

**FROM MINDSET TO WEIGHT MANAGEMENT. WHAT'S THE ROLE OF THE
GOAL? HOW IMPLICIT MINDSET AND GOAL ORIENTATION INTERACT TO
INFLUENCE MALADAPTIVE WEIGHT MANGAGEMENT BEHAVIOURS**

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ABSTRACT

Some consumers manage weight healthily, while others do not. This research examines how implicit mindset (growth vs. fixed) and goal orientation (GO; development vs. demonstration) influence maladaptive weight management behaviours (MWMB). Hypotheses suggested growth (fixed) mindsets would have development (demonstration) GO and subsequently engage in MWMB that requires (doesn't require) proactivity, persistence, and effort. In a Pretest, an online panel rated MWMB items on proactivity, persistence, and effort required. In Study 1, an online panel's responses were used to test if GO mediated the relationship between mindset and MWMB. Results did not support an indirect effect of mindset on MWMB through GO. In Study 2, GO was examined as a moderator. University students first completed a survey where GO was manipulated and then completed a follow-up survey two weeks later. Results show GO did not moderate the relationship between mindset and MWMB. Exploratory analyses, implications, and future research are discussed.

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LIST OF ABBREVIATIONS

Abbreviation	Full Wording
EPSI	Eating Pathology Symptoms Inventory (Forbush et al., 2013a)
MWMB	Maladaptive weight management behaviour
EVB	Expectancy-value beliefs
Dev Ap	Development approach goal orientation
Dev Av	Development avoidance goal orientation
Dem Ap	Demonstration approach goal orientation
Dem Av	Demonstration avoidance goal orientation
GC	Goal condition
GM	Growth mindset
BD	Body dissatisfaction
BE	Binge eating
CR	Cognitive restraint
P	Purging
R	Restricting
EE	Excessive exercise
MB	Muscle building
NO	Negative attitude toward obesity

CHAPTER 1: INTRODUCTION

Changing one's behaviours to manage one's weight is a difficult thing to do, often involving one or more failures on the way to successfully altering the behaviour of interest. Research suggests individuals tend to handle these failures differently (Burnette, 2010; Babij et al., 2020) – but why? For example, sometimes these challenges can lead to frustration and more extreme behaviours to achieve the desired change (e.g., developing disordered eating; Foreich et al., 2018), and sometimes these challenges can lead to giving up on the goal (e.g., intending to not diet again; Burnette, 2010). Which individual attributes allow some to handle failure in more adaptive ways and under what circumstances do those same attributes translate failure into maladaptive behaviour? Applying implicit mindset theory and a goal orientation framework to a weight management context, this research seeks to deepen understanding of the paths to specific types of maladaptive behaviour. In the context of this research, “maladaptive behaviours” are behaviours that have the potential to be more harmful than helpful to the consumer, particularly when done in excess or in combination with other potentially harmful (i.e., maladaptive) behaviours. It should be noted that many of the behaviours measured in this research may not be inherently “unhealthy” or harmful when done on their own or with low frequency, but also could indicate disordered eating behaviours and eating disorder diagnoses, particularly when done in combination and with higher frequency (Forbush et al., 2013a). With that in mind, the studied weight management-related behaviours will herein be called “maladaptive weight management behaviours.”

In the coming sections, implicit mindset theory and goal orientation are introduced, followed by the theoretical framework and hypotheses. Then, one pretest and two studies are presented to examine the relationships among implicit mindset, goal orientation, and maladaptive

weight management behaviours. These studies lay the groundwork for future interventions using implicit mindsets and goal orientations to reduce maladaptive behaviour, and, in particular, maladaptive weight management behaviour. This research also has potential to add to literature (e.g., Hooper et al., 2018; Lee et al., 2020) exploring the boundary conditions of the often-beneficial growth mindset.

1.1 MINDSET

Implicit mindset theory provides guidance on how consumers view abilities and traits, generally seeing them as either malleable due to hard work, effective strategies, and help from others (i.e., growth mindset), or as stable and unchangeable (i.e., fixed mindset; Dweck et al., 1995). These individual differences in malleability beliefs have been shown to influence financial decision making (Rai & Lin, 2019), brand experiences and perceptions (Park & John, 2010, 2014, 2018), social media use (Song et al., 2019), environmental behaviours (Duchi et al., 2020), and even emotions and productivity while working from home during the global COVID-19 pandemic (Howe & Menges, 2020). Additionally, and importantly, these underlying beliefs influence how individuals set goals (Beruchashvili & Moisiso, 2013; Beruchashvili et al., 2014) and strive towards them (Burnette et al., 2013).

Implicit mindset theory can also be used to conceptualize how individuals handle setbacks and failures (Dweck et al., 1995; Burnette, 2010). Specifically, it posits that growth and fixed mindsets react to setbacks in goal pursuit, such as those experienced by consumers undertaking a diet or exercise regime, differently based on their malleability beliefs (Burnette, 2010). Consequently, whereas growth mindsets might see a setback as an opportunity to learn and use the lesson to persist in pursuit of their goal, fixed mindsets may see that same setback as a sign they were not meant to achieve that goal and give up (Dweck et al., 1995). Within this

theory is the idea that growth mindsets tend to believe persistence pays off, whereas fixed mindsets are less inclined to believe that (Dweck et al., 1995; Burnette, 2010). As a result, growth mindsets tend to persist longer (Burnette, 2010). They also tend to actively seek out activities that involve personal growth and require persistence to see that growth (Beruchashvili et al., 2014).

Implicit mindsets are important for understanding behaviour because they “shape people’s motivation” (Murphy & Dweck, 2016, p. 127). Largely found to have beneficial outcomes, such as healthy eating intentions (Thomas et al., 2019), and increased actual healthy eating and exercising (Parent & Alquist, 2016), the benefits of having a growth mindset may also have limits. For example, Hooper et al. (2017) found that those with a growth mindset tend to be more negative towards overweight people as they believe those individuals are responsible for their condition. Importantly, if mindset can influence how consumers judge other people, it also seems likely it could influence how they judge themselves, which would be relevant for assessing goal pursuit progress [Burnette et al. (2013) have an in-depth discussion of mindset’s relation to goal setting/operating/monitoring].

