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anything else, how you see everyone as multi-faceted humans, not just one-dimensional workhorses, how you put time and thought into helping us develop all aspects of academia, rather than just narrowly focus on our own work, and how you put importance on our long-term aims and goals, not just our dissertation. Most of all, I've valued how you treat us all like equals. (And, of course, for fostering my love of the Oxford comma.)

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Ethics approval

The Auckland University of Technology Ethics Committee (AUTEC) granted ethical approval for this dissertation research on:

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dieticians and nutritionists were identified as the most qualified and suited to help obese and overweight individuals lose weight [10]. However, while 68.6% of those who are told to lose weight report an intentional attempt at weight loss, only 10.9% of them seek help from health professionals such as these [14]. Outside of clinical studies, individuals in fact work with many other "nutrition coaches", such as personal trainers, sports coaches, and health coaches [15-17]. As these fields are not as regulated as other health care professions, they have varied backgrounds and qualifications, and there is no commonly accepted definition for these professions [18]. Indeed, in many cases (depending on context) providing nutrition and weight loss help can be considered out of the scope of practice for certain professions [19, 20]. There is currently a lack of data on nutrition providers outside of the primary care physicians and dieticians, especially on those providers who - despite not being considered primary care providers - follow evidence-based best practice.

The Diet Doc LLC

The Diet Doc is a US-based weight loss coaching company founded over 25 years ago with almost 150 licensed Diet Doc Weight-Loss Centres around the world. Nutrition coaches at the Diet Doc undergo training in evidence-based best practice for weight loss. The Diet Doc coaches work with their clients one-on-one and provide individualised programs, but coaches also have access to a multi-disciplinary team of support consultants including dieticians, medical doctors, physical therapists, and strength and conditioning specialists. These aspects of The Diet Doc make them an appropriate group to collaborate with for research into the client-practitioner relationship of those who work with nutrition coaches, and how this relationship affects weight loss and maintenance. For this research, The Diet Doc provided access to their database of current and former clients, to which an invitation was sent asking members to take part in qualitative interviews and subsequently, an anonymous survey. The uniform training, education, and qualifications of The Diet Doc coaches, the consistent delivery of The Diet Doc program to clients, and the one-on-one coaching model made for a productive

successful with long-term maintenance of this weight loss [33, 35]. However, being able to maintain weight after an initial weight loss attempt is important. While short-term weight loss can be achieved by dieting, it is suggested that in the long term, unsuccessful weight maintenance and associated multiple dieting attempts may negatively impact an individual's health – both mental and physical. This includes larger subsequent weight gain, increased chance of obesity, and ill effects on mental health including depression and eating disorders [36-39]. Without successful maintenance of at least a portion of the lost weight after initial weight loss, individuals may lose the health benefits of weight loss and suffer an increased risk of mental health concerns.

Fortunately, some data indicate higher success rates of weight loss maintenance can be achieved with a dedicated, practitioner-guided maintenance phase after initial weight loss [40]. To better understand the behaviours and perspectives associated with weight loss maintenance, and thus, the focus of the client-practitioner relationship during the weight maintenance phase, the present review was conducted. It aims to cover the current body of quantitative and qualitative literature around the behavioural and psychological determinants of weight loss and weight maintenance. A literature search was conducted online through PubMed, Scopus, EBSCO, Google Scholar, and PSYCHnet electronic databases. Multiple search strings were used, examples of which are "weight loss OR weight maintenance OR weight control AND practitioner OR dietician OR coach OR personal trainer" and "weight loss OR weight maintenance OR weight management AND psychological OR cognitive AND behavio*". Peer-reviewed, English-language papers were selected by screening titles and abstracts, and relevant papers were read in full. Reference lists of selected papers were also searched for related references.

The findings of the literature are herein reviewed to highlight the behaviours associated with weight loss and maintenance, along with the effects of eating behaviour on weight management. These associations, along with the literature on client-practitioner relationships,

are reviewed to provide guidance as to which perspectives and behaviours are most likely to help those seeking long-term weight loss maintenance succeed.

Weight loss maintenance

Successful weight loss maintenance is defined as intentionally losing 5-10% of initial body weight and maintaining that loss for at least one year [8]. A large meta-analysis of behavioural weight loss interventions found that weight loss and associated health benefits peak at around six months into weight loss interventions, followed by gradual weight gain after this [41]. Kraschnewski and colleagues reported only slightly more than one in six US adults who have been overweight or obese have maintained a weight loss of 10% of initial body weight long term [33], while a review by Wing and Phelan suggests only about 20% of people in the general population are successful with long-term maintenance of weight loss [35]. Further, a longer-term meta-analysis of 29 weight-loss studies with an average of 4.5 years of follow-up found more than half the initial lost weight was regained within two years, and more than 80% of lost weight was regained by five years [9].

Weight maintenance is an important part of the weight management process. Short-term weight loss can be achieved by dieting; however, multiple dieting attempts and weight instability may result in larger subsequent weight gain [37, 42, 43], an increased odds of subsequent obesity [39], and susceptibility to increased weight gain long term [44]. For example, an early cross-sectional study by French and colleagues [45] with a follow-up of two years, found individuals who were currently dieting, or had previously participated in a weight loss program, gained more weight than those who had not previously attempted to lose weight. However, it is hypothesised that while diet-induced weight loss does hasten weight regain, it does not cause weight gain beyond what would occur without the diet, and instead, multiple dieting attempts reflect a personal vulnerability to weight gain, particularly in non-obese individuals [46]. Regardless, multiple weight loss attempts are also associated with mental health concerns, including binge eating [36], depressive symptoms including major

Weight control and behaviours

There is a large body of research examining the behaviours associated with successful weight loss and maintenance. A study of the NWCR found the most commonly reported behaviours for initial weight loss were restricting intake of certain types/classes of food, limiting the quantity of food, and counting calories [55]. For weight maintenance behaviours, eating a low-fat diet, frequent self-monitoring, and regular physical activity were most reported. Different analyses of the NWCR report similar results [56, 57] and identified a fourth weight maintenance behaviour - consuming breakfast daily [35, 57]. Other studies largely mirror and support these findings, and also suggest that other factors like high levels of restraint, low levels of disinhibition (a measure of periodic loss of control of eating), and consistent eating patterns are associated with weight maintenance [34, 54, 55]. Additionally, important lifestyle behaviours for weight loss maintenance include leading an active lifestyle, weighing oneself several times a week, long-term self-monitoring, and engaging in leisure time activities [55, 58].

More recently, the Weight-Related Behaviours Index (WRBI) was developed by Koutras and colleagues to assess the frequency of weight-related behaviours [59]. Ten specific behaviours previously linked to weight loss or weight maintenance were chosen and subjects were asked to report their frequency of these behaviours. The results of this study showed that successfully maintaining weight was associated with eating at least 6 meals a day and almost always eating homecooked meals [59]. This is the first index developed to score behaviours , rather than food or nutrient intake, and could prove to be an important tool for researching weight-related behaviours and for clinically assessing and supporting patients during long-term weight maintenance [59].

While the current research identifies which behaviours are associated with weight maintenance, the question remains: why do some individuals keep practicing these behaviours and maintain weight loss long term, while others stop? Sciamanna and colleagues [34]

practitioner-prompted review of behavioural goals, practitioner-provided rewards (rewarding diet success), and planning for social support and change were linked with increased dietary self-efficacy.

Additional studies look at how three different cognitive eating behaviours are associated with weight maintenance. These psychological behaviours include cognitive restraint (CR; the tendency to consciously restrict food intake to control body weight, while cognitively ignoring physiological hunger and satiety cues), emotional eating (EE; the tendency to overeat in response to negative emotions such as anxiety, anger, boredom, or irritability), and uncontrolled eating (UE; the tendency to overeat, accompanied by feelings of loss of control with subjective feelings of hunger) [64]. CR is not the same as dieting – while dieting refers to a reduction of energy intake in order to lose weight, CR refers to the cognitive effort to restrict food, regardless of the outcome of this effort [65]. In weight loss and maintenance interventions, increased CR is consistently associated with both increased weight loss and maintenance, decreased energy intake, and increased consumption of healthy foods [66-69]. Researchers thus suggest that weight-loss programs should focus on increasing skills to improve CR for long-term success in weight control [67]. However, some research has further subdivided CR into two dimensions - flexible and rigid control – the latter of which is cross-sectionally associated with higher disinhibition, BMI, and more frequent and severe binge eating, and the former with lower BMI, improved rates of weight loss maintenance, fewer and less severe incidences of binge eating, and lower self-reported energy intake [70]. Therefore, how CR is expressed may be just as important as its presence. Thus, practitioners should encourage moderation and flexible approaches rather than black-and-white thinking [71]. In support of this notion, adopting a greater number of flexible control habits is associated with an increased likelihood of weight loss maintenance [72], and higher scores for flexible control may moderate weight loss maintenance success [73]. With that said, some researchers report that flexible and rigid control share substantial variance [74], which may indicate the difficulty in adopting a purely flexible control mindset, and the potential risks of attempting to do so.

receiving ongoing maintenance-phase contact are associated with decreased risk of weight regain [27, 87].

Practitioner-led weight loss interventions, even without a continuing maintenance phase, produce better weight maintenance compared to self-directed weight loss efforts. In a study by Williams et al. [26], women who completed a 12-month practitioner-led weight loss program weighed significantly less at 24 months, compared with a control group who completed 12 months of self-directed weight loss (64.6 kg vs 67.3 kg; $p = 0.015$). One year following the intervention, participants in the practitioner-led weight loss program regained less than a kilogram, while the control group regained all lost weight. Similarly, dietician-directed weight loss programs led to small but significant improvements in weight maintenance compared to self-directed programs in a meta-analysis investigating the effectiveness of dietician guidance on weight loss, with the caveat that more research is needed in this area [88].

Ongoing practitioner contact and guidance during the maintenance phase may be a key factor that contributes to this observed success. A study by Svetkey and colleagues [86] randomised over 1000 successful weight loss maintainers into an intervention consisting of either monthly personal contact with a weight-loss practitioner (10–15-minute phone calls), unlimited access to a technology-based maintenance intervention, or a self-directed control group, and followed them for over two years. At 30 months, those in the personal contact group regained significantly less weight than those in the self-directed control group. Similarly, a study by Wing and colleagues [89] compared a maintenance-phase intervention presented in either a face-to-face format or an internet-based format, compared with a newsletter-only control group. The face-to-face format was associated with improvements in weight-related behaviours – consistent exercise and weighing habits – and the psychological eating behaviour of dietary restraint, while the other groups experienced decreases in all these behaviours. These behaviours – along with decreases in disinhibition and hunger – were associated with

improved weight loss maintenance [89]. Various other studies also showed that behaviours practiced by groups receiving ongoing maintenance-phase contact were associated with decreased risk of weight regain [27, 87]. Indeed, it has been repeatedly shown that maintenance phases are more effective when they include practitioner guidance compared to when they are self-directed or technology-based [86, 89, 90]. For example, the TOURS study randomised women with obesity to a practitioner-led extended care intervention receiving 26 biweekly sessions delivered either face-to-face or by telephone, or to a control group receiving 26 biweekly educational newsletters [85]. The practitioner-led sessions covered problem-solving barriers to maintaining good eating and exercise habits. After 12 months of this maintenance phase, both the telephone and face-to-face groups with practitioner support regained significantly less weight than the self-directed group and had significantly greater adherence to self-monitoring behaviours, whereas the self-directed group experienced a three-times larger increase in BMI. These results indicate that one-on-one help with weight maintenance can lead to better outcomes, possibly because of personalised motivation, support, and guidance.

