seeking weight-loss. It is important to consider that even those who do not meet the criteria for a mental health diagnosis can still benefit from a psychologically informed intervention because, independent of psychological distress levels, psychological factors are the foundation of maintaining long term change (Greaves et al., 2017).

Strengths

This research used validated measures of psychological distress, weight concern and eating behaviour. This study replicated real-world weight loss attempts, as there were people who were pursuing weight loss independently or with professional support. The study also had participants who were a healthy weight, which potentially showed that some of the population seek weight loss despite being in a normal weight range. This research showed that the majority of those pursuing weight-loss reported some form of psychological distress or concern which would most likely benefit from psychological support. Of those who scored highly in psychological distress, most were unsuccessful in achieving significant weight loss (>5% of body weight) at a 12 week follow-up period, possibly helping to explain the varied outcomes and success rates of weight-loss interventions. This has serious implications for the delivery of current weight management services.

Limitations

Like much of the weight loss research, this sample was predominantly women, where the number of men was almost insignificant. There was no controlled intervention in order to control for an 'evidence-based', and this may have been a confounding variable in the approach if the individuals were not following evidence-based approaches. However, this also replicates real world weight-loss attempts. There was significant attrition for follow-up. Of the 668 participants who were assessed at baseline, 322 completed a follow-up weigh-in. Dietary adherence was not measured, so it is unknown how well participants adhered to their

given approaches. The sample may have been biased by the title of the study, as people who identify with mental health or psychology and struggle with weight loss may have been more enticed to participate.

Future research

It would be valuable to implement a controlled trial comparing behavioural versus psychological interventions. There is evidence to suggest that psychological interventions are successful for weight loss (Lawlor et al., 2020); however, it is not yet known to what extent or how they compare to behavioural solutions, as the research is in its infancy. Another area of research could include whether or not weight loss interventions currently use appropriate levels of psychological assessment and ongoing input.

This research recommends screening individuals at baseline to assess psychological wellbeing prior to engaging in weight loss. However, this is not well practiced in weight management, and it would be valuable to assess how screening at baseline and assigning participants to the most suitable interventions would impact outcomes.

Conclusion

This research assessed the predictive value of psychological measures in weight loss. The data has shown that many people pursuing weight loss experience high levels of psychological distress, weight concern and overeating behaviours, even without a diagnosis of an eating disorder. This is significant as it shows a concrete plausible mechanism for weight gain and weight loss, which isn't currently being addressed in mainstream approaches. By assessing and addressing psychological factors, interventions can meet the needs of the people it aims to support.

No significant change in weight occurred between baseline and follow up; therefore, this research showed that for free-living individuals who score highly for psychological distress, attempting weight loss is largely unsuccessful. This could help explain the variety in weight loss outcomes and adherence rates in dietary interventions. These results add to the weight of evidence which suggests public health messages around eating less and moving more are entirely reductionist, and do not consider any other influencing factors such as

psychological barriers to change. There are multiple plausible mechanisms by which psychological distress can impact weight loss, weight gain and ability to maintain changes. The recommendations for practice include; training health professionals in low-intensity psychological interventions and screening people at baseline to assess if they are suitable for a traditional behavioural interventions or if a psychologically informed bespoke approach would be more beneficial. Further research recommendations are to assess whether psychological input is sufficient in current weight management interventions.

References

Alberga, A. S., Russell-Mayhew, S., von Ranson, K. M., & McLaren, L. (2016). Weight bias: A call to action. *Journal of Eating Disorders*, *4*(1), 34. https://doi.org/10.1186/s40337-016-0112-4

Boggiano, M. M., Wenger, L. E., Turan, B., Tatum, M. M., Morgan, P. R., & Sylvester, M. D. (2015). Eating tasty food to cope. Longitudinal association with BMI. *Appetite*, *87*, 365–370. https://doi.org/10.1016/j.appet.2015.01.008

Butland, B., Jebb, S., Kopelman, P., McPherson, K., Thomas, S., Mardell, J., & Parry, V. (2007). *Tackling obesities: Future choices—Project report (2nd edition)* (p. 164). UK: Government Office for Science. http://www.bis.gov.uk/assets/foresight/docs/obesity/17.pdf

CDC. (2021, August 27). *All About Adult BMI*. Centers for Disease Control and Prevention. https://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html

Cuypers, K., Kvaløy, K., Bratberg, G., Midthjell, K., Holmen, J., & Holmen, T. L. (2012). Being Normal Weight but Feeling Overweight in Adolescence May Affect Weight Development into Young Adulthood—An 11-Year Followup: The HUNT Study, Norway. *Journal of Obesity*, *2012*, e601872. https://doi.org/10.1155/2012/601872

Dombrowski, S. U., Knittle, K., Avenell, A., Araújo-Soares, V., & Sniehotta, F. F. (2014). Long term maintenance of weight loss with non-surgical interventions in obese adults: Systematic review and meta-analyses of randomised controlled trials. *BMJ*, *348*, g2646. https://doi.org/10.1136/bmj.g2646

Evans, C., Connell, J., Audin, K., Sinclair, A., & Barkham, M. (2005). Rationale and development of a general population well-being measure: Psychometric status of the GP-CORE in a student sample. *British Journal of Guidance & Counselling*, *33*(2), 153–173. https://doi.org/10.1080/03069880500132581

Gibson, E. L. (2012). The psychobiology of comfort eating: Implications for neuropharmacological interventions. *Behavioural Pharmacology*, *23*(5–6), 442–460. https://doi.org/10.1097/FBP.0b013e328357bd4e

Graham, A. K., Trockel, M., Weisman, H., Fitzsimmons-Craft, E. E., Balantekin, K. N., Wilfley, D. E., & Taylor, C. B. (2019). A Screening Tool for Detecting Eating Disorder Risk and Diagnostic Symptoms among College-Age Women. *Journal of American College Health : J of ACH*, *67*(4), 357–366. https://doi.org/10.1080/07448481.2018.1483936

Greaves, C., Poltawski, L., Garside, R., & Briscoe, S. (2017). Understanding the challenge of weight loss maintenance: A systematic review and synthesis of qualitative research on weight loss maintenance. *Health Psychology Review*, *11*(2), 145–163. https://doi.org/10.1080/17437199.2017.1299583

Hayes, S. C. (2016). Acceptance and Commitment Therapy, Relational Frame Theory, and the Third Wave of Behavioral and Cognitive Therapies—Republished Article. *Behavior Therapy*, *47*(6), 869–885. https://doi.org/10.1016/j.beth.2016.11.006

Hemmingsson, E. (2014). A new model of the role of psychological and emotional distress in promoting obesity: Conceptual review with implications for treatment and prevention. *Obesity Reviews*, *15*(9), 769–779. https://doi.org/10.1111/obr.12197

Hilbert, A., Pike, K. M., Goldschmidt, A. B., Wilfley, D. E., Fairburn, C. G., Dohm, F.-A., Walsh, B. T., & Striegel Weissman, R. (2014). Risk factors across the eating disorders. *Psychiatry Research*, *220*(1), 500–506. https://doi.org/10.1016/j.psychres.2014.05.054

Iturbe, I., Echeburúa, E., & Maiz, E. (2021). The effectiveness of acceptance and commitment therapy (ACT) upon weight management and psychological well-being of adults with overweight or obesity: A systematic review. *Clinical Psychology & Psychotherapy*. https://doi.org/10.1002/cpp.2695

Kluck, A. S. (2010). Family influence on disordered eating: The role of body image dissatisfaction. *Body Image*, *7*(1), 8–14. https://doi.org/10.1016/j.bodyim.2009.09.009

Krug, I., Linardon, J., Greenwood, C., Youssef, G., Treasure, J., Fernandez-Aranda, F., Karwautz, A., Wagner, G., Collier, D., Anderluh, M., Tchanturia, K., Ricca, V., Sorbi, S., Nacmias, B., Bellodi, L., & Fuller-Tyszkiewicz, M. (2021). A proof-of-concept study applying machine learning methods to putative risk factors for eating disorders: Results from the multi-centre European project on healthy eating. *Psychological Medicine*, 1–10. https://doi.org/10.1017/S003329172100489X

Langeveld, M., & de Vries, J. H. H. (2013). The mediocre results of dieting. *Nederlands Tijdschrift Voor Geneeskunde*, *157*(29), A6017.

Lawlor, E., Islam, N., Bates, S., Griffin, S., Hill, A. J., Hughes, C. A., Sharp, S. J., & Ahern, A. (2020). *Third-wave cognitive behaviour therapies for weight management: A systematic review and network meta-analysis*. https://doi.org/10.17863/CAM.49474

Liechty, J. M., & Lee, M.-J. (2013). Longitudinal predictors of dieting and disordered eating among young adults in the U.S. *International Journal of Eating Disorders*, *46*(8), 790–800. https://doi.org/10.1002/eat.22174

Linardon, J., & Mitchell, S. (2017). Rigid dietary control, flexible dietary control, and intuitive eating: Evidence for their differential relationship to disordered eating and body image concerns. *Eating Behaviors*, *26*, 16–22. https://doi.org/10.1016/j.eatbeh.2017.01.008

Major, B., Hunger, J. M., Bunyan, D. P., & Miller, C. T. (2014). The ironic effects of weight stigma. *Journal of Experimental Social Psychology*, *51*, 74–80. https://doi.org/10.1016/j.jesp.2013.11.009

Michie, S., Ashford, S., Sniehotta, F. F., Dombrowski, S. U., Bishop, A., & French, D. P. (2011). A refined taxonomy of behaviour change techniques to help people change their physical activity and healthy eating behaviours: The CALO-RE taxonomy. *Psychology & Health*, *26*(11), 1479–1498. https://doi.org/10.1080/08870446.2010.540664

Michie, S., Richardson, M., Johnston, M., Abraham, C., Francis, J., Hardeman, W., Eccles, M. P., Cane, J., & Wood, C. E. (2013). The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: Building an international consensus for the reporting of behavior change interventions. *Annals of Behavioral Medicine: A Publication of the Society of Behavioral Medicine*, *46*(1), 81–95. https://doi.org/10.1007/s12160-013-9486-6

NHS. (2020). *Health Survey for England*. NHS Digital. https://digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england/2019

Olson, J. M. (1992). Psychological Barriers to Behavior Change. *Canadian Family Physician*, *38*, 309–319.

O'Reilly, C., & Sixsmith, J. (2012). From Theory to Policy: Reducing Harms Associated with the Weight-Centered Health Paradigm. *Fat Studies*, *1*(1), 97–113. https://doi.org/10.1080/21604851.2012.627792

Peters, J. C., Wyatt, H. R., Foster, G. D., Pan, Z., Wojtanowski, A. C., Vander Veur, S. S., Herring, S. J., Brill, C., & Hill, J. O. (2014). The effects of water and non-nutritive sweetened beverages on weight loss during a 12-week weight loss treatment program. *Obesity*, *22*(6), 1415–1421. https://doi.org/10.1002/oby.20737

Pi-Sunyer, X. (2009). The Medical Risks of Obesity. *Postgraduate Medicine*, *121*(6), 21–33. https://doi.org/10.3810/pgm.2009.11.2074

Prevedini, A., Presti, G., Rabitti, E., Miselli, G., & Moderato, P. (2011). Acceptance and Commitment Therapy (ACT): The foundation of the therapeutic model and an overview of its contribution to the treatment of patients with chronic physical diseases. *Giornale Italiano Di Medicina Del Lavoro Ed Ergonomia*, *33*, A53-63.

Qualtrics XM // The Leading Experience Management Software. Qualtrics. Retrieved 12 February 2022, from https://www.qualtrics.com/uk/

Rehkopf, D. H., Headen, I., Hubbard, A., Deardorff, J., Kesavan, Y., Cohen, A. K., Patil, D., Ritchie, L. D., & Abrams, B. (2016). Adverse childhood experiences and later life adult obesity and smoking in the United States. *Annals of Epidemiology*, *26*(7), 488-492.e5. https://doi.org/10.1016/j.annepidem.2016.06.003

Richards, R., Jones, R., Whittle, F., Hughes, C. A., Hill, A. J., Lawlor, E., Bostock, J., Bates, S., Breeze, P. R., Brennan, A., Thomas, C. V., Stubbings, M., Woolston, J., Griffin, S., & Ahern, A. L. (2021). *Development of a web-based, guided self-help, ACT-based intervention for weight loss maintenance: An evidence-, theory- and person-based approach*. https://doi.org/10.17863/CAM.77758

Ross, K. M., Qiu, P., You, L., & Wing, R. R. (2019). Week-to-Week Predictors of Weight Loss and Regain. *Health Psychology : Official Journal of the Division of Health Psychology, American Psychological Association*, *38*(12), 1150–1158. https://doi.org/10.1037/hea0000798

Sarwer, D. B., & Polonsky, H. M. (2016). The Psychosocial Burden of Obesity. *Endocrinology and Metabolism Clinics of North America*, *45*(3), 677–688. https://doi.org/10.1016/j.ecl.2016.04.016

Schvey, N. A., Puhl, R. M., & Brownell, K. D. (2011). The impact of weight stigma on caloric consumption. *Obesity (Silver Spring, Md.)*, *19*(10), 1957–1962. https://doi.org/10.1038/oby.2011.204

Sharifi, N., Mahdavi, R., & Ebrahimi-Mameghani, M. (2013). Perceived Barriers to Weight loss Programs for Overweight or Obese Women. *Health Promotion Perspectives*, *3*(1), 11–22. https://doi.org/10.5681/hpp.2013.002

Skinner, T. C. (2004). Psychological barriers. *European Journal of Endocrinology*, *151*(Suppl_2), T13–T17.

Spreckley, M., Seidell, J., & Halberstadt, J. (2021). Perspectives into the experience of successful, substantial long-term weight-loss maintenance: A systematic review. *International Journal of*

Qualitative Studies on Health and Well-Being, *16*(1), 1862481. https://doi.org/10.1080/17482631.2020.1862481

Theis, D. R. z., & White, M. (2021). Is Obesity Policy in England Fit for Purpose? Analysis of Government Strategies and Policies, 1992–2020. *The Milbank Quarterly*, *99*(1), 126–170. https://doi.org/10.1111/1468-0009.12498

Tiggemann, M. (1996). "thinking" versus "feeling" fat: Correlates of two indices of body image dissatisfaction. *Australian Journal of Psychology*, *48*(1), 21–25. https://doi.org/10.1080/00049539608259501

Williamson, D. A., Bray, G. A., & Ryan, D. H. (2015). Is 5% weight loss a satisfactory criterion to define clinically significant weight loss?: "Clinically Meaningful" Weight Loss. *Obesity*, *23*(12), 2319–2320. https://doi.org/10.1002/oby.21358

Wing, R. R., Papandonatos, G., Fava, J. L., Gorin, A. A., Phelan, S., McCaffery, J., & Tate, D. F. (2008). Maintaining large weight losses: The role of behavioral and psychological factors. *Journal of Consulting and Clinical Psychology*, *76*(6), 1015–1021. https://doi.org/10.1037/a0014159

Wiss, D. A., & Brewerton, T. D. (2020). Adverse Childhood Experiences and Adult Obesity: A Systematic Review of Plausible Mechanisms and Meta-Analysis of Cross-Sectional Studies. *Physiology & Behavior*, *223*, 112964. https://doi.org/10.1016/j.physbeh.2020.112964

Zipfel, S., Schmidt, U., & Giel, K. E. (2022). The hidden burden of eating disorders during the COVID-19 pandemic. *The Lancet Psychiatry*, *9*(1), 9–11. https://doi.org/10.1016/S2215-0366(21)00435-1

Systematic Review

Investigating the application of the Theoretical Domains Framework and COM-B model to behaviour change interventions targeting diet and nutrition. A systematic review.

Abstract

Background

Behaviour change targeting diet and nutrition is a significant public health challenge. Promoting nutritional and dietary change is advocated to support the prevention of many non-communicable illnesses, such as cardiovascular disease, diabetes, and stroke. In order to provide appropriate support, interventions are recommended to be informed by a theoretical framework. However, there is limited evidence as to how behaviour change theory is used when designing interventions. The Theoretical Domains Framework (TDF), and related frameworks, e.g. the COM-B model and Behaviour Change Wheel (BCW), are considered sound theoretical frameworks for supporting intervention design. The aim of this review is to investigate how the TDF, COM-B model and the BCW have been applied to interventions targeting diet and nutrition.

Methods

A systematic search of five electronic databases (Cochrane (CENTRAL), Medline (EBSCO), Web of Science, CINAHL, and PsycINFO) elicited 478 articles eligible for screening. Of these articles, 9 met the pre-determined inclusion criteria. Stage 1 of screening titles and abstracts, stage 2 of screening full texts, and stage 3 of extracting data, were completed independently by two reviewers.

Results

Of the 9 papers included, five used a combination of the COM-B, BCW or TDF. Four papers used either the COM-B or BCW only. Studies included online and face-to-face interventions, and were aimed at changing diet or nutrition. No intervention covered every theoretical domain, and the analysis identified that some domains were consistently preferred compared to others, for example knowledge was addressed in every intervention but emotions were addressed in only two interventions. Only two interventions used specific guidelines that were developed for their intervention framework, whilst four studies did not report the use of design guidelines. Interventions frequently used very limited techniques to address an entire domain.

Conclusion

There is evidence to suggest that key psychologically-based theoretical domains are neglected while behavioural and knowledge-based domains are addressed more frequently, despite there being strong evidence for the inclusion of the neglected domains. It is unclear how well the frameworks are being used in practice, and some key elements of dietary behaviour change are being missed. The TDF, COM-B, and BCW frameworks, when applied using appropriate guidelines, can create high quality interventions. This review suggests guidelines are not always being followed when designing interventions for nutrition-related behaviour change. There is also uncertainty as to how many behaviour change techniques appropriately address a domain. Further research is required to understand (i) the barriers to effectively applying the TDF, COM-B and BCW frameworks, and (ii) the barriers to including all theoretical domains.

Introduction

There is overwhelming evidence to suggest that improving health behaviours at a population level could improve population health and reduce the incidences of disease and illness (Everest et al., 2022; Musaiger & Al-Hazzaa, 2012; Popkin, 2006). However, dietary behaviour change interventions at both the population and individual level have been largely unsuccessful in changing behaviour in the long term (Grodstein et al., 1996; Shai & Stampfer, 2008; Theis & White, 2021). Research also suggests that regardless of the specific dietary approach, health benefits such as cholesterol or blood pressure, often regress within 12 months (Ge et al., 2020) meaning that over the longer term, the benefits from dietary interventions are not being sustained.

Due to the challenge and complexity of creating effective behaviour change at a population and individual level, the National Institute for Health and Care Excellence (NICE) suggest interventions are underpinned by theory (NICE, 2007, 2014). Despite this recommendation, few specific theories are proposed within the guidelines, and there is little information about how health services or practitioners should design and deliver theoretically informed interventions in practice. There are many theories that have been used in healthcare and cited in health literature, such as the popular Theory of Planned Behaviour (TPB) (Ajzen, 1991) and the Transtheoretical Model of Change (TTM) (Prochaska & Velicer, 1997). However, these theories have had some scathing criticisms about their efficacy for complex health interventions (Adams & White, 2005; Sniehotta et al., 2014). For example, criticisms include that these theories are overly reductionist and may not be supported by evidence for complex behaviour change interventions.

Michie et al. (2011) outline that previous frameworks do not distinguish between the population or the individual level of intervention, but may not adapt well when used cross-functionally. Michie also stated that prior theoretical frameworks are not comprehensive and conceptually coherent enough for their purpose. Michie and colleagues (Cane et al., 2012; Michie et al., 2005, 2011) have developed multiple related frameworks to address these issues. In 2005, Michie and colleagues originally developed the Theoretical Domains Framework (TDF), and created the COM-B model and Behaviour Change Wheel (BCW) in 2011 as an extension of the original theoretical domains. Each framework integrates with the other to address the issues of historical models of behaviour change (Michie et al., 2011).

Michie's framework includes 14 theoretical domains that underpin the "Behaviour Change Wheel" (BCW). The TDF is designed to explain what determines a health behaviour, and the BCW and COM-B is used to determine what intervention functions may be needed to support a change in that behaviour, and which areas might be important to address in the intervention design (Cowdell & Dyson, 2019). Despite the growing popularity of these frameworks, it is unclear how they are being applied in practice more broadly.

The purpose of this review was to explore how the TDF, COM-B, and BCW are applied to the design of dietary interventions. The review aimed to understand which theoretical domains are typically addressed in behaviour change interventions (BCIs) and if the intervention design appropriately followed best practice guidelines. The authors used published guidelines, specific to the frameworks, to analyse of how they are being used in intervention design (Atkins et al., 2017; Cane et al., 2012, Michie et al., 2014).

Methods

Search strategy (Inclusion/Exclusion in a table)

Five online electronic databases were searched: Medline, PsycINFO, CINAHL, CENTRAL and Web of Science. These databases were searched using the following search terms within full texts: (Diet* OR nutrition* OR eating OR "weight loss" OR "weight management" OR obes*) AND ("theoretical domains framework" OR "COM-B" OR "behaviour change wheel" OR "capability opportunity motivation"). Papers were searched from 2015 onwards in order to include recent research only, and to ensure the use of the most recent, validated iteration of the TDF (published in 2012).

An additional search of papers which cited Michie et al., (2012) was conducted to identify any other potential papers. The search was completed on the 21st February 2022. The inclusion and exclusion criteria are outlined in Table 4. After duplicates were removed, title and abstract screening was completed independently by two members of the research team to ensure accuracy. Online systematic review software Covidence (www.covidence.org) was used to complete each stage.

Table 4 - Inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
Published from 2015 onwards	Published in a language other than English
Targeting nutrition or dietary change in the general population	Papers that focused on an intervention for practitioners
Uses the TDF, COM-B or BCW to design an intervention	Papers that used the framework to design guidelines or a protocol
Participant group must be over 18	Interventions that focus on pregnant women, or interventions that required a specific dietary intervention for a patient population

Analysis

The focus of the analysis was on empirical research that has designed or delivered an intervention using TDF, COM-B or BCW frameworks. A narrative synthesis approach was used to analyse the data, and the British Medical Journal Systematic Review Without Meta-

Analyses (SWiM) reporting guidelines (Campbell et al., 2020) were used to ensure the narrative synthesis methodology was robust (Appendix A). This style of synthesis was used as it offers a method of analysing data when the data of interest is not conducive to a meta-analysis. Data was extracted using Covidence, and were transposed into a data extraction table (Table 5), where the following was recorded; study design, population group, type of framework, and behaviour of interest. The quality of the intervention design and reporting was assessed using the Template for Intervention Description and Replication (TIDieR, Hoffmann et al., 2014) checklist (Table 6). As the review was focused on intervention design and methodology, rather than outcomes of the interventions, the TIDieR checklist was deemed sufficient for assessing quality. The TDF integration table (Table 7) assessed each study against the 14 domains from the TDF. The techniques used by each intervention were linked to a theoretical domain using the Michie et al (2014) guidelines. Specifically, Michie et al., (2014, p. 156) have resources outlining how different BCTs and intervention functions link to the TDF. In order to remove human error and bias, these resources were systematically used as a framework when analysing how the interventions in this review link to the TDF. Previous publications that have outlined how to use the TDF to design interventions appropriately were used as supporting documents (Atkins et al., 2017; Cane et al., 2012).

Results

Search results

The initial search yielded 478 papers, of which 230 duplicates were removed. Of the 248 remaining studies, 225 were ineligible as they did not mee the inclusion criteria when screening titles and abstracts. 23 were eligible for a full text review and 9 met the inclusion criteria for final review. 14 papers were deemed ineligible after full text review, and the rationale is outlined in the PRISMA flowchart (Figure 5). No further studies were eligible based on the key paper citation screen of titles and abstracts.

Figure 5 - PRISMA flow chart

Descriptive Analysis

Data from the nine studies was extracted using a bespoke data extraction form (Table 5). There were a total of 6,545 participants across the nine included studies, 74% of whom were female (n = 4867). A combination of the BCW/COM-B, and TDF was used in five papers (Bird et al., 2021; Coupe et al., 2021; McEvoy et al., 2018; Power et al., 2021; Verbiest et al., 2019). Four papers used either the COM-B or BCW only (Anderson et al., 2020; Beleigoli et al., 2020; Costello et al., 2018; Shoneye et al., 2020). Five interventions used an evidence-based guideline for intervention design (Costello et al., 2018; Coupe et al., 2021; McEvoy et al., 2018; Power et al., 2021; Shoneye et al., 2020) and only two used guidelines specifically designed for use with the TDF, COM-B or BCW frameworks (Costello et al., 2018; Coupe et al., 2021) . There was significant variability in the types of nutrition intervention delivered.

The interventions targeted weight loss (Beleigoli et al., 2020; Coupe et al., 2021; Shoneye et al., 2020), and improving dietary quality (Anderson et al., 2020; Costello et al., 2018; McEvoy et al., 2018; Power et al., 2021; Verbiest et al., 2019). The interventions also varied in the population groups that they targeted, including nurses (Power et al., 2021), older adults (Bird et al., 2021), low socioeconomic status groups (Coupe et al., 2021), preventative interventions for people at risk of cardiovascular disease (McEvoy et al., 2018), breast cancer (Anderson et al., 2020), obesity (Beleigoli et al., 2020; Shoneye et al., 2020; Verbiest et al., 2019) and athletes (Costello et al., 2018). The mode of delivery was a mix of online delivery, in person delivery, and mixed methods. The length of the interventions also varied between studies. Studies were primarily based in the UK, with one study in each of Australia, New Zealand, and Brazil.

Table 5 - Data extraction table

Reference	***Location***	***Aim of study***	***Intervention description***	***Study design***	***Population description***	***Behaviour of interest***	***Type of framework***
Shoneye et al., 2020	Australia	To improve diet and physical activity behaviours in adults with overweight and obesity	Digital intervention to apply behaviour change techniques	Qualitative research	Adults with a BMI of over 25 (n=56)	Diet	COM-B
Power et al., 2021	UK	To develop an intervention for nurses to improve their eating habits and physical activity	An online programme containing five modules using behaviour change techniques	Other: Intervention design study	Adult nurses (n=245)	Diet	BCW and TDF
McEvoy et al., 2018	UK	Improve adherence to the Med-diet in adults at high risk of cardiovascular disease	12-month group-based programme delivered by peer volunteers, incorporating behaviour change techniques	Other: Intervention design study	Adults at high risk of cardiovascular disease (n=67)	Mediterranean diet adherence	BCW and COM-B
Coupe et al., 2021	UK	Improve weight loss outcomes in low socioeconomic areas	Development of a booklet to support with multiple facets of diet and barriers to change.	Qualitative research	Adults (44-84) from low socioeconomic areas who are pursuing weight loss (n=25)	Diet	COM-B, BCW, and TDF

Reference	*Location*	*Aim of study*	*Intervention description*	*Study design*	*Population description*	*Behaviour of interest*	*Type of framework*
Bird et al., 2021	UK	Improve diet and lifestyle to promote better cognitive health	The delivery of an online questionnaire and a cognitive test, with dietary and lifestyle behaviour feedback	Non-randomised experimental study	Men & Women, age 50 and older (n=4826)	Diet and lifestyle	COM-B and BCW
Anderson et al., 2020	UK	Improving lifestyle behaviours to reduce breast cancer risk	Weight management intervention delivered by lifestyle coaches. One hour of face-to-face coaching and six fortnightly 15-minute calls for three months.	Non-randomised experimental study	Adult women (n=27)	Dietary and physical activity	COM-B
Beleigoli et al., 2020	Brazil	Compare the effectiveness of types of feedback in a weight loss intervention	A digital weight loss programme delivered in to three different groups across 24 weeks	Randomised controlled trial	University students and staff, aged 18-60 (n = 1298)	Diet	BCW
Verbiest et al., (2019)	New Zealand	To develop a culturally tailored digital health intervention	A digital intervention delivered through an app	Intervention design study	Targeting individuals of Maori and Pasifka heritage (n = NA)	Diet, physical activity and family	TDF and BCW
Costello et al., 2018	UK	To increase body mass	12 week intervention to increase energy intake while maintaining high dietary quality	Case report	18 year old elite athlete (n = 1)	Diet	BCW

Table 6 - TIDieR quality assessment (Tick= information was reported NA= Not applicable to the study/intervention, X = Not included, P = Partial details, E = Reported in a different publication)

Title	*Rationale included?*	*Materials described?*	*Procedure described?*	*Provider detailed?*	*Mode of delivery stated?*	*Location included?*	*Details of intervention frequency?*	*Tailoring?*	*Modifications?*	*Adherence description?*	*Intervention delivered as planned?*
Shoneye et al., 2020	✔	✔	✔	✔	✔	✔	X	NA	NA	NA	NA
Power et al., 2021	✔	✔	✔	✔	✔	✔	✔	✔	NA	✔	NA
McEvoy et al., 2018	✔	✔	✔	✔	✔	✔	✔	NA	NA	X	NA
Coupe et al., 2021	✔	✔	✔	✔	✔	✔	✔	NA	NA	NA	NA
Bird et al., 2021	✔	P	P	X	X	X	X	X	NA	X	NA
Anderson et al., 2020	✔	E	E	✔	✔	✔	✔	NA	NA	✔	✔
Beleigoli et al., 2020	✔	E	✔	✔	✔	✔	✔	✔	NA	P	✔
Verbiest et al., 2019	✔	✔	✔	✔	✔	✔	X	NA	NA	NA	NA

Title	*Rationale included?*	*Materials described?*	*Procedure described?*	*Provider detailed?*	*Mode of delivery stated?*	*Location included?*	*Details of intervention frequency?*	*Tailoring?*	*Modifications?*	*Adherence description?*	*Intervention delivered as planned?*
Costello et al., 2018	✔	X	X	✔	✔	✔	✔	✔	NA	X	NA

Reporting Quality

Overall, the quality of intervention reporting was good, but variable. Most studies included the majority of requirements when reporting interventions. Many interventions were standardised, therefore the tailoring and modifications did not apply. Materials and procedure are commonly not described appropriately in intervention reporting (Campbell et al., 2020), and four of the included studies did not appropriately report materials or procedure, or it was reported elsewhere. For example, Anderson et al., (2020) published multiple papers based on the same intervention, in which the details of their programme was reported in another of the author's papers (Anderson et al., 2018). The other area of concern was the lack of reporting of adherence. One important quality of the included studies was the reporting of how intervention functions or techniques linked to a theoretical framework. Power et al (2021) were the only study to use a specific framework for intervention reporting (TiDieR framework).