1.2 GOAL ORIENTATIONS

While mindset influences how someone views their attributes and potential to achieve certain goals, the particular way someone attempts to achieve their goals may rely on their goal orientation. One prominent goal orientation framework is the 2x2 achievement framework developed by Elliot and McGregor (2001). This framework outlines four distinct goal orientations, separated mainly goals that seek to master skills and goals that seek to show skills: (1) mastery-approach, (2) mastery-avoidance, (3) performance-approach, (4) performance-avoidance (Elliot & McGregor, 2001). The approach/avoid distinction is the valence of the goal

where consumers either strive toward positive success (i.e., approach is a positive valence) or focus on avoiding a negative outcome (i.e., avoidance is a negative valence; Elliot & McGregor, 2001).

The original mastery and performance goal types were composed of two subcomponents, which are often collapsed together or only one is chosen for analysis (Korn & Elliot, 2016). These parts are: (1) the standards (the competence reference, who/what someone compares their skill to) and (2) the standpoint from which competence is viewed (the method for competence, either showing it or acquiring it; Korn & Elliot, 2016). Conceptually, this may pose a problem when trying to understand the real motivations behind consumers' actions as there are two possible explanations.

One refinement on the original framework comes from Korn and Elliot (2016). To clearly examine the standpoints component of goals, they developed the 2x2 standpoints model. The four goals in the standpoints model are: (1) development-approach, (2) development-avoidance, (3) demonstration-approach, (4) demonstration-avoidance. As the names suggest, development goals focus on developing competence while demonstration goals focus on demonstrating it (Korn & Elliot, 2016). Overall, the 2x2 standpoints model can be used to show that goal orientation influences outcomes (i.e., intrinsic motivation and performance) even without a specific referent for comparing one's competence to (Korn & Elliot, 2016). Understanding what goals consumers pursue (i.e., to develop or demonstrate skill) and how they perceive success (i.e., having developed or demonstrated the skill) is useful in starting to identify behaviours that could be associated with each goal orientation. As well, understanding these motivations helps to associate them with other personal attributes.

1.3 MINDSET AND GOAL ORIENTATIONS

Past research has found associations between implicit mindset and goal orientations. Typically, growth mindsets are more associated with goals that involve development of skill (i.e., development goals) and fixed mindsets tend to have goals that focus on demonstrating competence (i.e., demonstration goals; Dweck & Grant, 2008; Burnette et al., 2013; Beruchashvili et al., 2014). As growth mindsets believe that attributes are malleable through effort and persistence (Dweck et al., 1995), it follows that they are likely to have development goals allowing them to focus on developing the skills they need to accomplish their goals. Further, as fixed mindsets believe less in attribute malleability (Dweck et al., 1995), it follows that they would focus more on goals allowing them to demonstrate the competence, or the attribute, that they do have.

Since goal pursuit often includes facing setbacks, noting that growth and fixed mindsets react differently to negative situations is important. When growth mindsets get negative feedback, they try to make themselves feel better by working to *do* better next time (Nussbaum & Dweck, 2008). In contrast, fixed mindsets try to improve their negative mood by finding ways to, in their own mind, make themselves *seem* better, such as by engaging in downward social comparison (Nussbaum & Dweck, 2008). Since fixed mindsets have lower belief that they can change aspects of themselves, pursuing demonstration goals may be the most efficient way for them to feel accomplished because their efforts will be put to something they believe they can more easily change – personal perceptions (e.g., how they think about themselves or work to create a particular image for other people to see) instead of something they believe they cannot change (i.e., their attributes or skills).

For the purposes of hypothesis creation, the development and demonstration components of the goals will be focused on as the belief in one's ability (or not) to develop competence and skill (i.e., their implicit mindset) is conceptually directly linked to whether someone tries (or does not try) to develop their competence and skill (i.e., their goal orientation). While acknowledging that past research suggests growth mindsets may be more related to approach-type goals and fixed mindsets to avoidance-type goals (Burnette, 2010, Beruchashvili et al., 2014), this is not a focal aspect of this research and so will not be theorized on further.¹

1.4 CONCEPTUAL OVERVIEW

From beliefs about one's own self and potential to goal setting and planning to actual behaviour choice and subsequent actions – weight management has numerous, intertwined, complex components. This research specifically focuses on implicit mindset and goal orientation in a weight management context. Its purpose is to explore one application of how these two personal characteristics interact to impact individuals' behaviour.

Research has already begun delineating these components, including studies on implicit mindset's influence on health-related behaviours and the struggles consumers go through in the weight management domain. For example, Burnette (2010) found that when faced with a setback in their diet, fixed mindsets tended to have lower expectations for future diet success and used avoidant coping mechanisms (e.g., intended not to diet in the future) to handle the failure. Similarly, Burnette et al.'s (2013) meta-analysis found that fixed mindsets are more associated with helpless-oriented (vs. mastery-oriented) strategies. Those authors further suggested that an individual's mindset should influence the particular dieting behaviours they engage in (Burnette et al., 2013).

¹ While it was not theorized on, as will be shown later, analysis ultimately does examine each goal orientation separately for clearest results.

Building on this line of research, Thomas et al. (2019) “suggest that mindsets relate to eating intentions, at least in part, because they inform individuals’ expectancy-value beliefs” (p. 373). More specifically, their research suggested that consumers were more likely to engage in tasks they valued and thought they could effectively do (Thomas et al., 2019). These beliefs influenced persistence, such that higher beliefs in efficacy and value increased persistence on the task or goal-related behaviour (Thomas et al., 2019). Overall, their results showed that growth mindsets tended to value healthy eating more than fixed mindsets. This may have been because growth mindsets tended to expect they could successfully manage their eating behaviours, which, in turn, positively predicted higher healthy eating intentions than fixed mindsets (Thomas et al., 2019).