A systematic review of qualitative literature reported that individuals who previously lost weight found maintaining that weight loss was a constant source of tension, requiring an ongoing mental effort that led to cognitive fatigue and instability in weight management behaviours, negative thoughts, and eventually, relapse [91]. Thus, going through this phase alone, without professional support may easily end in weight regain. Some researchers suggest that the client-practitioner relationship can improve the effectiveness of weight loss and weight maintenance programs by including intensive cognitive interventions that could help patients maintain weight loss long-term [8, 92-94]. Weight-loss practitioners – including dieticians and health coaches – aim to provide support, guidance, and accountability, and further, help increase client engagement with the program, ultimately leading to increased weight loss and long-term maintenance.

makes a weight-loss intervention effective. They compared face-to-face weight-management programs which included diet, exercise, and behaviour change, to minimal care. The researchers determined that three models – each based on relationships between the client and practitioner or peers – were associated with more effective weight-loss interventions. The "provider-user alliance" model reflects the quality of the client-practitioner relationship and is characterised by an emphasis on building strong client-practitioner relationships, including many opportunities to develop a strong relationship, and emphasising the need to move from provider support to self-regulation. The "provider directiveness" model reflects the clients' perceived need for a high level of guidance and includes the practitioner setting calorie targets, weight goals, exercise goals, and provision of exercise plans. Finally, the "peer relationships" model reflects the fostering of peer relationships and includes delivering the intervention via a group setting or targeting a specific population group. In addition to these models, the researchers hypothesised that effective interventions are also characterised by a shift from extrinsic to intrinsic motivation; initially, the support, guidance, and accountability from practitioners provide motivation to initiate healthy behaviours. Then, with this support, clients realise they are capable of behaviour change, and as they see the benefits of these new behaviours, are able to internalise motivation to continue. This process is made possible by a strong relationship with the practitioner, including support and direction, and a strong relationship with their peers [114].

Weight loss maintenance relies on multiple complex targets of behaviour change. Thus, both the guidance and direction from a practitioner play an important role in treatment outcomes, and this is apparent at multiple specific points in the course of the client-practitioner relationship. For example, Hall & Kahan [115] reported that patients' initial unrealistic expectations – including expectations to lose 20-40% of initial body weight – and the difference between expectations and outcomes, can be demoralising to weight-loss participants, increasing self-blame, negative thoughts, and leading to unsuccessful outcomes. Practitioners could help alleviate this process by setting realistic expectations and goals, and

actions to reach these goals. Further, in a study by Gabriele and colleagues [102], participants in a lifestyle behaviour change weight-loss intervention were randomised to directive, non-directive, or minimal support groups. The directive group was associated with more significant weight loss, along with increased engagement and higher physical activity levels than both non-directive and minimal support groups. The researchers in this study hypothesise that directive interventions are helpful for weight loss because individuals entering an intervention are ready for change but need clear and concrete advice and specific steps along the way for successful weight loss. Therefore, directive support can simplify the process needed for long-term success by setting expectations for appropriate goals and outcomes, establishing appropriate plans, reinforcing positive behaviours, highlighting counterproductive behaviours, and pushing the participant to move forward, which individuals may struggle to do alone.

Conclusion

The global obesity pandemic has led to an estimated 65% of the population seeking weight management. While weight loss is a common and achievable goal, weight maintenance continues to present a challenge. Research over the last three decades has led to an understanding of the physiological determinants of weight loss and the weight behaviours required to lose and maintain weight. However, the psychological determinants – the cognitive, emotional, and behavioural aspects – are less clear, but may play a larger part in successful weight loss maintenance. The practitioner relationship may represent an important part of the weight loss journey. Individualised, directive support from a practitioner – focusing on changing cognitive and behavioural habits and developing self-regulation and self-efficacy – is helpful in weight loss maintenance. Both practitioner contact and guidance during the maintenance phase clearly impact successful weight maintenance, and individual coaching allows practitioners to address and strengthen behavioural and psychological aspects of weight maintenance. The relationship between the client and practitioner – and how this affects an individual's long-term weight control success – is an interesting area in need of further research. Both qualitative research to gain insight into the experiences of successful

an eastern health practitioner and holds regular health and wellness seminars and workshops for corporate clients. Finally, one former client described how she became the primary source of health and wellness advice in her circle of friends and her strong identity of being in control of her life as others face health struggles.

These new "worlds" and roles clients took on after coaching contributed to further accountability as clients spoke of needing to "walk the talk" or feeling a kind of "peer pressure" to "belong to that group".

"She put on two or three times a year...A weight loss clinic or a basic clinic at the community centre here and now I go to most of them, I think, since...when I've been available and just sort of…give a little talk about how it worked… [I am] a before and after to prove that it can be done." Participant 1.

"I'm a personal trainer. And so, part of my accountability is I want to somewhat look the part…And so that's part of what motivates me. And so, I'm a bit of a fitness geek, and so I've been able to maintain it." Participant 2.

"And also, if you're going to talk about it, you've got to walk the walk, you know? Yeah, yeah, it helps [with weight maintenance]." Participant 3.

Discussion

This study explored participants' experiences with losing weight and maintaining weight loss with online coaches. Their responses indicate many similar experiences before, during, and after coaching with The Diet Doc coaches. Four themes were prevalent throughout the six interviews. All participants sought coaching after experiencing a health or age-related life-defining event. They all spoke of being shocked about their current health and life trajectory and felt like they already "tried everything" to lose weight. Participants came to view their coach as a mentor and teacher. All participants spoke of their coach providing nutrition and/or

exercise tools and education, while most participants also spoke of their coach providing accountability, direction, and support. In addition, most participants thought of their relationship with their coach as a long-term relationship in which they were able to reach out for more support if needed. Clients believed coaching enabled them to become their own weight-loss coach, contributing to their ability to control weight long-term. Participants spoke of their increased knowledge and tools giving them increased confidence in weight maintenance, as did their ability to internalise accountability. Finally, the participants felt their coaches helped them adopt a health and fitness identity. Coaches influenced how participants identified with health and fitness and helped participants see their post-coaching lifestyle as "the new me". The participants felt their new identity of being a fit and healthy person encouraged them to "walk the walk" and helped motivate them to maintain their weight loss. Each of these themes provides potentially relevant insights into coaching practice.

Reasons for starting

The age-related or health (personal or familial) life-defining events which led the participants to seek coaching caused participants to feel lost, scared or shocked about their current health and life trajectory, acting as a trigger for attempting weight loss. Indeed, this mirrors other studies, in which health reasons are one of the leading triggers for patients to seek weight loss [122-124]. Participants acknowledged they were unsuccessful in previous weight-loss attempts due to a lack of knowledge and support, and recognised they needed professional help. These experiences match previous research in which lack of knowledge was identified as one of the main barriers to healthy weight control [125], and individuals who were trying to lose weight were unanimous in their need for professional support [126].

These experiences are important to consider. Despite studies showing individuals are more successful at weight loss and weight loss maintenance with the help of a weight-loss practitioner [120], only 10% of patients told to lose weight will seek help from a professional [14]. This suggests by the time individuals seek help with weight loss, they may feel vulnerable

and desperate and have exhausted the possibilities of self-help, commercial programs, and exercise in their attempts at weight control. Weight-loss practitioners should be mindful of the experiences that lead individuals to seek their help, and that individuals' desire for weight loss is often rooted in health and wellness goals [127]. While participants sought weight loss primarily for health and age-related reasons, they measured success by weight loss itself, rather than by improvements in health. Considering not all individuals will be as successful at weight loss maintenance as the participants in the present study (who were selected because they were successful), coaches may better serve their clients by tracking health measures in their programs. Highlighting health improvements (e.g., through bloodwork or the adoption of health-supporting behaviours) may provide clients with more opportunities to visualise success, resulting in increased motivation to "stay the course", even when weight-loss stalls, which may, in turn, increase the chance of successful weight maintenance long term [128].

Coach as a teacher and guide

Participants saw their coach as a guide who set expectations and realistic goals, provided nutrition tools and education on behaviour change and mindset shifts, and provided external accountability. Coaches were further thought of as a "mentor" – someone who had been through the process many times before and achieved successful results. Participants mentioned this allowed them to put their full trust into the program. The participants' view of their coach mirrors the emerging concept of health coaching: coaching to affect a change in lifestyle behaviours for weight loss as a patient-centred process of leading individuals from their current weight and state of health, towards their goal weight and state of health [129]. The patient-centred role of The Diet Doc coaches – helping clients set realistic goals and expectations and providing extensive education around weight-loss behaviours – contrasted with the commercial programs previously attempted by participants, such as Weight Watchers and Jenny Craig in which standardised nutrition advice was provided to all members. Indeed, previous studies on such programs found unrealistic weight-loss goals were the primary reason

for client attrition [124]. All participants spoke of the weekly food logs and check-ins as important accountability tools that kept them on track. The coach thus led the participants from their pre-coaching state of vulnerability and frustration, to their desired state where participants reached their weight loss goals and changed their lifestyle and identity.

While The Diet Doc coaching did not include a specific maintenance phase, participants referred to their client-coach relationship as a long-term relationship, in which participants felt they kept in touch with their coach long after finishing coaching. This was mainly through social media - particularly Facebook and Facebook groups run by the coach - which allowed the coaches to be a continual presence in their clients' lives. Participants also stated they could reach out to their coaches at any time - after their professional coaching had ended - and how their coaches checked in with them and helped them with problems. It is possible this continued presence contributed to successful weight maintenance. Various studies show ongoing practitioner contact after the initial weight loss period leads to better long-term weight maintenance, compared with no contact in that maintenance phase [86, 130] and that even the best weight-loss interventions are unlikely to show long-term success without continuing maintenance-phase intervention and support [115]. The continual social media presence of the coach in the clients' lives may have contributed to better weight maintenance, as clients still felt connected to their coach and lifestyle.

Turning clients into their own coach

After successful weight loss, participants expressed confidence in being able to control their weight long-term without daily input from their coaches; in effect, becoming their own coaches. Most participants said the knowledge they gained made it much easier to maintain lifestyle changes after coaching finished, and that the tools and habits they learned were easier to follow once they had the knowledge of why these tools helped. As Participant 3 stated, *"A lot of people aren't even knowledgeable about nutrition…So I think it's really helpful*

if you know. It's one thing if you don't know, but once you know…it's a little harder [to choose not to do it].*"*

While coaches help clients lose weight initially, they should also help clients learn and understand long-term weight maintenance behaviours. Previous research consistently highlights that certain behaviours are associated with successful weight loss [54]; however, there is a disparity between behaviours associated with successful weight loss and successful weight loss maintenance [34]. A cross-sectional survey of adult Americans found only eight of 36 weight loss behaviours were associated with both weight loss and maintenance; furthermore, the practices associated with successful weight loss were not associated with successful weight maintenance, and vice versa [34]. Teaching clients weight loss and weight maintenance behaviours and helping them build the knowledge as to why these behaviours are effective, may play a role in increasing the self-efficacy of clients, leading to more successful long-term weight control.

Confidence in maintaining weight long-term was consistently brought up by participants as they found weight gain less concerning than before with the tools available to return to the weight they desired. Participant 4 stated, *"I don't feel sad when I go up a little bit because I know I have the tools to fix it."* This increased confidence could reflect participants developing self-efficacy. Bandura defined self-efficacy as an individual's confidence in their ability to carry out a specific behaviour necessary to achieve their goals in a variety of different situations [62]. Previous research indicates eating and exercise self-efficacy beliefs are associated with an increased practice of weight-loss behaviours and associated weight loss [131, 132]. To ensure clients are successful with long-term weight maintenance, it could be important to increase their self-efficacy in practising weight-control behaviours long-term. Helping clients increase their knowledge of why these behaviours are important, and how they can be incorporated into their lifestyles could be an important factor.

Participants in this study spoke of previous weight loss attempts using Weight Watchers, Jenny Craig, weight-loss books, and others, and how these systems taught them to "game the system" instead of long-term weight control behaviours. All participants discussed prior failures in working with a coach. As Participant 6 stated "*I was much more engaged* [with The Diet Doc] *than say, like Weight Watchers, where they just give you a book and say, eat this many points and you figure it out…* [with Weight Watchers] *it's like I didn't learn anything. I didn't gain any new tools. I learned how to game the system*." This experience contrasted her experience with The Diet Doc, in which she stated "*So I understand more about my body, how I need to eat, have multiple meals. You know, I have salad every day for lunch, so I've learned habits through them that...You know, so much about my own body and how it reacts to food or different things that I didn't have before had I not worked with them."* Practitioner-led weight loss interventions produce better user engagement and adherence, and ultimately, better weight loss and weight maintenance compared with self-directed weight loss efforts [120, 133]. This suggests personalised coaching could pass on the knowledge of the correct tools for weight loss and weight maintenance, help clients incorporate these behaviours into their lives, and teach the importance of different tools and behaviours for different phases. In contrast, individuals attempting self-directed weight loss may have a more challenging time maintaining lost weight if they are not taught the importance of behaviours associated with successful long-term maintenance.