Individual analysis of the application of the TDF, COM-B, and BCW

Shoneye et al., (2020) focused on the use of the COM-B model to design a digital intervention for weight management. The quality of the intervention reporting was high, and they addressed six of the 14 theoretical domains in their intervention design, which was underpinned by behaviour change techniques (BCTs) from Michie et al., (2013). They did reference previous study designs and the BIT guidelines (Mohr et al., 2014) as the basis for their intervention design process, but did not report using any guidelines specific to the COM-B model.

Power et al., (2021) used the BCW and TDF to improve nurses eating and physical activity, which was delivered by health professionals through an online programme. The quality of the reporting was high and Power et al (2021) employed the TIDieR checklist directly to ensure quality of reporting. They covered seven of the theoretical domains, using multiple BCTs to address each domain. Although they did not specifically use the 8-stage process recommended by Michie et al (2014), they did use the Medical Research Council guidelines (2008) which is a systematic and evidence based approach to intervention design.

McEvoy et al (2018) used the BCW and COM-B model to design a peer-led intervention to improve adherence to the Mediterranean diet for those at risk of cardiovascular disease. The reporting of the intervention was of good quality. The authors addressed seven of the theoretical domains. The Medical Research Council guidance (MRC, 2008) on designing complex interventions was used as a systematic and evidence based process for designing the intervention.

Coupe et al (2021) used the COM-B, BCW, and TDF to design an intervention to improve weight loss outcomes amongst low socioeconomic groups. The intervention was delivered via a physical booklet, as an additional resource to a standard weight loss group. The reporting of the intervention was of high quality. There was evidence that seven of the theoretical domains were addressed. There was some discrepancy in the domain of 'identity', where the authors mentioned covering that domain, but it was unclear how this was addressed using the BCTs mentioned in the paper. The authors used evidence-based guidance from Michie et al (2011) and the MRC (2008) to inform the design of the intervention.

Bird et al., (2021) designed and delivered an online tool to support older adults in improving their diet and lifestyle, to improve cognitive health. The intervention was delivered solely online. The reporting of the intervention did not meet many of the TIDieR criteria. The details of the intervention were not clearly reported therefore it was not possible to determine which theoretical domains were addressed. The authors mentioned part of the intervention was designed using the COM-B model, yet there was little evidence how this applied to improving users health behaviours. Part of the intervention included feedback on diet and lifestyle, however the details of the intervention were not reported, making it difficult to determine how the intervention supported participants in changing their behaviour, and how the COM-B model was used in designing the intervention. There is no evidence of the use of appropriate guidelines in the intervention design process.

Anderson et al., (2020) used the COM-B model to design an intervention to improve diet and physical activity as a preventative for breast cancer. The intervention was delivered by lifestyle coaches face-to-face with telephone follow up. The reporting of the intervention was relatively high quality, although some of the full details of the intervention were published elsewhere (Anderson et al., 2018). There was evidence for six of the theoretical domains being addressed in the intervention. The intervention was informed by the authors own research, including focus groups, a feasibility trial, and feedback from stakeholders. However, there is no evidence of the use of recommended evidence-based guidelines, such as the MRC (2008) or Michie et al., (2014).

Beleigoli et al., (2020) used the BCW to design a digital weight loss intervention. The intervention reporting was inconsistent. A binary regression analysis on adherence was omitted, in addition to some key study materials. Ten theoretical domains were addressed in the intervention. There was no evidence of the use of intervention design guidelines. The protocol of the research design was published elsewhere (Beleigoli et al., 2018).

Verbiest et al., (2019) used the TDF and BCW to design a culture-specific digital intervention aimed at improving diet, physical activity, and holistic wellbeing. The intervention reporting was of good quality. The intervention addressed six theoretical domains in the dietary arm of the intervention. The authors used guidelines for the development of the digital application, but there was no evidence of the authors using published guidelines for the development of the intervention.

Costello et al., (2018) used the COM-B model to design an intervention for a single professional athlete for the purposes of weight gain, while maintaining dietary quality. The intervention reporting was of low quality, with key information about materials and procedure being omitted. The intervention addressed four of the theoretical domains. The eight-step guidelines published by Michie et al., (2014) were followed when designing the intervention.

Table 7- TDF integration table (Tick = Information reported; X = information not provided;, Blank spaces = not addressed in the intervention)

TDF Domains	Shoneye et al., 2020	**Power et al., 2021**	**McEvoy et al., 2018**	**Coupe et al., 2021**	**Bird et al., 2021**	**Anderson et al., 2020**	**Beleigoli et al., 2020**	**Verbiest et al., 2019**	**Costello et al., 2018**
Knowledge	✔	✔	✔	✔	X	✔	✔	✔	✔
Skills	✔	✔	✔		X		✔	✔	
Identity					X		✔	✔	
Beliefs about capabilities					X		✔		
Optimism		✔			X				
Beliefs about consequences	✔	✔	✔	✔	X	✔	✔	✔	
Reinforcement					X				
Intentions			✔	✔	X	✔			
Goals	✔		✔	✔	X	✔	✔	✔	
Memory, Attention & Decisions				✔	X				
Environment		✔		✔	X		✔		✔
Social influences	✔		✔		X	✔	✔	✔	✔
Emotion		✔			X		✔		
Behavioural regulation	✔	✔	✔	✔	X	✔	✔		✔

Collective analysis of the link between interventions and theoretical domains

Table 7 displays the theoretical domains that were reported to have been addressed within each intervention. The domains most frequently addressed include knowledge, skills, beliefs about consequences, goals, social influences, and behavioural regulation (Beleigoli et al., 2020; McEvoy et al., 2018; Power et al., 2021; Shoneye et al., 2020).

By contrast the domains of memory, attention and decisions, emotions, reinforcement, optimism, beliefs about capabilities, and identity were rarely addressed. Only two studies addressed the domains of emotions (Beleigoli et al., 2020; Power et al., 2021). Two studies addressed the domain of identity (Beleigoli et al., 2020; Verbiest et al., 2019) and only one addressed optimism or beliefs about capabilities (Beleigoli et al., 2020; Power et al., 2021). Memory and attention was addressed by a single study (Coupe et al., 2021) while no study addressed reinforcement. None of the studies provided detail on why particular domains were included or not.

Discussion

The purpose of this review was to understand how the TDF, COM-B and BCW frameworks have been used in behaviour change interventions targeting diet. After identifying relevant research, 9 studies met our inclusion criteria. Each of the 9 studies used the TDF, COM-B or BCW framework to design an intervention. There was some expected overlap, as 5 studies used a combination of the TDF, COM-B and/or BCW. Several discussion points arose from the analysis of the use of these frameworks in practice.

It is evident that some TDF domains are addressed frequently in interventions aimed at dietary behaviour change, whilst others are neglected. In this review, knowledge, skills, beliefs about consequences, goals, social influences, and behavioural regulation were the domains addressed most often. Evidence suggests that addressing these domains is an important aspect of nutritional behaviour change (Greaves et al., 2017; Spreckley et al., 2021). According to the COM-B and BCW (Michie et al., 2011), interventions should address Capability (psychological and physical), Opportunity (social and physical), and Motivation (automatic and reflective) to support behaviour change. The interventions included in the current review tend to focus on improving knowledge, and monitoring behaviour, which are only two elements of improving psychological capability. The interventions also focus on beliefs about consequences, and goal setting, which are only two elements of reflective motivation. Social support is only one element of social opportunity. While the interventions do meet some of the criteria to address nutritional behaviour change, they are far from comprehensive and appear to neglect some of the more psychological and motivational elements of the TDF and COM-B/BCW models. In this review memory, attention, decisions, emotions, reinforcement, optimism, beliefs about capabilities, and identity were frequently excluded from interventions.

The studies included in the current review tend to be focused heavily on knowledge and behavioural regulation, rather than more psychological components like identity, emotion, and beliefs. While knowledge and behavioural regulation are important aspects of change, there seems to be at best a significant imbalance, and at worst a neglect of those factors. The way in which certain domains appear prioritised or neglected is an important finding, as there is evidence to suggest that some of the neglected psychologically-focussed domains can be vital in supporting behaviour change (Greaves et al., 2017; Spreckley et al.,

2021). For example, emotional regulation and stress management is a vital component of changing eating behaviour (Ingels & Zizzi, 2018; Jacob et al., 2018; Lawlor et al., 2020; van Strien, 2018). In the habit literature, certain types of reinforcement can be helpful in forming new habits, however intrinsic reward seems to perform better (Lally & Gardner, 2013). There is also evidence to suggest that identity is a strong predictor of success when making changes to diet (Greaves et al., 2017). By failing to address these domains, the field of healthcare is potentially neglecting the needs of its users. Interestingly, these neglected domains are some of the same psychological components outlined by Greaves et al., (2017) in their review of successful maintainers of dietary change. In the current review, intervention authors did not provide rationale as to why certain domains were omitted and others included, therefore it is unclear why certain aspects were not addressed. Reasons for exclusion could include feasibility, e.g. too complex to address all of the domains in one intervention, resources, e.g. a lack of psychology resources to address psychologically-focused intervention domains, or a lack of psychology skills in the intervention provider therefore it would be outside of the provider's the scope of practice. For example, Dietitians, coaches, and peers delivered some of the interventions in this review and they are unlikely to have training in delivering psychologically-focused interventions. There also potentially exists a lack of awareness about the importance of emotions, stress, beliefs, optimism, and identity, when designing interventions. Traditionally, UK government interventions have been primarily based on knowledge and education alone (Theis & White, 2021), and this seems to be consistent with the current review.

Strengths and limitations of intervention design

One area where the intervention designs fell short when using TDF, COM-B or BCW, was the lack of systematic and evidence based guidance in the designing process of the intervention. The authors of the TDF, COM-B and BCW have published explicit guidelines which have been developed in order to ensure their appropriate application. There were studies which used alternative intervention design guidelines, but it is unclear how well they can be applied to the TDF, COM-B, and BCW. The authors are suggesting that they have used intervention design theory appropriately, however they do not explain why domains were consistently neglected. In some of the other included studies, there was no reported use of

evidence-based design processes during intervention design. The adherence to appropriate intervention design guidelines is unclear, and that may have contributed to other issues raised in this review. While there is proof that some evidence-based design guidelines were used, the complete application process of the TDF, COM-B, or BCW seems to have been lost. When studies outlined clear processes relative to the framework, the intervention design was more thorough, and the reporting of the intervention was of better quality. In order to use the TDF, COM-B, or BCW appropriately, adhering to the designated processes for intervention design from the beginning of the process is paramount. A bias could exist in intervention-design that is explained by the experience and expertise of the designers and providers of these interventions, which could lead to a preference for a limited number of theoretical domains being addressed.

The apparent lack of appropriate application of the guidelines could have contributed to the discrepancies evident when it came to the use of BCTs to appropriately address theoretical domains. Some research used a single BCT to address an entire domain. For example, in Coupe et al., (2021) the author mentioned addressing the 'skills' domain, and the technique was described as – "*Instruction on how to perform the behaviour".* Similarly, Beleigoli et al (2020) address the domain of emotions through the technique of - *"reducing negative emotions".* Although they report a behaviour change technique, it is unclear how the reduction in negative emotions is achieved and if it is sufficient. This means that intervention developers could claim to address the entire 'emotions' domain while only using a single technique.

Further examples of using limited techniques to address broad domains are present in each of the reviewed papers, and no intervention covered every domain. The design and application of behaviour change interventions may utilise multiple BCTs to address a domain, or apply only one technique within a single domain. Some interventions within this review used multiple BCTs to address a single domain in a comprehensive way. For example, "emotions" was addressed by Power et al (2021) by using multiple approaches such as; delivering a session on progressive muscular relaxation and diaphragmatic breathing, education and exercises on the link between emotion and eating, and facilitating group emotional social support. However, the extent to which a theoretical domain was comprehensively addressed using multiple techniques was inconsistent throughout each intervention. It is unclear whether a single BCT is sufficient to induce behaviour change, and

furthermore, whether the techniques described are appropriately addressing the domain. In addition, it remains uncertain how many domains should be addressed in each intervention, given that many interventions may not have the resources or capacity to address every domain. There may be a clear rationale for the variability seen in these interventions, however this is not typically reported. The importance of reporting rationale for including/excluding specific domains or techniques is an important learning for future research. This would align with current research in the field of health psychology which aims to identifying specific, effective components of interventions (Liu et al., 2019; Scott-Sheldon et al., 2020; Thomas et al., 2021; Willmott et al., 2019). Future research could evaluate these interventions based on their measured success at changing the targeted behaviour, to quantify the number of BCTs required to induce change. Michie et al., (2014), do not specify the number of BCTs or domains that should be addressed in order to create change, and there would likely be huge variability between interventions. However, something that should be considered by intervention designers is how many techniques are necessary in order to achieve meaningful change within a theoretical domain. It seems unlikely that an entire domain can be captured with a single BCT; for example, emotions are a complex topic with huge diversity in their presentations. It is unlikely that a single technique can account for the diversity of this domain. The reviewed interventions are considered 'theory informed', yet most only address part of the theory on which they are based, which may help explain the variability and lack of success in dietary interventions. It remains unclear whether the bias for behaviour-focused interventions is present across other dietary interventions that may not have used the TDF, COM-B, or BCW. The authors of the studies included within this review have not acknowledged this as a potential limitation in their articles.

Strengths & Limitations of the review

This is the first review on the use of the TDF, COM-B and BCW applied to dietary interventions. There are question marks over some of the most popular frameworks for intervention design, such as the TPB and TTM. This review improves the understanding of the implementation of a contemporary framework for behaviour change, and has revealed some important findings; namely that there are entire theoretical domains that are consistently

being neglected when designing dietary interventions, such as emotions, identity, beliefs about capability, reinforcement, optimism, and memory, attention, and decisions. The evidence base supporting the inclusion of these psychologically-focused domains is strong for its use within these population groups and as part of the interventions included in this review. This may explain some of the lack of success in dietary interventions. This review reveals a consistent bias in the application of theory, the neglect of psychologically-focused domains, and has identified some contentious applications of the TDF, COM-B and BCW frameworks when designing interventions. This included the use of small numbers of techniques to address entire domains.

Although this review followed the SWiM guidelines for reporting a review without meta-analysis (Campbell et al., 2020), one criticism of narrative synthesis is that it may contain bias. By following the guidelines, the risk of bias is reduced in this review. The review can only speculate as to why the interventions do not address all theoretical domains, and insight into why certain domains are neglected could be the basis for important future research.

Conclusion

The evidence on how the TDF, COM-B and BCW frameworks are applied to dietary behaviour change interventions is limited. This review outlined that appropriate guidelines and processes for using the TDF and its relatives are not always followed. Few studies designed their intervention using the appropriate processes, and the majority did not address all of the theoretical domains within their intervention. There is uncertainty as to why particular domains are used less often. There is also uncertainty at the number of techniques required to comprehensively address a domain. There are reasons to cautiously accept that following appropriate guidelines tends to lead to better intervention design, despite the limited evidence. Further research is required to explore how intervention designers could improve their interventions to potentially address more theoretical domains.

References

Adams, J., & White, M. (2005). Why don't stage-based activity promotion interventions work? *Health Education Research*, *20*(2), 237–243. https://doi.org/10.1093/her/cyg105

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Anderson, A. S., Craigie, A. M., Gallant, S., McAdam, C., Macaskill, E. J., McKell, J., Mutrie, N., O'Carroll, R. E., Sattar, N., Stead, M., & Treweek, S. (2020). Optimisation of the ActWELL lifestyle intervention programme for women attending routine NHS breast screening clinics. *Trials*, *21*(1), 484–484. rzh. https://doi.org/10.1186/s13063-020-04405-z

Anderson, A. S., Craigie, A. M., Gallant, S., McAdam, C., Macaskill, E. J., Mutrie, N., Neilson, A. R., O'Carroll, R. E., Rauchhaus, P., Sattar, N., Stead, M., & Treweek, S. (2018). Randomised controlled trial to assess the impact of a lifestyle intervention (ActWELL) in women invited to NHS breast screening. *BMJ Open*, *8*(11), e024136. https://doi.org/10.1136/bmjopen-2018-024136

Atkins, L., Francis, J., Islam, R., O'Connor, D., Patey, A., Ivers, N., Foy, R., Duncan, E. M., Colquhoun, H., Grimshaw, J. M., Lawton, R., & Michie, S. (2017). A guide to using the Theoretical Domains Framework of behaviour change to investigate implementation problems. *Implementation Science*, *12*(1), 77. https://doi.org/10.1186/s13012-017-0605-9

Atkins, L., & Michie, S. (2015). Designing interventions to change eating behaviours. *Proceedings of the Nutrition Society*, *74*(2), 164–170. https://doi.org/10.1017/S0029665115000075

Beleigoli, A., Andrade, A. Q., Diniz, M. D. F., & Ribeiro, A. L. (2020). Personalized Web-Based Weight Loss Behavior Change Program With and Without Dietitian Online Coaching for Adults With Overweight and Obesity: Randomized Controlled Trial. *Journal of Medical Internet Research*, *22*(11), e17494. https://doi.org/10.2196/17494

Beleigoli, A. M., Queiroz de Andrade, A., Haueisen Diniz, M. de F., Alvares, R. S., & Ribeiro, A. L. (2018). Online platform for healthy weight loss in adults with overweight and obesity - the "POEmaS" project: A randomized controlled trial. *BMC Public Health*, *18*(1), 945. https://doi.org/10.1186/s12889-018-5882-y

Bird, M., Cooper, C., Patel, F., Copeman, C., Stansfeld, J., Charlesworth, G., & Aguirre, E. (2021). The psychological determinants of making lifestyle and dietary behaviours after using an online cognitive health tool and its associated recommendations for protective cognitive

health behaviours. *EUROPEAN JOURNAL OF PSYCHIATRY*, *35*(3), 145–156. https://doi.org/10.1016/j.ejpsy.2021.02.001

Campbell, M., McKenzie, J. E., Sowden, A., Katikireddi, S. V., Brennan, S. E., Ellis, S., Hartmann-Boyce, J., Ryan, R., Shepperd, S., Thomas, J., Welch, V., & Thomson, H. (2020). Synthesis without meta-analysis (SWiM) in systematic reviews: Reporting guideline. *BMJ*, *368*, l6890. https://doi.org/10.1136/bmj.l6890

Cane, J., O'Connor, D., & Michie, S. (2012). Validation of the theoretical domains framework for use in behaviour change and implementation research. *Implementation Science*, *7*(1), 37. https://doi.org/10.1186/1748-5908-7-37

Costello, N., McKenna, J., Sutton, L., Deighton, K., & Jones, B. (2018). Using Contemporary Behavior Change Science to Design and Implement an Effective Nutritional Intervention Within Professional Rugby League. *International Journal of Sport Nutrition and Exercise Metabolism*, *28*(5), 553–557. https://doi.org/10.1123/ijsnem.2017-0298

Coupe, N., Cotterill, S., & Peters, S. (2021). Enhancing community weight loss groups in a low socioeconomic status area: Application of the COM-B model and Behaviour Change Wheel. *Health Expectations : An International Journal of Public Participation in Health Care and Health Policy*. cmedm. https://doi.org/10.1111/hex.13325

Cowdell, F., & Dyson, J. (2019). How is the theoretical domains framework applied to developing health behaviour interventions? A systematic search and narrative synthesis. *BMC Public Health*, *19*(1), 1180. https://doi.org/10.1186/s12889-019-7442-5

Craig, P., Dieppe, P., Macintyre, S., Michie, S., Nazareth, I., & Petticrew, M. (2008). Developing and evaluating complex interventions: The new Medical Research Council guidance. *BMJ*, *337*, a1655. https://doi.org/10.1136/bmj.a1655

Everest, G., Marshall, L., Fraser, C., & Briggs, A. (2022). *Addressing the leading risk factors for ill health: A review of government policies tackling smoking, poor diet, physical inactivity and harmful alcohol use in England*. The Health Foundation. https://www.health.org.uk/publications/reports/addressing-the-leading-risk-factors-for-ill-health

Eysenbach, G., & Group, C.-E. (2011). CONSORT-EHEALTH: Improving and Standardizing Evaluation Reports of Web-based and Mobile Health Interventions. *Journal of Medical Internet Research*, *13*(4), e1923. https://doi.org/10.2196/jmir.1923

Ge, L., Sadeghirad, B., Ball, G. D. C., da Costa, B. R., Hitchcock, C. L., Svendrovski, A., Kiflen, R., Quadri, K., Kwon, H. Y., Karamouzian, M., Adams-Webber, T., Ahmed, W., Damanhoury, S., Zeraatkar, D., Nikolakopoulou, A., Tsuyuki, R. T., Tian, J., Yang, K., Guyatt, G. H., & Johnston, B. C. (2020). Comparison of dietary macronutrient patterns of 14 popular named dietary programmes for weight and cardiovascular risk factor reduction in adults: Systematic review and network meta-analysis of randomised trials. *BMJ (Clinical Research Ed.)*, *369*, m696. https://doi.org/10.1136/bmj.m696

Greaves, C., Poltawski, L., Garside, R., & Briscoe, S. (2017). Understanding the challenge of weight loss maintenance: A systematic review and synthesis of qualitative research on weight loss maintenance. *Health Psychology Review*, *11*(2), 145–163. https://doi.org/10.1080/17437199.2017.1299583

Grodstein, F., Levine, R., Troy, L., Spencer, T., Colditz, G. A., & Stampfer, M. J. (1996). Three-year follow-up of participants in a commercial weight loss program. Can you keep it off? *Archives of Internal Medicine*, *156*(12), 1302–1306.

Hoffmann, T. C., Glasziou, P. P., Boutron, I., Milne, R., Perera, R., Moher, D., Altman, D. G., Barbour, V., Macdonald, H., Johnston, M., Lamb, S. E., Dixon-Woods, M., McCulloch, P., Wyatt, J. C., Chan, A.-W., & Michie, S. (2014). Better reporting of interventions: Template for intervention description and replication (TIDieR) checklist and guide. *BMJ*, *348*, g1687. https://doi.org/10.1136/bmj.g1687

Ingels, J. S., & Zizzi, S. (2018). A qualitative analysis of the role of emotions in different patterns of long-term weight loss. *Psychology & Health*, *33*(8), 1014–1027. https://doi.org/10.1080/08870446.2018.1453511

Jacob, A., Moullec, G., Lavoie, K. L., Laurin, C., Cowan, T., Tisshaw, C., Kazazian, C., Raddatz, C., & Bacon, S. L. (2018). Impact of cognitive-behavioral interventions on weight loss and psychological outcomes: A meta-analysis. *Health Psychology*, *37*(5), 417–432. https://doi.org/10.1037/hea0000576

Lally, P., & Gardner, B. (2013). Promoting habit formation. *Health Psychology Review*, *7*(sup1), S137–S158. https://doi.org/10.1080/17437199.2011.603640

Lawlor, E., Islam, N., Bates, S., Griffin, S., Hill, A. J., Hughes, C. A., Sharp, S. J., & Ahern, A. (2020). *Third-wave cognitive behaviour therapies for weight management: A systematic review and network meta-analysis*. https://doi.org/10.17863/CAM.49474

Liu, Z., Xu, H.-M., Wen, L.-M., Peng, Y.-Z., Lin, L.-Z., Zhou, S., Li, W.-H., & Wang, H.-J. (2019). A systematic review and meta-analysis of the overall effects of school-based obesity prevention interventions and effect differences by intervention components. *The International Journal of Behavioral Nutrition and Physical Activity*, *16*(1), 95. https://doi.org/10.1186/s12966-019-0848-8

McEvoy, C. T., Moore, S. E., Appleton, K. M., Cupples, M. E., Erwin, C., Kee, F., Prior, L., Young, I. S., McKinley, M. C., & Woodside, J. V. (2018). Development of a peer support intervention to encourage dietary behaviour change towards a Mediterranean diet in adults at high cardiovascular risk. *BMC Public Health*, *18*(1), 1194–1194. rzh. https://doi.org/10.1186/s12889-018-6108-z

Michie, S., Atkins, L., & West, R. (2014). *The Behaviour Change Wheel: A Guide to Designing Interventions*. Silverback.

Michie, S., Johnston, M., Abraham, C., Lawton, R., Parker, D., & Walker, A. (2005). Making psychological theory useful for implementing evidence based practice: A consensus approach. *BMJ Quality & Safety*, *14*(1), 26–33. https://doi.org/10.1136/qshc.2004.011155

Michie, S., Richardson, M., Johnston, M., Abraham, C., Francis, J., Hardeman, W., Eccles, M. P., Cane, J., & Wood, C. E. (2013). The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: Building an international consensus for the reporting of behavior change interventions. *Annals of Behavioral Medicine: A Publication of the Society of Behavioral Medicine*, *46*(1), 81–95. https://doi.org/10.1007/s12160-013-9486-6

Michie, S., van Stralen, M. M., & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science*, *6*(1), 42. https://doi.org/10.1186/1748-5908-6-42

Mohr, D. C., Schueller, S. M., Montague, E., Burns, M. N., & Rashidi, P. (2014). The behavioral intervention technology model: An integrated conceptual and technological framework for eHealth and mHealth interventions. *Journal of Medical Internet Research*, *16*(6), e146. https://doi.org/10.2196/jmir.3077

Musaiger, A. O., & Al-Hazzaa, H. M. (2012). Prevalence and risk factors associated with nutrition-related noncommunicable diseases in the Eastern Mediterranean region. *International Journal of General Medicine*, *5*, 199–217. https://doi.org/10.2147/IJGM.S29663

National Institute for Health and Care Excellence (NICE). (2007). Behaviour change: General approaches. *Public Health Guideline [PH6]*. https://www.nice.org.uk/guidance/ph6

National Institute for Health and Care Excellence (NICE). (2014). Behaviour change: Individual approaches. *Public Health Guideline [PH49]*. https://www.nice.org.uk/Guidance/PH49

Popkin, B. M. (2006). Global nutrition dynamics: The world is shifting rapidly toward a diet linked with noncommunicable diseases. *The American Journal of Clinical Nutrition*, *84*(2), 289–298. https://doi.org/10.1093/ajcn/84.2.289

Power, B. T., Kiezebrink, K., Allan, J. L., & Campbell, M. K. (2021). Development of a behaviour change workplace-based intervention to improve nurses' eating and physical activity. *Pilot and Feasibility Studies*, *7*(1), 53. cmedm. https://doi.org/10.1186/s40814-021-00789-0

Prochaska, J. O., & Velicer, W. F. (1997). The Transtheoretical Model of Health Behavior Change. *American Journal of Health Promotion*, *12*(1), 38–48. https://doi.org/10.4278/0890-1171-12.1.38

Scott-Sheldon, L. A. J., Hedges, L. V., Cyr, C., Young-Hyman, D., Khan, L. K., Magnus, M., King, H., Arteaga, S., Cawley, J., Economos, C. D., Haire-Joshu, D., Hunter, C. M., Lee, B. Y., Kumanyika, S. K., Ritchie, L. D., Robinson, T. N., & Schwartz, M. B. (2020). Childhood Obesity Evidence Base Project: A Systematic Review and Meta-Analysis of a New Taxonomy of Intervention Components to Improve Weight Status in Children 2-5 Years of Age, 2005-2019. *Childhood Obesity (Print)*, *16*(S2), S221–S248. https://doi.org/10.1089/chi.2020.0139

Shai, I., & Stampfer, M. J. (2008). Weight-loss diets—Can you keep it off? *The American Journal of Clinical Nutrition*, *88*(5), 1185–1186. https://doi.org/10.3945/ajcn.2008.26876

Shoneye, C. L., Mullan, B., Begley, A., Pollard, C. M., Jancey, J., & Kerr, D. A. (2020). Design and development of a digital weight management intervention (ToDAy): Qualitative study. *JMIR MHealth and UHealth*, *8*(9), 17. APA PsycInfo®. https://doi.org/10.2196/17919

Sniehotta, F. F., Presseau, J., & Araújo-Soares, V. (2014). Time to retire the theory of planned behaviour. *Health Psychology Review*, *8*(1), 1–7. https://doi.org/10.1080/17437199.2013.869710

Spreckley, M., Seidell, J., & Halberstadt, J. (2021). Perspectives into the experience of successful, substantial long-term weight-loss maintenance: A systematic review. *International Journal of Qualitative Studies on Health and Well-Being*, *16*(1), 1862481. https://doi.org/10.1080/17482631.2020.1862481

Theis, D. R. z., & White, M. (2021). Is Obesity Policy in England Fit for Purpose? Analysis of Government Strategies and Policies, 1992–2020. *The Milbank Quarterly*, *99*(1), 126–170. https://doi.org/10.1111/1468-0009.12498