The current research focuses more on the “expectancy” part of Thomas et al.’s (2019) research, exploring how believing in malleability of attributes influences subsequent behaviours. However, where Thomas et al. (2019) focused on mindset and *healthy* (i.e., adaptive) behaviours, the upcoming studies focus on mindset and *maladaptive* behaviours. Additionally, rather than examining intentions, the studies in this research will collect data on actual participant behaviour, through reflective self-report surveys and entries of food/exercise behaviours. This research also builds on Chernishenko et al.’s (2021) examination of the relationships between perfectionism and mindset. These authors found that perfectionism and growth mindset interact to increase engagement in certain maladaptive weight management behaviours, and also that growth mindset had significant main effect relationships with a few maladaptive weight management behaviours as well (Chernishenko et al., 2021).

Also relevant to this research are findings on how mindsets differentially approach weight management and the goals they make, which gives clues as to the process of how those

behaviours are chosen. Fixed mindsets have been found to want to minimize effort during participation in weight management programs, both long-term and short-term, to achieve weight loss (Beruchashvili et al., 2014). One way they do this is by focusing on maintaining somewhat normal diet patterns (e.g., eating a variety of foods but staying within set limits) and choosing to follow externally set plans (e.g., weight loss programs; Beruchashvili et al., 2014). These findings suggest fixed mindsets tend to have demonstration-oriented goals, as these behaviours allow fixed mindsets to demonstrate how successfully they can follow a plan (e.g., in the case of following a weight loss program) or how naturally dieting comes to them (e.g., in the case of choosing somewhat normal diet patterns). In contrast, growth mindsets tend to set goals “of acquiring weight-loss competence, [and] developing self-knowledge,” which involves goals for developing new eating and exercising behaviours for themselves (Beruchashvili et al., 2014, p. 55). It follows, then, that growth mindsets should lean toward having development-orientation goals. Furthermore, growth mindsets were also found to want to lose weight for their own self-enhancement, not just enhancing how other people perceive them (Beruchashvili et al., 2014), which also aligns with development goal orientation.

1.5 THEORETICAL OVERVIEW

Broadly, this research proposes that mindset indirectly influences maladaptive weight management behaviours through goal orientation. More specifically, a parallel process is proposed (Figure 1) where having a growth mindset leads to having development-orientation goals and having a fixed mindset leads to having demonstration-orientation goals (Dweck & Grant, 2008, Beruchashvili et al., 2014). These goals, in turn, are expected to differentially inform the approaches (i.e., maladaptive weight management behaviours) used to pursue the different goals. Development-orientation goals should predict behaviours requiring proactivity,

persistence, and effort (e.g., taking initiative to develop new diet and exercise plans and perform them consistently; Beruchashvili et al., 2014). In contrast, demonstration-orientation goals should predict behaviours requiring less planning, less persistence, and less effort, but which make one appear as if they are performing well (e.g., adhering to a pre-made weight loss program to completion; Beruchashvili et al., 2014). In sum, the model suggests growth mindsets will hold development goals, and in turn engage in weight management behaviours that reflect development of personal ability. This is in contrast to fixed mindsets who are expected to hold demonstration goals and in turn engage in weight management behaviours that reflect demonstration of current ability.

As it is anticipated that the different mindset and goal orientation pairings will engage in contrasting maladaptive weight management behaviours, further explanation of the potential behaviours is warranted and elaborated on below.

1.6 EXPECTED MINDSET, GOALS ORIENTATION, AND WEIGHT MANAGEMENT BEHAVIOURS

This research uses the Eating Pathology Symptoms Inventory (EPSI; Forbush et al., 2013a) to assess maladaptive weight management behaviour because it includes behaviours that relate to eating as well as broader behaviours and beliefs related to weight management activities. Among the six pre-defined maladaptive weight management categories (developed by Forbush et al., 2013a) that will be used in this research, it is anticipated that subscales with items indicating high levels of proactivity, persistence, and effort (i.e., expected behaviours of those with growth mindset and development orientation goals) will be Excessive Exercise and Restricting. To contrast those, subscales with items that have low levels of proactivity, persistence, and effort (i.e., expected behaviours of those with fixed mindset and demonstration

orientation goals) will be Muscle Building² and Binge Eating. Purging and Cognitive Restraint subscales include items that could be classified as either type of weight management. While a pretest will be conducted to determine which subscales will be used for hypothesis testing, preliminary reasoning for the expected categorizations of these behaviours is further discussed next.

Excessive Exercise and Restricting may be considered to be highly proactive, persistent, or effortful weight management behaviours. Items in Excessive Exercise ask how significant of a role exercise plays in participants' lives (e.g., if they felt the need to exercise every day; Forbush et al., 2013b). Items in this scale indicate that Excessive Exercising involves both proactive preparation and ongoing commitment, so it is expected to be more related to growth mindset (and development goals) than fixed mindset (and demonstration goals). Restricting's items ask about how much participants eat and if other people notice how little they eat (Forbush et al., 2013b). When an individual consistently gets full after eating a small amount or others have noticed these restrictive behaviours, it may be inferred that the individual has been doing these behaviours for some time. This persistence would suggest that Restricting is more related to the proactive and persevering strategies growth mindsets are expected to use.

Muscle Building and Binge Eating may be classified as lower proactivity, lower persistence, and lower effort weight management behaviours. Items in Muscle Building ask participants about muscle building supplement use and how they feel about their muscularity (Forbush et al., 2013b). Using supplements can be perceived as having low requirements for perseverance and effort, and potentially low proactivity as well, especially if the supplement is used to achieve a muscular form quickly. Consequently, Muscle Building may be connected to

² To clarify the interpretation of "Muscle Building," note that the scale's items refer to taking supplements to build muscle and worry about muscle size, but do not ask about how muscle is being built or the effort that goes into it.

fixed mindsets and demonstration goals, despite the name of the scale being potentially conceptually connected to persistent exercising (to build muscle through effort). Binge Eating's items ask participants about their snacking behaviours and how much they eat (and eat without realizing; Forbush et al., 2013b). Items in Binge Eating appear unplanned and unintentional, indicating reactivity to the situation and thus a potential connection to fixed mindsets. The circumstances leading up to binge eating behaviours may be varied (e.g., long periods of restricting), but, for the purpose of this research, only the actual act of Binge Eating's connection to mindset and goal orientation will be examined.

