Using psychological approaches for working with obesity and type 2 diabetes

This article examines the range of factors impacting on weight and type 2 diabetes management.

As Dr Vanessa Snowdon-Carr highlights, failure to acknowledge these factors during assessment risks providing an intervention which may not meet the needs of the patient.

Introduction

Obesity is one of the primary risk factors for type 2 diabetes mellitus.\textsuperscript{1} There is a seven times greater risk of diabetes in obese people compared to those of healthy weight, with a three-fold increase in risk for overweight people.\textsuperscript{2} Both the management of diabetes and the management of obesity are time, energy and emotion intensive. Coping with the two together can be extremely hard. Within diabetes, failing to follow health care advice to the letter is so common it is considered as normal\textsuperscript{3} and so in order to optimise health and well-being we need to understand the factors which impact on the management of both conditions.\textsuperscript{4,5}

Psychological theory for health-related behaviours

There are a number of psychological theories that help us to understand behaviours relevant to health conditions and help to explain why following health advice can be challenging. The Health Belief Model is extensively applied to health research as it focuses on the attitudes and beliefs of individuals. Table 1 highlights the six dimensions which determine health behaviour.\textsuperscript{6}

The perception of severity, beliefs about the effectiveness of treatment and self-efficacy have all been found to influence behaviour and outcome in diabetes.\textsuperscript{7}

While the Health Belief Model is used to predict health-related behaviours, other theories such as the Self-Regulatory Theory serve as an attempt to understand the dynamic processes which lead to achieving or not achieving a particular standard.\textsuperscript{8}

Table 2 summarises the components involved with this model.\textsuperscript{9}

Utilising these models to consider the interplay between diabetes and obesity is useful. Many people who believe they have little control over their obesity will assume they will develop type 2 diabetes at some point. This belief is often distressing but is associated with resigned helplessness. The belief in one’s ability or capacity to influence change as highlighted in Table 1 is known as self-efficacy.\textsuperscript{10}

Self-Efficacy Theory\textsuperscript{10} integrates cognitive and social learning frameworks. Table 3 summarises the way self-efficacy influences eating in people with type 2 diabetes.\textsuperscript{11}

Depending on their personal model of the condition, individuals adopt coping strategies that determine outcome. Strategies to cope can be both helpful and adaptive or unhelpful, sabotaging and maladaptive. Sometimes the frequency and length of time a particular strategy is used can also determine how helpful or otherwise it can become. Generally, adaptive strategies include:

- Acceptance.
- Problem-focused coping.
- Cognitive reappraisal, i.e. reinterpreting the meaning of a situation to change the emotional impact.
- Seeking social support.

While maladaptive coping strategies include:

- Avoidance.
- Denial.
- Expression of anger.
- Alcohol/drugs.
- Food.
- Gambling.

Coping style is important for obesity.\textsuperscript{12}

Eating behaviour

As described in the introduction, obesity is not ‘just’ caused by eating too much. Holding such a reductionist approach will prevent us from properly understanding the people whom we are supporting. The following sections will be illustrated with typical statements used by patients.

Automatic eating

As children we are usually taught to eat our main meals three times per day. This becomes an over-learned behaviour we do automatically and secondary to other tasks of everyday life without even being aware of what we are doing.\textsuperscript{13} We are told when to eat regardless of whether we feel hungry, and typically we are encouraged to eat all of the food given to us. This pattern can lead to habitual overeating and correlates with weight gain, making obesity more difficult to control.\textsuperscript{14}
‘I was watching the TV and eating crisps. I didn’t really notice I was eating them until I got to the bottom of the packet and realised they were all gone.’

**Emotional eating**

Emotional eating is often referred to as ‘comfort eating’ although this more popular term misrepresents the range of triggers to eat that are emotionally driven and the function of this eating.