Thomas, J. G., Goldstein, C. M., Bond, D. S., Lillis, J., Hekler, E. B., Emerson, J. A., Espel-Huynh, H. M., Goldstein, S. P., Dunsiger, S. I., Evans, E. W., Butryn, M. L., Huang, J., & Wing, R. R. (2021). Evaluation of intervention components to maximize outcomes of behavioral obesity treatment delivered online: A factorial experiment following the multiphase optimization strategy framework. *Contemporary Clinical Trials*, *100*, 106217. https://doi.org/10.1016/j.cct.2020.106217

van Strien, T. (2018). Causes of Emotional Eating and Matched Treatment of Obesity. *Current Diabetes Reports*, *18*(6), 35. https://doi.org/10.1007/s11892-018-1000-x

Verbiest, M. E. A., Corrigan, C., Dalhousie, S., Firestone, R., Funaki, T., Goodwin, D., Grey, J., Henry, A., Humphrey, G., Jull, A., Vano, M., Pekepo, C., Morenga, L. T., Whittaker, R., & Mhurchu, C. N. (2019). Using codesign to develop a culturally tailored, behavior change mHealth intervention for indigenous and other priority communities: A case study in New Zealand. *Translational Behavioral Medicine*, *9*(4), 720–736. APA PsycInfo®. https://doi.org/10.1093/tbm/iby093

Veritas Health Innovation. (n.d.). *Covidence—Better systematic review management*. Retrieved 12 March 2022, from https://www.covidence.org/

Willmott, T. J., Pang, B., Rundle-Thiele, S., & Badejo, A. (2019). Weight management in young adults: systematic review of electronic health intervention components and outcomes. *Journal of medical Internet research*, *21*(2), e10265. http://dx.doi.org/10.2196/10265

Appendices

Appendix A

Methods		The SWiM guidelines for reporting without a meta-analysis (Campbell et al., 2020)
1 Grouping studies for synthesis	1a) Provide a description of, and rationale for, the groups used in the synthesis (eg, groupings of populations, interventions, outcomes, study design)	There is overwhelming evidence to suggest that improving health behaviours at a population level could improve population health and reduce the incidences of disease and illness (Everest et al., 2022; Musaiger & Al-Hazzaa, 2012; Popkin, 2006). However, dietary behaviour change interventions at both the population and individual level have been largely unsuccessful in changing behaviour in the long term (Grodstein et al., 1996; Shai & Stampfer, 2008; Theis & White, 2021). Research also suggests that regardless of the specific dietary approach, benefits often regress within 12 months (Ge et al., 2020) meaning that over the longer term, the benefits from dietary interventions are not being sustained.
	1b) Detail and provide rationale for any changes made subsequent to the protocol in the groups used in the synthesis	Due to the challenge and complexity of creating effective behaviour change at a population and individual level, the National Institute for Health and Care Excellence (NICE) suggest interventions are underpinned by theory (NICE, 2007, 2014). Despite the recommendations for the use of theory, few specific theories are proposed within

		the guidelines, and there is little information about how health services or practitioners should design and deliver theoretically informed interventions in practice. There are many theories that have been used in healthcare and cited in health literature, such as the popular Theory of Planned Behaviour (TPB) and the Transtheoretical Model of Change (TTM). However, these theories have had some scathing criticisms about their efficacy for complex health interventions (Adams & White, 2005; Sniehotta et al., 2014). The criticisms of the TPB and TTM are that they are overly reductionist and may not be supported by evidence for complex behaviour change interventions.
2 Describe the standardised metric and transformation methods used	Describe the standardised metric for each outcome. Explain why the metric(s) was chosen and describe any methods used to transform the intervention effects, as reported in the study, to the standardised metric, citing any methodological guidance consulted	A table was created to assess each study against the 14 domains from the TDF, and the techniques used by each intervention were analysed using the Michie et al (2014) guidelines. The interventions were also assessed based on previous publications that have outlined how to use the TDF to design interventions appropriately (Atkins et al., 2017; Cane et al., 2012; Michie et al., 2014). Specifically, Michie et al., (2014, p. 156) have resources outlining how different BCTs and intervention functions link to the TDF. In order to remove human error and bias, these resources were systematically used as a framework when analysing how the interventions in this review link to the TDF. The research team extracted

		each BCT included in an intervention, and linked it to a theoretical domain using Michie et al., (2014) as the explicit guidance. For any that were not explicit, the authors own classification was used. For example, if a BCT didn't easily fit a specific criteria using Michie's guidelines, the intervention designers classification was used instead to prevent the reviewer incorporating any bias.
3 Describe the synthesis methods	Describe and justify the methods used to synthesise the effects for each outcome when it was not possible to undertake a meta-analysis of effect estimates	A narrative synthesis approach was used to analyse the data, and the BMJ SWiM reporting guidelines (Campbell et al., 2020) were used to ensure the narrative synthesis methodology was robust. This style of synthesis was used as it offers a method of analysing data when the data of interest is not conducive to a meta-analysis.
4 Criteria used to prioritise results for summary and synthesis	Where applicable, provide the criteria used, with supporting justification, to select the particular studies, or a particular study, for the main synthesis or to draw conclusions from the synthesis (eg, based on study design, risk of bias assessments, directness in relation to the review question)	The inclusion criteria included studies from 2015 onwards as to only include the latest iteration of the TDF (as this was the version that was validated). In addition, Michie's guidance on using the BCW was only published in 2014. We also wanted more recent studies to reflect the current use of the frameworks, as the use and application of the frameworks is gaining popularity. The TDF and its relatives were chosen as it is an increasingly popular framework for intervention design. The behaviour of interest was chosen as nutrition interventions have such underwhelming outcomes. Understanding what is being delivered as part of nutrition

		interventions is an important step to improving them.
5 Investigation of heterogeneity in reported effects	State the method(s) used to examine heterogeneity in reported effects when it was not possible to undertake a meta-analysis of effect estimates and its extensions to investigate heterogeneity	This review was not aimed at assessing intervention effects, but rather methodology and intervention design. Therefore heterogeneity of reported effects was deemed lower priority.
6 Certainty of evidence	Describe the methods used to assess the certainty of the synthesis findings	Due to the limitations and variability in interventions, as well as the lack of thorough intervention design, these factors contributed to our conclusion that the certainty of findings is low. For this reason, any recommendations are delivered tentatively. We assessed the quality of the included studies. We critiqued the studies limitations. We considered the body of evidence available, which was small. We assessed any inconsistencies, of which there were very few. We did not use a formal measure of 'certainty', however we did consider elemenets in line with BMJ best practice.
7 Data presentation methods	Describe the graphical and tabular methods	Tables were used to represent which domains were addressed in interventions, to describe

	used to present the effects (eg, tables, forest plots, harvest plots)	details of studies, to outline inclusion/exclusion criteria, and to display the PRISMA flow chart. Studies were not ordered in any particular way, due to the variability between them.
	Specify key study characteristics (eg, study design, risk of bias) used to order the studies, in the text and any tables or graphs, clearly referencing the studies included	
Results		
8 Reporting results	For each comparison and outcome, provide a description of the synthesised findings and the certainty of the findings. Describe the result in language that is consistent with the question the synthesis addresses, and indicate which studies contribute to the synthesis	Each study contributed to the synthesis. The certainty of findings is low, and conclusions are delivered tentatively. The evidence on how the TDF and related frameworks are applied to dietary behaviour change interventions is limited. This review outlined that appropriate guidelines and processes for using the TDF and its relatives is not always followed. Few studies designed their intervention using the appropriate processes, and most studies did not address all of the theoretical domains within their intervention. There is uncertainty as to why particular domains are used less often. There are reasons to cautiously accept that following appropriate guidelines tends to lead to better intervention design, despite the limited evidence. Further research is required to explore how intervention designers could improve their

		interventions to potentially address more theoretical domains.
Discussion		
9 Limitations of the synthesis	Report the limitations of the synthesis methods used and/or the groupings used in the synthesis and how these affect the conclusions that can be drawn in relation to the original review question	One limitation of this review is the use of a narrative synthesis. Although this review followed the SWiM guidelines for reporting without meta-analysis (Campbell et al., 2020), one criticism of narrative synthesis is that it can contain bias. By following the guidelines, the risk of bias is reduced in this research, but cannot be eliminated as it requires a small element of researcher interpretation. For example, interpreting that a single BCT is not appropriate enough to create change in an entire domain.

Appendix B

Protocol

Background

At present, there is a pertinent question about how to improve the health of the population in the UK. There are theoretical frameworks available in the current literature (Birken et al., 2017; Michie et al., 2011) to ensure that health-related behaviour change interventions are effective and meet best practice guidelines . It is unclear how well theoretical frameworks are used to guide behaviour change intervention design. There is evidence to suggest that public health policy and intervention have been ineffective at changing population levels of overweight and obesity (Theis & White, 2021), and it is important to understand why interventions aimed at an individual level also have such poor results (Dansinger et al., 2007). This review aims to understand if nutrition interventions are effectively using theoretical frameworks to guide their design.

Review question

Analyse and evaluate the application of the Theoretical Domains Framework as applied to behaviour change interventions targeting weight loss and nutrition.

Methods

Search Strategy

How comprehensive will the search be?

Search popular databases *and* papers that reference key original papers (either the Theoretical Domains Framework or behaviour change wheel or COM-B model). As I am on a specific timeline, I will approach the search pragmatically – I may not be able to gather every single available piece of evidence by the end of the timeline. This means that I must be as thorough as possible, but cannot delay indefinitely in order to find every possible piece of evidence if some are unavailable.

What type of evidence will be included?

Published literature only. This is because we want to use only high quality, peer reviewed research. We do run the risk of publication bias, but we aren't looking at outcome data, we are looking at intervention design so it shouldn't impact our review as much. We are looking at intervention design, and not policy or legislation, so only searching for published literature seems like the most pragmatic and efficient approach.

What databases are being searched?
Cochrane (CENTRAL), Medline (EBSCO),Web of Science, CINAHL, PsycINFO.

SEARCH TERMS
(Diet* OR nutrition* OR eating OR "weight loss" OR "weight management" OR obes*) AND ("theoretical domains framework" OR "COM-B" OR "behaviour change wheel" OR "capability opportunity motivation") in the full paper from 2015-2022. This timeframe is because the TDF was validated and updated in 2012, and we want to include papers based only on this later iteration. We also only want to include up to date literature, and the TDF (and its iterations) have been used more extensively in recent years.

Inclusion/Exclusion Criteria

Inclusion. Empirical studies will be included if they are: a) peer-reviewed and published in 2015 or later so that we only review up to date literature based on the latest iterations of the TDF, b) English language, c) targeting change in eating habits/nutrition as the behaviour of interest, d) have participants over 18 years old, e) use the Theoretical Domains Framework, COM-B, or BCW to design a trial or intervention.

Exclusion. Studies will be excluded if they: a) are published before 2015 or not in peer-reviewed publications, b) do not focus on changing eating habits as the primary behaviour of interest, c) do not us the Theoretical Domains Framework to design the intervention, d) do not focus on adults, e) design something other than an intervention for an individual or group (e.g. policy or guidelines) or f) studies that focus on pregnant women, or studies that require specific dietary intervention as part of a treatment for a patient group.

PICO

Population: Adults.

Intervention: Any intervention (or intervention design) primarily targeting change in eating habits or nutrition, that uses the Theoretical Domains Framework, COM-B, or BCW to design the intervention.

Comparator: Studies are assessed using the Theoretical Domains Framework and using published guidelines, specific to the frameworks, to analyse how they are being used in intervention design (Atkins et al., 2017; Cane et al., 2012, Michie et al., 2014).

Outcomes: The extent to which an intervention does or doesn't meet the standards for interventions, set out in the Theoretical Domains Framework. This will be identified through the analysis of the interventions using specific published guidelines (Atkins et al., 2017; Cane et al., 2012, Michie et al., 2014).

Study design: Original intervention studies or studies that design an intervention, both qualitative and quantitative. No review papers.

Setting: All free living studies where participants are going about their daily lives as part of the study. No lab based or in patient or residential research.

Screening and selection

Initially, titles and abstracts will be reviewed to remove any obvious studies that do not meet the inclusion criteria. This will be done by JOB and the process will be reviewed by either HP or LN. Studies that meet the criteria will be selected for full text review.

Data extraction

Titles and abstracts of studies retrieved will be screened independently by two researchers to identify studies that meet the inclusion criteria as outlined above (using Covidence). The full text of potentially eligible studies will be retrieved and independently assessed by both

authors (With a deadline of March 1st). Any disagreement will be resolved through discussions including a third researcher.

A bespoke data extraction form will be used to extract information including study design, setting, intervention target group (including demographics), nutrition behaviour/outcome of interest, and specific framework use. Missing data will be requested from study authors (with a deadline of March 1st). Quality of the reporting will also be assessed using the SWiM guidelines (Campbell et al., 2020).

Quality Assessment

Quality assessment of the intervention design and reporting will be assessed using the TiDieR framework (Hoffmann et al., 2014)

JOB will assess quality independently and discrepancies will be resolved by discussion.

Majority rules for any disagreements between reviewers. All eligible studies will be included and quality discussed as part of the narrative synthesis.

Data Analysis

The intervention data (such as techniques or approaches used) will be extracted and analysed against the benchmark of the theoretical domains framework. The aim of the analysis is to identify which studies have included techniques or approaches that address each of the domains set out by the Theoretical Domains Framework.

Dissemination Plan

We plan to publish this review in the British Journal of Health Psychology, with scope to adjust depending on the criteria of the journal and depending on the outcome of the review. If this paper reveals anything that is relevant to the way we practice behaviour change interventions, a single page summary document will also be freely available for any relevant or interested parties.

Time Frame

8 weeks

Contact details for further information

Joe O'Brien

j.obrien@2020.ljmu.ac.uk

Organisational affiliation of the review

Liverpool John Moore's University (LJMU)

www.ljmu.ac.uk

Review team members and their organisational affiliations

Joe O'Brien, LJMU

Dr Lisa Newson, LJMU

Dr Helen Poole, LJMU

Type and method of review

Intervention, Qualitative synthesis

Anticipated or actual start date

21st February 2022

Anticipated completion date

31st April 2022

Funding sources/sponsors

None

Conflicts of interest

None

Language

English

Country

England

Stage of review

Review Ongoing

Subject index terms

Stage	Started	Completed
Preliminary searches	yes	yes
Piloting of the study selection process	no	no
Formal screening of search results against eligibility criteria	no	no
Data extraction	no	No
Risk of bias (quality) assessment	no	No

Data analysis no No

Health Behaviour; Humans; Eating Habits; Theoretical Domains Framework; Behaviour Change

Date of registration in PROSPERO

NA – Prospero not taking student admissions

Date of first submission

NA

Stage of review at time of this submission

The record owner confirms that the information they have supplied for this submission is accurate and complete and they understand that deliberate provision of inaccurate information or omission of data may be construed as scientific misconduct.
The record owner confirms that they will update the status of the review when it is completed and will add publication details in due course.

Appendix C

Search details

Search terms	(Diet* OR nutrition* OR eating OR "weight loss" OR "weight management" OR obes*) AND ("theoretical domains framework" OR "COM-B" OR "behaviour change wheel" OR "capability opportunity motivation")	
	2015 – April 2022	Cochrane (CENTRAL), Medline (EBSCO),Web of Science, CINAHL, PsycINFO.
Cochrane (CENTRAL)	43	
Medline (EBSCO)	185	
Web of Science	127	
CINAHL	102	
PsycINFO	20	
Manual Addition	1	One paper in the review was a protocol, and a manual search found the published paper, which was then included
Total	478	

Research Commentary

Introduction

This is a reflective research commentary to outline my learnings about the research process across the course of the Professional Doctorate in Health Psychology. Within this commentary, I have included reflections on both qualitative and quantitative research, and the process of conducting a systematic review research. My skillset has grown in all domains, from ethics to research design to execution to analysis. I have written three research papers of publishable quality, while developing skills in approaches and analyses that I had not used previously. Additional reflections that were not written at the original time of entry are written in italics. For example, if I had written an extra reflection on an entry six months after I had originally written it, I have types that reflection in italics.

Systematic review process

The first major learning in terms of the research process was around how to appropriately search for literature correctly. After our session in LJMU, and after some extra reading, I now feel competent in my ability to appropriately search for literature using proper search strategies. I also take the specifics of a database into account, which I wouldn't have done previously. My systematic review is an example of this skill development, where I designed, conducted, and executed a systematic search and synthesis of literature to a level of which I have not done before.

There is a part of me that is in disbelief that I ever called my previous work 'research', as the ability to find the right literature, appropriately synthesise it and critique it, contributes to a good quality researcher. I feel like I can now differentiate between a quality search for literature, versus what I have previously done. When I reflect on how this applies to the wider world, especially the anti-scientific discourse that is present in the media around COVID-19, I can see how someone might think they have 'conducted research', only for their research to be littered with confirmation bias and limited to the first page of google. I feel like it's a tough place for scientists like myself to try and disseminate information to a population that struggles to decipher between a scientifically sound methodology and a self-proclaimed expert who presents an emotive and relatable (but scientifically false) narrative. The learning I can take from this is how important it is to not just conduct research, but to disseminate it to a wider audience and if non-scientific content is getting airtime on popular media outlets, it's important for scientists to target those avenues.

After conducting my own qualitative research, I reflected on how the scientific community interpret and disseminate research. I had found that a very high number of participants in my research were considered 'at risk' of developing an eating disorder. The startling nature of the results could have put forward the narrative that 'most people who are pursuing weight loss are at high risk of an eating disorder', and that would be an emotive, and captivating, narrative. However, in order to ensure the integrity of my own work, it was important to acknowledge that my own work had limitations and had the potential to be interpreted or written with bias.

By recruiting for a study titled 'Psychology and Weight Loss', I was potentially unintendedly priming people who struggled with psychology and weight loss to take part in

the study and it is important to me to be transparent about that. I had to acknowledge that the very nature of my study probably impacted participants self-selection. I consider it scientifically appropriate to let the reader to know that my results could be skewed for that reason. However, I can imagine how others with a blind spot or bias, or with questionable integrity, could easily leave out those facts and put forward their own narrative. In addition, I can see how someone without a scientific background could so easily overlook such detail in the methodology. It could explain why the general population could find reading literature and identifying scientific rigour incredibly difficult, and could explain some of the recent mis-trust in the scientific communities. It's important as a researcher to consider how we disseminate research, and understanding how that research may be perceived in different audiences.

Balancing being a practitioner and researcher

My biggest challenge conducting qualitative research was switching from being a practitioner to being a researcher. I'm used to engaging with clients in a 1:1 setting and delving deeper into emotional challenges and psychological barriers in a way that helps them see some of their own difficulties and to see other potential solutions. In my role as a researcher, I had to stop myself from trying to help or supporting someone to see a different perspective. The qualitative interviews were not a place to help and support participants, but rather a place to hear them and to gain enough information to tell their stories appropriately, as they are now. This was hard for me, as I got into this field specifically to help people. It turned out that the participants were a lot like my clients; struggling with emotions, with harmful messages about size and weight, with life challenges, and my role was to listen and explore, rather than to support and help. Although it was difficult not to engage with the participants in a therapeutic way, I also think my ability to ask the right questions did improve the quality of the research. For example, as a practitioner, I feel like I have the skill to pick up on something important that a client may have brushed over unintentionally, therefore being a practitioner in research, I was able to use that skill to ask the right questions in the right moment to get a better sense of their experience. I was able to do this without biasing the

research by using interview skills like open ended and non-leading questions, while using the practitioner skill of identifying topics of importance.

I was also surprised at the similarities between my clients and the participants. In my practice log I wrote that I believed many of my clients were at the more extreme end of eating difficulties. I thought my clients, the ones who get support from a trainee psychologist, must be turning to this approach because things had really been difficult. I was very wrong. I spoke with people who were not getting support, and were pursuing weight loss, but they were having just as much difficulty as any of my clients. I could clearly see it in the hour I spent with them. I interviewed 20 people, and many of them shared incredibly emotional stories, with some telling those stories through tears. Fortunately, I have had appropriate experience with emotionally heavy topics as a practitioner, and this was managed in line with what was outlined in the ethics application. It was hard for me to send the standard follow up document outlining further support to these people, and not be able to do anything else. However, I had to adhere to the processes which were approved by the ethics committee, and hold my professional boundaries. This is a vital skill for me in my career, as there will be many situations in which my scope of practice or boundaries will be tested so having a framework (like ethical approval or the BPS code of conduct) to refer to can be really beneficial in navigating these challenges.

Research disappointments

I had one oversight when interpreting my regression analysis. The result of the analysis found that psychological factors only predicted 1% of the change in weight over the course of 12 weeks of weight loss, and this was the opposite of my own hypothesis. Based on my reading of the evidence base, I hypothesised that psychological factors measured at baseline would by predictive of how much weight people lost after 12 weeks. However, I overlooked a small detail. Our sample size analysis found that we needed 300 people for the test to have significant power, which we achieved. What I forgot to consider was that in order to assess change, I needed change to occur. Unfortunately, the majority of the sample didn't achieve significant weight loss. Only 30 people achieved significant weight loss in the

12 week study, and my multiple regression couldn't predict change in the sample because change never occurred in the other 300 people.

I was incredibly disappointed because I had designed and implemented a good quality research study, with the potential to discover important findings. However, my study design didn't take into account the fact that most people don't make significant changes when attempting weight loss, and that the true number of people who changed would need to be a lot higher in order to test appropriately. In reality, the study design was fine but I ran tests for multiple days without recognising that the test was not appropriate given the number of people who had not achieved change. Upon reflection, I think this study would be incredibly valuable if it were done with a larger sample size to test the outcome, but I failed to consider the fact that only a small minority of people generally lose weight in weight loss interventions. The data was still valuable and provided some insights which contribute something unique, so it was not all negative. However, the write up had to be transparent about the challenges of this paper.

Lacking belief

At the end of 2021 and the beginning of 2022, my primary supervisor was on leave. At this point, I was just beginning my systematic review and had never conducted one before. I had developed the review question with my supervisor so I thought at the time that it was a huge setback, and that I wouldn't be able to conduct the review without support. In fact, I was so sure of my inability to start the review, that I did nothing. However, after a few weeks, I learned that my supervisor might be out for longer than expected. Because I wanted to complete my work on time, I decided to begin the review with the resources I had. I bought a book on systematic reviews, and did my best to follow the guidance in the book. However, I felt just as lost after reading the book as I did before it. I had gotten some work together on my protocol, but I really didn't know where I was going with it. Because of that, I got in touch with a researcher in the field, I contacted my second supervisor and I emailed the librarian for support.

The reflection here is not that I was resourceful in a challenging period. It is that I had no belief in my research ability. I have been telling myself for a long time that research 'isn't

my thing' and I'm better at other things. However, when I met with my second supervisor, the researcher and the librarian, they were all affirming that I was on the right track. It turns out that all of the work I did on my own, the work I thought was worthless, was actually quite valuable. My reflection here is that my own narrative of 'I'm not good at research' is possibly just an old story I'm telling myself, and it's not necessarily true. Maybe it outlined that it's a belief rather than a fact, or that I'm not confident in my research skills rather than I'm not capable. I think the hard evidence suggests I am capable, and I have to challenge my own beliefs.

Memory is not enough

One of my biggest learnings about my research has been to document everything. When conducting all three of my research projects, I thought that I would remember why a datapoint was removed, or which was my latest dataset, or my most up to date reference list, however I was wrong. One huge, time-costly mistake I made when doing my quantitative work was that I didn't initially document who or why I removed people from my research and I didn't date my datasets. At one point, when I was too confused about which dataset was the most recent, I had to start from scratch with the original dataset. One thing I did the second time around was log the participant ID of people I removed from the dataset, and why. I didn't do this the first time around and ended up mixing up datasets between the original and the 'cleaned' data. I ended up questioning if I was missing data, if original data was wrongly excluded, and had difficulties keeping track of which dataset was the most up to date. I had to start from scratch because I hadn't documented my own work well enough to keep track of where I was at. The second time around, I took note of each step I took, and I also dated my datasets. I was then able to know which dataset and which output was the most recently updated. This early intervention probably saved me a lot of time and difficulty down the line. I was lucky I took this approach at the data cleaning stage.

I am also lucky that I learned this lesson prior to the systematic review. Even with a systematic log of everything I'm doing, the systematic review can still be messy and challenging. It has been an incredible help to have already developed a spreadsheet to keep track of my progress. One other reflection from this process is to use any available software

where possible. For example, one amazing piece of advice I got from a researcher in this field was to use Covidence, which is a software for systematic reviews. This has allowed me to keep a detailed log of my progress, and help my supervisor team also keep track of the review process. I would encourage any future researchers to research the appropriate tools

Fail to prepare, prepare to fail

One big area of development for me was in my ability to prepare appropriately. I wrote in my reflective practice diary about how I have jumped in to projects or assignments without thinking first, and how I have paid the price for that over-eagerness. In writing my research papers, I made a deliberate effort to assess the author guidelines of the potential publication papers in which I was writing for. This was one of the few times I really thoroughly prepared for an assignment before engaging with it. The preparation I engaged in really helped me write the articles, and was a significant shift in my process.

I also found this approach incredibly helpful with my systematic review. I spent a long time writing my protocol, and making iterations of that protocol, before starting the review. For that reason, the actual review process felt a lot less daunting. It felt a lot more like executing a plan which was well thought out, and therefore felt relatively straightforward. Having a thorough protocol in place was like following a well laid out map. Sometimes you still get lost, but it's easier to get back on track if things go wrong. I think for any future endeavours, research or otherwise, a well thought out protocol can never be a bad thing, and is quite a major learning for me.

I'm now actually reflecting on the reflective process for me, and it's interesting because I wrote an early reflection in this commentary about being impulsive and over-eager before I engaged in writing my research papers and before I started my systematic review (This is documented in my reflective practice diary). I have always been impulsive and over-eager, and maybe in the time between my first reflection and writing my research papers, it afforded me the opportunity to grow. This is the first time I've paid enough attention to the fact that impulsivity has held me back, and by reflecting on it through my own diaries, it has given me the impetus to make a change in a short space of time, and actually support me with my subsequent research work.

The Dunning-Kruger

The Dunning-Kruger effect is the false sense of confidence people get when they know a small amount about a given topic. When people start to learn more about a topic, it leads to feeling like they know nothing at all. The final stage is becoming an expert in the field and feeling confident again in your knowledge. I came in to the Professional Doctorate thinking I knew a lot, and even prior to conducting my research, I still thought this was relatively true. I was wrong.

What I've learned throughout conducting good quality research and after learning more about the scientific method, is that I know very little by comparison to the extent of the literature out there. I realise that up until the past year, much of my knowledge has come from books rather than original scientific peer-reviewed literature. However, books are not peer-reviewed and, especially when it comes to health, books can disseminate some really harmful and unsubstantiated content. I'm starting to realise that some books we just cannot trust. Books are normally chosen by publishers because they believe they will sell. Publishers don't usually care about the scientific accuracy of a book, and considering I got a lot of my information from non-academic books when I was younger, I wonder how much of my perceived insight is informed by non-peer reviewed books? I've learned that books, even when written by authoritative figures or health professionals, may not always be scientifically accurate.

Over the past year, I have made more of an effort to read peer-reviewed scientific literature only, and because of this shift, I feel like I am at the bottom of the Dunning-Kruger graph! However, I'm glad that I'm aware of some of my blind spots and I can read a book and critique it by comparison to the wider body of literature. This is a significant change for me, because I remember reading the power of habit (written by a journalist) and thinking that it contained all the secrets people needed to know to change their behaviour. In other words, I took it as gospel. I feel like I'm now in a position to take a piece of information from a source, and be able to critique it in the context of the wider literature. For example, if I read the habits book now, I would know there are far more genetic, biological, psychological, social, and environmental factors that impact behaviour outside of habits alone.

Final Reflection

The interesting part of reflection is that, if you had asked me candidly, I probably wouldn't have noticed the changes I've made or the learnings I've had over the past 2.5 years. The process of reflection has not just been a way to see these changes, but rather an important part of the process of change. I can see from my own diary entries that reflecting has given me the opportunity to notice my own learnings, biases, and barriers to change. Without these reflections, I would not have learnt or grown in the same way, and for that, I am grateful.

Chapter 3 - Behaviour Change Interventions

CHAPTER 3 INDEX

Summary of competency

This section details two behaviour change interventions (BCI) which I delivered. The first BCI was a client who I saw online over the course of 12 sessions, to work primarily on developing a healthy relationship with food. The second behaviour change intervention was the delivery of training to health professionals, with the intention to change their behaviour in practice. I've chosen these two interventions to write about as they are so diverse and display how I've learned to apply my skills in a range of domains. I have completed over 400 hours of 1-1 sessions which have been supervised, and cover a range of presentations, with people from different demographics, both online and in person.

BCI 1

Introduction

This case study summarises the 12 sessions I completed with "Anna", a client who I worked with to address binge eating, to meet the competency that forms part of the Stage 2 Doctorate Training in Health Psychology. This report outlines the assessment, formulation, intervention and evaluation related to the Behaviour Change Intervention (BCI) that was delivered to Anna online via Zoom. Part of this report will cover the rationale for the intervention, along with the reflections and considerations made in respect of professional boundaries, laws, codes of conduct and the therapeutic alliance. The intervention delivered was an integration of psychoeducational and psychotherapeutic in nature.

Assessing the client's needs

Anna came to the service with binge eating issues and initially saw Counselling Psychologist Dr. X. After 6 sessions with the Counselling Psychologist, Anna was referred to me. Dr. X gave me a handover of what they had covered in the initial 6 sessions and Anna felt she wanted a more behaviour focussed approach.

As part of our clinical process, clients are risk assessed to gauge if individual is suitable for the service. Anna was deemed low risk by Dr. X and after speaking with Dr. X about the case, we agreed Anna was a suitable client for a Trainee. I contacted Anna via email and an initial session was agreed. Due to the client's location, the session was conducted online.