Participants rated accountability from their coaches as one of the main determinants of their weight loss success, but they felt the ability to internalise that accountability was important for successful weight loss maintenance after coaching concluded. Clients consistently spoke of the food diaries and macro tracking habits learned from their coaches as keeping them accountable long-term after coaching finished. Most participants regularly weigh themselves and either continued tracking food well after reaching their goals or started tracking foods any time they felt they need to get their diet back "under control". Indeed, self-monitoring of

similar behaviours and outcomes (among many others) is associated with successful weight control [134, 135].

Helping clients assimilate health and fitness as their new identity

Participants who rated their client-practitioner relationship highly spoke of their coaches helping them develop a new personal identity associated with weight loss and new knowledge of health and wellness. Coaches were credited with changing participants' mindsets around health and wellness and "kickstarting" a path to incorporating fitness and wellness into who they were as a person. The participants who rated their client-practitioner relationship highly experienced a marked difference in self-identity between the start and end of their coaching experience. Participants began feeling lost, out of control of their weight and health and scared of the trajectory their health was headed. After coaching, clients were confident, in control and felt like experts themselves. In contrast, one client who did not rate their client-practitioner relationship highly stated she would not re-hire her coach, did not develop a new identity around health and wellness, and instead continued to see herself as someone who "will always struggle with my weight", even though she'd lost approximately 18 kg while working with The Diet Doc and was still maintaining weight loss.

These findings are similar to current understandings of self-determination. Self-determination is considered an intrinsic, self-sustaining form of motivation influenced by internal stimuli [136]. Self Determination Theory (SDT) suggests people become self-determined and intrinsically motivated when their needs for competence, connection, and autonomy are fulfilled [136, 137]. The participants describe being externally motivated prior to working with their coach – most commonly by the desire to improve their health and quality of life. Indeed, most people who seek weight loss are similarly motivated by an extrinsic desire [124]. It is possible that after initial goals are met, and health-related problems improve, extrinsic motivation wanes. Therefore, successful weight maintenance may rest on developing intrinsic motivation and self-determination to continue practising the behaviours required for weight

control based on the inherent rewards of the behaviour itself, rather than the external motivation of outcomes. Indeed, Sweet and colleagues [137] showed both self-efficacy and self-determination were significantly associated with carrying out physical activity behaviours. Similarly, a meta-analysis of experimental studies found an association between SDT-informed interventions and positive health outcomes [138] and another meta-analysis by Mossman and colleagues [119] reported positive associations between wellbeing and negative associations with distress in sports and exercise settings when coaching techniques (autonomy-supportive coaching) grounded in SDT were employed.

Coaching may have helped participants become self-determined by developing and satisfying their needs for competency, autonomy, and relatedness. As discussed in the previous two themes, most participants felt coaching increased their health and fitness competence, with participants eventually developing the ability to be their own coach. Further, participants spoke of being in control of their weight and behaviours. This was possibly developed as coaches provided autonomy support – teaching participants how to flexibly incorporate nutrition, exercise, and weight loss tools into their everyday lives and then giving feedback and advice through weekly check-ins and food logs to teach participants how to be more successful in the future. Experimental studies indicate high autonomy support is associated with increased internalisation of a given behaviour and an associated increase in free engagement in that behaviour, without external motivation [139]. To promote the internalisation of weight-loss behaviours, coaches should likely not just explain what to do, but also explain why, solicit client feedback, acknowledge client experiences, and then provide clients choices in how to incorporate behaviours in their lives [139].

Finally, coaches helped participants develop relatedness. Three participants were introduced to the bodybuilding world, which helped them feel a sense of belonging and attachment. As Participant 1 stated: *“I've gotten to know a bunch of…a bunch of the people and volunteered at a few of their shows. So, I know a bunch of them and it's yeah, they're all such nice people. It's*

not like the big type of big monsters, and so it's more of a more of a family type of affair." Participant 1 also developed a connection with the community as he was invited by his coach to take part in regular seminars about weight loss to talk to others about his journey. Participant 2 became a personal trainer after a 30-year career in the financial sector: "*These days I have relationships with PTs literally all over the world. And that's supportive in the sense that you know, you feel as sort of a... peer pressure for lack of a better word that you want to belong to that group."* Participant 3 found connectedness with the Eastern health community: *"So, my path… [my coaches] kick-started me. You know, they helped me jump-start the whole thing, and I've kept the weight off…then I did an outdoor training, a leadership entrepreneurship training... I'm certified to teach [yoga]…it actually took my practice to a different level that I would not have otherwise."* Further, Participant 6 spoke of being the "healthy" person in her friend group who was an inspiration.

Importantly, while most of the participants attributed some of their success to assimilating health and fitness into their identity, this study purposefully selected successful weight loss maintainers and could be an example of survivorship bias. As a parallel, the research on athletic identity indicates individuals with a strong identity as an athlete experience a greater emotional burden when injured and unable to compete [140]. Considering higher success rates of initial weight loss than long-term weight maintenance, it is possible those who develop a strong identity related to their initial weight loss but regain weight, could similarly experience a greater emotional burden and possibly a degradation in self-efficacy. Therefore, future research is necessary to determine this interplay. Specifically, researchers should address the question "does an identity associated with health and fitness increase the likelihood of successful weight loss maintenance, increase the risk of emotional distress if weight loss is not maintained, or both?"

A limitation of this study is that only six interviews were conducted, so while the results describe the experiences of these participants, they cannot be generalised to a larger

population. In addition, clients from The Diet Doc who had successfully lost weight were invited to participate, so it is probable that clients who felt they had a strong relationship with their coach were more likely to volunteer for interviews. Finally, while the interviews were semi-structured, participants were not asked systematically about their experiences but were able to steer the conversation based on their experiences with their weight-loss coach. Further research could look at how the client-practitioner relationship impacts weight maintenance in a larger sample size using quantitative methods to determine how the observed experiences relate to quantitative weight control outcomes.

Conclusion

To conclude, participants in this study sought help from coaches for health and age-related life-defining events. Participants saw their coaches as teachers and mentors and thought of the client-practitioner relationship as a long-term relationship. Participants stated that through coaching, they learned why weight loss behaviours were important, how to internalise accountability, and thus, they felt they could become their own coach. Finally, participants felt their coaches were instrumental in helping them develop a new personal identity associated with their weight loss and new health and wellness knowledge, possibly helping participants develop self-determination and internal motivation to continue weight loss behaviours that contributed to weight maintenance. These relational qualities among successful weight loss maintainers may be important aspects for nutrition practitioners to consider in applied settings.

Chapter 4 Quantitative exploration of the client-practitioner relationship and its effects on weight loss and maintenance

Preface

Participants in the preceding interviews (Chapter 3) described developing strong, long-term relationships with their practitioners, learning new weight-control tools and habits, and building knowledge around why these tools and habits were important. In addition, participants described their practitioners as helping and inspiring them to assimilate health and fitness into their new identity. The qualitative themes developed during the interviews in Chapter 3 align with quantitative findings on weight loss and weight maintenance in the broader literature, and thus, warranted a quantitative exploration of the client-practitioner relationship in online weight loss clients of the Diet Doc. Thus, the purpose of Chapter 4 was to quantitatively explore aspects of the client-practitioner relationship and its associations with weight-related behaviours, cognitive eating behaviours, weight loss, and weight maintenance.

Introduction

Obesity is considered a rising pandemic worldwide [21], and with weight losses of 5-10% of body weight associated with improvements in metabolic diseases [3, 25] and quality of life [6, 28], many individuals will seek weight loss at some point in their lives. However, while weight loss is an achievable goal, weight maintenance is considered one of the biggest challenges in the fight against obesity [8, 33, 34]. Indeed, weight regain is so common, that individuals who seek weight loss make an average of 15.2 lifetime attempts to lose weight [31].

Successful weight maintenance is defined as intentionally losing 5-10% of initial body weight, and maintaining that weight loss for at least one year [8]. A systematic review by Dombrowski and colleagues [7] showed that with behavioural weight loss interventions, weight loss generally peaks at around six months, followed by a gradual regain in weight, while a further meta-analysis by Dansinger and colleagues [141] reported that even during the maintenance

phase of interventions, weight regain is likely to occur at 0.02 to 0.03 BMI points per month. Indeed, in some studies, only 21% of subjects who successfully lost at least 10% of their initial weight are able to maintain that weight loss for one year [9, 33, 142]. However, weight maintenance is possible with effective interventions. The Look AHEAD study assessed the effects of an intensive lifestyle intervention on weight loss in over 5,000 overweight or obese adults with type 2 diabetes. The intensive lifestyle intervention led to a weight loss of at least 10% of initial body weight in 37.7% of participants at one-year follow-up [143], and 26.9% of participants were still maintaining this weight loss at the eight-year follow-up [40]. Interestingly, when following only those individuals who achieved a ≥10% initial weight loss, 39.3% were able to maintain that weight loss at eight years [40]. The discrepancy between the success of short-term weight loss and the difficulty of long-term weight maintenance suggests that weight maintenance is a different construct to weight loss, requiring different interventions and approaches to behaviour change. Weight maintenance is likely impacted by the client-practitioner relationship and frequency of support, particularly during the maintenance phase [26, 88], the frequency of practising weight-related behaviours known to be associated with weight maintenance [34, 54, 59], and also by cognitive factors such as CR, EE, and UE [64, 68, 82, 144].

Self-directed attempts at weight loss may not lead to successful weight maintenance as they may not change an individual's underlying values or ideas around food and eating, without also addressing the underlying cognitive and emotional factors. Ongoing practitioner contact in the maintenance phase could help improve weight maintenance long term. To test the effectiveness of this, the STOP Regain trial [27] randomised subjects who had lost at least 10% of their initial body weight to either a control group receiving quarterly newsletters, an internet-based intervention group, or a face-to-face intervention group, both of which were identical in the frequency of contact and content. The group receiving face-to-face contact regained roughly half the weight that the control group regained (2.5 ± 6.7 kg vs 4.7 ± 8.6 kg). Further, both intervention groups increased their weight-related behaviours such as daily self-

weighing. Indeed, the frequency of practising certain weight-related behaviours is also associated with weight maintenance. Klem and colleagues found that behaviours associated with successful weight maintenance included following a low-fat diet, restricting intake of certain foods, eating regular meals, eating mostly home-cooked meals, leisure-time physical activity, and frequent self-weighing and monitoring [56]. In addition to these weight-related behaviours, low CR and high EE and UE are associated with a higher BMI and increased weight over time [58, 64, 76, 77]. Further, when assessed longitudinally over the course of a weight loss intervention, increases in CR are observed while EE and UE tend to decrease, with successful dieters experiencing significantly less UE and EE than unsuccessful dieters [87]. It is thus possible that guidance from practitioners could help individuals learn the required behaviours, habits, and mindsets to support long-term weight control. Notably, given the importance of practitioner support during the maintenance phase, and the distinct nature of the behaviours and cognitions associated with successful weight loss and maintenance, there is surprisingly little research which explores the interaction between and association of these variables with successful weight loss maintenance.

Therefore, the aim of this study was to explore the relationships between weight-related behaviours, eating behaviours, and aspects of the client-practitioner relationship – including the client-perceived quality of the client-practitioner relationship, frequency of contact during the maintenance phase, and practitioner help with assimilating health and fitness into the client's new life – and how these variables are associated weight loss and weight maintenance. Specifically, the research hypotheses were that the measured aspects of the client-practitioner relationship would be positively associated with weight loss, weight maintenance, and CR, and negatively associated with EE and UE. It was further hypothesised that both the frequency of weight-related behaviours and CR would be positively associated with weight loss and weight maintenance, while UE and EE would be inversely associated with weight loss and weight maintenance.

Methods

A cross-sectional anonymous online survey of successful weight-loss maintainers who consulted with a nutrition coach to reach a target body weight was conducted. Specifically, associations between aspects of the client-perceived client-practitioner relationship, eating behaviours and cognitions, and both weight loss and how successful the respondents were at reaching their goal weight were explored (see Appendix D for full survey questions). Survey participants were current or former clients of The Diet Doc, an evidence-based weight-loss coaching franchise in the US, which trains nutrition coaches to align with best practices for weight loss. Nutrition coaches have access to a multi-disciplinary team of support consultants including medical doctors, dieticians, physical therapists, and strength and conditioning specialists, who help the coaches provide individualised weight loss programs to their clients. To take part in this study, participants must have been 18 years or older, lost at least 10% of initial body weight while working with The Diet Doc, and had to be maintaining this weight loss. Employees and practitioners of The Diet Doc and their families were ineligible from taking part in this study. Informational flyers with links to the survey were distributed to the email database of The Diet Doc and promoted on their social media accounts. An information sheet detailing the specifics of the survey preceded the actual questions, and participants were advised that by taking the survey they were providing informed consent. The study was approved by the University Ethics Committee (21/349).