Learning to use food to cope with strong negative emotions can become a very powerful strategy to avoid or suppress thoughts and emotions which feel unbearable or uncomfortable. Over time this use of food as an ‘anaesthetic’ becomes habitual and automatic:

‘I was so irritated with my partner…. but there was nothing I could do about it. I picked at food all that evening. I don’t know why…”

**Restrictive eating**

The issue of whether restrictive eating can actually cause difficulties is contentious. Early research highlighted the impact, both physically and cognitively, of significant calorie restriction. Rigid restraint results in a person being less attentive to physiological cues to hunger and satiety, which can lead to over-eating. Many people fall into the trap of trying to follow diets which are very different from their existing pattern of eating; this radical change can be hard to maintain both physiologically and behaviourally. If the diet plan is not followed it can lead to catastrophic thoughts of failure and undermine self-efficacy:

‘Why did I eat that chocolate bar? I wasn’t even hungry. I’m never going to be able to lose weight…. I need to really be strict with myself now…”

Followed by:

‘What’s the point? I’ve already messed the diet up for today. I’ll start again tomorrow…”

So a lapse can rapidly turn into a collapse and the diet is abandoned. Not being able to stick ‘perfectly’ to a diet plan will erode one’s beliefs about the possibility of weight loss and create repeated cycles of loss and regain, increasing shame, self-blame, reducing self-efficacy and creating an unhelpful mix of dieting ‘rules’. Flexible control over eating behaviour, however, is associated with better weight maintenance than rigid control.

**Binge eating**

Binge eating disorder (BED) involves recurrent episodes of eating significantly larger than usual portions of food in a short period of time, alongside a subjective sense of loss of control over eating. There is no compensatory behaviour as found in bulimia nervosa (such as self-induced vomiting, fasting or laxative misuse). Within the general population, prevalence rates have been noted as 1.4%. Within obese populations who are seeking treatment for their weight, the prevalence is considerably higher, up to 30%.

Binge eating is an important consideration for impact on weight, mood and physical health. It is associated with weight gain, obesity onset and severity of obesity. It is also linked to weight cycling of loss and regain.

Nearly 75% of a population of people who had BED also had at least one psychiatric disorder, with a significantly greater risk of developing metabolic syndrome over and above the risk attributable to obesity alone.

The prevalence rate for type 2 diabetes and BED has been observed at 5.6%, highlighting the need to screen for BED in people with type 2 diabetes.

**Understanding barriers**

‘I know perfectly well how to diet… I could write a book about calories… but I just can’t seem to do it.’

**Weight stigma**

Weight stigma originates from the belief that weight can be controlled and therefore obesity represents character deficits (for example: greed, laziness). This
belief is likely to be linked to the over-simplified messages about weight loss suggesting weight loss is easy if a person is motivated enough. People who are obese are far more likely to experience discrimination linked to their weight than their non-obese peers.27

Weight-based negative bias is found in employment and health care settings, within the media, interpersonal relationships and education.28 As BMI increases, the frequency of reported discrimination increases.29

Health care professionals are encouraged to provide health advice to their patients at every opportunity. The NHS ‘Making Every Contact Count’ initiative recommends that lifestyle advice be given priority – this includes encouraging individuals to: stop smoking; eat healthily; maintain a healthy weight; drink alcohol within the recommended daily limits; undertake the recommended amount of physical activity; and improve their mental health and wellbeing.30 However, many health providers dislike treating obesity, feel unprepared to do so and have little hope that patients will make lifestyle changes.31 Weight discrimination has been reported in health care settings, from clinicians in training32 through to qualified practitioners.33

There is a suggestion that weight-based stigma may encourage weight loss.34 However, overwhelmingly it has been found to leave people feeling berated and disrespected by their health care professional, upset by comments about their weight and worried that they will not be taken seriously and, as a consequence, reluctant to address weight concerns.35,36