Formulation

Formulation should be considered flexible, with the opportunity to change interpretations as new information comes to light: "… assessment and treatment are a continuous process of proposing, testing, re-evaluating, revising, rejecting, and creating new formulations" (Persons, 1989, p.55). In light of this, it's important to remember that initial perceptions of client's needs can be changed. In addition, and especially in this field, a client may not recognise the importance of addressing psychological factors related to behaviour change. They may present with conflicting ideas of what is important to address.

As the client was presenting with binge eating, I felt it was important to consider the psychological components of the behaviour. Eating behaviours, whether pathological or

typical, fall on the same continuum, as outlined by Brooks et al., (2012). For this reason, it's important to consider the psychological capability for change in both clinical and sub-clinical settings. Part of my formulation was informed by Dr. X's assessment which stated the client has previous issues with family relationships and a history of rigid dieting; however, it was important to create my own formulation with the client. Table 8 (below) is an outline of the formulation which was conceptualised using the 5 P's of formulation (Carr & McNulty, 2016).

Table 8 – 5 P's of formulation

5 P's Formulation	
Pre-Disposing	• Controlling food environment in the family home • Weight loss was valued, and size/shape were judged
Precipitating	• After working with a personal trainer, on a highly restrictive diet, binge eating increased and emotional distress increased.
Presenting	• Loss of control • Guilt around food • Self-critical after binging • Difficulty regulating emotions
Perpetuating	• Difficulty identifying, managing and expressing emotions • Lack of insight into the difficulty • Continued restrictive eating • Self-critical
Protective	• Seeking appropriate support • Supportive boyfriend • Not living in the family home • Physical capable and motivated

Intervention Design

Anna and I discussed her needs in session 1, which included 4 goals.

1. To move away from calorie counting (tracking) in a healthy way
2. To pay attention to hunger/fullness signals
3. To learn new ways of exercising and eating that didn't focus on weight loss
4. To learn to manage difficult feelings and emotions without food

I based my interventions on The COM-B Model and Behaviour Change Wheel (Michie et al., 2011), which was applied using the Principles of Change outlined by Martin Goldfried (2019). I worked on the premise that one single psychotherapeutic approach has not been well established for behaviour change interventions in nutrition despite emerging research on Third-Wave CBT (Lawlor et al., 2020). Part of the rationale for using the Behaviour Change Wheel was the concept of "Psychological Capability", which could be achieved through using psychotherapeutic approaches. There is also extensive evidence that suggest unmet psychological needs contribute to difficulties in behaviour change, and in binge eating (Stice, 2002; Greaves et al., 2017). Addressing unmet psychological needs could be seen as a way to enable psychological capability for the client.

Over the course of twelve 50-minute sessions, I planned and delivered an intervention to address Anna's goals. These sessions were semi-structured. We would often work from the challenges that were identified on the self-monitoring form that Anna completed every week. As per Goldfried (2019), it was my role to facilitate the client's awareness of the factors associated with their difficulty, so although the client would bring their challenges from the previous week, I would use my own knowledge of psychology and eating to draw links between the eating behaviour and the psychological factors to offer an understanding of the behaviour. Once the understanding of the behaviour was present, we could then problem solve and jointly consider solutions to the issues. From my reading of the evidence base, there are three broad causes of binge eating. (Gianini et al., 2013; Elran-Barak et al., 2015; Lewer et al., 2017)

1. Rigid dieting, restriction or food rules
2. Difficulty regulating emotions
3. Preoccupation or overvaluation of the body

From my initial formulation, it appeared Anna needed support reducing restriction around food and also managing emotional distress. In order to establish a pattern of behaviour, Anna self-monitored using a structured diary (See Appendix A). This allowed Anna and I to gain insight into what parts of the behaviour were important to address. Table 9 is a brief reflective summary of the twelve individual sessions.

Table 8 – Reflective summary of work

Session #	Reflective Summary
1	Anna spoke about the link between "stress" and eating. Some people might use stress when they don't have the words for other difficult feelings. Anna spoke about being hard on herself, which can perpetuate the issue of binging by leading to further restriction. Anna agreed to self-monitor to help identify patterns of behaviour.
2	Two observations from the self-monitoring diary showed quite variable meal timings, and large gaps between meals. We discussed how dietary restriction and fasting can contribute to binging. Anna also stated she sometimes avoids carbs, so we challenged some of those beliefs, as they were part of some of the rigid food rules.
3	Anna spoke about her binge eating episodes this week and made a link between binging and spending time with her parents. She felt distressed afterwards and this contributed to the eating behaviour. We spoke about labelling and recognising emotions and spoke about how they related to each other.
4	Anna mentioned that her period had returned; a sign that she was eating sufficiently. We spoke about the importance of health before weight loss. We also spoke about coping strategies in response to difficult emotions. Anna recognised she had not considered many alternatives.
5	Anna spoke about how work stress was impacting her, and we spoke about challenging some of her beliefs about her perfectionist-like standards. We spoke about self-care opportunities when those stressors do come up. Anna mentioned she had walked with her friend recently and since she moved away

	from calorie counting, she saw in her friend what she used to be like. She expressed her happiness that tracking steps/calories wouldn't be at the forefront of those thoughts anymore. Anna also mentioned that she was exercising because she enjoyed it, rather than being dictated by her phone or her Fitbit.
6	Anna had a two week break from sessions and said she found it difficult. The first week she had her brother living with her and said it went well. Her brother left the second week, and she found it a lot more difficult and mentioned that she felt lonely. We identified loneliness as a pattern that contributed to eating issues, therefore looked at some ways of staying connected.
7	Anna stated she was happy with the progress she had made. She said she understands that some of the main contributors were work stress, loneliness and family difficulties. She said the lightbulb moment for her was that she could do exercise she enjoyed without being focussed on weight loss. Anna mentioned flexibility and challenging her beliefs has allowed her to include more "trigger" foods.
8	Anna challenged her beliefs about her eating. She felt guilt and regret for eating a lot of ice cream. We looked at that in the context of her overall diet, and Anna said it showed her it wasn't so excessive in the context of her overall diet. Anna had a difficult emotion come up in her personal life and turned to food as a comfort. This showed Anna a very clear link between negative mood and eating. We spoke about how Anna might respond in future, without turning to food.
9	Anna was able to identify her mood after a difficult encounter with a family member and was able to respond in a healthier manner, in line with her goals. Anna also mentioned she was making progress and felt more in control of her eating. We did some work on mindful eating, and hunger fullness signals.
10	Anna worked on her perfectionist tendencies and challenged some of her beliefs about what her diet "should" look like. We talked about what is acceptable and achievable, rather than perfect.

11	Anna recognised her self-critic and mentioned feeling more able to challenge those thoughts in the moment. Anna said she is working to meet her needs in the other areas of her life, and outside of work stress, is very happy. We planned to end after the next session.
12	We identified future red flags and how to manage should some difficulties arise. We spoke about the major changes over the course of the intervention. Anna said she is able to identify how she is feeling and respond in a different way. She also said if she does have a hard day, she is able to be more compassionate towards herself.

Behaviour Change Techniques (BCTs)

Over the course of the 12 fifty-minute sessions, many BCTs were used (Michie et al., 2011). Although I consider myself integrative in my approach, and I don't believe I strictly align with one theoretical approach, I feel the BCTs below would be closely aligned with CBT. I have also drawn on other models such as Emotion-Focussed Therapy and ACT to support my understanding of the presenting issue and my approach to clinical practice. I believe rigidity in my approach is unhelpful as we have not found a manualized or structured approach that works for everyone. Below are four examples of BCTs that were used throughout the sessions.

Stress Management and Emotional Control

As mentioned, emotional regulation plays a role in binge eating behaviour. One emotion that Anna identified as being prominent for her was loneliness, and together we identified that the eating behaviour sometimes occurred in response to feeling lonely. Anna would then use food as a way of managing that feeling of loneliness. In order to address the loneliness, I supported Anna in finding new ways of connecting with others to address those feelings of loneliness. This in turn reduced the dependence on food, as the psychological need was being met.

Self-Monitoring

Anna was given a self-monitoring form from day one which offered prompts of what to record. Anna recorded time of meals, types of food, thoughts and emotions associated with the eating, hunger level and a yes/no column if it felt excessive. Monitoring the

behaviour allowed Anna and I to understand the patterns of behaviour and identify some of the antecedents to binging behaviour. For example, one significant moment for Anna was when she was able to identify the relationship between spending time with her family and urges to binge eat. Anna had a history of conflict with family and could often create tension and stress for her.

Provide instruction on the behaviour

Although these sessions were predominantly client-led, one element of the intervention was directed by me, and that was the instruction to increase meal frequency. Long periods of time between meals can promote binge eating, therefore increasing meal frequency and reducing time between meals can be helpful.

Reframing (Thought challenging)

As Anna had a previous history of rigid dieting, she held some beliefs about food that were not helpful and promoted restriction which is an antecedent for binging. Part of the process for Anna was challenging some of those beliefs. One example was that Anna believed that carbohydrates "made you fat", therefore she would avoid them. We challenged this idea and started including a variety of carbohydrates. We would then reflect on Anna's thoughts and beliefs in the moment and compare them to the reality of what actually happened, and over time Anna felt comfortable including those foods and challenging the old dieting beliefs she had previously held. In this example, "carbohydrates make you fat" would have been challenged and reframed to "carbohydrates can be included as part of a positive dietary pattern".

Evaluation

When evaluating the effectiveness of the intervention, it's important to reflect on what the initial goals of the client were. This section will critically evaluate the outcomes in light of each goal, with reference to the session summary.

To move away from tracking in a healthy way

Anna was able to achieve this, and by the end of our sessions, was no longer tracking calories in food or exercise. During our initial meeting she said she was often preoccupied with tracking numbers including body weight, step count and calories. In order to move away from this in a healthy way, we spent time challenging the function of tracking, and we trialled different ways of achieving the same thing. Anna kept a food diary without weighing food or

tracking calories. Anna paid more attention to the physical and mental benefit of exercise, and learned to enjoy exercise intrinsically, rather than extrinsically. Anna learned to challenge the belief that her weight and size was her value and focussed on the health outcomes of eating more. Anna mentioned in session #4 that her period returned, which was absent while she was dieting. Anna saw this as a sign of better health and eating enough.

To pay attention to hunger/fullness signals

Anna mentioned that her hunger and fullness signals returned relatively soon after incorporating a more structured and frequent meal pattern, which was actioned in session #1 using the "providing instruction" BCT outlined above. We also did some work on mindful eating and how to pay attention to hunger/fullness signals in session #9. I followed up the session with an email to Anna with an outline of the hunger fullness scale and how to pay attention to hunger.

To learn new ways of exercising and eating that didn't focus on weight loss

Part of this work was supporting Anna in seeing the other benefits of exercise and weight loss, as mentioned in session #7. As loneliness was a difficulty for her, exercise and walking facilitated social engagement. Anna would note how she felt after different types of exercise and came to the conclusion over the course of the intervention, that she actually enjoying running, team sports and fitness classes more than going to the gym.

To learn to manage difficult feelings and emotions

This was the biggest focus over the course of the twelve sessions. Each aspect of Anna's eating had emotional components. For example, how she felt when she wasn't perfect, how she felt when she binged and how she responded to difficult life circumstances. Anna gave multiple examples of how this changed, as referenced in session #9. Part of this work was about finding new ways to meet her psychological needs. As loneliness was identified as a problem, along with family issues and work stress, we worked on exploring and gaining insight into the links between these feelings and Anna's eating using the self-monitoring form and some semi-structured conversations. We also worked on some actions that would meet Anna's psychological needs, so that food wasn't the response to difficult feelings. E.g. Addressing loneliness with human connection, using exercise to manage stress and supporting Anna to speak about how she is feeling, rather than suppressing these feelings using food.

The intervention was largely successful, and when looking at the initial formulation, the 4 perpetuating issues were addressed. Difficulty identifying, managing and expressing emotions, lack of insight into the difficulty, continued restrictive eating and self-critical. As referenced by Goldfriend (2019), the role of a therapist is to facilitate client's awareness of their own difficulties, while encouraging corrective experiences. Throughout the twelve sessions, the focus was to facilitate Anna in seeing what was contributing to her issues, and drawing links between those difficulties and her eating behaviour. Anna expressed in her final session, her ability to recognise those things and how she has learned to mitigate that risk, therefore the intervention can be considered a success.

Reflections

I found this work challenging but insightful. The initial goals were chosen by Anna, who showed a significant level of insight into the issues that may be linked to her eating.

Emotional Management – A Foundation for Change

The reason this was interesting, is that each goal set by Anna had an emotional component. For example, moving away from tracking calories could create some anxiety around a loss of perceived control. Binge eating is often seen as an escape or a way of coping with difficult emotions, and that link is strong in the literature (Heatherton & Baumeister, 1991). The relationship between emotions and eating was at the forefront of many sessions and we worked on being able to identify and manage emotions as they arose. This meant that Anna could apply this to a number of situations which were perpetuating the issue – work difficulties, loneliness, family relationship issues, feelings of guilt or shame around food and feelings related to Anna's self-critic. What I learned is that this was a core piece of the work for Anna, regardless of where the focus was, and far-reaching behaviour changes occurred as a result.

Formulation is flexible

The initial formulation was done after session one, but I think I learned that it's important not to plan too far ahead and remember formulations are flexible. An example being in session #6 we identified loneliness as an issue. This was not part of the initial formulation, and it was important to then consider this as part of my approach moving forward. Prior to this insight, I hadn't considered loneliness, however Anna lived by herself

and when asking her more about loneliness, she mentioned that sometimes she would go multiple days without seeing or speaking to anyone. This is possibly something to consider more during COVID-19 restrictions.

No formal assessments

The way I measured success was initially through Anna's self-monitoring diary, and then through Anna's feedback. I do regret not formally assessing Quality of Life but judging from Anna's own reflections in her final session, she feels in a lot better a place than she did when she started. In future I would like to measure something similar to quality of life. I think there are limits to measuring changes in behaviour, as sometimes the behaviour of a client might be okay, but how they feel about the behaviour isn't, and a behaviour change measure may not reflect that.

First client

This was my first binge eating client. At the beginning I felt like I didn't know what I was doing. I felt I had the theoretical knowledge but hadn't practiced much in person. I was seeking constant reassurances from peers and colleagues before the first session, but as the sessions continued, I found myself more comfortable. At the time of writing this I have almost 100 hours of sessions completed. I do not need the constant reassurance, and I bring up any concerns during supervision. Judging from peer and supervisor feedback, I was approaching things relatively well. At the beginning I felt the need to have a notebook of questions, but some advice I'd received from a colleague that I found helpful was that it is up to the client to bring their requirements to the sessions, and the responsibility is on the client to use their time how they'd like.

Professional Boundaries and Ethics

No ethical issues arose from working with this client. I adhered to the HCPC and BPS codes of conduct in my approach. I am fortunate that my team are clinical and counselling psychologists, who have taught me appropriate boundaries in this field. I also feel my experience as an Assistant Psychologist working in a clinical field was helpful in shaping my strong boundaries. The experience taught me about professional boundaries, confidentiality and self-disclosure. It helped me feel confident that if any issues came up related to this, I would be aware of how to manage those issues.

Summary

This intervention was 12-sessions long and focussed on addressing binge eating behaviour. This was achieved predominantly by improving psychological capability to change. The client succeeded in attaining her primary objectives, based on her feedback and reflections throughout. I think moving forward, Anna has many of the skills to address her emotions which may prevent binging in the future. I think the area she may struggle with is how she feels about herself and her body image, which was an area of work we did not address deeply. The potentially for dissatisfaction with her body image might lead to restrictive dieting which promotes binge eating. However, we did some work on challenging those beliefs.

Anna was very engaged and willing throughout the process. I am aware not all clients will be as willing and as compliant. Anna had many protective factors that allowed her to change, and not all clients will have those supports. In terms of furthering my experience in the behaviour change competency, I would like to work with a more diverse client group including older and younger individuals, men and women. I have worked with a range of women, and very few men. I would also like to see a more diverse population within eating behaviour, but also including other health behaviours (sleep, smoking, exercise). Although it was a challenging endeavour, it taught me that I am capable of delivering these types of interventions and showed me that I have a lot to work on going forward. I would like to draw more from specific theoretical models and possible learn more in depth about EFT (Emotion-Focussed Therapy). Although I would consider myself integrative, I would like to have more theoretical knowledge of a specific approach. In order to facilitate this learning, I have engaged with a new clinical supervisor who is a Counselling Psychologist who can support this.

References

Brooks, S., Rask-Andersen, M., Benedict, C., & Schiöth, H. (2012). A debate on current eating disorder diagnoses in light of neurobiological findings: Is it time for a spectrum model? *BMC Psychiatry*, *12*, 76. https://doi.org/10.1186/1471-244X-12-76

Carr, A., & McNulty, M. (2016). *The Handbook of Adult Clinical Psychology: An Evidence Based Practice Approach*. Routledge.

Elran-Barak, R., Sztainer, M., Goldschmidt, A. B., Crow, S. J., Peterson, C. B., Hill, L. L., Crosby, R. D., Powers, P., Mitchell, J. E., & Le Grange, D. (2015). Dietary Restriction Behaviors and Binge Eating in Anorexia Nervosa, Bulimia Nervosa and Binge Eating Disorder: Trans-diagnostic Examination of the Restraint Model. *Eating Behaviors*, *18*, 192–196. https://doi.org/10.1016/j.eatbeh.2015.05.012

Gianini, L. M., White, M. A., & Masheb, R. M. (2013). Eating pathology, emotion regulation, and emotional overeating in obese adults with binge eating disorder. *Eating Behaviors*, *14*(3), 309–313. https://doi.org/10.1016/j.eatbeh.2013.05.008

Goldfried, M. R. (2019). Obtaining consensus in psychotherapy: What holds us back? *American Psychologist*, *74*(4), 484–496. https://doi.org/10.1037/amp0000365

Greaves, C., Poltawski, L., Garside, R., & Briscoe, S. (2017). Understanding the challenge of weight loss maintenance: A systematic review and synthesis of qualitative research on weight loss maintenance. *Health Psychology Review*, *11*(2), 145–163. https://doi.org/10.1080/17437199.2017.1299583

Heatherton, T. F., & Baumeister, R. F. (1991). Binge eating as escape from self-awareness. *Psychological Bulletin*, *110*(1), 86–108. https://doi.org/10.1037/0033-2909.110.1.86

Lawlor, E. R., Islam, N., Bates, S., Griffin, S. J., Hill, A. J., Hughes, C. A., Sharp, S. J., & Ahern, A. L. (2020). Third-wave cognitive behaviour therapies for weight management: A systematic review and network meta-analysis. *Obesity Reviews*, *21*(7), e13013. https://doi.org/10.1111/obr.13013

Lewer, M., Bauer, A., Hartmann, A. S., & Vocks, S. (2017). Different Facets of Body Image Disturbance in Binge Eating Disorder: A Review. *Nutrients*, *9*(12), 1294. https://doi.org/10.3390/nu9121294

Michie, S., van Stralen, M. M., & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science*, *6*(1), 42. https://doi.org/10.1186/1748-5908-6-42

Persons, J. B. (1989). *Cognitive therapy in practice: A case formulation approach* (pp. xviii, 227). W W Norton & Co.

Stice, E. (2002). Risk and maintenance factors for eating pathology: A meta-analytic review. *Psychological Bulletin*, *128*(5), 825–848. https://doi.org/10.1037/0033-2909.128.5.825

Timulak, L., & Pascual-Leone, A. (2015). New Developments for Case Conceptualization in Emotion-Focused Therapy. *Clinical Psychology & Psychotherapy*, *22*(6), 619–636. https://doi.org/10.1002/cpp.1922

Appendices

Appendix A

The Self-Monitoring Diary

Below is an outline of what to monitor in your diary. It is an alternative way of monitoring your eating behaviour without calorie tracking or weighing food. The idea is to help you and your practitioner to recognise the patterns of behaviour as well as understand some of the associated thoughts and feelings before and afterwards.

Instructions

Please fill in each section at every meal. Use a new form for each day. Reflect on how you felt before eating, and afterwards. Be as detailed as you feel is necessary. The more detail, the better your practitioner can understand and support you. Try and write in the moment, but if you forget it's okay to think back on what you ate earlier that day or yesterday. Some people find it helpful to set a reminder on their phones to fill out their diary. You don't have to fill it out on the word doc, you can use your phone or other alternatives if it's more useful, once you make sure to cover each section!

Day and Time	Place	Food	Did it feel excessive? Yes/No	Hunger Level (0-10)	My reflections (thoughts and feelings before and after)

Sample Table

Day and Time	Place	Food	Did it feel excessive? Yes/No	Hunger Level (0-10)	My reflections (thoughts and feelings before and after)
Monday 9am	Kitchen at home	Coffee and Porridge	no	4	Wasn't too hungry. Was in a rush so didn't get to make lunch. Feeling well rested and optimistic about the day.
12pm	Work	Fruit Salad	no	6	Bought a fruit salad at the canteen as I thought it would be a healthy option. Feel happy I didn't eat anything bad.
2pm	Work	Chocolate bar	no	6	Felt a little hungry. Felt like I deserved a treat after eating such a healthy lunch.
7pm	Restaurant	3 course meal. Wings, Lasagne and Cake	yes	10	Have been saving myself for dinner out with family. Struggled to stop eating even though I felt full after the main course. Now I feel a bit sick, and hate that I ate that much.

9.30pm	Living room at home	One packet of biscuits	yes	5	Decided I'll start eating well again tomorrow, so finished off the last of the bad foods in the house. Tomorrow I'll go for a run.

Sample Table

BCI 2

Introduction

This case study is a reflection on a Behaviour Change Intervention (BCI) delivered to Health Care Professionals (HCPs) working in a client-facing role. The intervention involved training HCPs to consider and utilise psychological approaches in their practice. The training was 6 hours long across two days. The intervention was delivered on Zoom and the majority of participants were from a nutrition, exercise or dietetics background. The goal of the intervention was to change how HCPs work with their clients and to utilise psychology in a health context. This case study will outline the assessment, formulation, intervention, and evaluation of the process of changing how HCPs understand behaviour and intervene differently in their practice after taking part in the training. The experience of developing and delivering the intervention is documented in my Teaching and Training Case Study.

At the time of writing, I have delivered this intervention to four groups of HCPs with a total of 82 participants across the four cohorts. This case study will be evaluating the collective change, rather than focussing on a single cohort. The overarching goal of this intervention was to change how HCPs worked with their clients. This was achieved through achieving three sub-goals outlined in the case study.

Assessing the participant's needs

According to the Association for Nutrition's (AfN) Programme Accreditation Document (2019) there is no requirement for the inclusion of psychology when accrediting a nutrition education programme, despite the evidence suggesting that psychological factors predict long term nutrition-focussed behaviour change (Greaves et al., 2017; Spreckley et al., 2021). There is also evidence to suggest that the vast majority of the time, nutrition related behaviour change interventions are unsuccessful in the longer term (Langeveld & de Vries, 2013; Montesi et al., 2016). When considering why these interventions are unsuccessful and comparing them to what successful change entails, there is a common theme amongst those who maintain changes in the long-term – psychological factors.

Greaves' and colleagues (2017), noticeably who are psychologists, have identified some of the long-term predictors of behaviour change including meeting psychological needs in new ways, challenging beliefs and self-concept, finding or renewing motivation, managing external influences, developing automaticity, and self-regulation.

The argument can be made that *all* of these factors are related to psychology in some capacity. What this tells us is that psychology is important to consider when delivering behaviour change interventions, regardless of the diagnosis/presentation of the person. Psychological factors predict behaviour change, therefore those who deliver behaviour change interventions should have significant training in the psychology underpinning behaviour change. However, judging from the prior needs assessment and the feedback from the training, HCPs feel they do not have all of the appropriate skills to manage these challenges.

Needs assessment

In order to manage the needs of the group of health professionals, I conducted a needs assessment. I considered what the group perceived their needs were by using an online questionnaire to investigate what HCPs wanted to learn from taking part in the intervention. What participants seemed to want from the intervention was:

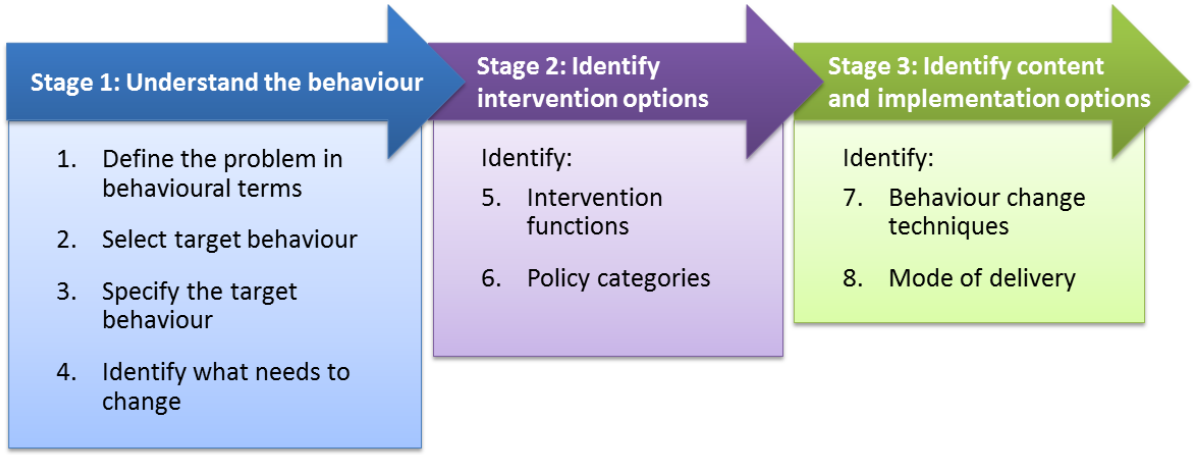
- An understanding of emotions and psychological issues in health
- Supporting clients with emotional difficulties
- Behaviour change techniques in practice
- Understanding scope of practice
- Designing interventions to support change

The needs identified by the HCPs overlapped with my own ideas of what HCPs might need, and this is reflected in what Greaves (2017) also published. This shows that the cohorts I worked with have insight into some of their knowledge gaps.

Intervention Objectives

This section delves into the structure and the rationale behind the BCI. Each objective is outlined below, and is explained using examples and theory. This section uses the Behaviour Change Wheel (Michie, Atkins & West, 2014) as the framework for designing the BCI. This framework suggests that in order to deliver an effective intervention, we must i) understand the behaviour, ii) identify intervention functions and iii) identify implementation options (see Figure 6).

Figure 6 – Stages of designing a BCI



However, there may be problems for HCPs in implementing these steps, as psychology is part of each of these three stages. It could be possible that the training HCPs receive, may not be enough to adequately apply this framework. In fact, some HCPs reported that they felt like they did not have all the tools they needed from their basic training. For example, two pieces of feedback that were received included “Something was missing from my tool box” and “it has become more clear that it is imperative for us to have a good understanding of the psychology of behaviour in order to help facilitate behaviour change in patients.”

Based on this information, my BCI had three main objectives, in line with Michie's recommendations.

1. Support HCPs in understanding the psychological barriers to behaviour change in their clients (Stage 1)
2. Provide HCPs with skills to identify psychological barriers to change and what to target in an intervention (Stage 2)
3. Implement this knowledge into practice using practical skills and techniques and working on case studies. (Stage 3)

Delivery of the Behaviour Change Intervention and Behaviour Change Techniques (BCTs)

In order to meet these objectives, an evidence-based intervention was delivered to HCPs using Behaviour Change Techniques (BCTs) from Michie's (2013) behaviour change taxonomy. The intervention was delivered in the form of group training, over the course of 2 days. Participants attended on Zoom, and the course was delivered in an interactive fashion, where case studies, activities, Q&A sessions, and a presentation were delivered to achieve the objectives and train the participants. As part of the implementation of this intervention, I used multiple BCTs in supporting the HCPs to change their behaviour, for which I provide examples of these techniques below.

Discrepancy between current behaviour and goal

To demonstrate the lack of understanding related to psychological expressions of behaviour and to outline the difficulty in gauging psychological barriers to change, participants were presented with the following case study.

Participants were asked "Which case, if any, is more likely to benefit from a psychological intervention? Person A, Person B or if you are unsure, please say so. There is only one correct answer"

Client A is a 38-year-old woman. She shows highly restrictive behaviour around food and cuts out whole food groups. Client 1 binges during the evening on some weekdays, and regularly at the weekend. She has been in this cycle for 10 years.

Client B is a 28-year-old man. He never eats anything with high sugar content. He feels his binging behaviour at weekends is stopping him getting to his health goals. He has experienced this for 1 year.

The correct answer here is that we are unsure, because the underlying expression of binge eating behaviour in these contexts could be physiological or psychological. The majority of the participants answer Client A in this example, and this shows the bias towards Client A and the failure to recognise the potential for underlying psychological factors in Client B. It often shows the discrepancy between how some people might understand eating behaviour and how a Psychologist might understand the same behaviour, leading the participants to see a deficit in their understanding of behaviour.

Instruction on how to perform the behaviour

One of the main focusses of the training was to help HCPs support their clients in different ways including supporting with emotional regulation while working within their scope of practice. One way of doing this was through utilising some psychotherapeutic self-care activities and how to implement them in a non-clinical health context. For example, one of the exercises used included expressive writing where HCPs were directed about how to use expressive writing in line with Baikie & Wilhelm's (2005) recommendations (Appendix A)

As per Greaves and colleagues (2017) renewing motivation is important when making behaviour change, and intrinsic or value-congruent behaviour is more likely to support long term change. In fact, promoting someone aligning behaviours with their values have often been considered a core part of health interventions (Ryan et al., 2008). For this reason, participants were instructed on how to use a value card exercise in a health context (See appendix B).

Demonstration of Behaviour

In order to facilitate learning, I utilised sample dialogues of how a mental health professional might speak to a client about an issue related to behaviour change. Appendix C is an example of a dialogue used in the sessions.