The online survey was delivered via Qualtrics and included four sections (see Appendix D for the full survey). Section one included demographics (age, sex) and self-reported data on current weight, goal weight, and total weight lost when working with The Diet Doc, and also whether they were currently trying to lose weight. Section two focused on the client-perceived client-practitioner relationship and included Likert scale questions on the quality of the client-practitioner relationship (poor to excellent), the frequency of contact during the weight maintenance phase (never to weekly or more frequently), and how working with a practitioner helped the client assimilate health and fitness into their identity (definitely false to definitely

true). The identity question was based on qualitative results from a previous study (Chapter 3), in which interviewed participants consistently spoke of the practitioner helping them assimilate health and fitness into their new lifestyle. The third section asked about the frequency of nine different weight-related behaviours, while the fourth section probed eating behaviours, as measured with the Three Factor Eating Questionnaire (TFEQ-R18). The TFEQ-R18, developed by Karlsson and colleagues [145] from an earlier 51-item test [146], assesses food-intake behaviour and has been validated in a variety of populations [64, 144, 147, 148]. This revised 18-item version comprises three different subscales to measure CR, EE, and UE, with responses scored on a four-point scale with anchors varying across the different items (for example "never" to "at least once per week", or "definitely true" to "definitely false"). These are then converted to a scale ranging from 0 to 100 using the equation [(raw score - lowest possible raw score)/possible raw score range) × 100]. Higher scores indicate a greater tendency toward CR on the CR subscale, a greater likelihood of eating in response to negative emotions on the EE subscale, and a greater likelihood of losing control of eating behaviour on the UE subscale, respectively.

Data were screened for incomplete, duplicate, and obviously false answers. JASP Version 0.16.2 software (University of Amsterdam, Netherlands) was used for all statistical analyses and significance was accepted at the $p \leq 0.05$ level. First, the self-reported weight data were used to calculate the percentage of weight regain from goal weight (PWR; [goal weight - current weight]/goal weight x 100). Thus, PWR produced a zero value for respondents at goal weight, a negative value for those above it, and a positive value when a respondent's current weight was below their goal weight. Additionally, the relative weight lost as a percentage of current weight plus weight loss (RWL; weight lost/[current weight + weight lost] x 100) was calculated for each participant. These data were normally distributed, so linear regression was performed using hierarchical multiple regression, to develop models based on the hypotheses. Specifically, relationships between the different aspects of the client-practitioner relationship (quality, frequency of contact, help in assimilating health and fitness into identity), weight-

related behaviours, and eating behaviour scores from the TFEQ-18 with both PWR and RWL were explored. The client-practitioner relationship and subscales of the TFEQ-R18 were also assessed using hierarchical multiple regression. A final model to show the strongest predictor of PWR using these data was developed by including all significant contributors to PWR from previous models.

Results

The anonymous online survey received 114 responses. After screening for incomplete and obviously false answers, there were 83 responses. See Table 4-1 For demographic data.

Table 4-1: Demographic characteristics of survey participants

Age	Number	Percentage
25-34	10	12.0
35-44	16	19.2
45-54	15	18.1
55-64	30	36.1
65-74	9	10.8
75-84	3	3.6
Gender		
Male	18	21.7
Female	65	78.3
Currently losing weight		
Yes	51	61.4
No	32	38.6
Weight lost (kgs)	Mean (std dev.)	
	11.6 (9.4)	

How is PWR affected by age, sex, currently losing weight status, and weight lost?

A linear regression was performed to explore how PWR was affected by current age, gender, whether the individual was currently trying to lose weight, and the amount of weight lost. The model revealed there was no statistically significant interaction between the independent variables and PWR ($F [4, 78] = 1.799$, $p = 0.137$), showing this model was an unclear predictor of PWR. Simple main effects analysis showed that none of the independent variables had a statistically significant effect on PWR, although actively losing weight had a relatively low p-value of 0.066, but did not reach 0.05 (see Table 4-2).

Table 4-2: Results of multiple regression analysis: association of age, sex, currently losing weight status and weight loss with PWR

Model	R	R^2	F	df1	df2	p
	0.291	0.084	1.799	4	78	0.137

Variable	Regression coefficient (B)	Standard error	t	p	Standardised coefficient
Weight lost	0.090	0.087	1.031	0.306	0.121
Age	0.448	1.279	0.351	0.727	0.039
Actively losing weight (no)	6.389	3.428	1.864	0.066	
Sex	-3.501	4.414	-0.793	0.430	

How is RWL affected by age, sex, and currently losing weight status?

A similar linear regression was performed to explore how RWL was affected by current age, gender, and whether the individual was currently trying to lose weight. This model was not a clear predictor (F [3, 79] = 1.609, p = 0.194), and simple main effects analysis showed that none of the independent variables had a statistically significant effect on RWL.

How are PWR and RWL affected by coaching quality/frequency/identity?

Linear regression models were then performed to explore the effects of the quality of the client-practitioner relationship, frequency of contact, and assimilation of health and fitness into identity, on both PWR and RWL. The resulting model for PWR was a clear predictor, which explained 16% of the variance (F [3, 78] = 4.941, p = 0.003). The quality of the relationship and frequency of support both significantly contributed to the model; however, identity assimilation did not (see Table 4-3).

The resulting model for RWL was also a clear predictor (F [3, 78] = 3.088, p = 0.032), explaining 10.6% of the variance. No factors clearly contributed to the model; however, quality of relationship had a relatively low p-value of 0.056 although it did not reach the 0.05 cut-off (see Table 4-4).

Table 4-3: Results of multiple regression analysis: association of quality of client-practitioner relationship, frequency of support and assimilation of health and fitness into new identity with PWR

Model	R	R^2	F	df1	df2	p
	0.400	0.160	4.941	3	78	0.003
Variable	Regression coefficient (B)	Standard error	t	p		Standardised coefficient
Quality of relationship	4.205	1.768	2.379	0.020		0.332
Frequency of support	-2.153	0.751	-2.868	0.005		-0.329
Assimilate new identity	1.426	2.000	0.713	0.478		0.099

Table 4-4: Results of multiple regression analysis: association of quality of client-practitioner relationship, frequency of support and assimilation of health and fitness into new identity with RWL

Model	R	R^2	F	df1	df2	p
	0.326	0.106	3.088	3	78	0.032
Variable	Regression coefficient (B)	Standard error	t	p		Standardised coefficient
Quality of relationship	1.720	0.889	1.936	0.056		0.287
Frequency of support	-0.446	0.377	-1.182	0.241		-0.140
Assimilate new identity	0.770	1.005	0.766	0.446		0.109

How are PWR and RWL affected by nine different weight-related behaviours?

Linear regressions were then performed to explore the effects of nine different weight-related behaviours on both PWR and RWL. The resulting model was not a clear predictor of PWR (F [9, 71] = 1.504, p = 0.163). However, the weight-related behaviour “Eating breakfast frequency” was significant within the model (p = 0.014) (see Table 4-5).

The resulting model for RWL was not a significant predictor (F [9, 71] = 0.966, p = 0.475), and no variables reached significance.

Table 4-5: Results of multiple regression analysis: association of nine different weight-related behaviours with PWR

Model	R	R^2	F	df1	df2	p
	0.400	0.160	1.504	9	71	0.163
Variable	Regression coefficient (B)	Standard error	t	p		Standardised coefficient
Eating out frequency	-4.304	3.012	-1.429	0.157		-0.188
Eating with others frequency	1.846	1.562	1.182	0.241		0.137
Eating breakfast frequency	5.199	2.062	2.522	0.014		0.289
Main meals per day	0.887	2.657	0.334	0.740		0.039
Eating rate	0.667	2.137	0.312	0.756		0.036
Eating home-cooked meals frequency	-3.250	2.860	-1.136	0.260		-0.148
Weighing frequency	-1.421	1.117	-1.273	0.207		-0.147
Time spent on food prep (< 1 hour)	4.868	3.980	1.223	0.225		
Responsible for food prep (mostly others)	2.227	5.085	0.438	0.663		

How are PWR and RWL affected by eating behaviours (CR, EE, and UE)?

A multiple linear regression was performed to explore the effect of EE, CR, and UE on PWR. This revealed there was no statistically significant interaction between the independent variables and PWR (F [3, 79] = 0.129, p = 0.943), showing this model was an unclear predictor of PWR. Simple main effects analysis showed that none of the independent variables had a statistically significant effect on PWR.

The multiple regression model for RWL was a clear predictor of RWL (F [3, 79] = 3.125, p = 0.03). Within the model, only CR was a clear contributor (see Table 4-6).

Table 4-6: Results of multiple regression analysis: association of CR, EE, and UE with RWL

Model	R	R^2	F	df1	df2	p
	0.326	0.106	3.125	3	79	0.030

Variable	Regression coefficient (B)	Standard error	t	p	Standardised coefficient
CR	0.178	0.064	2.790	0.007	0.333
UE	0.003	0.061	0.050	0.961	0.007
EE	-0.010	0.033	-0.310	0.757	-0.040

How are CR, EE, and UE affected by coaching quality/frequency/identity?

Three separate multiple linear regression analyses were then performed to explore how CR, EE, and UE were affected by the quality of the client-practitioner relationship, frequency of contact, and assimilation of health and fitness into identity. The resulting model for CR was statistically significant and explained 9.8% of the variance (F [3, 78] = 2.828, p = 0.044). The only significant contributor to this model was the quality of the client-practitioner relationship (see Table 4-7).

Table 4-7: Results of multiple regression analysis: association of quality of client-practitioner relationship, frequency of support and assimilation of health and fitness into new identity with CR

Model	R	R^2	F	df1	df2	p
	0.313	0.098	2.828	3	78	0.044

Variable	Regression coefficient (B)	Standard error	t	p	Standardised coefficient
Quality of relationship	3.387	1.255	2.700	0.009	0.390
Assimilate new identity	-2.152	1.419	-1.516	0.134	-0.218
Frequency of support	0.209	0.533	0.392	0.696	0.047

The model for EE was also statistically significant and explained 10.8% of the variance (F [3, 78] = 3.148, p = 0.030). While no factors clearly contributed to the model, support frequency had a

relatively low p-value of 0.064, although it did not reach the 0.05 significance cut-off (see Table 4-8).

Table 4-8: Results of multiple regression analysis: association of quality of client-practitioner relationship, frequency of support and assimilation of health and fitness into new identity with EE

Model	R	R^2	F	df1	df2	p
	0.329	0.108	3.148	3	78	0.030
Variable	Regression coefficient (B)	Standard error	t	p		Standardised coefficient
Quality of relationship	2.844	3.366	0.845	0.401		0.121
Assimilate new identity	1.550	3.809	0.407	0.685		0.058
Frequency of support	2.689	1.430	1.881	0.064		0.223

Finally, the model for UE revealed there was no statistically significant interaction between the independent variables and UE (F [3, 78] = 0.384, p = 0.765), showing this model was an unclear predictor of UE. In addition, simple main effects analysis showed that none of the independent variables had a statistically significant effect on UE.

Strongest predictor of PWR

The previous models were developed based on the study hypotheses and identified the significant contributors to PWR. As a final analysis of these data, significant variables from prior analyses were included in a multiple regression analysis model to find the strongest predictor of PWR. The dependent variable was PWR while the independent variables were quality of relationship, frequency of support, and eating breakfast frequency. The resulting model (see Table 4-9) explained 19.5% of the variance (F [3, 78] = 6.292, p < 0.001).