Purging and Cognitive Restraint could either be proactive, persistent, and effortful maladaptive weight management behaviour or not. Items in Purging ask participants about using laxatives or diuretics and if they have forcibly removed the contents they ingested (e.g., induced vomiting; Forbush et al., 2013b). Using supplements for weight loss indicates a quick fix or low perseverance strategy, which would align with fixed mindset. However, making oneself vomit could either be a reactive strategy for a fixed mindset (e.g., to compensate for eating too much) or it could be a proactive strategy for a growth mindset (e.g., to compensate for eating in general). Analysis will determine which mindset and goal orientation Purging is more related to. Cognitive Restraint's items refer to how participants choose and track their food (Forbush et al., 2013b). Depending on the level of commitment someone has to these behaviours, they could either be short term or for a performance reason (e.g., to look healthy in a group lunch) or long term (e.g., tracking food every day).

1.7 CURRENT RESEARCH

The proposed model for this research was based on ideas from Witte's (1992) Extended Parallel Process Model. Note, however, that although Witte's model was for fear appeals, this

research applies the model to a different area of research. This type of model was chosen as the parallel nature of this research (i.e., one independent variable splitting into two paths with different resulting behaviours) fits within the model well. This research’s model begins with implicit mindset. Then, depending on a consumer’s mindset [high growth vs. low growth (i.e., fixed) mindset] their behaviour should proceed along one of two theoretical routes. Consumers high in growth mindset should have demonstration goal orientations and engage in behaviours that will lead to achieving their goals (i.e., highly proactive, persistent, effortful maladaptive weight management behaviours). Conversely, consumers low in growth mindset (i.e., those with a fixed mindset) should have demonstration goal orientations which lead them to engage in behaviours that will help them achieve those types of goals (i.e., low proactivity, low persistence, low effort maladaptive weight management behaviours). The general model for this research is in Figure 1 below. Figure 2 illustrates the anticipated pathways for maladaptive weight management behaviours.