The HCPs are learning key psychotherapy skills using this dialogue and how to implement them in a health context. According to Goldfried (2019), the therapeutic alliance is a key components of the change process in psychotherapy. When a significant percentage of people seeking nutritional behaviour change interventions may struggle with disordered eating or emotional difficulties (Leehr et al., 2015), it is important to have these core skills. This dialogue gives multiple examples of validation, empathy and understanding which are all considered core parts of the therapeutic alliance. It's also an example of promoting expectations that HCPs can help, a core component of psychotherapy (Goldfried, 2019). These dialogues were useful in demonstrating how the principles of psychotherapy can be used in a health context.

Behavioural Practice

In order to allow the HCPs to practice some of the skills they had learned, we used case studies and discussions to facilitate this learning, with the help of the Five P's of Formulation (Carr & McNulty, 2016). Client's were given multiple case studies and based on the models and theories in the training, participants were asked to create a formulation.

An example of a case study is mentioned below:

Gemma is 24 and wants to change her weight. She says that she is being treated differently at work and finds it hard to be motivated in that environment. She has always struggled with her weight from a young age and has never really been able to make significant changes to her health behaviours. She lives at home with her parents which is a significant commute to work on the bus.

Gemma says her whole family struggle with weight, and that she thinks it's genetic. Gemma wants to get help now because she is sick of being treated differently and wants to finally change something or figure out what's wrong with her. She says that her life is otherwise really good, and she should be happy – she has a job where she gets paid well and she doesn't pay rent at home, so she's confused as to why this is impacting her so much.

Previously she's tried home workouts, online programmes and slimming world, none of which have had a lasting impact.

HCPs were asked to outline the predisposing, precipitating, presenting, perpetuating and protective factors associated with the case study, as well as discussing what they can and cannot do within their scope of practice. This was an opportunity for participants to cement their learning from the training into real-life practice, and how they might formulate and design an intervention for the individual, with feedback and reflection from me.

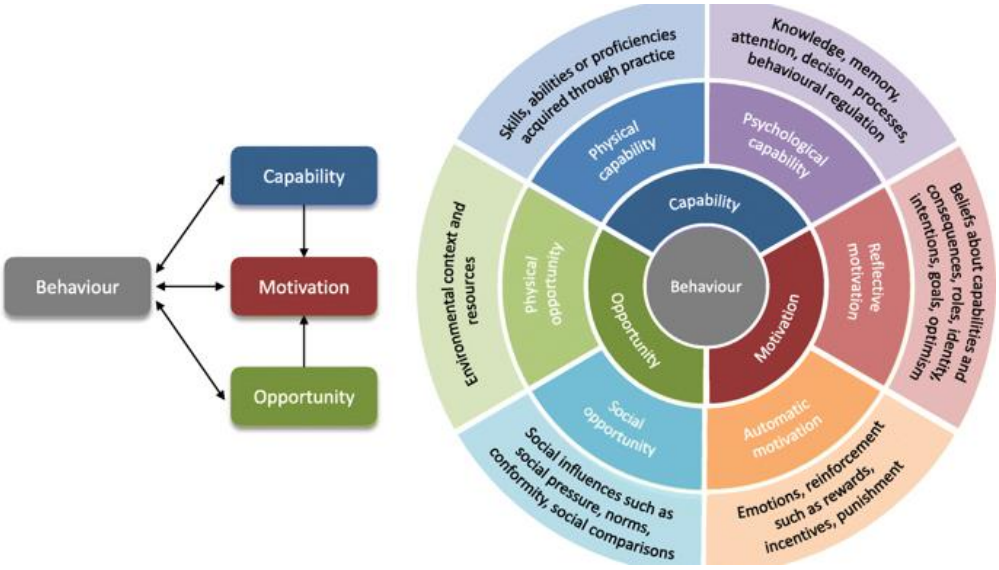
Intervention Outline and Achieving the Objectives

This section covers how the objectives of the intervention were met, in line with Michie and colleagues recommendations (2014).

Objective 1 – Supporting HCPs in understanding the psychological barriers to change

This objective was met through the teaching of the COM-B model of behaviour change (Michie et al., 2014). The participants were taught about how aspects of psychology can prevent behaviour change. For example, how psychological capability, motivation, emotional regulation, and the social environment can all impact on our ability to change behaviour. Real life case studies were used to demonstrate these factors, as well as my own reflections on the COM-B model and how it might work in understanding behaviour.

Figure 7 - COM-B Model



Objective 2 – How to identify the psychological barriers to behaviour change

This objective was met by supporting HCPs to formulate appropriately using the 5 P's and recognise psychological barriers such as limiting beliefs, black and white thinking or psychological distress. This was consolidated using the case studies (Appendix D).

Objective 3 – Implementing Knowledge in practice using practical skills and techniques

The case studies were an opportunity to cumulate the knowledge from the training and implement the skills in a practice setting, with the opportunity to receive feedback from myself and from peers. Participants were also given the opportunity to practice the activities during the training and would also receive feedback on the activities.

Evaluation & Feedback

In order to evaluate the success of the BCI, I sent out a follow-up questionnaire to assess how participants practice differently after the training. Participants were asked "How has your approach changed after completing the training?". The feedback suggested that different HCPs took different things from the sessions.

Every HCP who completed the follow-up evaluation indicated that they would be changing how they practice in some way, based on the training. The below are some quotes taken from the 52 evaluations that were completed.

"I will definitely validate my clients more in their experiences and feelings. Reflect back more and address the "why". I will be more mindful of my own biases, "expert behaviour" (should-phrases), and the scope of my work. I will also focus even more on a long-term approach that implements health behaviours starting from a person's values. In doing so, I will also prepare my clients for lapses"

"I'm going to attempt the 5'P's with each new client I work with. I'll also be digging a bit deeper in consultation calls to figure this out. I'm also going to try and come away from

progress pictures as a way to sell my service and talk about when I helped people change their behaviours instead. I will also try the theory A theory B method with clients who are struggling with mental barriers to behaviour change."

"Make sure I validate people's feelings, make sure I understand the underlying "why" more - use the 5 Ps in my screening form/screening conversation, use exercises like Theory A/Theory B or ABC exercises with them to help challenge/reframe their assumptions and beliefs"

Reflections

Out of the 82 participants who took part in the intervention, 52 returned the post-training evaluation and it is very evident that HCPs are intending on implementing the skills and knowledge from their training into their practice. The most common techniques that people found helpful were the practical exercises such as expressive writing, 5 P's, value cards and Theory A/B. In addition, understanding the psychological factors that become barriers to change (emotional regulation, past experiences, habits, learned behaviours) were important to participants. Participants regularly mentioned that they would formulate differently in terms of getting a more holistic understanding of the client before designing an intervention.

I also believe that this training may change behaviours in HCPs. However, my concern is if this is enough training to create sufficient change in the HCP's clients. I would argue that the AfN and British Dietetics Associations should consider implementing a greater focus on behavioural science and psychology in their accreditation of training programmes, both theoretically and practically.

In terms of my learning, I have learned that creating behaviour change in HCPs can be difficult. Some interactions with the participants made me think that when some HCPs have been doing things one way for a long time, they tend to display some conservatism to new information. One example that presented in the training was that some HCPs may use progress pictures as a way of measuring client progress and believe that it is motivating for clients. However, the DSM-V (American Psychiatric Association, 2013) criteria for many eating disorders includes preoccupation with body image/shape/weight, therefore this

approach might be harmful to those at risk (Shafran et al., 2004). When situations like this came up during interactive Q&A's, and there was a distinction between current practice and best practice, myself and the cohort challenged the ideas together using the Theory A and Theory B exercise for thought challenging (See appendix E). This allowed me to use the HCP's real world examples to offer alternative perspective, in a non-judgemental way.

One major limitation is that the intervention may not be enough to make changes in HCP's clients. I would theorize that more psychological skills and understanding would be necessary to help HCPs truly support their clients with behaviour change. For that reason, I believe the intervention should be longer and more comprehensive.

If it were to be a longer course, I would like to deliver it in person, and include role plays and feedback as part of the work. As mentioned, often when people are doing things for a long time, it can be hard to change. This intervention provided a lot of theoretical knowledge, it would be helpful to consolidate that knowledge with role plays and feedback on those role plays.

I would also change how I measured feedback and it would be interesting to test if changing HCP's behaviour had an impact on their patient's behaviour change. If I had capacity, I would certainly like to measure this in future.

Summary

I believe this BCI was a resounding success. All of the participants who completed the feedback form mentioned how the intervention would be helpful in practice, which has been outlined in the feedback section. In evaluating the intervention, I believe I have met my objectives by supporting HCPs in understanding the psychological barriers to change, the ability to identify psychological barriers and implementing their knowledge in practice, which was reflected by post-training evaluations. During this process, I have learned to deliver an effective BCI to a group of HCPs to improve their practice. For further learning and for new experiences, I would like to work with a smaller group of HCPs over a longer period of time. I believe that would be more helpful to HCPs in the long run and would challenge and develop my skillset.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Association for Nutrition (2019). Programme Accreditation, Outcomes Standards and Procedures. Retrieved from https://www.associationfornutrition.org/degree-accreditation/applying-for-accreditation

Baikie, K. A., & Wilhelm, K. (2005). Emotional and physical health benefits of expressive writing. *Advances in Psychiatric Treatment*, *11*(5), 338–346. https://doi.org/10.1192/apt.11.5.338

Carr, A., & McNulty, M. (2016). *The Handbook of Adult Clinical Psychology: An Evidence Based Practice Approach*. Routledge.

Goldfried, M. R. (2019). Obtaining consensus in psychotherapy: What holds us back? *American Psychologist*, *74*(4), 484–496. https://doi.org/10.1037/amp0000365

Greaves, C., Poltawski, L., Garside, R., & Briscoe, S. (2017). Understanding the challenge of weight loss maintenance: A systematic review and synthesis of qualitative research on weight loss maintenance. *Health Psychology Review*, *11*(2), 145–163. https://doi.org/10.1080/17437199.2017.1299583

Langeveld, M., & de Vries, J. H. H. (2013). The mediocre results of dieting. *Nederlands Tijdschrift Voor Geneeskunde*, *157*(29), A6017.

Leehr, E. J., Krohmer, K., Schag, K., Dresler, T., Zipfel, S., & Giel, K. E. (2015). Emotion regulation model in binge eating disorder and obesity—A systematic review. *Neuroscience & Biobehavioral Reviews*, *49*, 125–134. https://doi.org/10.1016/j.neubiorev.2014.12.008

Michie, S., Atkins, L., & West, R. (2014). The behaviour change wheel. *A guide to designing interventions. 1st ed. Great Britain: Silverback Publishing*, 1003-1010.

Michie, S., Richardson, M., Johnston, M., Abraham, C., Francis, J., Hardeman, W., Eccles, M. P., Cane, J., & Wood, C. E. (2013). The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: Building an international consensus for the reporting of behavior change interventions. *Annals of Behavioral Medicine: A Publication of the Society of Behavioral Medicine*, *46*(1), 81–95. https://doi.org/10.1007/s12160-013-9486-6

Montesi, L., El Ghoch, M., Brodosi, L., Calugi, S., Marchesini, G., & Dalle Grave, R. (2016). Long-term weight loss maintenance for obesity: A multidisciplinary approach. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy*, *9*, 37–46. https://doi.org/10.2147/DMSO.S89836

Ryan, R. M., Patrick, H., Deci, E. L., & Williams, G. C. (2008). *Facilitating health behaviour change and its maintenance: Interventions based on Self-Determination Theory*. https://acuresearchbank.acu.edu.au/item/86yww/facilitating-health-behaviour-change-and-its-maintenance-interventions-based-on-self-determination-theory

Shafran, R., Fairburn, C. G., Robinson, P., & Lask, B. (2004). Body checking and its avoidance in eating disorders. *International Journal of Eating Disorders*, *35*(1), 93–101. https://doi.org/10.1002/eat.10228

Spreckley, M., Seidell, J., & Halberstadt, J. (2021). Perspectives into the experience of successful, substantial long-term weight-loss maintenance: A systematic review. *International Journal of Qualitative Studies on Health and Well-Being*, *16*(1), 1862481. https://doi.org/10.1080/17482631.2020.1862481

Appendices

Appendix A – Expressive Writing Exercise

This exercise was shown to HCPs in order to give them an idea of how their own clients might manage emotions or stress.

Instructions

- Write for 15 minutes on a difficult experience or feeling.

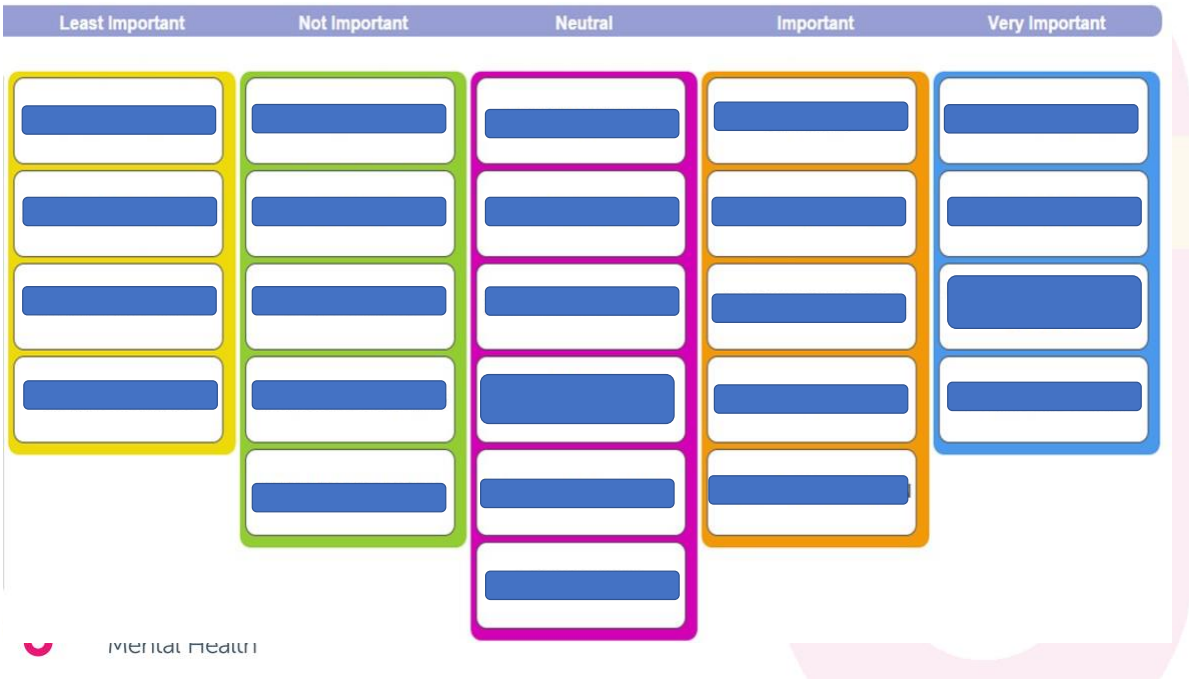
- Be honest, this is not intended to be read by anyone.
- Make sure you're in a private and comfortable space, with no distractions. Put your phone/tv/laptop away.
- The only rule is once you start writing, don't stop until you're finished
- If it becomes distressing, stop.

There are a few more subtle and less formal ways of getting people to write about how they feel.

Spectrum Mental Health

Appendix B – Value Cards Exercise

This exercise participants were instructed how to identify and categorise values, and some examples were given of how to align health behaviours with personal values. This was on the basis that they may use this in practice with clients. The purpose of the below is to use the categories to outline what you value in life. The group then attempted to align values with health behaviours. For example, if you value connection, how can a client integrate connection with a health behaviour? If you value autonomy, how can a client meet the need to be autonomous and also include that as part of the intervention?



Appendix C – Sample Dialogue used in training

SAMPLE DIALOGUE

Client - I want to lose 5kg

Practitioner - Okay, and what makes you want to make those changes?

I hate the way I look and feel. I want to make a serious change.

Great, well done on taking a step towards that by coming in. It sounds like you want a long term lifestyle change rather than a quick fix?

Yes, absolutely. I've tried everything before and nothing has worked.

What have tried before?

I've tried calorie counting, tracking macros, weighing every day, portion control, personal training, reading.

That's so frustrating that approach didn't work out for you. We can certainly look at some ways for you to make long term changes without focusing on those things that didn't work.

Oh, no cutting carbs/calorie tracking/slimming world did work for me, it's just I couldn't stick to it. I want to be able to stick to it.

It sounds like it might have worked in the short term. Do you think that it would work long term, tracking things like weights of food, or never eating a carbohydrate again?

No, but I want to do it until I reach my goal weight.

Okay, and what might happen once you stop? Would you be in the same place as you are now? I would just be concerned for you that maybe the same thing would happen again if we took the same approach that didn't work last time. Rather than trying to stick to unrealistic short term goals, we like to work towards long term changes and you can implement into your lifestyle. How would you feel about the more long term approach?

Yeah but I know the other stuff works, I just can't stick to it. I want to use that for the short term?

And I understand why that sounds really appealing – with that approach you can see those changes in that short term, and that can feel really good. From my experience, and working with clients similar to you, there are other ways to achieve that feeling, and I'm sure you'd feel happier having an approach you can use for life, that doesn't bring up those difficulties that come with that strict approach. Would you like to give it a go? I think it would be a great fit for you but of course this is a decision for you.

I'm not sure…

Well what was life like when you were dieting hard previously?

It was hard, I felt deprived, I felt bad when I broke it…….. etc

You see, I would hate those feelings or that experience to continue for you. I think there might be a way we can make those changes, without focussing on the things that create those difficulties. From what you're saying it sounds like you didn't enjoy the difficulties that came with the old way. Would that be right?

I guess so…

Okay, so I think if we gave this new approach a shot, in a few weeks we can re-evaluate and see what's working and what isn't working for you. We can certainly look towards setting some goals with you. Is that something you could get onboard with?

Yea sure, why not.

Appendix D – Sample Formulation and Case Study

Case Study

Gemma is 24 and wants to change her weight. She says that she is being treated differently at work, and finds it hard to be motivated in that environment. She has always struggled with her weight from a young age and has never really been able to make significant changes to her health behaviours. She lives at home with her parents which is a significant commute to work on the bus. She really feels like this is not the life she wanted for herself.

Gemma says her whole family struggle with weight, and that she thinks it's genetic. Gemma wants to get help now because she is sick of being treated differently, and wants to finally change something or figure out what's wrong with her. She says that her life is good on paper and she should be happy – she has a job where she gets paid well and she doesn't pay rent at home, so she's confused as to why this is impacting her so much.

Previously she's tried home workouts, online programmes and slimming world, none of which have had a lasting impact.

Sample formulation using the 5 P's (Participants are allowed to complete their own before a group reflection)

How can we help? What factors do we know about and what do we need to know more about?

Predisposing – Potentially a genetic component, maybe environmental components.

Precipitating – Sounds like something is happening at work where she isn't happy. This has triggered her to get support.

Presenting – We don't really know from this what the actual health behaviour looks like. How many of you presumed that Gemma is a bigger woman? She might turn up in front of you and be a normal healthy weight as classified by BMI, in which case she might need more psychological support rather than a weight loss intervention. So we don't know exactly what is going on here really in terms of the problem – we'd need to dive into that a bit more.

Perpetuating – She thinks it's genetic, maybe she might not be open to the possibility that there are still ways she has autonomy or control. She thinks that she shouldn't feel this way, so she's invalidating her own feelings, which you as healthcare practitioners can then validate. Let them know it's ok to feel whatever they're feeling. Her family sound like they might be also having difficulty, and that maybe that environment is difficult to be in. Maybe managing external factors here might be important.

Protective factors – financial support, she's willing to try, she wants to make changes.

Appendix E – Thought Challenging Exercise

This is an example of the theory A and theory B exercise in practice. The HCP can challenge their own beliefs (like in the example below) or use the table to support a client with challenging their own thought or beliefs related to health behaviour.

Theory A	Theory B
The problem is…. My client is lacking willpower and motivation and is possibly lying to me about what they're doing.	**I worry that the problem might be**…. The client doesn't trust me. Doesn't feel safe with me. And I'm not providing them with the right tools.
The evidence I have for the problem is…. They haven't made any changes even though they tell me they're following the advice.	**The evidence I have for the problem is….** They are not changing, and I feel like they are holding back from being honest with me. The things I have tried haven't worked for the client.
What will life look like if Theory A is true? Nothing will change for the client because they can't be honest with me about what they're doing. I've done what I can.	**What will life look like if Theory B is true?** I can make adjustments to my approach, build a relationship with them or refer to another more suitable person.

Teaching & Training Diary

Summary

This training diary is a document I have kept in order to display meeting the Teaching and Training competency for the Professional Doctorate in Health Psychology. In order to meet the competency, I must display I have designed, planned, delivered and evaluated training programmes related to health psychology. I should include the training of at least two groups of participants (including one group of health professionals), as well as the inclusion of training materials and feedback.

This diary is structured in a way that is divided into three sections. Section one covers the "Health Psychology in Practice" training course for health professionals. Section two covers the "Digital First Responders" training for employed adults. Section three includes ad hoc seminars and the "Mood & Food" course, of which are some once off seminars that include a range of topics and audiences.

Section 1 - Health Psychology in Practice

29.02.20

Today I attended a nutrition conference with all nutrition professionals. Given the conversations I had previously with an internal provider of dietetics services (which went poorly), I was surprised to see quite a different view from these nutrition professionals. All of the people I spoke to seemed to have a more open view towards incorporating a health psychologist into practice, but agreed that the business case is tough. I learned a lot about nutrition and research methodology, much of which are transferrable skills to the methodology in psychology research. In addition, I have met some health professionals who recognise the importance of psychology in nutrition.

What I learned: Many nutrition and health professionals are aware of the link between nutrition and psychology, however have disclosed to me that there are deficits in their knowledge base and training. I also confirmed my pre-existing belief that my skillset is important in that field. This gave me the push I needed to consider doing a health professionals course.

04.02.20

I created a rough outline of what the teaching and training might involve for health professionals. This took a lot of background research as to what current courses are available, price points, and doing a needs assessment. Again, the business case is paramount as I'm working in a private clinic, and everything else comes after. There is no real purpose in designing anything if there is no business case for it. This might be different if I was in a service where I could offer free training or groups.

What I learned: Doing market research, conducting a needs assessment based on individual interactions with HCPs and based on research. I also looked at the AfN and BDA curriculums to see what training dietitians and nutritionists receive when they do their training. I looked at feasibility and pricing and if there was a business case for the course.

05.05.20

Finding Participants

I used my social media channel of 12,000 people in order to find participants for the course. Almost 200 email addresses were collected. I sent out emails with the details of the course. I capped the course at 20 participants, which sold out within only a few days. The interesting reflection here was that I thought people would be more interested in 1-1 work rather than group, so I primarily proposed that idea. However, when people responded to the email, they were much more interested in the group sessions. For this reason I focussed more on promoting that, and realised that when looking for training, 1-1 work isn't what appeals to that group.

What I learned: The market for the course was there. I presumed people would enjoy 1-1 work, however this assumption was wrong. Maybe this was based on the fact that psychologists do 1-1 supervision and I've found it incredibly helpful, however this might not be the norm. However, the 200 email addresses showed that this was something valuable.

06.05.20

After this expression of interest and some of the initial feedback, I realised that people wanted group work. From this point forward, I got working on the content in more detail. Up until this point, I had decided the elements of the course outline but I had not designed the content. Part of the email that was initially sent to participants, included the five topics across three sessions –

Session 1: Using Health Psychology and Behaviour Change in a Health Context
Session 2: CBT and Psychotherapy Approaches to Health
Session 3: Understanding Motivation, Formulation and Maintaining Behaviour Change.

I used these titles as the foundation for developing further content.
What I learned: Market research is vital in order to develop a training product that is valuable to the participants.

11.05.20

The plan from today for the next few weeks was to create a word document in order to elaborate over the ideas. I wrote extensively under each heading all of the ideas I was considering. Initially it was a word document that was simply scattered ideas, but over time it became something more formulated. I cut out the least useful content, and once I was left with what I thought was enough, I ordered it so the learning would be scaffolded. I feel this is an important part of the learning for any individual. It's like reading the last chapter before reading the first. This reflection is dated on a single day, but this process took many weeks.

What I learned: Planning and development of the content. Collaboration with other psychologists to ensure the content was of good quality. Organising and prioritising which content was the most valuable. Considering the structure of the content.

29.05.20

Once the content was created in a word doc, I made a slide deck with all of the images and slides I wanted. I created this on blank power point slides and sent it to my design team who then branded the content into something visually appealing. I'm aware I am lucky to have a design team, as I would have struggled to create it myself. In addition, it would have taken me a lot more time. This is something I must be aware of when considering working privately or working in other organisations. At this point, the content and slide deck had been completed.

What I learned: Content creation and power point design. Delegation. Content creation would take an incredibly long time if I was an independent practitioner.

1.06.20

I spent the last week before the course creating my notes for the session. It was the first time I had formulated an idea, created the content, gathered participants and delivered a course all of my own making. I had previous experiences of delivering other people's content (which I have shared in other reflections), but I was nervous about this. I made the notes as a safety

net in case I forgot what to say or in case I missed something. This is something I'd love to move away from in the future – to feel competent enough to speak without notes or without prompts.

What I learned: Planning and preparing for delivery. Dealing with anxiety relating to the delivery especially related to training health professionals. Also preparing for an audience I have not trained before.

11.06.20

Once I had the final numbers, I collected payments over the phone. This was an incredibly tedious process and took up a considerable amount of time over the course of this week. As this was a pilot to check if this course was feasible financially and to gauge interest, I hadn't yet asked our admin team to set up online payment. This would have been a significant piece of work. Moving forward, setting up this process is a must.

What I learned: There are a lot more "hidden" hours that go into the organisation of the course, not just the delivery and content production. This should be allowed for when considering the value of my time and when planning for future work.

16.06.20

I sent the participants a detailed email about what to expect from the course, and how it would be run. This included a Zoom link to the session, details about what to expect and a needs assessment form. Participants were asked to fill out the form prior to the sessions. This was in order to effectively gauge their needs and what they would like to get from the sessions. After reading their responses, I was satisfied that the content covered what they wanted. The form was 5 questions with long form answers, and it asked participants about their current psychology knowledge, their expectations for the course, what they'd like to get from the course and what psychological issues come up most in their practice. I also asked about their profession.

What I learned: Adequately preparing for a training session means conducting a needs assessment and ensuring you are meeting the participants needs in the session. It also

seemed that many people wanted to be able to better support their clients when it comes to emotional wellbeing.

04.07.20

It was the first day of delivery today and I had a booked out course (21 participants and 2 pro-bono). I was physically sick beforehand! I had gone to my office to deliver the sessions from there, and the internet didn't work, so I had to rush home and set up there. I also had to coordinate with my roommates as I had to use the common area to deliver the sessions. This caused considerably more worry as it had thrown my initial plans out the window. I felt incredibly anxious as I had never done this before, and I wanted it to go well to prove myself. The delivery went incredibly well in the end. I wrote notes that I could look at when delivering the training, that corresponded to the power point presentation. The feedback was entirely positive and the group were really engaged and willing to learn. What I learned from session one was that I had definitely prepared too much content, and I didn't have enough trust in my own abilities to know the content. In reality, I knew the content back to front, but I felt quite dependent on the notes which I kept on the side. I also forgot to incorporate the fact that there might be questions and tangents and activities to be completed. This lead me to overestimate how long the sessions would take, so going forward I knew I had to either make the sessions longer or cut some of the content. What I decided after the first session was that it would be better to make the sessions longer – that way the clients would feel like they are getting more benefit from them. Overall, I was truly delighted with how the delivery went and I learned that I am capable of delivering these types of training.

What I learned: I proved myself wrong in terms of my ability to deliver the training. I was anxious beforehand as this was a significant unknown, but I was able to manage any questions that came up and the feedback was overwhelmingly positive! I think the notes were a safety for if anything went wrong.

11.07.20

Quite the opposite to week one, I felt quite confident going in to week two. However this was short lived. Once I started the training, one of my participants couldn't gain access to the session. I hadn't asked people to log on early, and I got quite flustered in the session not know what to do. I tried to help that person on the side but this disrupted the delivery of the session. In the end I had to briefly tell the person that it was a problem on their end, and to try and use another device or another Zoom log in, and then I had to continue with the session. What I learned was that I can't give tech support during sessions and from today onwards I should ask participants to log in early in order to make sure they can access the sessions. This gives me a window of opportunity to troubleshoot with people prior to the session. The participant ended up accessing the session, but approximately 20 minutes late.

Another major difficulty during this session was my internet. I had moved to a new place only 3 days previously, and I had recently installed the internet. Twice during the session my internet dropped and I was disconnected from the call. This was what I thought would be my worst nightmare, but in reality I dealt with it quite well. After I was disconnected for the second time, I immediately started an internet hotspot on my phone and connected my laptop to it. This worked for the remainder of the session and I apologized and continued as normal. I ran the session a few minutes over time to make up for the disruptions on my end.

I proved to myself that I was able to respond to adversity, even though one of the most difficult disruptions came up. It didn't seem to impact the post-course feedback.

What I learned: I could deal with adversity when things went wrong. I could troubleshoot in the moment. I learned that I could mitigate some of these risks beforehand.

18.07.20

This was the last day of delivery. After the difficulties of last week, I felt nervous again in my stomach and felt physically sick. I had agreed to make the last session longer as I had too much content to get through. This was well received by the participants as they wanted more time. It went as well as I hoped with no disruptions and the comments at the end of the session were very complimentary. I also emailed the participants after the session with a summary PDF which I worked on after I had finished the course (I had forgotten to put this

together beforehand). When sending that link, I also sent the online feedback form. It was interesting to me that 13 participants filled out the feedback form which included very positive reviews, however 100% of the participants had completed the pre-course questionnaire. I wonder how many people don't fill out the form as they have something negative to say. I also wonder is there a better way to ensure they complete the feedback (for example, they get the PDF document only if they complete the feedback).