Table 4-9: Results of multiple regression analysis: association of quality of client-practitioner relationship, frequency of support and eating breakfast frequency on PWR

Model	R	R^2	F	df1	df2	p
	0.441	0.195	6.292	3	78	< 0.001
Variable	Regression coefficient (B)	Standard error	t	p		Standardised coefficient
Quality of relationship	4.478	1.421	3.151	0.002		0.353
Frequency of support	-1.926	0.726	-2.655	0.010		-0.295
Eating breakfast frequency	3.679	1.854	1.985	0.051		0.204

Discussion

This study explored associations between aspects of the client-perceived client-practitioner relationship and PWR and RWL in clients of The Diet Doc who lost at least 10% of their initial body weight and maintained weight long-term. Weight management is a long-term process that commonly includes weight regain if no further attempts at weight loss are undertaken. As it is important to understand this process of weight regain, PWR was chosen as an inferred measure of weight maintenance to allow assessment of client-practitioner relationships, weight-related behaviours, and eating behaviours in successful weight maintainers, in relation to weight regain, within the parameters of participants that maintained at least 10% body weight loss. RWL was chosen as an outcome to determine how aspects of the client-practitioner relationship and the client's relationship with food related to their relative weight loss with The Diet Doc coaches. Finally, secondary outcomes of how aspects of the client-perceived client-practitioner relationship impacted CR, EE, and UE were explored. While the hypotheses generally were that aspects of the client-practitioner relationship would be positively associated with weight maintenance, only some of the hypotheses were supported by the results.

The first model explored the relationship between PWR and age, sex, weight lost, and whether individuals were currently trying to lose weight. While the resulting model was not a predictor of PWR (Table 4-2), one factor – whether the individual was trying to lose weight – did have a relatively low p-value ($p = 0.066$), predicting that participants who were not currently trying to lose weight would have approximately a 6% higher PWR. While this non-significant finding was nested within a non-significant model, it is worth noting that this result is similar to previous literature. It is thought weight loss during an intervention generally peaks at 6-8 months, followed by gradual weight gain [41, 149, 150]. Thus, in this sample group, those who were not actively trying to lose weight likely regained some of the initial weight lost. While previous studies found the amount of weight lost early during an intervention is a predictor of weight loss and weight maintenance [9, 149-152], the amount of weight lost was not a significant predictor of PWR in this study. A meta-analysis by Anderson and colleagues [9] found that weight maintenance at five years was more likely in those who had initially lost ≥ 20 kg. Losing large amounts of weight during the initial weight-loss intervention possibly distinguishes those who are highly motivated and more engaged with the program or practitioner. Thus, these individuals were more likely to maintain weight long term. However, the mean weight loss in this study was only 25.6 lbs (11.6 kg), suggesting that perhaps total weight loss is less of a predictor in cohorts losing smaller amounts of weight. A similar regression model exploring the relationship between RWL and age, sex, and whether individuals were currently trying to lose weight was also not a significant predictor of RWL.

A well-documented predictor of long-term maintenance is the frequency of practising weight-related behaviours. As previous studies found that certain weight-related behaviours were associated with weight loss and weight maintenance, models were made to explore the relationships between both RWL and PWR and nine different weight-related behaviours. The resulting RWL model was not a predictor of RWL, and none of the individual behaviours were significantly associated with RWL. The weight-related behaviours tested in this survey, such as eating breakfast and frequent weighing, were previously related more frequently to weight

maintenance, rather than weight loss [35, 56, 57, 59]. However, behaviours associated with weight loss include counting calories, limiting the quantity of food, and restricting certain classes of food [35], were not tested in this survey. In these clients of The Diet Doc, a model containing these nine weight-maintenance-related behaviours was not clearly associated with relative weight lost during the intervention.

Likewise, the same weight-related behaviours were not a significant predictor of PWR (see Table 4-5). Within this model, however, one behaviour – eating breakfast frequency –was a significant contributor (p = 0.014). This finding indicates in this group of clients, with other behaviours controlled, that every unit increase in eating breakfast frequency was associated with a 5.2% higher PWR. While the model itself was not significant and can therefore not be used to explain a relevant portion of weight maintenance, the significant result of eating breakfast frequency does correspond with previous studies in which regularly eating breakfast was associated with successful weight maintenance [35, 57]. Habitual breakfast eating could be an important focus for weight-loss practitioners as historically, in the general population, while the volume of food, energy density, and energy intake per eating episode have all increased over time, eating breakfast has declined [153]. Further, a study by Van Der Heijden reported that even in non-dieters, the consumption of breakfast was inversely associated with the risk of gaining 5 kg over 10 years of follow-up [154]. In these studies, breakfast was thought to be beneficial for weight loss, as eating early in the day may reduce hunger later in the day, thus preventing overeating. Likewise, starting the day with a healthy meal may make healthy decisions and less energy-dense food choices easier for the remainder of the day. Therefore, while this model was not a clear predictor of weight maintenance in this group of clients, when considering the previous research showing habitual breakfast eating is associated with successful weight maintenance, and the fact it was individually significant within this model, it could be good practice for weight-loss practitioners to encourage habitual breakfast eating.

The three cognitive-based eating behaviours of CR, EE, and UE have well-documented associations with weight loss and maintenance, with higher CR and lower EE and UE associated with successful weight control [66, 68, 155]. The model analysing these eating behaviours in association with RWL was a clear predictor of RWL (p = 0.03), explaining almost 11% of the variance (Table 4-6). Only CR was a significant contributing factor within the model and indicates that every one unit increase in CR is associated with a 0.18% higher RWL (p = 0.007). This may seem like a small increase; however, previous studies reported cognitive behaviour interventions of just six months can increase CR scores by over 12 points [66], which – in this group of participants – would correspond to a 2.16% higher RWL value. At a current weight of 91 kgs, this would be equivalent to having lost ~11 kgs rather than 9 kgs. Indeed, other research observed over a 12-month period that CR scores can increase 20-25 points with diet and exercise interventions [68].

However, when it comes to weight maintenance, the PWR model containing CR, EE, and UE was an unclear predictor of PWR, and none of the sub-scores of the TFEQ-R18 were significant. This is surprising, as most of the current literature supports higher CR and lower EE and UE being associated with better weight maintenance [68, 82, 156, 157]. This discrepancy could be due to the fact that our entire cohort could be considered successful weight loss maintainers, and thus, small differences may not have been detectable in this relatively small sample. Further, there was an unknown amount of between-participant variation in time from finishing their initial weight loss, to taking part in the survey, which may have impacted this relationship.

The models containing quality of relationship, frequency of contact during maintenance, and the degree to which the practitioner helped the client assimilate health and fitness into their life, were clear predictors of both RWL (p = 0.032) and PWR (p = 0.003), explaining 10.6% and 16% of their variability, respectively (Tables 4-4 and 4-3, respectively). While none of the individual factors significantly contributed to the RWL model (although quality of relationship

was close to significant), both relationship quality and support frequency were significant contributors to the PWR model. Quality of relationship had the strongest support as every one unit increase in the quality of relationship was associated with a 4.2% higher PWR. While it is intuitive that a strong relationship with a practitioner will lead to a client having more trust in their practitioner and being more engaged, very little research addresses how the strength of the client-practitioner relationship affects weight maintenance. 'Therapeutic alliance' – which refers to the strength of the collaborative relationship between client and practitioner – was recently used to assess this relationship in weight loss interventions [108-110]. Nagy and colleagues [108] reported that the client-practitioner relationship – including aspects of trust, empathy, and warmth – can be strengthened by subjects' completion of preparatory exercises before the first session, and by early clarification and agreement of goals and a plan to reach these goals, and by longer session durations. A further study by Melendez and colleagues [114] indicated a strong client-practitioner relationship is built upon the practitioner providing many opportunities to develop this relationship.

Support frequency, on the other hand, had an inverse relationship in this model, indicating that when other factors of the client-practitioner relationship were controlled, a higher frequency of support was associated with a lower PWR. This finding is counterintuitive as much of the literature supports better weight control outcomes with increased support in the maintenance phase [27, 85-87, 89, 90]. However, it is important to note this relationship was observed within a model while controlling for the quality of relationship. Thus, it is possible that the negative association of frequency of support manifested from some other negative factor that might covary with greater frequencies of contact, such as lower self-autonomy or possibly higher neuroticism. Presumably, individuals with low self-autonomy or higher neuroticism might seek out more support from their practitioner, while also being less successful at weight maintenance. Indeed, while most who start a weight-loss program are initially extrinsically motivated [124], Melendez and colleagues [114] indicated that for successful long-term maintenance, practitioners must help clients shift from extrinsic to

intrinsic motivation and develop high self-autonomy. Indeed, a meta-analysis by Ntoumanis and colleagues [138] reported increases in autonomous motivation were associated with positive changes in carrying out health behaviours. With that said, this is simply a possible speculative explanation for why there was an unexpected inverse relationship between PWR and support frequency; nonetheless, from a practical perspective, helping clients develop self-efficacy and autonomy could be an important consideration for weight loss practitioners.

Finally in this model, assimilating identity was not a contributing factor. Participants were asked to score the question "Working with a weight loss practitioner helped me assimilate health and fitness as part of my new identity" on a 5-point Likert scale from definitely false to definitely true. This question was incorporated into the survey based on previous interviews with a small number of representative clients from The Diet Doc, in which successful weight maintainers experienced a marked difference in self-identity between the start and end of coaching and spoke of their coaches helping them develop a strong new personal identity associated with their weight loss and new knowledge of health and fitness (see Chapter 3). Notably, the lack of association does not rule out the potential importance of changes in self-identity; rather, just the role of the coach in influencing such changes. Further, it is possible the survey participants did not understand the question or recognise how their practitioner influenced their identity changes. Alternatively, it is possible that the self-selected interviewees from Chapter 3 had a strong self-identity around health and fitness, leading them to want to take part in interviews about their experience with weight loss coaching; however, this may not be the case with all clients from The Diet Doc. It is also important to remember that while the overall model explains 16% of the variance of PWR, this is a relatively small proportion.

The final set of models explored the associations between aspects of the client-practitioner relationship and the three cognitive eating behaviours – CR, EE, and UE (Tables 4-7 and 4-8). The aspects of the client-practitioner relationship were clear predictors of CR, explaining ~10%

of the variance (p = 0.044). Within this model, the quality of the relationship was the only significant contributor (p = 0.009), such that higher relationship quality was associated with higher CR scores. The model was also significant for EE, explaining 10.8% of the variance (p = 0.03). However, while support frequency had a relatively low p-value (p = 0.064), none of the individual factors in the model were significant. The last model, assessing the effects of aspects of the client-practitioner relationship on UE, was not a clear predictor of UE.

As these models were cross-sectional, it is unknown if these were causal relationships, and if so, the direction of causality. While higher CR scores are associated with better weight maintenance [68, 73, 158], which are perhaps positively influenced by a high-quality client-practitioner relationship, it is also possible that this finding could be explained by the positive association between CR and BMI [58, 64]. Indeed, higher CR scores are expected in groups trying to maintain weight and individuals with a high BMI may benefit the most from a practitioner's help, so in this model, CR may have been a proxy for BMI.

EE is also positively associated with higher BMI [64, 81], possibly accounting for the observed positive association between higher quality client-practitioner relationships and EE scores. While a decrease in EE is associated with better weight maintenance [82], our cross-sectional design did not assess changes in EE over time. The observed positive association simply suggests that in this group, those with higher EE scores were more likely to have higher quality relationships with their coach. This could be due to individuals with a high EE score seeing more value in the guidance of their coach compared to those with lower EE scores, and thus, seeking more support to address EE, subsequently building a stronger client-practitioner relationship.

After these initial models were used to investigate the research questions, a final model was developed to find the strongest predictor of PWR with these data. The factors that had a significant result in previous models were added as variables – quality of relationship, frequency of support, and eating breakfast frequency. The resulting model explained 19.5% of

the variance of PWR. Looking at the relative contributions of these factors (Table 4-9), quality of relationship was the largest contribution to the model and was positively associated with PWR. Support frequency was again negatively associated with PWR, while eating breakfast was positively associated, and had the smallest contribution to the model.

This study has some limitations to be discussed. Firstly, despite best efforts, there were fewer completed responses than anticipated, limiting the power of our analyses. Further, as this survey was cross-sectional, caution is warranted when interpreting how changes in the associated variables might impact weight maintenance and eating behaviours. Further longitudinal research is needed to make such conclusions. Notably, the measure of PWR in this study relied on the individuals' goal weight when they started coaching. As goal weights are subjectively determined between practitioner and client, they may not be appropriate or reachable in all cases; however, this is not always obvious until coaching is underway. Similarly, RWL couldn't capture weight regain that occurred from the timepoint of reaching their goal weight until taking the survey. Thus, both of these factors may have introduced ambiguity in the results. Finally, it is important to remember that the models in this study explained only a small – but nonetheless important – amount of variance. While each significant model can't be used as a large predictor of PWR, RWL, or eating behaviours, they do show interesting associations with important nuances between the client-practitioner relationship and various measures of weight loss and maintenance.