Weight discrimination increases the risk of maladaptive eating patterns, eating disorder symptoms37 and binge eating.38 It has been linked to increased calorie intake and decreased perception of control of food.39 It has an impact on mood, with higher levels of depression reported and lower self-esteem.40 It interferes with people’s ability to engage in physical activity, with poor body image and anxiety about discrimination compounding exercise avoidance.40

Internalised weight bias in individuals who are obese has been found to be associated with greater impairment in both physical and mental health related quality of life domains over and above age, BMI and medical comorbidity.41

Obesity stigma can act as a barrier to ongoing management of both conditions. Obese patients with type 2 diabetes may feel responsible not only for their weight but also their diabetes.42 Therefore, exploring weight stigma in education programmes for type 2 diabetes is recommended.43

Shame

Feelings of shame in obese individuals can result from weight stigma but also from the experience of repeatedly being unable to lose weight or prevent weight regain.44 Individuals who are seeking treatment for obesity have been found to experience high levels of shame, distress, eating disorder psychopathology and uncontrolled eating, with internal shame being of particular importance.45

Shame and guilt focusing on weight have been found to be positively associated with disengaging coping responses, such as avoidance, negative self-talk, crying and isolating oneself. These responses are likely to prevent active coping styles which may be more helpful for weight loss, such as problem-solving, confronting and seeking social support.46

Shame within type 2 diabetes has been less explicitly researched; however, more recently the proposal of the social stigma around diabetes has been investigated and highlighted shame experienced by patients who feel others blame them for developing type 2 diabetes.47 Identifying ways to reduce shame may be useful for supporting weight loss and preventing relapse,45 as well as exploring shame, stigma and type 2 diabetes.

Mental health

High levels of emotional distress are linked to obesity48 with a complex bidirectional relationship between the two. Little evidence has been found to link mood disorders with the general overweight and obese populations, but of those people seeking weight-loss treatment elevated rates of depression and bipolar disorders have been noted.49 A systematic review of obesity and depression concluded that the risk of developing depression over time for obese people was 55%, whereas those who were depressed had a 58% increased risk of becoming obese.50

In a recent Cochrane review,51 it was noted that people with severe mental illness are twice as likely to develop type 2 diabetes than those without severe mental illness, but also to develop anxiety, depression and diabetes-related stress.52

There are recognised links between psychiatric medication and weight gain, often associated with mood stabilisers, antipsychotics and antidepressants. Only a few weight neutral or weight loss producing psychotropics are available.53

Research has typically focused on the impact of depression and anxiety but more recently there has been interest in trauma. Experiencing post-traumatic stress disorder (PTSD) symptoms is associated with increased risk of becoming overweight or obese, and PTSD symptom onset alters BMI trajectories over time.54,55 Clinical themes emerge around using the body (and weight) as a protection from unwanted intrusion.

Stress

Stress is associated with obesity, and the neurobiology of stress overlaps significantly with that of appetite and energy regulation.56 There is also considerable evidence to suggest that there are physiological drives to eat particular foods under stress conditions.57 Chronic life stress seems to be associated with a greater preference for foods that are high in sugar and fat58 and a decrease in vegetables and whole-grain foods.59

There is an increased risk of type 2 diabetes in people: exposed to stressful working conditions or traumatic events; who have depression; with personality traits or mental health problems that put them in conflict with others; of low socioeconomic status, either currently or in childhood; and in racial/ethnic minority populations, independent of current socioeconomic status.60
**Sense of self**

‘Our sense of self, which is part of our reality, is a subjective, emotion-laden, ongoing self-evaluation of worthiness, competence and social acceptability.’61

Struggling with self-esteem and self-worth is a pervasive theme noted within clinical practice for people who struggle significantly with their weight. Rather like depression, self-esteem occurs in both directions. People with low self-esteem may use food to care for themselves while at the same time weight stigma is having a deleterious effect on self-esteem. Self-esteem may also be very specific to weight; in other words, a person may have a good general sense of self-esteem but a very poor one in relation to body image and weight-related beliefs about self.