What I learned: Public speaking skills. Online engagement skills. I created too much content but it was valuable to the participants, therefore it was more beneficial to make the session longer than to cut content out. This is common in first attempts, I made too much content rather than too little. I was okay with that as again, it was safer. However, moving forward, I feel more competent and wouldn't feel the need to rely on the notes. I wonder how I could get more people to review the course – maybe offer an incentive, however 13 participants is not a bad number.

Further resources

The following are some excerpts from the feedback forms I collected.

"I liked the fact I didn't leave this course thinking 'now what' as you explained the theory behind psychological models as well as practical implementations to utilise with clients. Many similar courses are flawed in that they only teach the theory and not how to use this theory in practice, so this was a refreshing aspect of this course. I liked the interactive Q&A section as I'm sure many practitioners come across similar issues and so hearing answers to other people's questions proved beneficial too. The case studies were a fantastic way to consolidate knowledge gained and apply it to real world situations. The case studies varied allowing people from different professionals to all benefit."

"Joe's Health Psychology training fills a huge gap between knowledge and implementation when it comes to helping clients adopt healthier behaviours. The importance of psychology cannot be understated, especially in the context of behaviour change. Joe's training gave a great insight into different models of behaviour and all of the potential influencing factors.

Having the theoretical understanding is great but the training was very practical too. We were provided with a range of tools that we can use in our practices and I am confident that it will make a great difference in helping our clients. The sessions were very interactive and we had many opportunities to ask questions which really helped to deepen our understanding of the content and how it applies to real life. I will definitely recommend Joe's training to others - I really think this knowledge should be mandatory and can make a huge difference in the health & fitness industry."

"The course was fantastic ! Not long enough. Joe made it so interactive - allowing questions to be asked throughout the course and answering them in depth each time. We are all in similar professions, so all questions and answers made a sense to everyone in their own way. The content was just enough for me as an S&C coach to get an understanding of how different methods or approaches can be used - but not too much content that I was getting lost in the detail. I was able to follow each week & interact and ask questions when I needed to. The small details I picked up on the course will stand to me and my clients in a huge way in the future."

"This changes everything. My line of thinking has shifted and the course validated a lot of my concerns with how dietary issues are approached and now I have the practical skills to support the changes I would like to see. The information learned gives me a lot more confidence to break down and explain to clients the benefits of approaching their concerns on a much deeper level, such as through addressing their values, collaboratively exploring the "why" behind their issues and lifting the guilt they may feel from carrying out "disordered behaviour" to cope with these issues, and therefore helping them feel validated. It will definitely help build a stronger relationship with clients. The "mental health scale" was illustrated perfectly and will be referred to when clients show signs of being in the orange/red side. In these cases I would offer clients the option of seeking further support by working with a mental health professional and make sure I break down as many barriers possible for clients so getting this kind of support is a lot easier."

Summary: This was a brand new challenge for me. From start to finish, I have developed so many skills. I have identified a gap in the market, I have formulated ideas, conducted market research about the target audience, successfully pitched the idea to management, created the content, delivered the training and gotten overwhelmingly positive feedback. This was something I have never done before, and it challenged me endlessly, however the final delivery was positive. It has also lead me to continue to run this course since, and I have sold it out 6 times in total. Although I have gained many practical skills in this, I have also gained a lot of confidence and mental skills to manage when I think of myself in a negative light. It has challenged my technical and academic abilities but it has also tested my psychological resilience and boundaries, all of which have improved since designing this training.

End of Section One.

Section 2 - First Responders Training

24.01.20

Working on developing training for Spectrum, based around the online delivery of mental health training for “first responders”, similar to mental health first aid. Part of this work is considering the audience (lay person) and how to deliver the training in an interactive way, as it is two days when it is delivered in person. Another part is the logistics of organising clinicians time, planning appropriately and leading a team to deliver this project, a key professional skill. The audience is corporate businesses, so I must keep that in mind when designing the content.

What I learned: Planning and creating content for a different audience than my usual audience. This was for working professionals who were being trained to support staff with their wellbeing. My usual training or teaching would be for individuals to help themselves, rather than a “train the trainer” approach.

25.01.20

Sent a sample structure to my manager who came back to me with comments about structure and content, but apart from minor changes, the content was sound. The next step for me is to organise the clinicians. In order to do this, I paired the clinicians with those I thought might compliment each other well. As this was a camera facing role, I had to consider who was competent in front of a camera and who would be comfortable being in front of camera. I had a team of 28 clinicians to choose from, and I went with some of the more senior and experienced psychologists who had done camera-facing work previously. I also had experience of doing camera work with some of those clinicians so I knew their skillset.

Then I had to find a common time to record the session with the clinicians. As they were all busy with private clients, this proved quite difficult. I needed 4 hours from each clinician and some of the content required a panel discussion of two clinicians at the same time. Finding an appropriate time and coordinating the content for the clinicians was arguably the hardest part of the process. Not only did I have to schedule the recordings of 4 panel talks, 4

interviews, and 4 case study examples but I also had to create guides for each clinician so they knew their own roles and responsibilities when it came to recording the content.

The skill that I learned here was project management and team management. Turning a 2-day live training programme into a digital version to be delivered online is a very big ask, and I was in charge of leading the whole project.

What I learned: Planning content, organise clinicians time, manage the project and the needs of each stakeholder including the media team, responsibility and delegation, team management.

27.01.20

Worked on continuing the development of the online first responders training for Spectrum. Today was about formulating the content to ensure nothing is left out, and tailoring it to fit the time constraints of the clinicians. In addition, I was delegating the clinicians time to different groups and topics, to ensure they are playing to their strengths. I also created a full guide that was 29 pages and over 7000 words long. I sent this to each clinician so if they had any questions regarding their role or responsibility, they could refer to the document.

What I learned: Developing a content guide so when the actual recording of the content took place, everyone knew their role. Although this was a big piece of work for me, it saved any confusion for the clinicians.

21.02.20 – 17.03.20

The clinicians responded to me and we agreed to set aside 2 full days on the 20th and 23rd of March to get everything recorded. Initially, we intended to record everything in person – panel discussions, interviews, live role plays and case studies. The reason we had to give 4 weeks notice is that clinicians were having to give their private clients notice that they would not be available on those days. However, a huge curveball came our way in the shape of Covid-19 and this created problems for the live recordings, which were cancelled.

My job then changed. I had to ensure that what we were previously recording live and delivering online, would now be recorded online *and* delivered online. The challenge for me was to ensure it was still interactive and appealing content to consume. The way I managed this was to do group Zoom calls, where I could share a screen with images, slides and real life case studies, to ensure it wasn't just people talking on a screen.

What I learned: Responding to adversity, being flexible, attempting to change the style of delivery while continuing to make the content helpful.

18.03.20

I received a letter from the deputy managing director of the company today to inform me that my hours would be reduced by 80% due to the impact of Covid-19. This obviously gave me almost no time to work on my projects. The recording process was delayed indefinitely, as every clinician had received reduced hours across the company. This news was incredibly disheartening and hard to take at the time.

What I learned: Managing difficult personal circumstances and how life can change overnight.

20.05.20

Although my regular hours were reinstated 10 days later, this project didn't continue as it was less of a priority during the initial months of Covid-19. We agreed to record all of the sessions on Zoom, and use that to deliver a digital version of the "First Responders" course.

Again, my main consideration was for the audience who were employed. However, this could vary and this product could be sold to any company. It's interesting because when we think of teaching and training, the presumption is that you would be able to teach and have control over the direction of the session while delivering the training. This course was pre-recorded, therefore as the creator, I had to consider this from the beginning. The actual delivery of the

training was online, and this made things difficult for multiple reasons – mainly I had to make the online content engaging, as I couldn't use audience interactions or take questions or anything else you would normally associate with delivering training.

What I learned: There is a considerable difference between online delivery of content and in person delivery of content. Interactions can facilitate learning when the delivery is live, however if the delivery is pre-recorded, it's important to attempt to make the content remain interactive but in new ways (case studies, real life examples, panel discussions, quiz/knowledge checks).

June 2020

Since the sessions all went virtual, I had to organise the panel discussions, 1-1 interviews and case study discussions to go online. In order to make this work, I ensured the company provided me with a Zoom license with the functionality I needed (no time limits). I planned the online recording of the content all throughout June and had to coordinate 6 different clinicians, 2 media editors and myself. This work was completed and edited by the end of June.

What I learned: Coordinating multiple clinicians solely online. Ensuring that since the content would be recorded online, that it was still engaging. Using Zoom for the first time and recording a training course using the platform. Practicing within deadlines, time constraints, and the Covid-19 pandemic.

Summary: This was a particularly unique opportunity. Although the live first responder course was something that was already developed, I had to create and repurpose the content in a way that was essentially like designing a whole new course. I had to take the course objectives, and create brand new content that would fit a digital delivery, and continue to meet the objectives of the course in a satisfying way. This was a significant challenge given the circumstances, but one that allowed me to broaden my skillset significantly.

Section 3 - Ad Hoc Seminars & Other Training

This section is to identify just some of the other opportunities I have had to teach or train different groups. In the following, I have been able to speak at both large global wellness events, small UK & Ireland based events and private/corporate events. I have had the opportunity to speak to students, adults, lay people, and health professionals.

CIT Cork – Importance of Language in Mental Health Stigma (Jan 2020)

CIT Cork is a university in Ireland that got in touch with me about doing a talk for their mental health awareness week. They got in touch via Instagram and asked me to do a 30 minute talk with a Q&A at the end. For this, they asked me to speak about stigma and how language can impact stigma. I developed and designed the talk in a few hours as it was relatively routine for me to speak about. I spoke about stigma quite a lot while I was working in clinical mental health, so I was able to design and deliver something in person.

This was an opportunity to work with a student population from third level and second level education, something I have had limited experience with before. I based the talk around some difficulties I would hear from students when interacting in the online space – Exam pressure, interpersonal issues, bullying – and I created content that would relate to them. I feel it is important as a practitioner to meet your client where they are at, and in this case the people I was trying to reach were students, so I attempted to pitch it at their level. This involved inviting students on stage and doing interactive examples to keep the audience engaged.

What I learned: Engaging with a student population who were not all voluntarily there is a lot more difficult to engage. I struggle with sticking to a time schedule when delivering content live, something I need to work on. I was capable of answering all of the Q&A questions afterwards, and I was asked back for a second event in the university as they were happy with my contribution.

Future of Food – Conference (24th October 2020)

This was an event run by Dr. Hazel Wallace, (aka The Food Medic) who is a published author and creator of The Food Medic podcast. This event was full of amazing speakers and was originally supposed to be a live event in the Connacht Rooms in London. Due to Covid-19, it was moved online and it was an event for 800 people. This was a far larger event than I had imagined or had ever done before. My topic was "The Psychology of Behaviour Change", and I spoke about how emotions and mental health can be barriers to change.

Due to the gravity of the event, I was nervous. I was in charge of creating the content from scratch and delivering it to an audience of health professionals and lay people. Judging from the content from The Food Medic social media platforms, I presumed that the people who were attending the event had an above average knowledge of nutrition and health, and for that reason I pitched it at that level.

It went incredibly well. I had a huge audience and I felt I was able to answer their questions as they came in live in the chat function on the online platform. There were also hundreds of people who were in touch with me afterwards enquiring about 1-1 work and health professionals training. For this reason, I felt it went well.

What I learned: I am valued by a wider audience and should believe in my value a little more. I am being recognised on a wider platform for a reason.

University of Bath (Tech & Mental Health) (Nov 2020)

This was a very unusual experience for me. I was conducting a seminar for my company for which they provide wellbeing solutions for the University of Bath and their students/staff. They have frequent seminars and I was assigned to this seminar. I chose to do the topic "Technology and Mental Health". The reason it was unusual was not because of the content, but rather the audience was only 4 people. This was a first for me – normally companies who pay a lot of money for corporate talks promote them quite well and are therefore well attended. However, as part of the EAP programme that our company deliver to the University of Bath, they also deliver free seminars. For some reason there were only 4 participants. I went ahead with the seminar – there was a part of me that doubted if I had the

correct time, however I did and there were just very few attendees. It was interesting as I was immediately not delivering the talk the way I normally would – it's as if the smaller group changed my presenting style to a more informal and intimate approach. With a big group it's almost like I would be the focus, where as with a smaller group I was able to chat to them in a less formal and less structured style. I think this went down well, as there were 3 out of the 4 participants interacting using the chat function.

What I learned: I was capable of adjusting to my pre-prepared content and delivery style in the moment, based on what was happening in front of me.

Mood & Food Course (January 2021)

This course was, again, a new experience for me. I was running a psychoeducational course on emotional eating alongside a Registered Dietitian. The differences in my nerves after having some experience were astounding. I was more relaxed, more confident and was able to enjoy the process far more. The course was delivered on Zoom, and because there was another professional delivering the course alongside me, I felt there was safety in that.

It was a new experience as I had to coordinate and co-present a course. I came up with my content independently and designed my parts alone, and so did the registered dietitian. The challenge in this instance was to run the course smoothly between us. We did not practice, however we did allocate ourselves 30 minutes each for our content and 30 minutes for Q&A at the end. This strategy worked well, and we could add comments throughout where we felt necessary. The chemistry seemed to work well and the delivery worked. The course was delivered over 5 weeks, and at the end we received very positive feedback regarding the course and the delivery.

What I learned: To speak to a different group (emotional eating cohort). To deliver a course alongside another health professional. To design content in tandem with another clinician.

Feedback

“The course has changed my life. I know I have a long way to go but my relationship with food and the way I eat has changed. I am already happier and more relaxed about my diet and know that when I feel like binging then it is probably because my emotional needs are not being met.”

“Brilliant course. Helps make clear why so many of us engage in emotional eating and what we can do to help ourselves overcome this.”

“A compassionate deep dive into the why's behind your eating. A fresh perspective with kindness and understanding. Recommend to anyone who is ready to have a close look at their own eating behaviours.”

“This was a brilliant course. Funny, you'd think in order to take part you need to feel like you have an issue with food. But this course is relevant for all accepting walks in life. It has helped me identify the emotions I'd cover away - lonely, not feeling good enough, stress... While it has also made me aware of the fact that I hadn't been feeding my actual needs at all. Thank you both - a wonderful way to start the year”

“Very good introduction into the psychology of eating; will make you want to learn more. Give you the starting tools to gain more perspective into your own relationship with food. Delivered in a very professional relatable safe manner. Would definitely recommend.”

Summary: Having delivered a range of seminars, webinars, podcasts and public talks, I believe I have developed the skillset to adapt my delivery based on the target audience. I have delivered talks to hundreds as well as delivering a talk to 4 people. I have trained health professionals, ran group sessions for emotional eaters, and delivered teaching to the general public and student populations. I believe that this diary outlines the length and breadth of

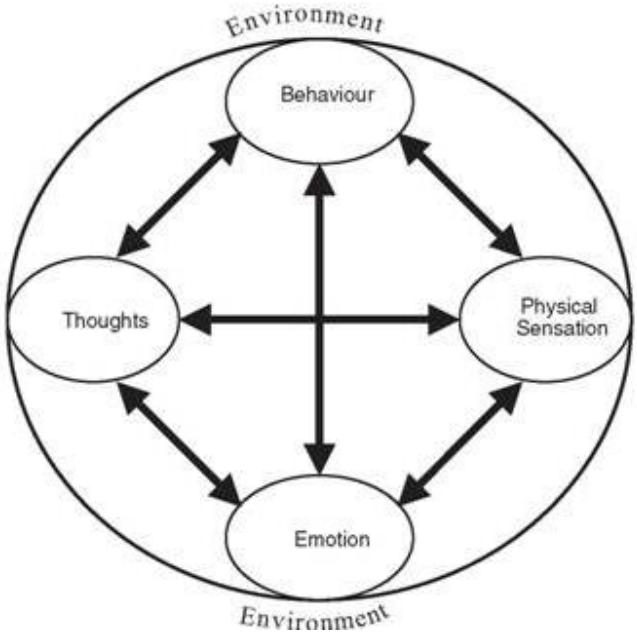
experiences I have had since beginning my training, and the skills I have learned in developing as a practitioner.

Appendices

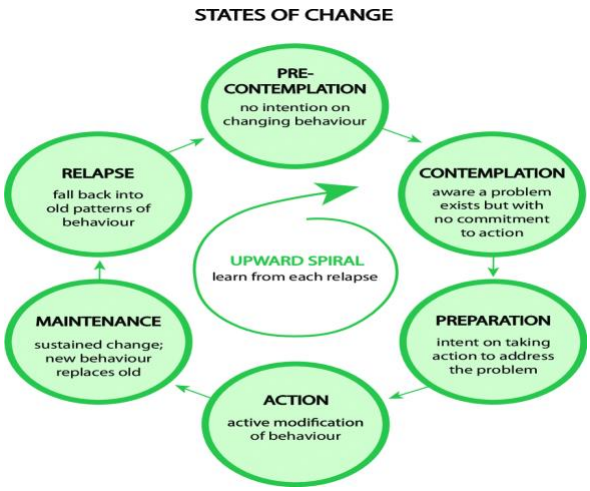
Appendix A – Course content examples

Below are some examples of images and case studies used in the slide deck to explain psychology and health concepts in the "Health Psychology in Practice" course. There were over 100 slides, so I have just included a few examples.

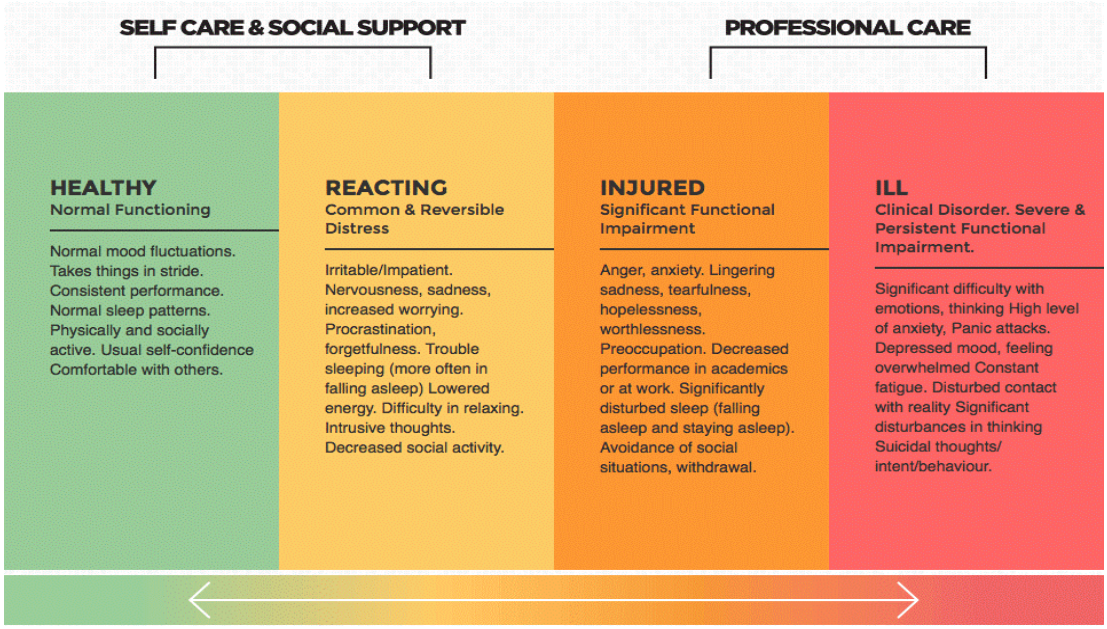
CBT Framework



Transtheoretical model of change



Mental Health Continuum



Case Study Example

Gemma is 24 and wants to change her weight. She says that she is being treated differently at work, and finds it hard to be motivated in that environment. She has always struggled with her weight from a young age and has never really been able to make significant changes to her health behaviours. She lives at home with her parents which is a significant commute to work on the bus.

Gemma says her whole family struggle with weight, and that she thinks it's genetic. Gemma wants to get help now because she is sick of being treated differently, and wants to finally change something or figure out what's wrong with her. She says that her life is otherwise really good and she should be happy – she has a job where she gets paid well and she doesn't pay rent at home, so she's confused as to why this is impacting her so much.
Previously she's tried home workouts, online programmes and slimming world, none of which have had a lasting impact. How can we help?

Chapter 5 - Consultancy Case Study & Contract

The development of the Food & Mood Course

Foreword

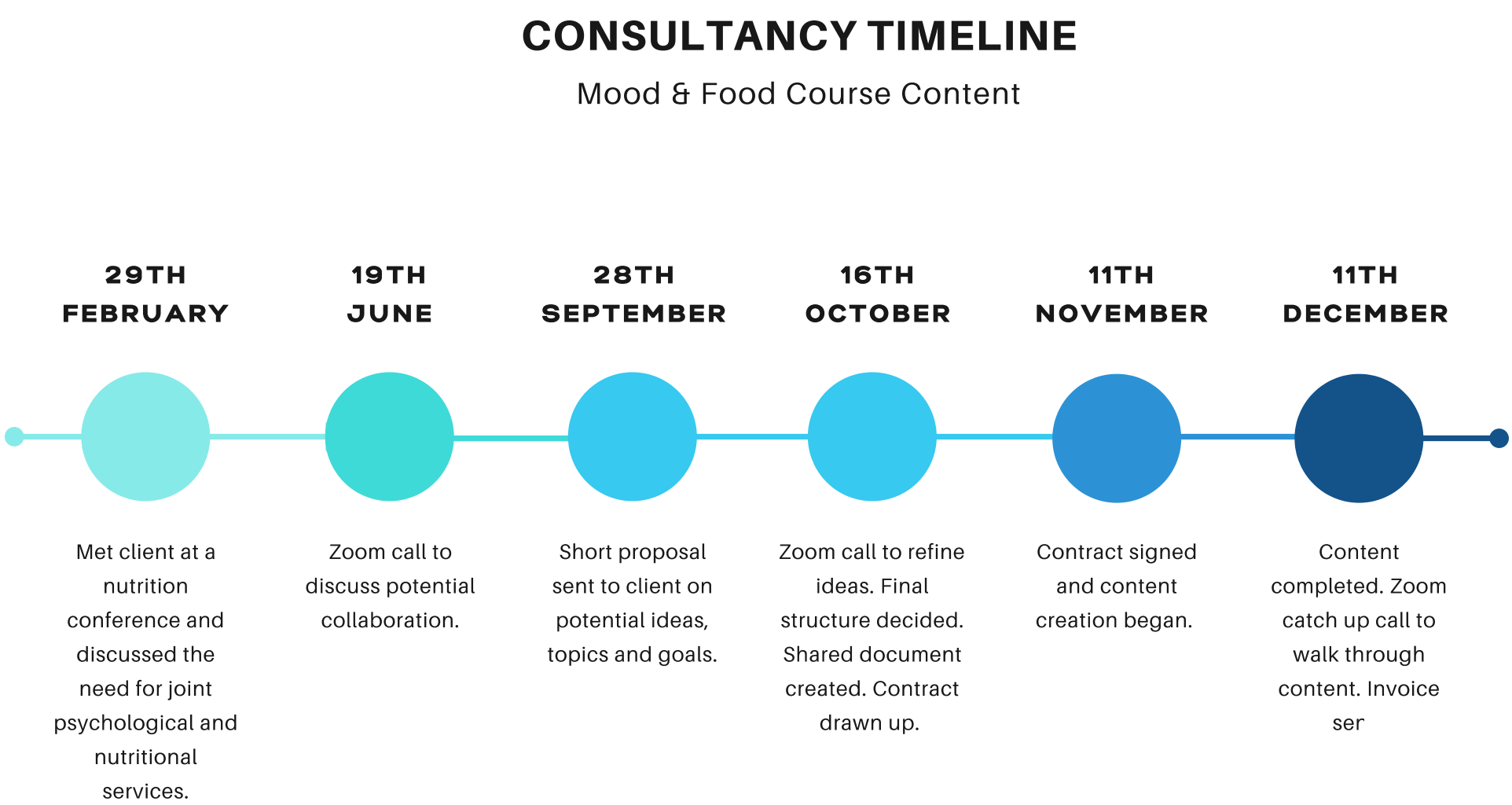
Consultancy is the use of specialist health psychology skills and knowledge to provide a service to a client. These clients could be through public, private or third sector organisations. In this example, the client is a freelance dietitian.

Over the course of my Professional Doctorate in Health Psychology, there were a number of consulting opportunities which presented themselves which I have detailed in my practice log. These opportunities included public speaking opportunities, delivering training to health professionals in the NHS and delivering behaviour change training in gyms. The following consultancy report provides details of the creation of a bespoke emotional eating course which I designed and developed at the request of a freelance dietitian. The framework I used was Block's "Flawless Consulting" model (2000). As part of meeting the criteria, I have also included the consultancy contract, report and some sample content in the appendices.

Consultancy Summary

To meet the consultancy competency for the Professional Doctorate in Health Psychology, I present a project which was initiated and requested by a freelance dietitian (referred to as the client from here on out), to create content for an online emotional eating course. The project was initially considered when I attended a nutrition seminar on the 29th of February 2020 and met the client at the event. The final product was a 5 session emotional eating course. My role was to create content for the course, prior to January 1st 2021. I also delivered the course content alongside the client, however the consultancy work and payment was based on the creation of the content. This course was designed for laypeople. We advertised the course through our social media platforms and email lists and it was open to any member of the public to sign up. The course was solely educational and was not meant as a clinical treatment for eating disorders. An initial report was delivered to the client outlining what I could provide as a consultant, and the final content was delivered as a slide deck and speaker notes.

Figure 8 - Food and Mood timeline



Block's "Flawless Consulting" Model

Peter Block (2000) suggests that consultancy takes place in 5 stages.

1. Entry & Contracting,
2. Discovery & Dialogue,
3. Feedback & Decision to Act,
4. Engagement & Implementation, and
5. Extension, Recycle & Termination.

The way I worked on this consultancy project was based on this model and this consultancy report is delivered in this format.

Phase 1 - Entry and Contracting

This phase of consultancy is the initial contact with a prospective client including exploring what the need is, exploring the problem and exploring if the consultant and client can work together to solve that problem. It's also discussing mutual expectations and finalising them with an appropriate contract.

Establishing a working relationship & formation of ideas

The consultancy opportunity had been something the client and I spoke of since February 2020 at a nutrition conference. I spoke to the client about the crossover between psychology and nutrition, and the client also had a keen interest in this link. We spoke about the importance and contribution of psychology in nutrition, and the client mentioned that they felt nutrition and psychology should work collaboratively to achieve best outcomes. The client followed up that conversation with a message on social media and we arranged to have a Zoom call. I had interacted with the client through social media prior to the opportunity arising. We shared similar views on the treatment of eating issues in practice - namely to include psychological support regardless of the presence or absence of a patient's clinical diagnosis. The client has undergone further training in eating disorders and has taken part in the behaviour change training I deliver for health professionals. We had spoken informally about some ideas when we met in February. Building the professional relationship had begun

at that point, and continued in multiple conversations back and forth on social media, and by email. We agreed to talk through our ideas for collaboration during a Zoom call on the 19th of June 2020. This is where we began forming a professional relationship beyond the informal conversations we had previously.

On that call we decided that we would like collaborate in some way, however we did not consider an online course at that time. The client acted as the developer of the course. They took the payments and the content was branded in line with their company. They also held intellectual property for the January 2021 launch (but could not use the content past that point).

The role of the consultant

When considering the different roles of a consultant, as outline by Lippitt & Lippitt (1986), I acted in the "Information Specialist" role; a person who acts as a content expert and acts in a directive role to the client. With this in mind, I created a document outlining my potential contribution as a consultant, which is covered later. The client's initial ideas included a private 1-1 service and an online learning platform. Acting as the "informed specialist", I mentioned the importance of ensuring that participants were aware this course was not for those with a diagnosed eating disorder and it was not a suitable replacement for 1-1 support or treatment. This was to ensure the appropriate client group attended and that they were informed about the scope of the course. The reason behind this decision was that people who seek weight management can struggle with disordered eating (Stunkard & Costello Allison, 2003). After the initial call, we decided that we would organise another meeting with some ideas about how we could carry this forward. Given I had other priorities over the summer period, we did not follow up until September 28th 2020. At this stage I provided a report of what expertise I could add as a consultant (See 'Proposal of Content' section). Once this was reviewed by the client, we agreed mutually to move forward, and had Zoom calls and discussions in a private chat in order to develop the product.

In total, we had five Zoom calls. Our vision and goals changed significantly over this time and by the end of our 2nd conversation, we had agreed on the mode of delivery (live delivery via Zoom) and the course outline.

Proposal of Content

I spoke with the client on Zoom in June, and followed up with a report (See Appendix A – Client Report) to detail recommendations of what I felt I could deliver in terms of the content, as well as some goals I had for the course. Initially I proposed the content based on the idea that it would sit on a pre-recorded online platform. This document included 13 topics that could be covered as part of the content. On the 16th October 2020 we discussed the cost of an online platform and the lack of interaction with pre-recorded content, and subsequently decided a live delivery was better. For this reason, we shortened the content to five sessions and changed the content in order ensure it was appealing to the target audience, affordable, and feasible. By the end of that Zoom call on October 16th, we had agreed the course outline. At this point, we had not yet discussed or signed a contract. This process is outlined in the section below.

Contracting

I have a prior agreement with my company that any external work I do is billed through them. This is to cover me for insurance purposes, but also to prevent a conflict of interest. For example, I would not be allowed to deliver services that my company already deliver due to a conflict of interest. This ensures a mutual benefit as I have safety in my job, supervision and insurance cover. This consultancy opportunity was carried out on my own time and the opportunity was developed by me, however the payment went to my company.