Conclusion

In summary, aspects of the client-practitioner relationship – including the quality of the relationship, the frequency of support in the maintenance phase, and help assimilating health and fitness into one's new lifestyle – had interesting associations with weight control and eating behaviours. Aspects of the client-practitioner relationship explained 10.6% of the variance in RWL and 16% of the variance in PWR, while they were also positively associated with both CR and EE in individuals who lost and maintained at least 10% of their body weight

while receiving coaching from The Diet Doc. From a practical perspective, based on these findings, practitioners should primarily focus on developing high-quality relationships with their clients seeking long-term weight control, as this was the variable most consistently and unambiguously associated with greater weight loss maintenance success.

Chapter 5 General discussion

Summary

The overarching purpose of this research was to explore the associations between aspects of the client-practitioner relationship and both weight loss and weight maintenance in current or former clients of The Diet Doc. The review of the literature (Chapter 2) summarised the large body of research around predictors and correlates of weight loss and weight loss maintenance, showing there exists a good understanding of the weight-related behaviours and cognitive eating behaviours associated with successful weight maintenance. However, it also revealed the lack of understanding as to why some individuals succeed at changing these behaviours, and others do not. The potential for the client-practitioner relationship to effect successful long-term maintenance was identified, although very little research exists on this topic. Therefore, two investigations were designed to explore associations between the client-practitioner relationship and weight loss and maintenance.

The first investigation was a set of qualitative interviews to explore the first-hand experiences of current and former clients of The Diet Doc with weight loss, weight maintenance, and their relationship with their practitioner (Chapter 3). Despite the participants in these interviews finishing initial coaching with The Diet Doc between two and 13 years previously, all participants reported similar experiences before, during, and after coaching. There were four major themes developed from this set of interviews. Firstly, participants sought a weight loss coach after experiencing a health or age-related life-defining event and after many failed attempts at self-directed or commercial weight loss. An experienced coach was sought as participants recognised they lacked the appropriate knowledge and support required for success. The second theme described how participants saw their coach as a teacher and guide, or mentor. At this stage, coaches provided participants with external motivation, education, guidance, and support. While the help in setting goals and expectations, and the weekly food logs and accountability check-ins were seen as valuable to participants, they also came to view

– and value – the client-coach relationship as a long-term relationship in which they could reach out for help even years after initial coaching ended. This followed through to the third theme which described how coaches helped their client become their own coach. While coaches were initially valued for accountability, participants internalised this accountability to eventually act as their own coach, expressing confidence in being able to control weight long-term without daily input from their coach. This internal motivation and accountability was developed through building tools and habits required for long-term maintenance, but also through gaining the knowledge as to why these behaviours were important. The final theme described how those participants who rated the quality of the client-practitioner relationship highly, experienced a marked difference in self-identity between the start and end of their coaching experience and attributed their coach's help to their success assimilating health and fitness into their new identity. Before coaching, participants felt lost, with no control over their weight and health, and scared of the trajectory their life was headed. After coaching, clients were confident, in control, and felt like they were the experts, and health and fitness were important parts of their new identity.

The qualitative themes developed from the interviews aligned with quantitative findings in the broader literature on weight maintenance and were thus used to inform the subsequent anonymous survey. This questionnaire – given to current and former clients of The Diet Doc who lost at least 10% of their initial body weight and were successfully maintaining that weight loss –explored associations between weight-related and cognitive eating behaviours, weight loss and weight maintenance, and the client-practitioner relationship. When assessing the client-practitioner relationship, participants were asked to rate the strength of the relationship, the frequency of contact during the maintenance phase, and the extent to which the coach helped them assimilate health and fitness into their identity. This identity question was incorporated as it was a strong theme in the interviews. The results of the questionnaire showed some interesting relationships between the variables studied. In this sample of participants, aspects of the client-practitioner relationship explained 10.6% ($p = 0.032$) of the

variance of RWL, and 16% (p = 0.003) of the variance of PWR. A model of the measured aspects of this relationship was also positively associated with cognitive eating behaviours CR (p = 0.044) and EE (p = 0.03), explaining 9.5% and 10.8% of their variances, respectively. Eating behaviours were not associated with PWR but were a clear predictor of RWL (p = 0.03), although only CR was a clear contributor to this model (p = 0.007). Finally, the model containing nine weight-related behaviours was not significantly associated with RWL or PWR, although the behaviour "eating breakfast frequently" was significant within the model (p = 0.014).

These two investigations helped answer the main research questions for this dissertation. To explore the first question of how aspects of the client-practitioner relationship are associated with weight loss, the qualitative interviews determined this relationship was highly valued by former clients of The Diet Doc who were successfully maintaining their weight loss (Chapter 3). These participants sought out an experienced and qualified practitioner at the start of their weight loss journey and came to value their practitioner as a coach and mentor. Many of the participants spoke of the relationship as a friendship or long-term relationship, and how their coaches changed their mindset around health and inspired or "kickstarted" their journey into incorporating health and fitness as an important part of their identity, highlighting how important that client-practitioner relationship was to them. These qualitative results were mirrored in the survey results, as aspects of the client-practitioner relationship were associated with both RWL (p = 0.032) and PWR (p = 0.003) (Chapter 4). In fact, the quality of the client-practitioner relationship was the variable most consistently associated with weight loss and weight maintenance in this survey (Chapter 4), highlighting the importance of this relationship for long-term success.

Interestingly, frequency of support was inversely associated with PWR in this model. But as the quality of relationship was controlled for, this inverse relationship could indicate the existence of a covarying factor such as low autonomy. In this case, individuals with low autonomy will be

likely to seek out more support, while also being less successful at weight maintenance. If this is the case, increasing autonomy in weight-loss clients will be an important area of focus for increasing long-term maintenance. Indeed, high autonomy support is associated with the internalisation of a given behaviour and an increase in the frequency of free engagement of that behaviour, without external motivation [139]. The interview participants spoke of the autonomy support they received, in the form of being taught tools to flexibly incorporate nutrition, exercise, and self-regulation into their lives, being given feedback through weekly check-ins and food logs, and further training and advice on how to be more successful in the future (Chapter 3). This aligns with previous research, which indicates effective interventions are characterised by a shift from extrinsic to intrinsic motivation [114]. Clients initially rely on external motivation to initiate weight-control behaviours – usually in the form of support, guidance, and accountability from their practitioners. With this support, clients realise they are capable of behaviour change, and as they experience the benefits of these new behaviours, are able to internalise motivation to continue.

The last aspect of the client-practitioner relationship studied was the extent to which the coach helped the client assimilate health and fitness into their identity. Five of the six interview participants spoke of how their coaches helped them assimilate health and fitness into their new identity – for example inspiring them to join bodybuilding contests or develop a career in the health industry – and interestingly, the same five participants rated the client-practitioner relationship highly. The sixth participant – who did not rate the relationship highly – did not develop a new identity around health and wellness and instead continued their old identity as someone who "will always struggle with my weight", despite that they had lost approximately 40 lbs (18 kgs) while working with The Diet Doc. This could suggest a strong working relationship with a practitioner can help clients change their mindset and identity around health and fitness, and this identity will encourage them to "walk the walk" and stay motivated to control their weight long term. However, although the participants in the interviews seemed to benefit from their coach helping them assimilate health and fitness into

their lives, this association was not mirrored in the survey results. This discrepancy could be due to how the question was worded, the participants themselves not having thought about or recognising to what extent their coach helped and inspired them, or perhaps could indicate that those with the strongest relationship with their coach were more likely to volunteer for the interviews.

The second question this research explores is how the nine measured weight-related behaviours and cognitive eating behaviours are associated with weight loss and weight maintenance. The successful weight maintainers in these interviews (Chapter 3) gained knowledge around the importance of behaviours associated with long-term weight maintenance such as eating breakfast, regular physical activity, self-monitoring, and regular self-weighing, and had these tools and behaviours to "fall back on" even up to 13 years after their initial coaching. Interestingly, interview participants continued these practices not only because they knew they worked for weight loss and maintenance, but because their coach taught them why they were important. This highlights an important role of the weight-loss coach that was valued by the interview participants in this research – to teach clients weight-loss behaviours *and why* they are important. This knowledge participants gained from their coaches helped them develop a strong sense of self-efficacy and autonomy. All interview participants demonstrated high self-efficacy and confidence in their ability to control their weight by manipulating their behaviours when needed, such as daily food logs, controlling calories, and increasing exercise. Conversely, in the sample of online weight loss clients who undertook the questionnaire, the model of nine weight-related behaviours was not associated with either weight loss or weight maintenance (Chapter 4). Only "eating breakfast frequently" was a significant contributor to the model explaining PWR. This difference between the interview and survey participants could indicate that autonomy and self-efficacy are more important than the continual practice of these behaviours. Indeed, interview participants spoke of having these tools and behaviours to fall back on if they gained weight – rather than continuously practising these habits – and also spoke of their confidence in being able to use

these behaviours to control weight when needed. Notably, this aligns with the literature that reports self-efficacy for diet and exercise is associated with successful weight loss and maintenance [60, 61]. Again, a strong and trusting client-practitioner relationship may be important in helping clients develop this self-efficacy and autonomy.

Cognitive eating behaviours were harder to assess in the qualitative interviews, as most people don't have a clear knowledge of what CR, EE, and UE specifically entail. Despite this, all interview participants described a change in what was potentially CR over their coaching period. When speaking of the lead-up to initial coaching with The Diet Doc, participants spoke of feeling out of control of what and how much they ate, being unable to stop binge eating, and not listening to hunger and satiety cues. When referring to the maintenance phase after coaching, participants spoke of being more mindful about food and portion sizes, being able to better control how much they consumed, and their willingness to track calories as a way of restraining their intake. In the subsequent questionnaire, however, eating behaviours were not associated with PWR but were a clear predictor of RWL ($p = 0.03$), although only CR was a clear contributor to this model ($p = 0.007$) (Chapter 4). While this association between weight loss and eating behaviours agrees with the literature [66, 68], the lack of association between eating behaviours and PWR was unexpected, as it is widely agreed that higher CR and lower EE and UE are associated with better weight maintenance [68, 82, 156, 157]. There are two potential causes of this discrepancy. Firstly, due to the entire survey cohort being successful weight loss maintainers, small differences may not have been detectable in this small sample, and secondly, the time between finishing weight loss coaching and taking the survey was different for each subject, both of which may have impacted the relationship between these factors.

The final dissertation question was "how are aspects of the client-practitioner relationship associated with eating behaviours?" Again, this was hard to assess in the interviews, as participants don't have a clear understanding of CR, EE, and UE; however, these participants –

who valued the client-practitioner relationship highly – did talk about their improved relationship with food and ability to restrain food intake when needed after coaching (Chapter 3). In the subsequent questionnaire, a model containing aspects of the client-practitioner relationship was associated with CR, explaining ~10% of the variance, with quality of the relationship being the only significant contributor. This indicates a stronger client-practitioner relationship was associated with higher CR scores. In the literature, better weight maintenance is associated with high CR scores [68, 73, 158], so this could suggest a strong client-practitioner relationship influences CR. However, as this survey was cross-sectional, it is impossible to assess whether these relationships are causal, and if so, the direction of causality. A model containing aspects of the client-practitioner relationship was also associated with EE, explaining ~11% of the variance (Chapter 4). Again, causality and direction are impossible to assess; however, as EE is positively associated with BMI [64, 81], this could simply indicate that individuals with high EE were more likely to value and seek support from their practitioner, and in the process built a stronger relationship.

Overall, these investigations helped explore aspects of the client-practitioner relationship and how they are associated with weight loss and weight maintenance in a sample of online weight-loss clients of The Diet Doc.

Limitations and future areas of research

There are several limitations to this research. First, both the interviews and survey had limited participants. So, while the interviews in Chapter 3 described the experiences of six participants, the results cannot be generalised to a larger population. Similarly, due to receiving fewer survey responses than anticipated, the statistical power of Chapter 4 was limited. In addition, this research was cross-sectional, so whilst it allowed for the exploration of client-practitioner relationships at one point in time, it did not allow an assessment of change over time which limits the ability to interpret how different factors affect weight loss and weight maintenance longitudinally.