Learning about the role of food and self-care will come from our primary caregivers. For example, children who have been offered food to compensate for all kinds of needs do not learn alternate strategies for coping and food becomes a long-term, central strategy. They may have experienced inadequate care in other aspects,62 or caregivers misinterpreted their needs. Those with secure attachment styles were found to participate in healthier preventive health behaviour and had higher self-esteem than those with insecure attachment styles.63

The relationship between self-esteem, self-care and self-worth and the impact on weight management has received little empirical attention. Cochrane61 has written about the importance of reframing the task from weight loss to self-care, suggesting that people with a healthy sense of self-worth consistently and conscientiously take care of their own health.

**Social support**

Social support can assist in well-being by buffering against the negative effects of stress. It is considered to be a powerful means of enhancing outcome for weight loss but empirical evidence is mixed. This may be because ‘social support’ covers such a diverse range of interactions.

Eating is a universal experience such that everyone will have their own ideas about what is required for weight loss and this will inform social support. Women who ‘never’ experienced family support were found to be less likely to lose weight compared to women who experienced frequent friend and family support. However, a paradoxical finding noted that women who had ‘never’ experienced friend support were the most likely of all to lose weight.64 This study highlights the complexity of what is meant and experienced as social support. Within clinical practice the variation of social support is noted with very different experiences between the approaches: encouraging support which enhances self-efficacy (for example, affirming of ability to make change) and/or supportive of healthy eating (for example, eating the same food) versus support which is perceived, even if not intended, as critical (for example, ‘should you be eating that?’). Often support that is perceived as overly directive and critical is rejected and defended against which can prompt eating in secret driven by shame and/or a sense of rebellion.

Mayberry and Osborn65 described two types of unhelpful support with type 2 diabetes: the first was sabotaging behaviours from family members who were not well informed about diabetes, and the second in which attempts to support resulted in conflict. Lower levels of adherence to diabetes medication were observed in people who reported non-supportive family interactions which were experienced as sabotaging of their efforts to engage in self-care/management behaviours.

Integrating social support into interventions has potential benefit if there is understanding about how to enhance motivation and self-care rather than sabotaging.65 Interventions may also benefit from providing strategies for managing others’ comments about weight, eating and diabetes.

**Therapeutic approaches**

For complex obesity in which there is experience of weight cycling and low self-efficacy, simply concentrating on dietary change is not sufficient. Indeed, failing to acknowledge and explore the barriers discussed prevents an understanding of ambivalence.

The following section will explore the main therapeutic approaches, the issues they can be most useful to target and their outcomes.

**Cognitive behaviour therapy**

Cognitive behaviour therapy (CBT) is an approach that aims to help people cope more effectively with problems by equipping them with a framework for thinking, feeling and behaviour.66 CBT is perhaps the most researched psychological intervention in the eating disorder and obesity field. It is versatile in terms of mode of delivery (self-help reading material, computerised, telephone, face-to-face individual and group), and different levels of intensity can be taught to a range of health professionals.

The following elements have been highlighted as essential when using CBT for obesity:

- Drawing a distinction between weight loss and weight maintenance.
- Addressing potential obstacles:
  - Identifying and moderating unrealistic weight goals.
  - Tackling body image concerns.
  - Directly addressing patients’ primary goal.
- Helping patients acquire and then practise the behavioural skills and cognitive responses needed for effective weight control.
- Achieving weight loss.
- Addressing obstacles to the acceptance of weight maintenance.