The contract (See Appendix B) was developed in order to outline my contribution to the process. This was discussed via email. My company also sent an invoice for my time. The client wrote the contract, however we negotiated what we both wanted to include. The client felt that the terms I suggested (outlined below) were acceptable.

The items I wanted to include in the contract are the following:

- Date
- Defining the name of client and consultant
- Services provided (15 hours of content creation)
- Compensation - That my compensation is the fee of £1100. It is also work to contribute to my Professional Doctorate in Health Psychology.

- Ownership and maintenance of intellectual property – The client owns the IP for the delivery of the content for January. This was to prevent the client using my content in future. The fee of £1100 was based on the premise that the content would be used once. If the IP remained with the client for all future use of the content, it would have made the client considerably more income, therefore the value of the content would have been higher.
- Modification – Any changes to the contract are only valid when agreed by both parties.
- Timescales – Content to be created and delivered by Jan 1st.
- Payment within 30 days of delivery of the content.
- Signatures of both parties

There was only one issue in the contract that had to be rectified, which was an incorrect address. Once this was rectified the contract was signed on 11th November 2020, and the creation of the content began. The contract was signed using SignNow – a platform where I could provide a secure digital signature. My fee was calculated by estimating the time it would take me to develop the content and based on the potential earning power of the content. The estimate for the content creation was approximately 15 hours and my hourly rate for 1-1 work is €70 (€1050). The contract was signed on the 11th of November 2020, with the intention for the content to be delivered by January 1st. The client set the course fee at £150 per person, and would total a maximum of 20 people. This was in order to ensure it was interactive and people had the opportunity to ask questions. This meant a sold out course was potentially worth £3000. I felt my fee was fair as the client was taking the risk of the course not selling out, in addition to taking payment, branding the content and marketing – all of which I had no part in. This meant I was satisfied with the fee split and my value as a Trainee Health Psychologist was met. I discuss this further in my reflections. The development of the content started after the contract was signed.

Phase 2 – Discovery and Dialogue

This section is about the consultant getting an understanding of the problem. This includes defining the problem, how to best approach the problem and how to structure time.

It can often also include data collection or the collection of some information. I felt like given that my role in the consultancy was as an "Information Specialist", and given that I support people with emotional eating in my 1-1 clinic work, I felt I had a good gauge of the problem and what I needed to include in order to approach it best. It was also important to ensure that the client was satisfied with this approach, therefore I continued open dialogue on social media, by email, through online shared documents and through Zoom in order to ensure the approaches I was using were satisfactory for what the client needed. I was fortunate that the client trusted my judgement of what was needed to include in the content, and I had freedom and autonomy, however this may not always be the case in future consulting.

Phase 3 – Feedback and Decision to Act

This phase was about collecting all of the information I could provide to support people with emotional eating, and collating it to a manageable piece of content and fit within my clients agreed 5 sessions. In this piece of work I narrowed down the content from an initial 13 topics, to a manageable 5. The client and I spoke on Zoom (16th October 2020) about which topics we felt were most important to prioritize and how we could meet the needs of the target audience with that content. I provided my feedback on what was important as the Information Specialist, and the client trusted my recommendations. I must also be aware that I may not always have such an open and willing client – In future, I'm sure I will have pushback and disagreements over the feedback that I may provide to future clients. As we had agreed on the final content, we then put a plan in place to ensure the client was kept updated on the progress of the project. This was in the form of a shared online document so the client could see the latest edits of the slide deck and speaker notes for the content. If we had any questions or concerns about the content, we agreed that we would communicate via the shared document.

Phase 4 – Engagement and Implementation

This involved carrying out the planning of the previous steps. For me, this was the development of the content including a slide deck and speaker notes for that content. This stage started on the 11th of November 2020 therefore I had approximately 5 weeks until the Christmas break. I decided I would conduct the bulk of the work in two days, so that there would be plenty of time for feedback, restructuring and discussion should any changes be

required. This was a helpful decision, as the client outlined a few changes and tweaks to the content to be made before the final delivery. Allowing myself that extra time made sure I had time to correct it before the final deadline. I have included a full outline, rationale and theoretical underpinning to explain the content development and design (Appendix C). Given that the client had access to these updated documents at all times, it ensured that they could voice any concern at any point, and the line of communication was always open.

Phase 5 - Extension, Recycle and Termination

This section evaluates the implementation and delivery of the content. After the final content was delivered on the 11th December 2020, the client and I caught up on a Zoom call to go through the final version. There were a few changes to be made and a few pieces that were left unfinished by myself. For example, the inclusion of a case study that was promised but not part of the final delivery, and also the inclusion of royalty free images. I rectified these concerns and on the 14th of December 2020, the client notified me that the work was sufficient. Once I heard from the client and they were satisfied, I informed my company to send the invoice, and this was paid on the same day. In terms of extending, recycling or terminating, the client and I agreed the course was good enough to run again, therefore we agreed to recycle the content and continue to work together on delivering this course again. (See Appendix D for client feedback).

Challenges

This was my first attempt at formal consulting and there were plenty of learning curves for me. It felt a lot like learning on the job even though I had theories and models to guide me. I had worked collaboratively before plenty of times and I have also had services requested of me, but this was one of the first time I had to negotiate the process from start to finish for a fee. This project went relatively seamlessly, however I am not naïve enough to think this is the norm. I understand that in future, difficulties can arise with interpersonal relationships, working with larger teams or organisations, dissatisfaction with the work or even personal difficulties. This section includes some of the barriers that were encountered on the delivery of this project.

The personal impact of COVID on planning and productivity

One thing that I found quite difficult was planning. Part of this case study should include how I planned out each step and how I detailed each move ahead of time. The reality is, I didn't plan it sufficiently. If I was to do this in ideal circumstances, I would certainly have liked to map out a timeline for the project. However, in the middle of the COVID-19 pandemic, working from home had been incredibly draining, especially in the midst of a second and third lockdown.

The reality of working from home was trying to get *some* work done, maintain boundaries so work didn't spill into non-work, and get through the day. I feel our society has pressurises us to maximise our productivity, get the utmost output from our day and flourish, but in the middle of this pandemic, it's been learning to be okay with being mediocre sometimes. What came with these personal struggles tied over to my professional and academic life too. My productivity and standard of work wasn't what it could be – understandable given the context. For that reason, I decided I would work on this project if and when I had spare time. This was evident when you look at the timeline I have provided – Our first Zoom call was in June, and I followed up on that call with a proposal at the end of September. In normal circumstances I could have done this sooner, but in the midst of an incredibly difficult year, I've tried to cut myself some slack and not hold myself to the highest standard. That included my work not being as well planned or as meticulous as I would like. I'm lucky that I had a client who was not under rigid time constraints and was working on the project as a side project, but I am aware that future clients may want more detailed planning, timelines and more frequent updates. It is something that if I were to do again now, I would like to put more structure and planning in place.

The Consultant-Client Relationship

Although the client and I were frequently on the same page when it came to the work, there were a few instances where the relationship needed management. For example, there were differing opinions on how best to approach emotional eating and what was most relevant. Based on my understanding of emotional eating, I objected to including certain types of potentially triggering content (e.g. the focus on numbers or weights of foods) against the wishes of the client, and I was aware that I had to object to this in a way that would not be taken personally or as a criticism. Using my skills as a practitioner, I would gently put

across my points in a non-judgemental fashion, and fortunately for me, the client was receptive to my views. This may not always be the case in consultancy though, which is why it is so vital to manage the relationship. I was lucky that from the beginning, myself and the client had engaged in enough conversations about the topic that I was aware of their values and perspectives when it came to psychology and nutrition. I feel I would struggle to align with someone who shared differing opinions.

Feasibility

In order to complete a consultancy project, it was important it was feasible from my perspective and from the client's perspective. This was a challenge as it was my first time gauging a project of this magnitude for myself. Consultancy opportunities that come through my company are often vetted before they get to me, and as this opportunity was developed through me, I had to gauge this for myself.

Time

I had ample time to complete the project. I estimated approximately 15 hours of content creation and I had two months to complete that. Much of the knowledge used to create the content would be used in my private 1-1 practice, therefore I didn't estimate much more time would be needed to complete the project.

Financial Feasibility

This was a large and important piece for the client and I to consider. The client is a private freelance dietitian and it was important this was profitable for them. In addition, my company would expect that I bring in extra income through these types of opportunities, therefore I wanted to deliver something financially feasible. Firstly, it was important to consider if there was a sufficient target market. Judging from the evidence, a large percentage of those who struggle with weight issues, also struggle with emotional regulation and emotional eating. In fact, in treatment-seeking obese populations, between 23% and 46% report binge eating (Bulik et al., 2003). Given that the majority of the population is either overweight or obese, there were enough potential participants to take part in the course. In addition, collectively, the client and I have large social media followings. Based on the

content we produce, we assumed that some percentage of our followers would be interested in the course. When we advertised the course we allowed people who were interested to sign up to an email list, of which 220 obliged.

When it came to the fee, the client agreed I would be paid regardless of how many places were sold on the course, therefore regardless of if the course sold out or not, it was financially feasible for me. I was not at risk if the course did not sell out.

Ethical considerations

The research suggests people who struggle with emotional regulation may also struggle eating disorders or mental health issues (Leehr et al., 2015). Therefore it was important to ethically consider scope of practice and the potential population. It was important that when marketing the product, participants were fully informed who the course was suitable for. For this reason, I included as part of the content that the course was not a clinical treatment for any mental health disorder. I also included that it was educational and should not be used in replacement of 1-1 support from a mental health professional. Judging from speaking to people seeking treatment on social media, there can be much confusion when it comes to the management of mental health issues, therefore I felt the boundaries of my scope of practice were outlined clearly.

I also considered health literacy when designing the course. This is a person's ability to understand health information and subsequently make health-related decisions (Berkman et al., 2010). There are grounds to suggest that all health information be simplified as to support the wider population in accessing and understanding health information (Paasche-Orlow et al., 2005), therefore the course content that I designed considered this perspective.

Capability

After delivering Teaching & Training to Health Professionals, I felt capable of providing a different perspective on eating behaviour to the general population. I felt if health professionals believed it would be useful in practice, so would the general public. I also felt capable having supported people in addressing emotional eating in my 1-1 work.

Monitoring and evaluating the work

In terms of my own evaluation of the work, I had billed for 15 hours work. I created the content initially in one working day (approximately 7 hours). I then reviewed the content myself on another day for approximately 2 hours to which I was satisfied with my own work. I ensured I had extra time after the client had reviewed the content, and any alterations would be done in the remaining time. I was aware that there was the possibility that changes would need to be made, as was the case.

Over the course of multiple Zoom calls, the client and I had plenty of opportunity to continually monitor the work. The three main areas of continual monitoring of the work were:

- Online shared document and slide deck
- Email updates
- Zoom calls

The updates and feedback were bi-directional via these channels. The main bulk of the evaluation was after the final piece of completed work on the 11th of December. The client and I spent 2 hours on a Zoom call where we revised the content I had created to ensure it met the needs of the client and was suitable for the target audience. The client was satisfied with the content in terms of the topics and slide deck I had created. The main changes that were made on that call were to the structure and the placement of certain topics, as well as some minor tweaks to the content itself – for example, we moved some content from session #1 to session #5. We included an extra case study and we changed the images to non-copyright images. We also included more visual diagrams to help explain concepts to the clients, with the general populations health literacy in mind.

Completion of the consultancy

The delivery of the content was completed by the 14th of December 2020, ahead of the course being delivered in January of 2021. The invoice was sent to the client on the 14th of December 2020 as the content was complete. This was paid on the 21st of December.

Reflections

The Value of Health Psychology

Over the course of this work, I've learned not to undervalue myself and undervalue Health Psychology. I've seen people in my network not being paid well for their expertise. I believe I gained significant insight into the true value of Health Psychology from a few experiences.

1. Speaking with Health Professionals about their practice, which often includes psychological challenges.
2. Working on social media and gauging what people engage with.
3. My private work primarily attracts individuals who have tried "traditional" health interventions, but to no avail.

Considering these experiences, I believe Health Psychology is of significant value to the field of health, nutrition and preventative medicine, and for that reason I felt it was important to value what I bring to the table when it comes to consultancy. If a large percentage of the population who struggle with their weight engage in disordered eating (Nicholls & Viner, 2005), and disordered eating is often by its very nature psychological, then psychology *must* be part of the treatment. If you consider the main public health issues present at the moment – COVID-19, obesity, alcohol, smoking, CVD, dementia, mental health but to mention a few – all have psychological and behavioural factors that could be benefitted by behaviour change. For this reason it's important we know our value as future Health Psychologists.

Considering the target audience

When considering the target audience, it was important to remember that people may be struggling with clinical eating issues. It was not possible to assess people for eating disorders. I am not appropriately qualified to accurately screen people for eating disorders, and it would be a costly task to pay a Clinical Psychologist to assess participants prior to engaging in the service. For that reason, I designed a course that was psychoeducational, rather than as a clinical intervention for eating issues. This boundary was important in order to manage the expectations of the participants, but also to ensure practice within our scope and ensure participants are well informed of what to expect. This information was included in the marketing and was mentioned in the content of the slide deck.

Building future working relationships

I feel that I was lucky in finding a like-minded dietitian to collaborate with, who had an understanding of the importance of psychology in nutrition. In future I think a stumbling block for any future Health Psychologist is getting buy-in from other professions.

One of the problems I see most is health professionals practicing outside of their scope of practice. One example is a health professional who is not psychologist, advertising treatments for emotional or binge eating. As I've mentioned, psychological intervention is important for these issues. There are no other health professionals, outside of psychologists or psychotherapists, who have sufficient training in treating emotional distress (unless they have undergone further training), yet many other health professionals will advertise interventions for issues that are underpinned by psychology. I'm not sure if this is a lack of awareness and insight, or if it's deliberate, however it is unhelpful and potentially dangerous. Moving forward and building other professional relationships with health professionals, I feel it's important to help them see that issues with emotional regulation or distress is within the scope of practice of mental health professionals, and outside the scope of practice of most other health professionals. I feel it is also important to help other health professionals see what Health Psychology brings to the table – namely addressing emotional or psychological distress, and understanding the role of psychology in health and illness.

Defining my role

I outlined from the first Zoom call we had, that I would focus on the psychological/emotional, and the client could create any nutrition content they wished to deliver themselves. The client had the insight and awareness to leave the psychological components of the content to me. I feel this is an important boundary for me moving forward, as I would not like to align myself with people who practice outside of their scope of practice. For example, I would not like to align with someone who attempts to work with eating disorders without any psychology qualifications.

Summary

The result of this collaboration with my client was largely successful. When gauging what constitutes success, I consider a few things. The deadline was met early, the content was sufficient for the client's needs, and the client was satisfied with the work. In addition, I was satisfied with the work, I was satisfied with the fee, and I was satisfied with the outcome. Of course like any piece of work, there are things I'd have liked to do differently – namely my own organisation, planning and productivity. However given the circumstances we find ourselves in with a global pandemic, I feel I should give myself some flexibility and not hold myself to too high a standard.

References

Berkman, N. D., Davis, T. C., & McCormack, L. (2010). Health Literacy: What Is It? *Journal of Health Communication*, *15*(sup2), 9–19. https://doi.org/10.1080/10810730.2010.499985

Block, P. (2000). *Flawless consulting: A guide to getting your expertise used* (2nd ed). Jossey-Bass/Pfeiffer.

Bulik, C. M., Sullivan, P. F., & Kendler, K. S. (2003). Genetic and environmental contributions to obesity and binge eating. *International Journal of Eating Disorders*, *33*(3), 293–298. https://doi.org/10.1002/eat.10140

Glisenti, K., Strodi, E., King, R., & Greenberg, L. (2020). *The Feasibility and Efficacy of Emotion-Focused Therapy for Binge-Eating Disorder: A Pilot Randomised Waitlist Control Trial*. https://doi.org/10.21203/rs.3.rs-30265/v2

Greaves, C., Poltawski, L., Garside, R., & Briscoe, S. (2017). Understanding the challenge of weight loss maintenance: A systematic review and synthesis of qualitative research on weight loss maintenance. *Health Psychology Review*, *11*(2), 145–163. https://doi.org/10.1080/17437199.2017.1299583

Leehr, E. J., Krohmer, K., Schag, K., Dresler, T., Zipfel, S., & Giel, K. E. (2015). Emotion regulation model in binge eating disorder and obesity—A systematic review. *Neuroscience & Biobehavioral Reviews*, *49*, 125–134. https://doi.org/10.1016/j.neubiorev.2014.12.008

Linardon, J., & Mitchell, S. (2017). Rigid dietary control, flexible dietary control, and intuitive eating: Evidence for their differential relationship to disordered eating and body image concerns. *Eating Behaviors*, *26*, 16–22. https://doi.org/10.1016/j.eatbeh.2017.01.008

Lippitt, G. L., & Lippitt, R. (1986). *The consulting process in action*. Pfeiffer.

Masuda, A., Price, M., Anderson, P. L., & Wendell, J. W. (2010). Disordered Eating-Related

Cognition and Psychological Flexibility as Predictors of Psychological Health Among College Students. *Behavior Modification*, *34*(1), 3–15. https://doi.org/10.1177/0145445509351569

Max-Neef, M., Elizalde, A., & Hopenhayn, M. (1992). *Development and human needs. Real-life economics: Understanding wealth creation, 197, 213*

Michie, S., Richardson, M., Johnston, M., Abraham, C., Francis, J., Hardeman, W., Eccles, M. P., Cane, J., & Wood, C. E. (2013). The Behavior Change Technique Taxonomy (v1) of 93 Hierarchically Clustered Techniques: Building an International Consensus for the Reporting of Behavior Change Interventions. *Annals of Behavioral Medicine*, *46*(1), 81–95. https://doi.org/10.1007/s12160-013-9486-6

Nicholls, D., & Viner, R. (2005). Eating disorders and weight problems. *BMJ*, *330*(7497), 950–953. https://doi.org/10.1136/bmj.330.7497.950

Paasche-Orlow, M. K., Parker, R. M., Gazmararian, J. A., Nielsen-Bohlman, L. T., & Rudd, R. R. (2005). The Prevalence of Limited Health Literacy. *Journal of General Internal Medicine*, *20*(2), 175–184. https://doi.org/10.1111/j.1525-1497.2005.40245.x

Sandhya Johnson. (12:49:55 UTC). *The consulting process models* [Business]. https://www.slideshare.net/sandhyajohnson/the-consulting-process-models

Schein, Edgar H. (1997). The concept of "client" from a process consultation perspective: A guide for change agents. *Journal of Organizational Change Management*, *10*(3), 202–216. https://doi.org/10.1108/09534819710171077

Stunkard, A. J., & Costello Allison, K. (2003). Two forms of disordered eating in obesity: Binge eating and night eating. *International Journal of Obesity*, *27*(1), 1–12. https://doi.org/10.1038/sj.ijo.0802186

The British Psychological Society (2019). *Psychological perspectives on obesity: Addressing policy, practice and research priorities.*

Timulak, L., & Pascual-Leone, A. (2015). New Developments for Case Conceptualization in Emotion-Focused Therapy. *Clinical Psychology & Psychotherapy*, *22*(6), 619–636. https://doi.org/10.1002/cpp.1922

Appendices

Appendix A – Client Report

Consultancy Opportunity with [redacted]

Spectrum Mental Health

Emotional & Stress Eating – Online Platform

Boundaries of Service

From my understanding we will be promoting the service as support in behaviour change when it comes to emotional and stress eating. It will be an educational resource and not a sole treatment for disordered eating. It will sit online as a resource where people will pay to access the course or platform. At the end of the course, they have the option to continue with 1-1 sessions with either myself or you.

In terms of intellectual property, this would be owned by you and I (not by Spectrum). This is not a Spectrum Mental Health (SMH) venture, I am acting independently as a consultant, to meet the requirements of my Professional Doctorate in Health Psychology through LJMU.

Contents of Service

The below would be the titles of the modules I could provide, which have flexibility to change as per our conversations and the needs of the users. They would be psychoeducational in nature.

An Intro to Emotional Eating

[redacted]

Am I in the right place to change?

[redacted]

Is this service right for me?

[redacted]

Self-Monitoring (alternatives to calorie counting)

[redacted]

Value-congruent behaviour change

[redacted]

How does mood and stress impact my eating?

[redacted]

Removing Rigidity and Food Rules

[redacted]

Limiting Beliefs and How to Challenge Them

Moving the focus from your weight and size

Meeting your psychological needs

Maintaining behaviour change and preventing relapse

FAQs

Any common Q's that come up in clinic.

Course Objectives

1. Participants understand and are able to recognise emotional and stress eating
2. Practice ways of self-monitoring that brings awareness to their difficulties
3. Develop new ways to address psychological tension & mood issues
4. Understand the physiology behind emotional eating
5. Be able to recognise limiting cognitions and beliefs, and address them
6. Maintain changes in behaviour

I would guess that each module is likely going to be 40-50 minutes, with a mixture of video and text, with additional follow up practical exercises. Would be great to organise a chat soon to get the ball rolling!

[redacted]

CONSULTANCY AGREEMENT

This Agreement is made on the date of last signature set out below between:

1. [redacted] (the **Client**); and
2. [redacted] whose registered address [redacted] (the **Consultant**). Joe O'Brien [redacted]

Agreement

Definitions and Interpretation

1. In the Agreement, the following words are defined:

Agreement	the agreement set out in this document including any agreed written amendments;
Client Personal Data	any Personal Data that is processed by the Consultant on behalf of the Client in relation to this Agreement, but excluding data with respect to which the Consultant is a Controller;
Commencement Date	10 November 2020;
Controller	has the meaning given in applicable Data Protection Laws from time to time;
Consultant Work	any Work developed, created, written, prepared, devised or discovered by the Consultant or the Representative in the course of providing the Services;
Data Protection Laws	all applicable laws relating to the processing of Personal Data, including, for the period during which it is in force, the General Data Protection Regulation (Regulation (EU) 2016/679) **(GDPR)**;
Data Subjects	has the meaning given in applicable Data Protection Laws from time to time;
Employee	an individual employed by the Client or Consultant under a contract of employment;

Intellectual Property	all existing or future intellectual and industrial property rights anywhere in the world in the Consultant Work including any invention, patent, utility model right, copyright and related right, trade mark, trade name, internet domain name, design right, design, service mark, database right, topography right, right in get-up, right in goodwill or to sue for passing off and any other right of a similar nature whether registered (or capable of registration), and the right to apply for any of these;
Personal Data	has the meaning given in applicable Data Protection Laws from time to time;
Representative	Joe O'Brien and any other person who performs the Services on behalf of the Consultant under this Agreement;
Services	(a) Services provided: To create and deliver content for an emotional eating course. [redacted]
Supervisory Authority	has the meaning given in applicable Data Protection Laws from time to time;
Term	the term of this Agreement;
Work	all forms of work, including works of authorship, products, documents, materials, discoveries, inventions, programs (including software programs and source code), databases, know-how, methodologies, ideas and designs;

2. In the Agreement, unless the opposite is clear from the context:
   a. the masculine shall include the feminine;
   b. all singular words include plural ones and vice versa;
   c. all references to paragraphs, schedules or appendices are to the ones in the Agreement;
   d. all references to a person include firms, companies, government entities, trusts and partnerships;
   e. the term 'including' does not exclude anything not listed;
   f. all references to statutory provisions include any changes to those provisions;
   g. the headings are not part of the Agreement.

Services

3. From the Commencement Date, acting through the Representative, the Consultant will perform the Services as defined above. The Client is not obliged to provide work for the Consultant or the Representative.
4. The Consultant must (and where appropriate must procure that the Representative will):
    a. spend as much time as necessary to perform the Services properly unless prevented by illness or injury (which it must notify to the Client as soon as reasonably practicable and no fee shall be payable during any time period when the Services are not being provided to the Client);
    b. perform the Services using reasonable care and skill and to the best of its and the Representative's abilities;
    c. co-operate with the Client and attend meetings and discussions whenever the Client reasonably requests;
    d. keep the Client properly informed of progress on all projects and give them written information when asked to; and
    e. comply with all applicable laws, regulations, codes and sanctions relating to anti-bribery and anti-corruption, including the Bribery Act 2010. They must have their own policies and procedures in place to ensure compliance and where requested by the Client certify to it on an annual basis that they continue to comply. The Representative must ensure they report any matter relating to bribery or corruption to the Client immediately, if they become aware of or suspect such activity, whilst providing the Services for the Client. Failure to comply with this paragraph entitles the Client to terminate this agreement immediately.
    f. comply with the Client's policies, procedures and rules that the Client reasonably requests as may be notified to the Consultant from time to time. This always includes the Client's health and safety policies and procedures and if they become aware of any whilst providing the Services for the Client, the Representative must always report any unsafe working conditions to the Client immediately.
5. During the Term and with express permission, the Consultant and the Representative may work for or be involved in any other business or undertaking as long as doing this does not create a conflict of interest or interfere with the Services.

Status, equipment and resources

6. The Consultant is an independent contractor, in business on his own account. The parties agree that this Agreement and providing the Services do not make the Consultant or the Representative an Employee, worker, partner, member or agent of the Client and the Consultant and the Representative cannot hold itself or himself out as such. The Consultant and the Representative do not have (and must not hold themselves out as having) any authority to incur any expense to the Client or to bind the Client in any other way.

7. The Consultant is responsible for providing, maintaining and ensuring the safety of the equipment and resources necessary for the Representative to perform the Services.

8. The Consultant may use third parties to provide administrative functions relating to the Services, but must bear the costs of this in full and any such third party must, if requested by the Client, enter into direct promises with the Client, including relating to confidentiality.

Fees and Expenses

9. Compensation will be provided to the Consultant in the form of a fee of [redacted] and the ability for this project to contribute to the Representative's consultancy competency as part of the LJMU.

10. The Client must pay the Consultant within 30 days of receiving an invoice from the Consultant.

11. The Consultant is responsible for all expenses incurred by it or the Representative while performing the Services, except if the parties agree differently in writing in advance of any specific expenses being incurred.

12. If either party ends this Agreement early, the Consultant will only be paid for Services satisfactorily provided by the last day of the Term. The Client shall be entitled to deduct from the fees (and any other sums) due to the Consultant any sums that the Consultant may owe to the Client at any time.

Termination

13. This Agreement begins on the Commencement Date and ends when either party gives at least 14 days advance notice in writing that they wish to terminate it or when one of the grounds for immediate termination set out in this clause applies.

14. The Client can terminate the Agreement in writing immediately without notice or payment of any compensation (without prejudice to other rights in law to terminate this agreement) if:

a. the Consultant or the Representative is guilty of any misconduct;

b. the Consultant or the Representative commits any repeated or fundamental breach of this Agreement, fails to comply with the Client's policies or any reasonable and lawful directions of the Client or the Consultant or the Representative is negligent or incompetent in performing the Services;

c. the Consultant or the Representative commits a criminal offence or acts in any way dishonestly, whether or not while providing the Services, that damages or is likely to damage the Consultant's, the Representative's or the Client's reputation;

d. the Representative is unable to provide the Services for ten days in any one month consecutive period by reason of incapacity;

e. the Consultant is dissolved or stops conducting substantially all of its business or cannot pay its debts as they fall due or a receiver is appointed over any of its property or assets or it is subject to an administration order (within the meaning of the Insolvency Act 1986) or goes into liquidation; or

f. the Representative is bankrupt, applies for or is the subject of a receiving order or makes any composition or enters any deed of arrangement with his creditors or has a court administration order made against him under the County Court Act 1984.

15. The Consultant can terminate this Agreement immediately without notice or payment of any compensation if the Client:

a. commits any fundamental breach of this Agreement;

b. commits a criminal offence or acts in a way, whether or not while the Consultant or Representative is providing the Services, that is likely to damage the Consultant's, the Representative's or the Client's reputation;

c. is a company and is dissolved or stops conducting substantially all of its business or cannot pay its debts as they fall due or a receiver is appointed over any of its property or assets or it is subject to an administration order (within the meaning of the Insolvency Act 1986) or goes into liquidation; or

d. is a natural person and is bankrupt, applies for or is the subject of a receiving order or makes any composition or enters any deed of arrangement with his creditors or has a county court administration order made against him under the County Court Act 1984has been: sequestrated

under the Bankruptcy (Scotland) Act 2016; is subject to a debt arrangement scheme per The Debt Arrangement Scheme (Scotland) Regulations 2011; or is engaged in a trust deed for the purposes of debt repayment per the Bankruptcy (Scotland) Act 2016.

Confidential information

16. During the Term, the Consultant and the Representative may have access to confidential information about the Client and its business(es) which will be deemed to include any documents and information whether written, electronic or otherwise, which is non-public information concerning the Client's:

a. finances, operational model, business plans and sales and marketing information, plans and strategies, trade secrets including technical data and know-how, business transactions, research activities and dealings and affairs;

b. customers, suppliers, licensors, licensees, agents, distributors, shareholders, management, contractors or other business contacts including, without limitation, lists of, identities of, contact details of and requirements of such persons, pricing or price structures, discounts, special prices or special contract terms offered to or by or agreed with such persons;

c. intellectual property, existing and planned goods, product lines or services and their components and any underlying technology or proprietary materials, product lines,

d. computer and communications systems, source codes and software;

e. in each case whether the Consultant or Representative creates, develops, receives or obtains the information, whether it is marked confidential or not, whether past, current, future or prospective. Confidential information does not include any information which is generally available to the public other than through the Consultant's breach of this Agreement.