Another limitation was the outcomes measured in Chapter 4. Calculating PWR relied on the goal weight chosen by individuals and their coaches when they started the coaching process. These goal weights were subjectively determined and may not be suitable or achievable for all participants; however, it is difficult to know this until coaching is well underway. A similar limitation exists with the measurement of RWL. The time between the end of initial coaching and the survey was not consistent between all participants and could not capture any weight regain that occurred from the time they reached their goal weight, until taking the survey. Both factors could have added ambiguity to the results.

To assess the effect of the client-practitioner relationship more fully on weight loss and weight maintenance, further longitudinal studies should be completed to assess changes over time, with measures taken at the start and end of the weight loss intervention, and at a uniform time during the maintenance phase.

Practical applications

Despite the limitations of small sample size, cross-sectional study design (Chapters 3 and 4), and outcome measures in the survey (Chapter 4), when considering this research in the broader literature on weight maintenance, the following recommendations are made:

- Practitioners should concentrate on developing high-quality relationships with clients seeking long-term weight control.
- Practitioners should focus on helping their clients internalise motivation and develop a strong sense of autonomy and self-determination in carrying out weight-control behaviours.
- Along with providing guidance and setting goals and expectations with clients, practitioners should provide education and knowledge about why certain behaviours are necessary for long-term weight control.

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Appendices

Appendix A Ethics approval (Chapter 3 and 4)

Auckland University of Technology Ethics Committee (AUTEC)

Auckland University of Technology
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29 October 2021

Eric Helms
Faculty of Health and Environmental Sciences

Dear Eric

Re Ethics Application: **21/349 The Effect of Client-Practitioner Relationships on Weight Loss and Weight Maintenance in Online Weight Loss Clients**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved in stages for three years until 29 October 2024.

This approval covers the first stage of research (interviews with 6 clients of The Diet Doc LLC). The second stage of the research (survey) will be informed by these interviews. The final survey will be provided via the EA2 amendment pathway.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.
7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard and that all the dates on the documents are updated.
8. AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

Please quote the application number and title on all future correspondence related to this project.

For any enquiries please contact ethics@aut.ac.nz. The forms mentioned above are available online through http://www.aut.ac.nz/research/researchethics

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat
Auckland University of Technology Ethics Committee

Cc: rosemaryhunter@gmail.com

Appendix B Interview guide

Table 0-1: Semi-structured interview guide

Topic	Sample questions
Initial reasons about joining The Diet Doc	Can you tell me about your initial reasons for wanting to lose weight? What made you decide to join The Diet Doc? Were there any barriers you had to overcome to join The Diet Doc? And how did you overcome them?
Expectations of working with an online weight-loss practitioner (The Diet Doc)	What were your expectations about working with an online weight-loss practitioner? What parts of working with an online practitioner did you think would be helpful/beneficial to you?
Experiences with weight loss	What were your goals when joining The Diet Doc? How did you measure success? Did you reach your goals? Why do you believe you were/were not successful in reaching your goal? How difficult was your experience with weight loss? How did having a weight-loss practitioner help/not help?
Experiences with weight maintenance	Can you tell me about your experience with weight-maintenance? Why do you believe you have/have not been successful in maintaining weight? How did having a weight-loss practitioner help/not help when it came to weight maintenance?
Weight loss/maintenance behaviours and lifestyle	Tell me about weight maintenance behaviours you practice daily/weekly. Why do you think you practice these behaviours? What has influenced which weight loss behaviours you do/do not practice? Tell me about lifestyle changes you have made and how easy/hard they have been. Why do you think you have made these changes? Why do you think they have been hard/easy to make?

Relationship with food	Tell me about your relationship with food. How has this relationship changed? Why do you think it has/has not changed? How has your weight-loss practitioner influenced your relationship with food?
Support	Tell me about the people who have supported you during weight-loss and maintenance. How have you been supported?
Perceived relationship with practitioner	On a scale of 1-10, how would you rate your relationship with your weight-loss coach?

Appendix C Table of themes from participant interviews

Table 0-2: Summary of themes and quotes identified from participant interviews

Theme: Clients seek help after a life-changing event

Sub themes	Examples
Big life events	“I was in a really bad, bad time in my life. I was unemployed. I was broke. I was…I was well over 300 pounds. And I just, you know…Life was pretty bad…I made that point that it was - OK, well, I need to get some help” - Participant 1 “Turning 70 you know was so big, I mean, it's just like…I was going through retirement. I lost my dad. I mean, we had a lot of stuff going on. And when I finally just kind of picked myself up again, it was like, OK…we've got a lot of life left to live here. So, let's just do it right?” – Participant 4 “I had gained some weight that was stress related. I'd taken my first director role was newly remarried.” – Participant 6
Shocked about health	“One day I was…it was just after my 50th birthday…I was broke and I was sitting there watching TV, one day on the floor, and I went to stand up and I couldn't. I had to grab onto the couch and pull myself up, and it was just sort of, "Whoa, what the hell's that about?" – Participant 1 "When I was forty-seven years old? I had a triple bypass surgery… I'd been a fitness buff for...I hate to say this, these numbers are getting bigger and scary, but about 40 years. So, despite that, I still wound up with a hereditary heart disease. And so, after I had the bypass surgery, I had set a goal for myself to be in the best shape of my life by the time I was 50 years old” – Participant 2 “My mother-in-law had been diagnosed with breast cancer. So, my husband and I said, OK, we need to, you know, we need to get on track with our health.” – Participant 5 “I wanted to build muscle and be stronger because I have some health concerns around osteoporosis in the family…My sister has kyphosis and scoliosis and, you know, she's kind of trending that way and I have mild scoliosis. So, I wanted to really learn how to build my body to be able to support myself as I got older.” – Participant 6
Already “tried everything” and ready for change	“I was ready. I guess finally, I was ready, which is the huge, huge thing…you know, I tried for years and tried all the stupid...the I eat all this or yeah, buy this piece, exercise thing and all the crap again.” – Participant 1 “When you think of the number just in my small body, how many pounds I've gained and lost over the years with different brands.” – Participant 4 “I mean, I really had been trying to lose weight most of my life, not really successfully because, you know, just not having enough knowledge.” – Participant 5

	"I was frustrated with trying other diet plans, trying other, you know, I don't know, Weight Watchers, whatever. I mean, food that's shipped to you, whatever. Yes, they work. My issue is they're not sustainable, right?" – Participant 5 "And I had done Weight Watchers in the past and I had cheated the system to lose the weight, so I didn't really learn anything. And as soon as I stopped, you know, hit my goal weight, as soon as I stopped participating, I gained it all back. And so I had already had that experience, and I'm like, I don't want to do that again. I want to. I wanted better tools versus gaming the system" – Participant 6
Recognised exercise was not enough	"I had worked out in the gym for several years before that, and I just I never lost. You know, I would always get down to a certain weight and I would never get any, any further below it. I didn't really know why. I do now, but at that point I didn't have a clue." - Participant 1 "You can't exercise your way out of a bad diet." – Participant 2 "I had gradually creeped up in my weight over the years, but I went to the gym three times a week before and I just felt like I was not getting anywhere and not gaining anything by all of the effort I was putting in there." - Participant 4 "I had been working with a trainer but really wanted to dive deep into nutrition and change my body composition and find a good outlet to reduce stress and move more." - Participant 6 "It was very different for me, but I was super excited because I had had a personal trainer, and I'd worked with some other people, but it was just like, Oh, here's your workout, just do your workout." – Participant 6

Theme: Coach as a mentor and teacher

Sub themes	Examples
Teaching and tools	"It was just it was all down to what they taught you, what she taught me. I got what I learned from them, and it was just, you know, this is where you have to behave if you want to maintain." – Participant 1 "But the knowledge that I gained, that was the first time I'd ever done any serious study of nutrition, probably since high school…They really educated me well on it." – Participant 2 "I still use all the tools. And the food logs and everything that I that I did for that year, that I was with Diet Doc." – Participant 4 "I understood why (the plan worked). I mean, finally, after she worked with me, I understood how they all work together and how that balance was there. So, she taught me and she taught me well." - Participant 4

	"I give massive, massive kudos to (coach) for teaching me how to measure my food in terms of macros, right? I thought weighing my food was a little crazy. But I get it now because it's portion control, right? And she initially wanted me weighing myself daily, which I also thought was argh...but I get it." – Participant 5
Coach as mentor. Providing accountability, direction, and support	"She was very...non-judgmental. It was more me thinking, I don't want to let her down or disappoint her, or have her be disappointed in me too, more than anything else" – Participant 1 "I always thought, Oh, I know I can't eat that because then I have to put it on my diary. And was she going to be disappointed in me? So I didn't...I didn't want to let her down, either." – Participant 1 "It was sort of like I didn't want to let her down, so I wouldn't...I wouldn't do that...you know, if I was in the store or I want to buy this. Not if I buy that I eat it, then I got to put it in my diary and then she'll be disappointed me." – Participant 1 "Well, (my coach) kind of set the expectations for me and I said, OK, well, that's a target, let's do it." – Participant 2 "Accountability, because when you know you're going to submit your logs every week to (coach), it's like oh crap, she's going to see this." – Participant 3 "Your biblical Angel on the shoulder, yet reminding you to do the right thing? It was like a partnership at first, and that was really really helpful." – Participant 4 "So, she definitely helped me with those goals and knowing that I can achieve whatever I wanted to do." – Participant 4 "The tools are great, but I needed her. I needed that accountability." – Participant 4 "I think having that accountability of having to check in with somebody and somebody holding you accountable to your goals is very helpful." – Participant 6 "To have an expert, somebody who really was trained and wasn't just somebody at the gym who this was not necessarily their full educational background. I really appreciate that about (coach) and his educational background and his research. This is somebody who is well known and who's going to lead me down the right path versus somebody who's just read a book and taken an exam and doesn't really have the one, the life experience or the knowledge." – Participant 6 "You know, it's like having a mentor like, you know, I looked at them as that. These are my mentors and they're keeping me accountable." – Participant 6
Long-term relationship	"(After I finished coaching) I wasn't an official client. But yeah, you know, I still I could still text her. And yeah, we kept in touch…so it's more of a friendship than a client relationship." – Participant 1 "I've stayed connected in ways over time through emails and social media…I followed

	her and followed her and Joe ever since…It's community or even friendships." – Participant 3 "I lost 20 pounds and she saw it and she still recognizes me, recognizes my achievement. And it's like a reminder...she's still part of my journey, you know? It's a relationship that we just forged and it's still very important. I'm just not checking in so often." – Participant 4 "And even in my most frustrating times, even if I wasn't specifically working with (my coaches) at a particular time, I can always reach out...I can always email (coach) and be like, Oh my gosh, like, I need centring like, bring me back to reality. So, they have been great." – Participant 6 "…Even though I don't talk to her every day. We're still pretty close." – Participant 6