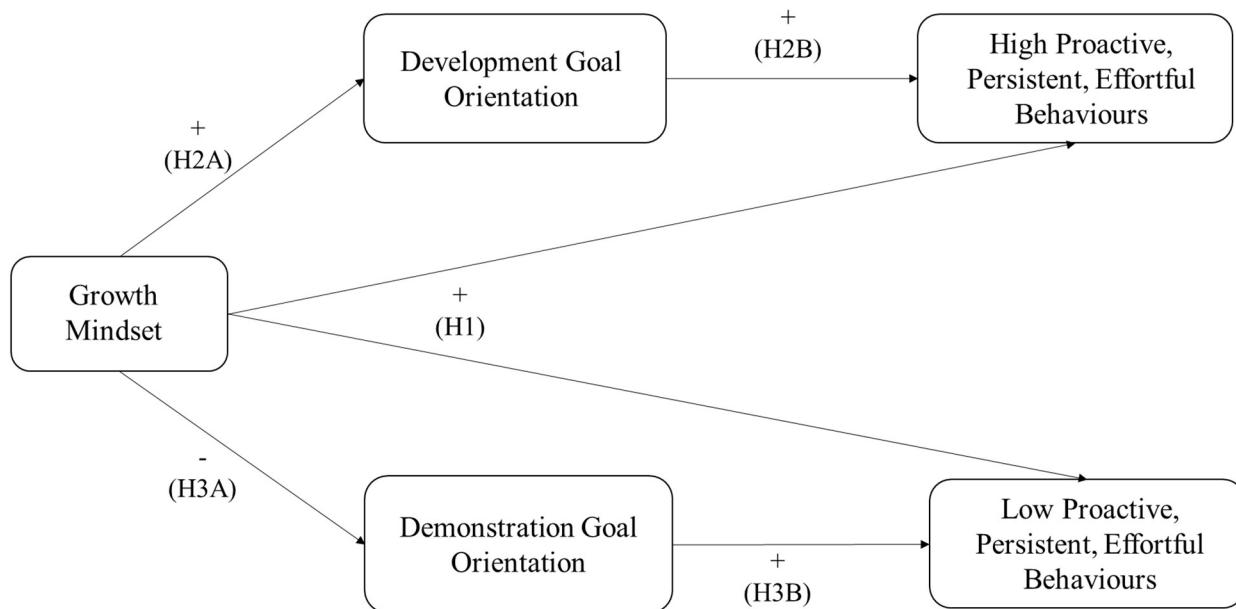


Figure 1

Parallel process model

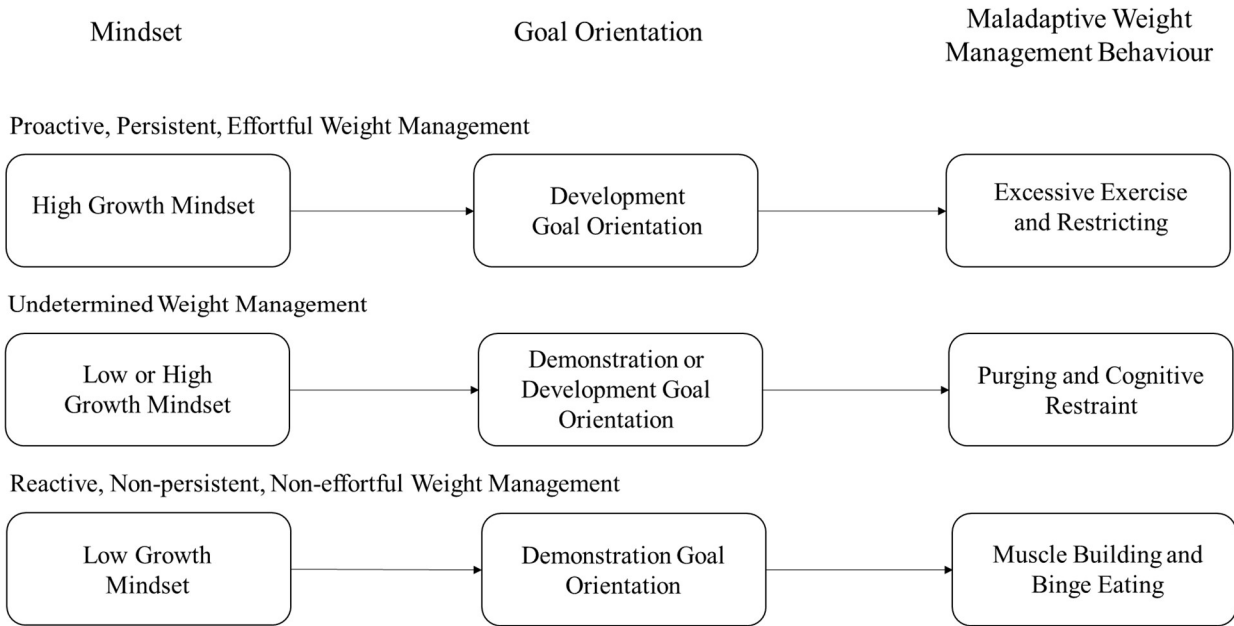


Figure 2

Expected behavioural paths

Formally put, the hypotheses are:

Hypothesis 1: Participants higher in growth mindset will practice more maladaptive weight management behaviours than participants lower in growth mindset (i.e., fixed mindset).

Hypothesis 2A: Participants higher in growth mindset will have *development*-orientation goals.

Hypothesis 2B: Participants with *development*-orientation goals will engage in maladaptive weight management behaviours that require high levels of proactivity, persistence, and effort.

Hypothesis 3A: Participants lower in growth mindset (i.e., fixed mindset) will have *demonstration*-orientation goals.

Hypothesis 3B: Participants with *demonstration*-orientation goals will engage in maladaptive weight management behaviours that require low levels of proactivity, persistence, and effort.

First, a pretest was done to assess the items in each subscale of the EPSI measure on a scale of 1 (Strongly Disagree) to 7 (Strongly Agree) for their levels of proactivity, persistence, and effort. Scores in each category were averaged for each EPSI subscale to determine the defining features. The purpose of this study was to categorize the subscales so the hypotheses could be appropriately tested.

Next, in two studies, this research sought to further understand the relationship between mindset and maladaptive weight management behaviours, and how goal orientation allowed or altered that relationship. Study 1 was a cross-sectional survey of participants in an online panel to test Hypotheses 1-3. Study 2 was a longitudinal experiment, with participants filling out pre- and post-intervention surveys online. For Study 2, goal orientation was manipulated and participants were asked to record their eating and exercising behaviours over two weeks on two days each week to see if and how their behaviours changed as a result of the manipulation. The days were chosen to be two weekdays and two weekend days. The order of the days was chosen arbitrarily. Additional hypotheses for Study 2 are below.

Hypothesis 4: Development approach goal orientation will moderate the relationship between growth mindset and maladaptive weight management behaviours, such that those with this goal orientation will be more likely to engage in maladaptive weight management behaviours that require high levels of proactivity, persistence, and effort.

Hypothesis 5: Demonstration avoidance goal orientation will moderate the relationship between growth mindset and maladaptive weight management behaviours, such that

those with this goal orientation will be more likely to engage in maladaptive weight management behaviours that require low levels of proactivity, persistence, and effort.

As mindset and goal orientations are potentially modifiable since they can be made more salient with certain types of interventions or repeated exposure (Dweck & Grant, 2008; Korn & Elliot, 2016; Pahljina-Reinić & Kolić-Vehovec, 2017), the results of this research could add useful information for those planning interventions to reduce maladaptive weight management behaviours.

CHAPTER 2: WEIGHT MANAGEMENT BEHAVIOURS PRETEST

For testing the hypotheses, subscales in the EPSI needed to be split into categories of behaviours that were either (1) high proactivity, persistence, and effort, or (2) low proactivity, persistence, and effort. Participants from Canada, the US, and the UK who were 18+ years old were recruited for a pretest through Prolific Academic (<http://prolific.co>; $n = 95^3$, 52.6% female, $M_{\text{age}} = 31.14$, $SD = 11.66$; 62.1% White/Caucasian, 4.2% Black/African/Caribbean descent, 1.1% American Indian/Indigenous, 27.4% Asian, and 5.3% other). Participants assessed each item in the six EPSI subscales with potential for being used in hypothesis testing (Binge Eating, Cognitive Restraint, Purging, Restricting, Excessive Exercise, and Muscle Building) on the extent to which the behaviour described was proactive, persistent, and effortful (i.e., “Read each item to determine how reactive or proactive/how much persistence/how much effort you think they require”) on 7-point scales. Descriptive statistics and Cronbach’s alpha for each subscale on each behaviour type are in the Tables 1 and 2.

³ Post hoc power analysis using G*Power version 3.1.9.7 indicated this sample size was sufficient. As well, the sample exceeds the recommendations of Perneger et al. (2015) to have at least 30 participants for pretests.

Table 1

EPPI pretest bivariate Correlations (n=95)

		BE - Pro	CR - Pro	P - Pro	R - Pro	EE - Pro	MB - Per	BE - Per	CR - Per	P - Per	R - Per	EE - Per	MB - Per	BE - EFF	CR - Eff	P - Eff	R - Eff	EE - Eff	MB - Eff	
BE - Pro	Pearson Correlation	1																		
CR - Pro	Pearson Correlation	-.127	1																	
P - Pro	Pearson Correlation	.093	.469**	1																
R - Pro	Pearson Correlation	.391**	-.030	.304**	1															
EE - Pro	Pearson Correlation	-.018	.525**	.440**	-.096	1														
MB - Pro	Pearson Correlation	.053	.464**	.750**	.203*	.601**	1													
BE - Per	Pearson Correlation	.305**	-.271**	-.072	.180	-.282**	-.152	1												
CR - Per	Pearson Correlation	-.298**	.430**	.116	-.083	.260*	.280**	-.348**	1											
P - Per	Pearson Correlation	.061	.151	.341**	.087	.045	.257*	.147	.269**	1										
R - Per	Pearson Correlation	-.046	-.118	-.035	.249*	-.125	.021	.372**	.000	.090	1									
EE - Per	Pearson Correlation	-.210*	.259*	.183	-.086	.222*	.274**	-.218*	.733**	.325**	.069	1								