17. During and after the Term, the Consultant must not (and must procure that the Representative does not) use or disclose or allow the use or disclosure of any such confidential information without the Client's prior written consent, except:

a. as necessary to properly perform the Services for the Client;

b. where required by law, court order or any governmental or regulatory body;

c. to any of its Employees, officers, sub-contractors, representatives or advisers who need to know the information in order to discharge its obligations under the Agreement and agree only to use the information for that purpose and not to cause or allow disclosure of that information;

d. where the information has become generally available to the public (other than as a result of disclosure in breach of the Agreement by the party or any of its Employees, officers, representatives or advisers);

e. where the information was available or known to it on a non-confidential basis before being disclosed under the Agreement; or

f. where the information was developed by or for it independently of the Agreement and is received by persons who are not the disclosing party.

18. As soon as either this Agreement ends, however that happens, or the Client requests it, the Consultant must (and must procure that the Representative will):

a. return to the Client all materials, equipment, property and documents that it or the Representative has or controls that either belong to or relate to the Client or its business or clients;

b. delete (and procure that the Representative deletes) any such property and information from any electronic device which belongs to the Consultant or the Representative. Contact details of business

contacts made during the course of this agreement must be deleted, including from personal, social or professional networking accounts.

19. The Client may have access to the confidential information of the Consultant or Representative included in the first clause in this section on Confidential Information and the Client agrees not to use or disclose or allow the use or disclosure of any such confidential information without the Consultant's prior written consent apart from if the second clause in this section on Confidential Information applies.

Insurances

20. The Consultant shall be liable and indemnify the Client for any loss, liability, costs (including reasonable professional costs), damages or expenses arising from any breach by the Consultant or a substitute engaged by the Consultant of the terms of this agreement including any negligent or reckless act, omission or default in providing the Services. The Consultant must provide the Client with reasonable information concerning the business insurance policies that he has in place and must maintain insurance policies with reputable insurers, providing for a level of cover and other terms of insurance which are acceptable to and agreed by the Client. The Consultant must supply the Client with copies of insurance policies, that the Client's interest is noted on the policies and evidence that premiums have been paid, if requested by the Client. The Consultant shall comply (and procure that the Representative complies) with all terms and conditions of their insurance policies at all times. The Consultant must notify the Client as soon as reasonably practicable if cover shall be changed, lapse or not be renewed or if the Consultant is aware of any reason why the cover may be changed, lapse or not be renewed.

Data Protection

21. Both parties shall comply with their obligations under the Data Protection Laws, so far as they relate to their obligations under this Agreement.

22. The Client shall only supply to the Consultant, and the Consultant shall only process, in each case under or in relation to this Agreement, the Personal Data of Data Subjects falling within the categories and types specified in Part A of Schedule 1 (Data processing information) (the **Client Personal Data**) and the Consultant shall only process the Client Personal Data for the purposes specified in Part A of Schedule 1 (Data processing information).

23. The Consultant shall only process the Client Personal Data during and for the Term of this Agreement.

24. The Consultant shall not transfer any personal data obtained from the Client outside of the European Economic Area (EEA) unless the prior written consent of the Client has been obtained.

25. Notwithstanding any other provision of this Agreement, the Consultant may process Personal Data if and to the extent that the Consultant is required to do so by applicable law. In such a case, the Consultant shall inform the Client of the legal requirement before processing, unless that law prohibits such information on grounds of public interest.

26. The Consultant shall ensure that persons authorised to process the Client Personal Data have committed themselves to confidentiality, or are under an appropriate statutory obligation of confidentiality.

27. The Consultant shall implement appropriate technical and organisational measures to ensure an appropriate level of security for the Client Personal Data. The Consultant shall provide the Client with details of all such technical and organisational measures on reasonable written notice from the Client.

28. Where the Consultant is acting as a Processor of Client Personal Data in connection with its delivery of Services under this Agreement the Consultant may retain and use the services of third parties who from time to time mayneed to process Personal Data (each a **Third Party Sub-Processor**). As such, the Client hereby generally authorises each Third Party Sub-Processor engaged by the Consultant at the time this Agreement is

executed to be a sub-processor in relation to the Personal Data. The Consultant will provide the Client with a list of all Third Party Sub-Processors on written request.

29. The Consultant shall, insofar as possible and taking into account the nature of the processing:

a. take appropriate technical and organisational measures to assist the Client with the fulfilment of the Client's obligation to respond to requests exercising a Data Subject's rights under the Data Protection Laws;

b. assist the Client in ensuring compliance with the obligations relating to the security of processing of Personal Data, the notification of Personal Data breaches to the Supervisory Authority, the communication of Personal Data breaches to the Data Subject, Data Protection Impact Assessments (as such term is defined in the Data Protection Laws) and prior consultations in relation to high-risk processing under the Data Protection Laws;

c. make available to the Client all information necessary to demonstrate the compliance of the Consultant with its obligations under the Data Protection Laws;

d. at the Client's discretion, delete or return all of the Client Personal Data to the Client upon termination or expiry of the Agreement, and shall delete existing copies save to the extent that applicable law requires storage of the relevant Personal Data; and

e. allow for and contribute to audits, including inspections conducted by the Client or another auditor mandated by the Client in respect of the compliance of the Consultant's processing of Client Personal Data with the Data Protection Laws.

30. The Client may hold and process a wide variety of personal data about the Representative, including references, personal records, emails containing personal details, addresses and details of contractual benefits. Some of this data may come within the "special categories of personal data" (known as sensitive personal data) and includes but is not limited to information about:

a. the Representatives's racial or ethnic origin or religious or similar information, for equal opportunities monitoring;

b. information about the physical or mental health of the Representative to monitor sickness absence; and

c. any criminal proceedings involving the Representative, for insurance purposes and to comply with legal requirements and third party obligations.

31. The Client will only process sensitive personal data if:

a. it has a lawful basis for doing so; and

b. one of the special conditions for processing sensitive personal data applies, eg the Consultant has given their explicit consent.

32. Before processing any sensitive personal data, the Client will take all steps necessary to ensure it can process such information lawfully.

33. The Client will use appropriate technical and organisational measures to keep the Representative's data secure, and in particular, to protect against unauthorised or unlawful processing and against accidental loss, destruction or damage. More information on data security can be found in the Client's Information Security Policy.

Warranties and indemnities

34. The Consultant represents and warrants that:

a. it and the Representative do not have any obligation which would in any way restrict or prohibit it or him from complying with this Agreement; and

b. it is not and will not become a managed service company, within the meaning of section 61B of the Income Tax (Earnings and Pensions) Act 2003.

35. The total liability of the Consultant under the Agreement is capped at 100% of the total amount paid and payable under the Agreement by the Client, however it may arise, including for:

a. the acts or omissions of the Representative or any Consultant's other employees, agents, consultants or subcontractors;

b. any representation, statement or negligent act or omission affecting the Agreement.

36. No party will be liable to any other party under the Agreement (except where required by law) for any:

a. special, indirect, consequential or pure economic loss, costs, damages, charges or expenses;

b. loss or corruption of any data, information, database or software;

c. loss of profits;

d. loss of business; or

e. depletion of goodwill and/or similar losses.

37. Nothing in this Agreement:

a. limits or excludes the liability of a party for death or personal injury caused by the negligence of that party;

b. limits or excludes the liability of a party for fraud or fraudulent misrepresentation; or

c. limits or excludes the liability of any party in any way that is not permitted under applicable law.

38. The Consultant will be solely responsible for the payment of any tax and National Insurance Contributions in respect of the sums payable to the Consultant under this Agreement.

39. The Consultant must indemnify the Client and keep it fully and effectively indemnified in respect of:

a. any claims, assessments, contributions, deductions or demands that may be made by the relevant authorities against the Client in respect of income tax or National Insurance Contributions relating to the Consultant's or the Representatives work for the Client pursuant to this Agreement together with any interest and penalties, unless any such claim or demand derives from the default or negligence of the Client. The Client may make deductions from payments due to the Consultant to satisfy this indemnity;

b. any employment-related claim or any claim based on Employee or worker status brought by the Consultant or the Representative against the Client arising in connection with the provision of the Services; and

c. any breach of the warranties given in this Agreement.

40. All warranties, conditions and other terms implied by statute or common law are excluded from this Agreement unless otherwise stated in this Agreement, to the fullest extent permitted by law.

Intellectual Property

41. The Consultant warrants to the Client that:

a. the client owns the intellectual property for the content creation and delivery of the agreed services outlined in this contract, and:

b. the Representative has agreed to hold on trust for the Consultant any Intellectual Property in which the legal title has not passed (or will not pass) to the Consultant.

Governing law and jurisdiction

53. This Agreement shall be governed by and interpreted according to the law of England and Wales, Scotland and all disputes arising under the Agreement (including non-contractual disputes or claims) shall be subject to the exclusive jurisdiction of the English and WelshScottish courts.

The parties have signed this Agreement on the day(s) and year set out below:

[redacted]

Joe O'Brien[redacted]

[redacted]

[redacted]

SCHEDULE 1

PART A - DATA PROCESSING INFORMATION

Processing of Client Personal Data by the Consultant under this Schedule shall be for the subject-matter, duration, nature and purposes and involve the types of Client Personal Data, some of which may be sensitive personal data, and categories of Data Subjects set out in this Part A. For the purposes of this Part A, 'Customer' shall mean any legal person to whom the Client has provided products or supplied services or proposed to provide products or supply services to.

- Where the Customer is a natural person, 'Customer Personal Data' means personal data relating to that Customer.
- Where the Customer is a non-natural person, 'Customer Personal Data' means personal data relating to that Customer's Employees and representatives.

Subject-matter of processing:

The Consultant's provision of the Services and any related technical support to the Client.

Duration of the processing:

The Term plus the period from expiry of the Term until return/deletion of all Personal Data by the Consultant in accordance with this Schedule.

Nature and purpose of the processing:

The Consultant will process Client Personal Data for the purpose of providing the Services and any related technical support to the Processor in accordance with this Schedule.

Types of Personal Data:

- Names, email addresses and telephone numbers of the Client and the Client's Employees and representatives (as applicable).
- Names, email addresses and telephone numbers of the Consultant and the Consultant's Employees and representatives (as applicable).
- Customer Personal Data of the following categories: names, email addresses and telephone numbers.

Types of Sensitive Personal Data ('Special Category' Personal Data):

- Sensitive Customer Personal Data of the following categories: health, racial and ethnic origin, religious or philosophical beliefs, trade-union membership, information relating to sex life or sexual orientation, and biometric data.

Categories of Data Subjects:

Client Personal Data will concern the following categories of Data Subjects:

- Data Subjects about whom the Consultant collects Personal Data in its provision of the Services; and/or
- Data Subjects about whom Client Personal Data is transferred to the Consultant in connection with the Services by, at the direction of, or on behalf of the Client.

Appendix C – Rationale & Theoretical Underpinning

Development of content and the theoretical underpinning

Once the contract was signed, I started working on the content. When conducting the report and designing the content, I researched what I felt was important to include to include when delivering a course on emotional eating. This section shows the structure of the content and the theory underpinning it's importance.

Outline of content

Session #	Content
1	**Exploring your relationship with food** Self-Monitoring Psychological roles of food
2	**Emotional wellbeing & nutrition** Biopsychosocial Model Eating Behaviour Unmet Psychological Needs Food as coping
3	**What needs to change?** How to meet your psychological needs
4	**Embracing Flexibility** Challenging rigid beliefs
5	**Maintaining Long Term Change** The psychological factors that predict success

Exploring your relationship with food

Part of this section will be helping people to understand what function food serves for them. If we look at it from an EFT perspective, emotional eating is an example of the behavioural avoidance of a primary or secondary emotion (Timulak & Pascual-Leone, 2015; Glisenti et al., 2020). In order to support people in managing their emotions, developing emotional literacy is important therefore we included this in session one by using the emotions wheel (Appendix E) and by using a self-monitoring diary (Appendix F). This might

help people recognise the patterns of their behaviour and understand what role food plays for them. For example, is someone eating because they are lonely? Do they eat in response to feeling anger or sadness? Alexithymia is the inability to identify and express emotions, and this is highly prevalent in binge eating. Alexithymia is a predictor of emotional eating in binge eaters, and by supporting people in learning about emotions and expressing emotions, the participants should, theoretically, be more capable of expressing emotions without using food as a method of coping.

The content also covers the psychological roles of food. As outlines by Greaves and colleagues (2017), multiple psychological aspects predict maintenance of change in the long term including identity, social roles and the ability to meet psychological needs in new ways. In order to support people where food serves a psychological function other than fuelling the body, it is important to help them understand what need food might be meeting, so they can then meet that need in a new way. For example, if being Keto (following a very low carbohydrate diet) is part of someone's identity and they receive validation and are accepted by a community for identifying as Keto, they may need to find a way to self-validate and find community somewhere else in order to change that way of eating (meeting the need in a new way). For another person, they might be known as "the fun one" who's always up for eating out or getting a takeaway. In order to change, it might be important to find a new way of connecting with your social circle that doesn't revolve around food. Challenging your social role or identity might be a way of changing your dietary pattern.

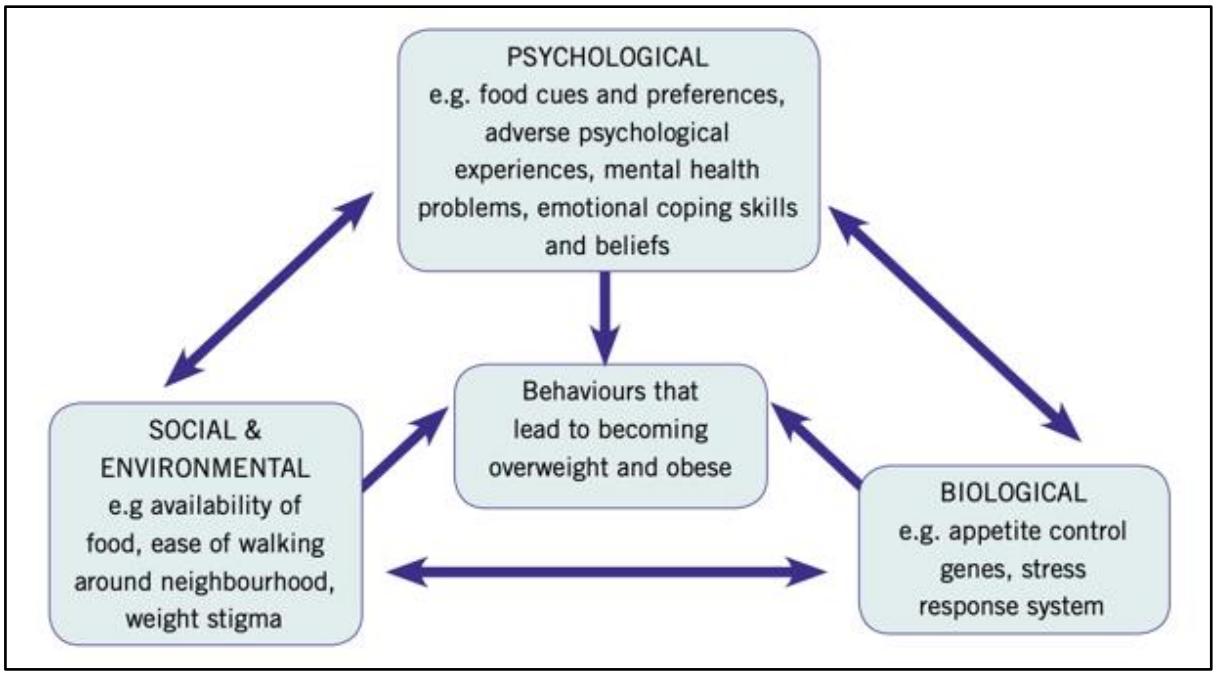
In order to help people identify the function of food in their life, self-monitoring can be a good way to bring attention to the behaviour and is a well renowned behaviour change technique (Michie et al., 2013). As part of week one I felt it would be important to show a basic self-monitoring diary and how to use it. This would support the participants gaining insight into the understanding and monitoring of their behaviour.

Emotional Wellbeing & Nutrition

The course was titled Mood and Food, and was marketed towards people who struggle with emotional eating. For that reason, it was important to help participants understand the underlying mechanisms behind emotional eating. *Figure 1* (below) was taken from the 'Psychological Perspectives on Obesity' (British Psychological Society, 2019) and it shows the biopsychosocial model of obesity. This model outlines how adverse psychological

experiences, mental health problems and emotional coping skills all impact an individual's eating behaviour. Judging from my professional experience working 1-1 with people who are emotional eaters, many do not understanding the link between emotions and eating. I felt it was important to include this content to help the clients understand their behaviour and in turn be able to respond appropriately.

Framework for psychology and eating behaviours



As Greaves and colleagues outlined (2017), one reason why people find behaviour change difficult in the long term is that they may have unmet psychological needs which are expressed through food. A way of addressing that deficit is by meeting your psychological needs in new ways. If we look at eating from an Emotion Focussed Therapy (EFT) perspective (Timulak & Pascual-Leone, 2015), eating could be considered behavioural avoidance of the emotion. In simple terms, people might eat in order to reduce the distress of their emotions, however it doesn't resolve the underlying issue. For example, if someone feels lonely, they may turn to food in order to reduce the intensity of that emotion, however the lonely feeling remains after eating. This piece of the course content was important to include to give people insight into the role of emotions in eating behaviour.

What needs to change?

After the previous session's content outlining how emotions impact food, this session was about how to meet emotional needs in new ways. Included was a series of reflective prompts in order to support people seeing what they truly needed to address the emotion. Below is an example from the content.

Prompt 1. What happened?

I was at home alone. I was bored and just couldn't stop eating. I felt really sick afterwards and it didn't help.

Prompt 2. How did I feel before? What was happening?

My friends were all out celebrating together and I wasn't asked. I guess I felt lonely and a bit neglected by my friends.

Prompt 3. What did I need or want in that moment (instead of food)?

If I was lonely, I could have reached out to someone. I might not look at my phone or social media as I feel left out.

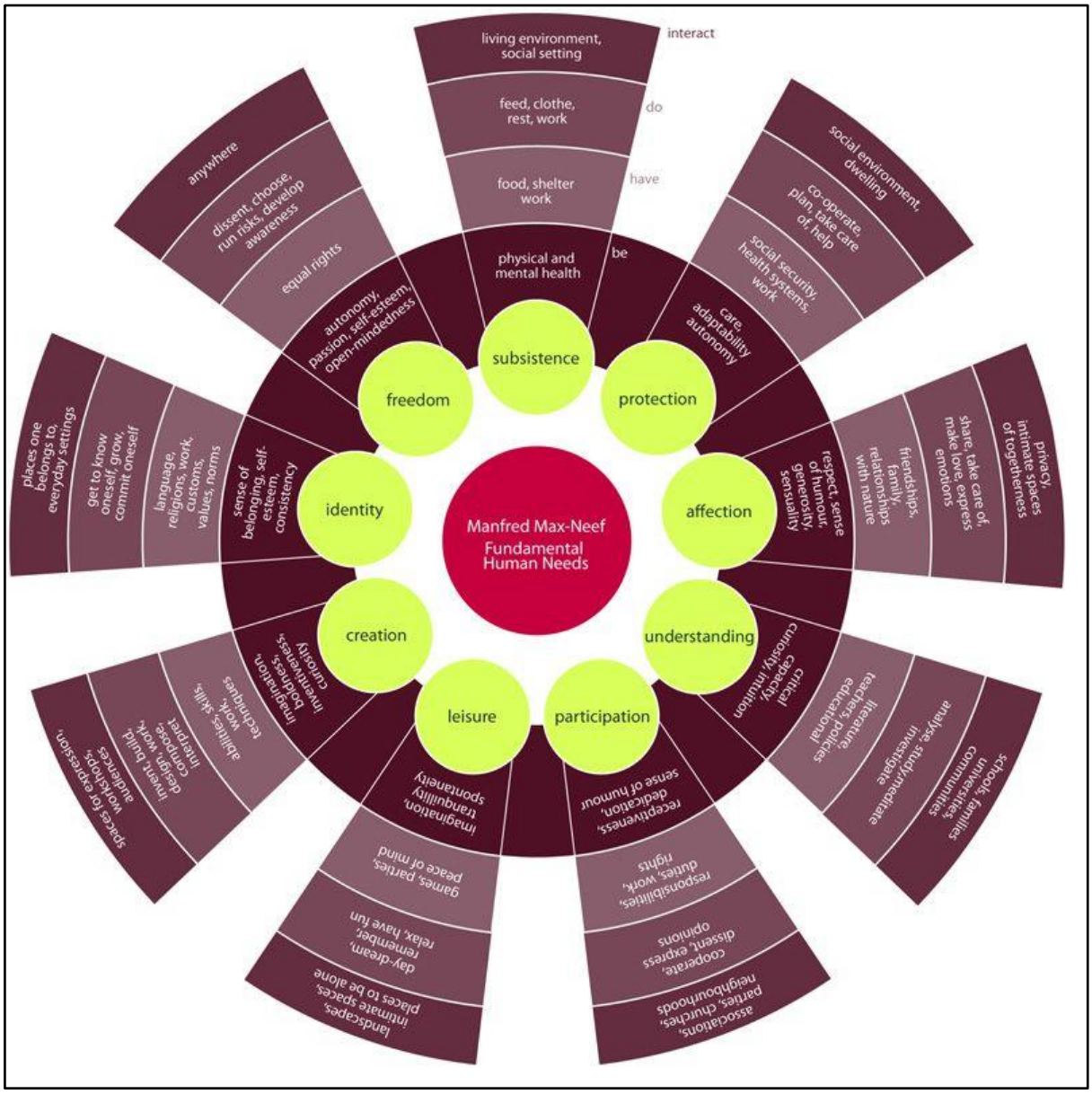
Prompt 4. What could I change going forward?

Recognise that I felt lonely and take a step towards managing that feeling without food.

This example shows how a person's psychological need was human connection and in the absence of that they felt lonely. It also shows how someone might manage loneliness in a way that doesn't mean turning to food.

In addition, a psychological needs diagram (*Figure 2*) was included for participants to identify any deficits in their own psychological needs. Humans have fundamental needs (Max-Neef, Elizalde & Hopenhayn, 1992) and this section was about identifying what areas of your needs are not being met, using the below diagram. Participants were prompted to consider what areas of their needs were not being met. If those psychological needs were not being met, they may express those needs through food.

Manfred Max-Neef – Human needs diagram



Embracing Flexibility

There is evidence to suggest that rigidity and dichotomous thinking styles can promote disordered eating behaviours (Linardon & Mitchell, 2017). Using the CBT model of eating behaviour which states that beliefs or cognitions impact behaviour, this section was aimed at challenging some of the unhelpful rigid beliefs that are common in emotional eaters. For example, “carbohydrates are bad foods and should be avoided”. We also know that psychological inflexibility can promote disordered eating as well as predicting poorer emotional wellbeing. Considering emotional distress can be a trigger for emotional eating,

psychological flexibility was important to work on. Psychological flexibility was explained in the content, as well as giving some real life examples of how to challenge inflexibility. The first step would be noticing inflexible language (I can't, that's bad, I have to, I must) and challenging it by using the headings below.

- Describe the negative or rigid thought or belief
- What evidence supports that thought or belief?
- What evidence doesn't support that thought or belief?
- Is there an alternative perspective that might be true?

Maintaining Long Term Changes

Again drawing from Greaves et al (2017) it is important to consider the psychological predictors of long term behaviour change. Greaves outlines a few key components that are important to consider when maintaining changes, and the below were outlined in the content which was created.

- Meeting your psychological needs in new ways
- Finding intrinsic value in exercise/nutrition
- Developing intrinsically motivating goals
- Moving away from the evaluation of shape and weight
- Developing a new identity
- Viewing the changes as part of a new lifestyle, rather than a short term fix.

This was included to help participants identify some long term predictors of change and some areas to avoid. Frequent weighing and a preoccupation with weight is something that I see a lot in my 1-1 work with clients, and can often be unhelpful. For example, self-weighing might bring feelings of shame, embarrassment or disgust and in turn people may manage those feelings with food.

dieteticallyspeaking

Website: dieteticallyspeaking.com
Email: maeve@dieteticallyspeaking.com

Maeve Hanan
Consultant Dietitian
BSc (Hons) Dietetics
CORU: DI037648
HCPC: DT27185

Instagram: @dieteticallyspeaking **Twitter:** @DieteticSpeak **Facebook:** @DieteticallySpeaking

Consultancy Project Feedback for Joe O'Brien

Joe O'Brien provided consultancy input in the development and delivery of the Mood and Food Online Course which took place from the 11th of January until the 8th of February 2021.

Joe's input was invaluable. He developed relevant and user-friendly content for the live sessions and course workbook related to the psychological basis of emotional eating.

Importantly, Joe's delivery of the content during the live sessions was very clear, engaging and impactful. This was reflected in the wonderful feedback the course received, for example: "The course has changed my life. I know I have a long way to go but my relationship with food and the way I eat has changed. I am already happier and more relaxed about my diet and know that when I feel like binging then it is probably because my emotional needs are not being met".

Another review that highlights Joe's skills in facilitating online group sessions mentioned that: "Both hosts were very engaging and chaired in a way that made it feel like a whole group experience".

Joe was also professional and very pleasant to work with, and I would be delighted to work with him again in future.

Maeve Hanan

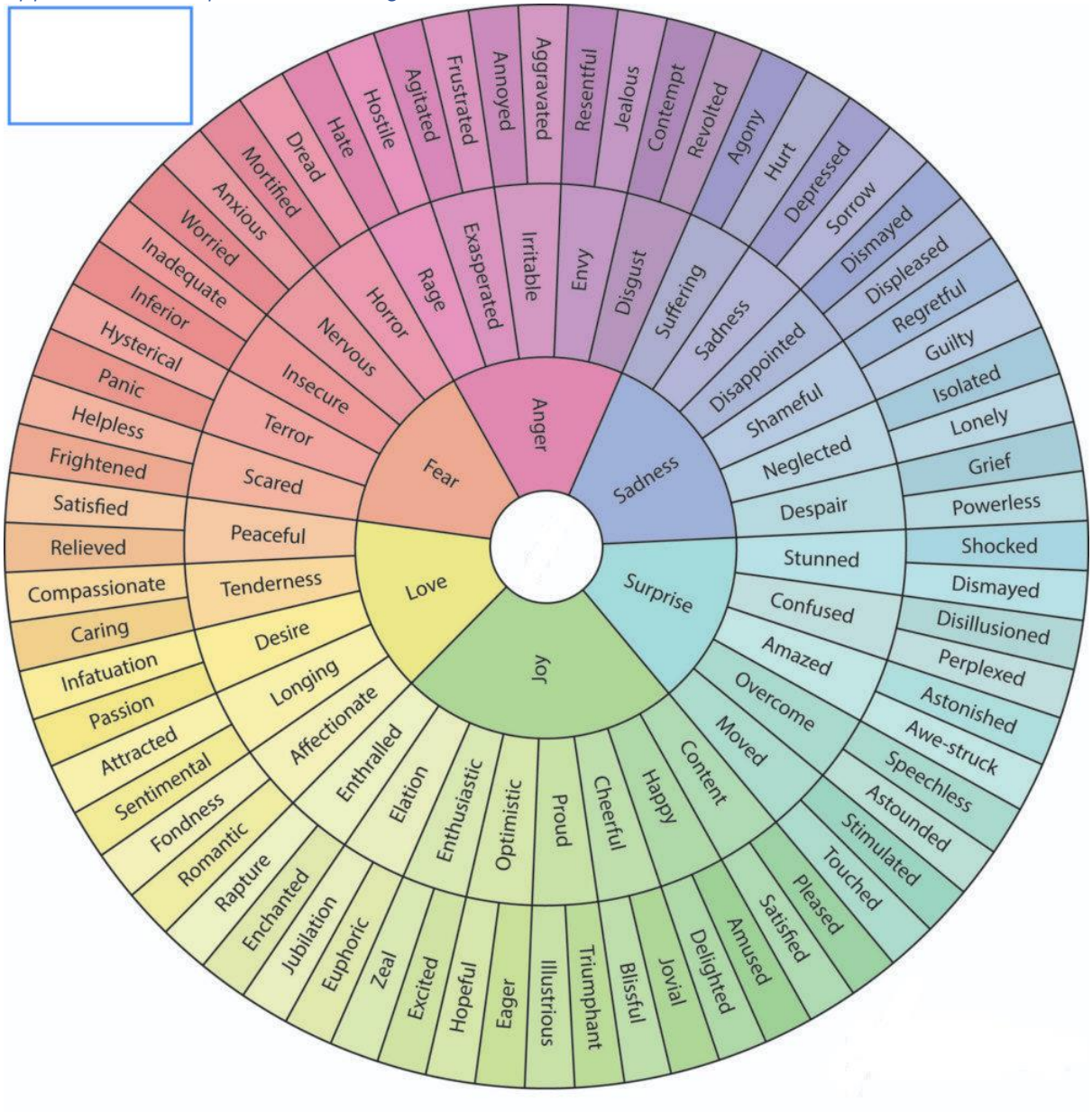
Consultant Dietitian

BSc Hons Dietetics

CORU: DI037648

HCPC: DT27185

Appendix E – Sample Content Diagrams



The Self-Monitoring Diary

Below is an outline of what to monitor in your diary. It is an alternative way of monitoring your eating behaviour without calorie tracking or weighing food. The idea is to help you and your practitioner to recognise the patterns of behaviour as well as understand some of the associated thoughts and feelings before and afterwards.

Instructions

Please fill in each section at every meal, and use the same document. Reflect on how you felt before eating, and afterwards. Be as detailed as you feel is necessary. The more detail, the better your practitioner can understand and support you. Try and write in the moment or at the time. You can print and hand write if you wish, or fill it out on the Word Document.

Day and Time	Place	Food	Did it feel excessive? Yes/No	Hunger Level (0-10)	My reflections (thoughts and feelings before and after)

Below is a sample table to get an idea of what to write.