Generally, CBT interventions are not considered to yield significant weight loss (average 9% weight loss).68 CBT has, however, been found to be more useful in reducing attrition69 and relapse70 and treating BED.71 Some studies have found limited impact for type 2 diabetes, noting improvements in long-term glycaemic control and psychological distress but no significant impact on weight control or blood glucose concentration.72 While others have noted that an adapted CBT intervention was an effective intervention for adherence, depression, and glycaemic control in people with depression.73

How we think and feel are profoundly important in terms of...
antecedents and consequences of targeting eating behaviours. Exploration of cognitive distortions and thinking errors can highlight extremely useful insights clinically, into rigidity around approaches to eating and weight loss, and yet empirical evidence does not support CBT on its own as an effective intervention for weight loss.

**Motivational interviewing**

Motivational interviewing is a therapeutic approach used extensively in physical health care. It is linked to the Transtheoretical Model of Change, which postulates that change is a process, not a discrete event. Motivational interviewing is used to work alongside an individual to explore and resolve their ambivalence about change, to support self-efficacy and enhance intrinsic motivation.

It is considered to be a useful approach for weight management because people are generally aware of what they need to do to control their weight but they struggle with motivation to sustain these behaviours. Part of the difficulty in implementing behaviours to support weight loss is linked to ambivalence about whether the perceived costs (for example, focus on eating, increased activity etc) out-weight the benefits. While motivational interviewing does appear to have an impact on weight reduction programmes, the effect size, however, is small. It is often statistical rather than clinical significance that is reported in studies, with as little as 1.47kg weighted mean difference between motivational interviewing interventions versus control.

Evidence suggests that motivational interviewing is a useful adjunct, effective for weight management when combined with physical activity, diet and other interventions. It can also be useful when specifically targeted to the individual’s stage of change: Carels et al found adding a component of motivational interviewing for people who were struggling to meet behavioural treatment goals resulted in increased weight loss and greater engagement in exercise than a matched group who did not receive motivational interviewing.

**Compassion focused**

Self-compassion allows for an acknowledgment of mistakes and shortcomings, enabling the individual to consider changing unhelpful behaviours and attempt new goals, rather than berating themselves for previous failures. Compassionate mind focused therapy is based on the premise that people with high levels of shame and self-criticism find it very difficult to be self-supporting or self-reassuring. This, therefore, fits well when working with external and internalised stigma about weight and previous unsuccessful weight loss attempts.

Compassion-focused interventions have not been extensively researched in isolation for obesity, weight management or type 2 diabetes but an adaption for eating disorders addresses the associated high levels of shame and self-criticism. Research on women’s motivation to exercise found that self-compassion was positively associated to intrinsic motivation and negatively related to introjected motivation (i.e. behaviours pressured by other forces).

**Mindfulness**

Mindfulness is defined as the ability to attend, in a non-judgemental way, to one’s own physical and mental problems during ordinary, everyday tasks. Through practice it is possible to pay attention to what is happening in the present moment rather than being caught with worries about the past or future.

Over the last few years, there has been a great deal of interest in mindfulness as applied to eating behaviour. The most promising results have been noted when mindfulness is adapted to target specific behaviours, rather than general mindfulness training. It has been found to potentially minimise the automatic and inattentive reactions to food and triggers which lead to emotional eating and over-eating. It is a very useful approach to develop greater self-regulation, noticing cravings without acting on them therefore enabling weight loss and a reduction in binge eating.

Specific programmes have been designed such as the Mindfulness Based Eating Awareness Training (MB-EAT) and the MB-EAT for Diabetes (MB-EAT-D). With diabetes specifically, mindfulness approaches have found a reduction in fasting glucose or HbA1c in some but not all studies.

Developing both mindfulness and self-compassion appears more promising for weight loss than developing mindfulness alone or simply dieting.

**Summary**

It is essential that psychological factors are considered to avoid prescriptive interventions for weight and type 2 diabetes which, rather than prompting change, can frequently lead to repeating cycles of lapse and relapse, reduced self-efficacy and increased shame.

This paper highlights many of the factors essential to consider during assessment.

**References**

References are available in Practical Diabetes online at www.practicaldiabetes.com.
Short report

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References

50. Werij MQ, et al. Adding cognitive therapy to