		BE -	CR -			EE -	MB -	BE -	CR -			EE -	MB -	BE -	CR -			EE -	MB -
		Pro	Pro	P - Pro	R - Pro	Pro	Per	Per	Per	P - Per	R - Per	Per	Per	EFF	Eff	P - Eff	R - Eff	Eff	Eff
MB- Per	Pearson Correlation	.055	.083	.314**	.284**	.027	.261*	.198	.224*	.774**	.340**	.259*	1						
BE - Eff	Pearson Correlation	.231*	-.186	.066	.108	-.140	-.067	.763**	-.403**	.246*	.193	-.270**	.236*	1					
CR - Eff	Pearson Correlation	-.264**	.321**	.101	-.108	.266**	.219*	-.298**	.785**	.285**	.017	.635**	.208*	-.200	1				
P - Eff	Pearson Correlation	.017	-.001	.213*	.178	-.015	.100	.149	.082	.723**	.148	.198	.614**	.323**	.249*	1			
R - Eff	Pearson Correlation	.032	-.172	.035	.162	-.060	.040	.347**	-.244*	.301**	.599**	-.192	.436**	.440**	-.031	.479**	1		
EE - Eff	Pearson Correlation	-.308**	.249*	.170	-.155	.110	.210*	-.328**	.726**	.223*	-.019	.868**	.117	-.371**	.649**	.115	-.303**	1	
MB - Eff	Pearson Correlation	.076	-.082	.120	.313**	-.071	.056	.215*	.014	.625**	.261*	.062	.717**	.318**	.159	.853**	.538**	-.025	1

** . Correlation is significant at the 0.01 level (2-tailed). * . Correlation is significant at the 0.05 level (2-tailed).

Pro = Proactive; Per = Persistence; Eff = Effort; BE = Binge Eating; CR = Cognitive Restraint; P = Purging; R = Restricting; EE = Excessive Exercise; MB = Muscle Building

Table 2*Descriptive statistics for EPSI subscales as perceived to be proactive, persistent, and effortful*

Subscale	Number of Items	Alpha	Mean	SD
Binge Eating – Pro	8	.820	2.491	1.028
Binge Eating – Per	8	.798	2.522	1.075
Binge Eating - Effort	8	.858	2.543	1.129
Cognitive Restraint – Pro	3	.780	4.912	1.557
Cognitive Restraint – Per	3	.779	5.467	1.332
Cognitive Restraint - Effort	3	.757	5.368	1.202
Excessive Exercise – Pro	5	.709	4.613	1.220
Excessive Exercise – Per	5	.865	5.731	1.313
Excessive Exercise - Effort	5	.857	5.901	1.205
Muscle Building – Pro	5	.658	3.844	1.213
Muscle Building – Per	5	.750	3.408	1.237
Muscle Building - Effort	5	.871	3.023	1.432
Purging – Pro	6	.860	3.384	1.550
Purging – Per	6	.887	5.523	1.559
Purging - Effort	6	.890	3.226	1.541
Restricting – Pro	6	.519	3.140	.874
Restricting – Per	6	.760	3.163	1.154
Restricting - Effort	6	.748	2.760	1.096

Pro = Proactive; Per = Persistence

It was expected that Excessive Exercise and Restricting would be perceived as the most proactive, persistent, and effortful behaviours. In line with this, Excessive Exercise was perceived as such, however, Restricting was not. Instead, Cognitive Restraint was perceived as the other most proactive, persistent, and effortful behaviour. On the other end of the scale, Binge Eating and Muscle Building were expected to be the lowest rated in proactivity, persistence, and effort. Interestingly, results showed that the means for all remaining EPSI subscales – Binge

Eating, Restricting, Purging, and Muscle Building – were below the grand mean or were not significantly different from it⁴. Considering this, Binge Eating and (unexpectedly) Restricting were chosen as the low proactivity, persistence, and effort subscales. Binge Eating was selected because it appeared to have a significantly lower mean in the measures for proactivity and persistence, and have a lower (but not significantly lower) mean for effort, making it a clearer comparison choice. In a similar fashion, Restricting was chosen as it tended to have the second lowest means. Notably, though, measures for Restricting were generally not significantly different than the other two EPSI subscales (Muscle Building, Purging). In summary, the highly proactive, persistent, and effortful maladaptive weight management behaviours that will be used for assessing Hypotheses 1, 2b, and 4 will be Cognitive Restraint and Excessive Exercise; the maladaptive weight management behaviours low in proactivity, persistence, and effort that will be used for assessing Hypotheses 1, 3b, and 5 will be Binge Eating and Restricting.

Figures 3, 4, and 5 display the overall results comparing EPSI subscales in proactivity, persistence, and effort.

⁴ Note: Muscle Building's mean was above the grand mean, albeit not significantly different from it, on the measure for proactivity. Purging's mean was below the grand mean for proactivity, but does not appear significantly different from it.