Theme: Turning clients into their own coach

Sub themes	Examples
Knowledge and tools increased confidence in weight-loss maintenance	"But what I have realized in various times when I've fluctuated (during maintenance phase) is I have to write down everything I eat and that's what the diet doc had me do - is measure and write down everything I eat. And over the years, I have tried and failed enough times to …recognize that, at least for me...I've come to the conclusion for me that that's an absolute necessity." – Participant 2 "I've kept it off because…we have a lot of chicken and fish and I do eat red meat, but we don't eat a lot of super high fat foods and a lot of that stuff I learned from...from the diet doc." – Participant 3 "I'm now at 116. I've been that for... I mean, in a week, I could be back down there (112 pounds). So, if there is a family occasion or a hunting trip that we went on with friends or, you know what I mean? I just hold the line. I could be there today. I could be there next week. And so, I have this realistic eating plan that'll work for me the rest of my life." – Participant 4 "Yes. I weigh every day, so if I see that I'm up more than I want to be, then I just get right back on the log. You know, it's like, do I want to write that down? I mean, if I eat that, I have to write it down." – Participant 4 "I don't feel sad when I go up a little bit because I know I have the tools to fix it." – Participant 4 "Having the knowledge that I gained and just the understanding of food and the mental aspect of it and the importance of physical activity, I now know that if I work hard enough, I could get myself safely without being miserable to probably one hundred and fifty pounds." – Participant 5 "My weight is going to be a struggle my entire life always has been, always will be. But I always have the information that I learned from (coach), whether it's macros, whether it's the mental aspect to always fall back on. And know, OK, you know what? I need to

	eat more protein or less carbs, whatever. I mean, it really comes down to that." – Participant 5 "5: There are maybe three or four key things - macros, hydration and the mental...Being mindful of the mental aspect of eating." RH: That's awesome. And what do you think influenced you continuing those practices? 5: Because I knew they worked, because they worked the first time I was successful at it…for whatever reason, whether it was stress or just straight boredom that I started to gain weight and wanted to eat different things again. But the good thing is, I knew I could always go back to those basic tenets because it worked." – Participant 5 "RH: Do you think that time you spent working with (your coaches) helped during the maintenance part? 6: Yes, because I had the tools to be able to do it." – Participant 6 "But I know I have the tools to do it in a better, smarter way than I did in my early twenties when I did Weight Watchers and I just like, stopped doing it. And it's like I didn't learn anything. I didn't gain any new tools. I learned how to game the system." – Participant 6 "Their knowledge of how things work, their experience with other people and you know, (coach) is very into the science of kinetic energy, you know, and I think understanding that made it more fun for me. Like I said, I felt like it was a science experiment, and it was fun versus…you know, not somebody just saying: Oh, here, eat this and not giving you the reason why behind it." – Participant 6
Internalizing accountability	"(Weighing myself daily is) the thing that works for me. I mean, I didn't for a while, I didn't weigh myself. And then all of a sudden you start creeping up and it's really easy to get off track to where you said, you know, I'm just…going to go ahead and do it...for me it's a good thing. It's not obsessing about it, but it still keeps me focused, keeps it on my...my mind." – Participant 1 "(I practice the same tools because it's) just the way to…keep myself going and keep myself focused and not slip back into my old habits." – Participant 1 "If I don't write it down for me, I think of it as having a slip, you know what I mean?... So, the accountability that I've made to myself is not that I will not eat X or Y or Z or anything, or even a goal for so many calories, just that I'm going to write it down...what I found that does for me or I think I would do with anybody is it takes you away from mindless eating." – Participant 2 "Yes. I weigh every day, so if I see that I'm up more than I want to be, then I just get right back on the log. You know, it's like, do I want to write that down? I mean, if I eat that, I have to write it down. So, it's kind of like that little...That's the side of the punitive thing, that says, no, I'm not eating that." – Participant 4
Coaches helped clients change mindset for maintenance	"It was just it was all down to what they taught you, what she taught me. I got what I learned from them, and it was just, you know, this is where you have to behave if you want to maintain" – Participant 1 "...you have to change your whole mind…It was just it was all down to what they taught

	you, what she taught me. I got what I learned from them, and it was just, you know, this is where you have to behave if you want to maintain." - Participant 1 "It was eye-opening to not break that kind of illusion, but to see it for what it really is, right? OK, I grew up thinking food is love, but in reality, as an adult coming to the consensus and understanding that it's really nourishment at the end of the day, it can still be love. That's fine. But as it relates to maintaining weight, you really got to see it as nourishment." - Participant 5

Theme: Helping clients assimilate health/fitness identity into their everyday lives

Sub themes	Examples
This is my new normal	"The reason (I continue practicing these weight-loss behaviours) is because I am so much happier at this weight. So, I mean, it's just the reward was huge. I mean, I weighed less than I did when I was in my 20s when I was in college…So I feel wonderful. I feel strong and good and in charge of what I'm doing." – Participant 4 "Now, it's kind of like this is the new normal right now…And so this is the new me. And it's the old me, actually, which some of them don't remember. I remember this me. I've always thought, you know, this me was inside here." – Participant 4 "I'm not twenty-five years old anymore and I won't probably weigh a hundred and thirty-five pounds all my life. I think my body tends to like about one hundred and forty-five pounds better. And (coach) and I've had many conversations about that, like your, your body just knows where it wants to go and where it wants to stay." – Participant 6
My coach influenced how I identify with health/fitness	"You know, I got into the bodybuilding federation because (my coach) was one of the people that started the federation in Canada…I've gotten to know a bunch of a bunch of the people and volunteered at a few of their shows. So, I know a bunch of them and it's yeah, they're all such nice people. It's not like the big type of big monsters, and so it's more of a more of a family type of affair." – Participant 1 "I've actually put together a book about it and I'm trying to get it finished. Three or four years that I'm basing it around my emails to and from [my coach]. So, I'm hoping to get that in, you know, within the next few months. Get that out. Self-published." – Participant 1 "I came in third out of eight people [in a bodybuilding competition]. People who were usually quite a bit younger than I was." – Participant 2 "I only started to do that about three years ago [became a personal trainer]. I retired after working 30 years in the financial services." – Participant 2 "You know, I talk about health and wellness a lot, and I study it. And I, you know, I even give some webinars on it and things like that…I didn't do any of that before the diet doc, so they really started me in doing all this eastern study, the integrative study, and even some of the teaching that I do." – Participant 3 "So, my path… [my coaches] kick-started me. You know, they helped me jump-start the whole thing, and I've kept the weight off…then I did an outdoor training, a leadership

	entrepreneurship training... I'm certified to teach [yoga]…it actually took my practice to a different level that I would not have otherwise." – Participant 3 "And we're all facing our own challenges with health now. I mean, you know, some of us are approaching our seventies if we aren't already in them, and so I think people are like going, well, this is important and it's good that you're feeling good and that you're healthy...because I'm struggling with this or I'm struggling with that…so I'm just like in my place, I'm back to where I feel in control." – Participant 4
Me vs "them" identity	"And to me, that's just the amount of excess...the crap people eat...I go for lunch every now and again then… to a good restaurant and have lunch. And it's there's one particular place, a Greek place, and they have a lunch. You get a little like three course meal for the same price as you would get a MacDonalds…And McDonalds is lined up out the door…People are eating it, eating the crap from McDonald's and that and old pop and that sort of thing." – Participant 1 "But I suspect strongly that one of the reasons why long-term weight loss maintenance is so dismal is because people are not willing to do that (track food intake) long-term." – Participant 2 "When I tell most of my clients what I do. Most of them probably roll their eyes - maybe not to my face - and say, I'm not...I don't want to do that." – Participant 2 "But I have become convinced that whether it's a weight maintenance goal, or any goal with, you know, sort of out of the ordinary that you have personally, professionally…People say you have to be committed or dedicated. I think those are good, but most people are just a little bit obsessive about it." – Participant 2 "Among my friends, it was like, "you're getting so thin" and this and that, and it's...you know what I mean? I was improving myself. I weighed one hundred and forty some pounds and I'm five one. You know? I was too heavy. Yeah. And yet they didn't want me to change or to improve in a way...you know? It's that weird dynamic of going "This is a change, and we're not really happy."" – Participant 4 "Oh, you need some fat when you get older so you don't get sick and..." And I'm just like, "well, why not just be healthy?" "Why not do our best to be healthy?" – Participant 4 "(I say) Oh, I'm eating, you know, non-fat Greek yogurt with pudding and you know, that type of stuff. And they're like, "oh, I try that - that's too much work. I don't know how you do that." It was really frustrating because I'm like, "don't ask me for advice or help if you're just going to be like, I'm not going to do that...don't complain." I learned long, long ago, like, you know, if you're complaining about your weight, then do something about it. Don't say, "Oh, that's too hard" or "I'm not going to do that"." – Participant 6
Expertise - I have to walk the talk	"She put on two or three times a year...A weight loss clinic or a basic clinic at the community centre here and now I go to most of them, I think, since...when I've been available and just sort of…give a little talk about how it worked… (I am) a before and after to prove that it can be done." – Participant 1

“(I am) a before and after to prove that it can be done.” – Participant 1

“And even now, you know, guys, you know, people, I've been friends. "oh, you're such an inspiration...You did such a good job.” – Participant 1

“I'm a personal trainer. And so, part of my accountability is I want to somewhat look the part…And so that's part of what motivates me. And so, I'm a bit of a fitness geek, and so I've been able to maintain it.” – Participant 2

“These days I have relationships with PTs literally all over the world. And that's supportive in the sense that you know, you feel as sort of a... peer pressure for lack of a better word that you want to belong to that group.” – Participant 2

“And also, if you're going to talk about it, you've got to walk the walk, you know? Yeah, yeah, it helps.” – Participant 3

Appendix D Questionnaire

Demographics:

1. What is your current age?

   18-24

   25-34

   35-44

   45-54

   55-64

   65-74

   75-84

   85-94

2. What gender do you identify with?

   Male

   Female

   Non-binary/third gender

   Prefer not to say

Weight data:

3. What is your current weight (to the closest pound)?

4. What was your goal weight when you started working with The Diet Doc (to the closest pound)?

5. How much weight did you lose while working with The Diet Doc (to the closest pound)?

6. Are you actively trying to lose weight now?

   Yes

   No

Perceived relationship with practitioner:

7. How would you describe the quality of your relationship with your weight loss practitioner?
   Poor (1)/ fair (2)/ average (3)/ above average (4)/ excellent (5)

8. How often did you receive support from your weight loss practitioner during the weight maintenance phase?

Never (1)/ once or twice per year (2)/ quarterly (3)/ every other month (4)/ monthly (5)/ bimonthly (6)/ weekly or more frequent (7)

9. Working with a weight loss practitioner helped me assimilate health and fitness as part of my new identity.
   Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

Frequency of weight-related behaviours:

10. How often do you eat out?
    Rarely/never (1)/ 1-3 times per month (2)/ 3-6 times per week (3)/ daily (4)/ more than twice a day (5)

11. How often do you eat with others?
    Rarely/never (1)/ 1-3 times per month (2)/ 3-6 times per week (3)/ daily (4)/ more than twice a day (5)

12. How often do you eat breakfast?
    Rarely/never (1)/ 1-3 times per month (2)/ 3-6 times per week (3)/ daily (4)

13. How many main meals do you have per day?
    1 (1)/ 2 month (2)/ 3 (3)

14. How would you describe your eating rate?
    Very fast (1)/ fast (2)/ medium (3)/ slow (4)/ very slow (5)

15. How much time do you spend on food preparation each day?
    1 or more hours (1)/ less than one hour (2)

16. Who is responsible for food preparation?
    Mostly you (1)/ Mostly others (2)

17. How often do you eat home cooked meals?
    Almost never (1)/ sometimes (2)/ often (3)/ almost always (4)

18. How often do you weigh yourself?
    Daily (1)/ 2-6 times per week (2)/ weekly (3)/ 1-3 times per month (4)/ a few times per year or never (5)

Relationship with food:

19. When I smell a delicious food, I find it very difficult to keep from eating, even if I have just finished a meal.
    Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

20. I deliberately take small helpings as a means of controlling my weight.
    Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

21. When I feel anxious, I find myself eating.
    Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

22. Sometimes when I start eating, I just can't seem to stop.
    Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

23. Being with someone who is eating often makes me hungry enough to eat also.
    Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

24. When I feel blue, I often overeat.
    Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

25. When I see a real delicacy, I often get so hungry that I have to eat right away.
    Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

26. I get so hungry that my stomach often seems like a bottomless pit.
    Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

27. I am always hungry so it is hard for me to stop eating before I finish the food on my plate.
    Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

28. When I feel lonely, I console myself by eating.
    Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

29. I consciously hold back at meals in order not to weight gain.
    Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

30. I do not eat some foods because they make me fat.
    Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

31. I am always hungry enough to eat at any time.
    Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

32. How often do you feel hungry?
    Only at meal times (1)/ sometimes between meals (2)/ often between meals (3)/almost always (4)

33. How frequently do you avoid "stocking up" on tempting foods?
    Almost never (1)/ seldom (2)/ moderately likely (3)/ almost always (4)

34. How likely are you to consciously eat less than you want?
    Unlikely (1)/ slightly likely (2)/ moderately likely (3)/ very likely (4)

35. Do you go on eating binges though you are not hungry?
    Never (1)/ rarely (2)/ sometimes (3)/ at least once a week (4)

36. On a scale of 1 to 8, where 1 means no restraint in eating (eating whatever you want, whenever you want it) and 8 means total restraint (constantly limiting food intake and never "giving in"), what number would you give yourself?