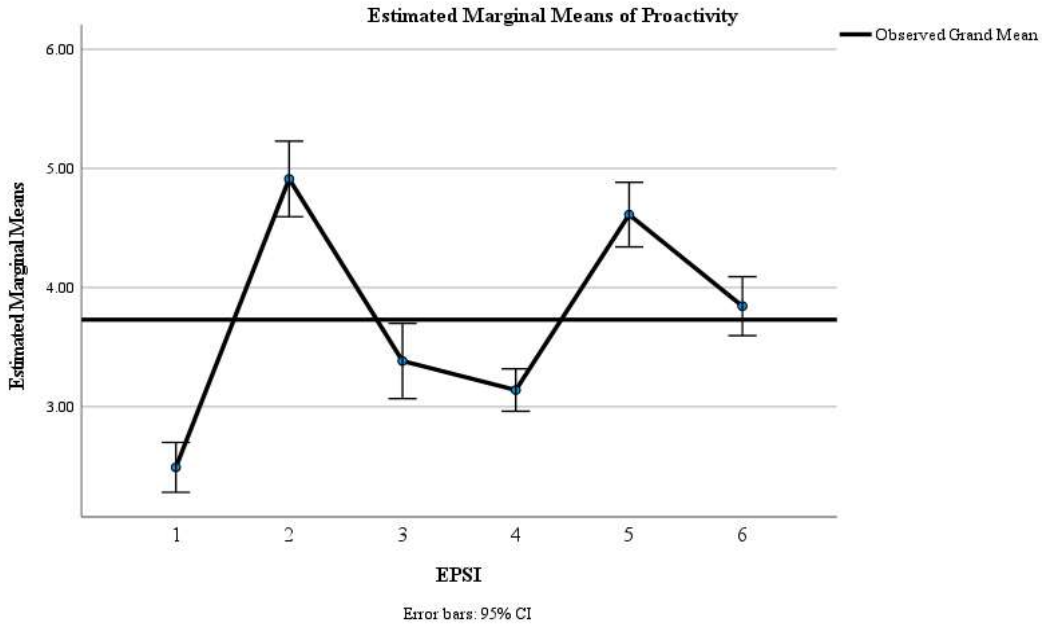


Figure 3

Means for measure of proactivity (1 = Binge Eating, 2 = Cognitive Restraint, 3 = Purging, 4 = Restricting, 5 = Excessive Exercise, 6 = Muscle Building)

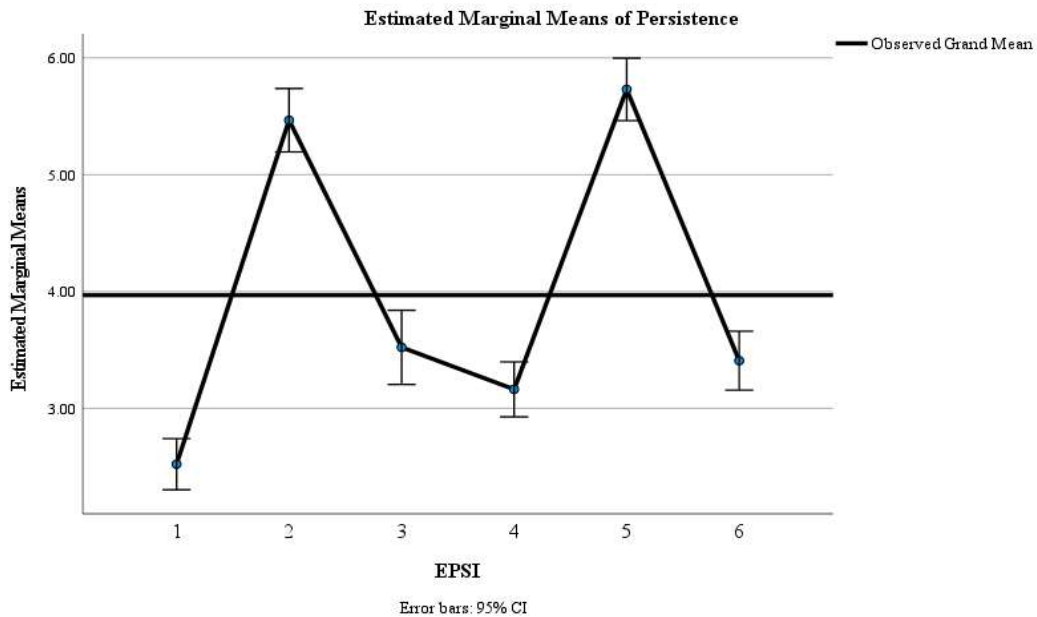


Figure 4

Means for measure of persistence (1 = Binge Eating, 2 = Cognitive Restraint, 3 = Purging, 4 = Restricting, 5 = Excessive Exercise, 6 = Muscle Building)

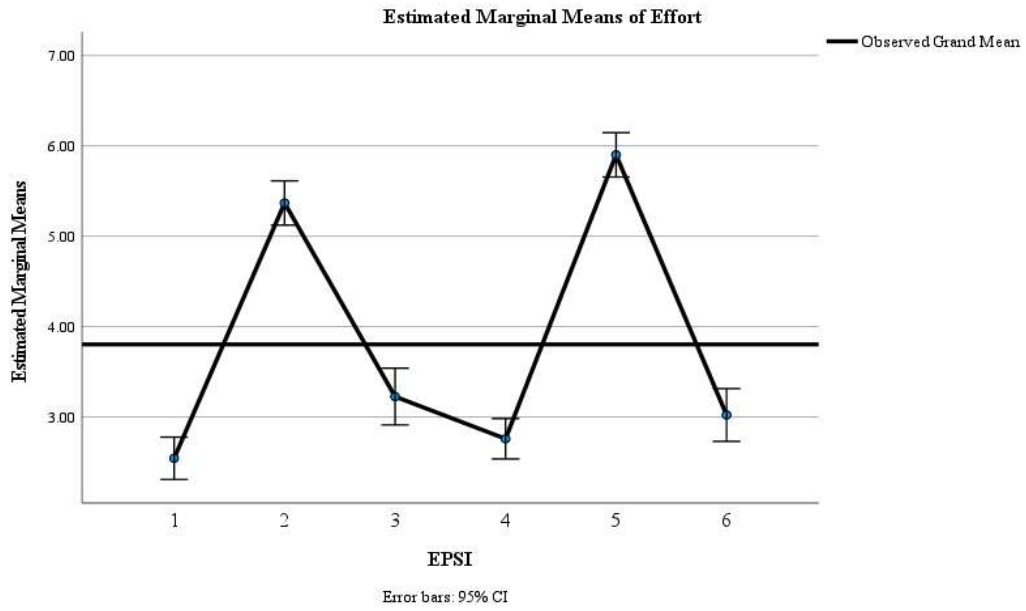


Figure 5

Means for measure of effort (1 = Binge Eating, 2 = Cognitive Restraint, 3 = Purging, 4 = Restricting, 5 = Excessive Exercise, 6 = Muscle Building)

CHAPTER 3: STUDY 1

3.1 PARTICIPANTS

Six hundred participants who were 18+ years old were recruited from Canada, the US, and the UK on Prolific Academic into a pre-registered study (AsPredicted, 2020⁵); however, 601 completed the survey. To enhance validity of participant answers, several attention checks were placed throughout the survey (Meade & Craig, 2012; Huang et al., 2012). According to the pre-registration, participants were removed upon failure to accurately complete at least one attention check. Seventeen participants were removed for not answering the item attention checks (e.g., Choose 2 for this item), and five participants were removed for inaccurately answering the attention check question (i.e., “Please write the fourth word exactly as it appears”; Meade & Craig, 2012; Huang et al., 2012). There were also validity check questions to validate the answers participants provided for the EPSI items. No participants had inconsistencies between these questions and the EPSI items. One participant’s age (but not the rest of the participant’s data) was removed for being highly improbable (i.e., 521 years old). After all exclusions were made, 579 participants remained (58.9% female, $M_{\text{age}} = 34.16$, $SD = 13.13$).

3.2 MEASURES

Measures are briefly described below.

3.2.1 MINDSET

The three-item Kind of Person mindset scale was used to assess mindset (Dweck et al., 1995). This measure was chosen as it can “cut across domains” (Dweck et al., 1995, p. 269), compared to other measures of mindset that are domain-specific and less applicable to the intention of this study. Therefore, it is expected this measure could enhance generalizability to

⁵ <https://aspredicted.org/blind.php?x=fn4sx3>

other populations or behaviours. Participants answered on a scale of 1 (Strongly Disagree) to 6 (Strongly Agree) with higher scores indicating a more fixed mindset. For ease of interpretation and to align with a focus on growth mindset, items were then reverse coded so that higher scores meant the participant had more of a growth mindset. The items are (1) “The kind of person someone is, is something very basic about them and it can’t be changed very much,” (2) “People can do things differently, but the important parts of who they are can’t really be changed,” and (3) “Everyone is a certain kind of person and there is not much that can be done to really change that” (Dweck et al., 1995, p. 269).

3.2.2 GOAL ORIENTATION: STANDPOINTS

The 2x2 Standpoints Model of Achievement Goals (Korn & Elliot, 2016) was adapted to assess whether participants endorsed a development or demonstration goal orientation. This measure has 12 items assessing four goal orientations (development-approach, development-avoidance, demonstration-approach, and demonstration-avoidance). For the purposes of this study, items were adapted to reflect weight management goals. Example items include: “My aim is to develop knowledge on how to achieve my goal”; “My aim is to demonstrate my ability to achieve my goal”; “My aim is to avoid showing incompetence while achieving my goal.” Items were answered on a scale of 1 (Not at All True of Me) to 5 (Extremely True of Me). This measure was important to understand the purpose of participants’ goals, which was expected to influence their strategies for achievement.

3.2.3 MALADAPTIVE WEIGHT MANAGEMENT BEHAVIOURS

The Eating Pathology Symptoms Inventory (EPSI; Forbush et al., 2013a) was used to assess maladaptive weight management behaviours. Permission from Forbush, the lead author

and owner of this scale, was received to use it.⁶ This measure has 45 items assessing eight facets of maladaptive weight management behaviours (Body Dissatisfaction, Binge Eating, Cognitive Restraint, Excessive Exercise, Restricting, Purging, Muscle Building, and Negative Attitudes Toward Obesity). Participants answer on a scale of 0 (Never) to 4 (Very Often) how many times they engaged in each maladaptive behaviour in the past four weeks. Note that Body Dissatisfaction and Negative Attitudes Toward Obesity were used in analysis as covariates rather than dependent variables. This is because they are not maladaptive weight management behaviours, but reflect attitudes that may be relevant to maladaptive weight management behaviours.

3.2.4 COVARIATES

3.2.4.1 BODY DISSATISFACTION (EPSI)

This subscale of EPSI assesses how dissatisfied a participant is with their body. Participants indicate on a scale of 0 (Never) to 4 (Very Often) how many times they engaged in the behaviour over the previous four weeks.

3.2.4.2 NEGATIVE ATTITUDES TOWARD OBESITY (EPSI)

This subscale of EPSI assesses attitudes toward those who are overweight or obese. Participants indicate on a scale of 0 (Never) to 4 (Very Often) how many times they engaged in the behaviour over the previous four weeks.

3.2.4.3 DEMOGRAPHICS

⁶ Approval was granted for both main studies in this research. Permission note: From "Development and validation of the Eating Pathology Symptoms Inventory," by Forbush, K. T, et al. 2013, *Psychological Assessment*, 25, 859-878. Copyright © 2011 by Kelsie T. Forbush. Reproduced with permission. No further reproduction, modification, or distribution of the Eating Pathology Symptoms Inventory, derivative versions, or translated versions is permitted without advance, written permission from the copyright holder (Dr. Kelsie Forbush).

Gender and age were also asked as they were also expected to influence the particular maladaptive weight management behaviours engaged in and their frequency (Forbush et al., 2013a). Gender was made into a dichotomous variable for clearer interpretation.

3.2.5 EXPLORATORY MEASURES

Two extra measures were included in the survey as potential alternative mediators – expectancy-value beliefs (EVB) and positive and negative affect.

3.2.5.1 EXPECTANCY-VALUE BELIEFS (EVB)

The 13-item EVB measure that was adapted for healthy eating behaviours by Thomas and colleagues (2019; from the original by Wigfield & Eccles, 2000) was provided by F. Thomas. For this study, it was further adapted to reflect eating *and* exercising to encompass broader weight management behaviours. Participants answered on a scale of 1 (Strongly disagree) to 7 (Strongly agree) for each item. Items included “Engaging in better eating and/or exercising behaviours will be good for my overall health” and “I’m sure I can learn new information related to healthy eating and/or exercising.” This measure was included to assess it as an alternative or additional mediator between mindset and EPSI behaviours. See Appendix A for details.

3.2.5.2 POSITIVE AND NEGATIVE AFFECT (PANAS)

Participant affect was assessed using the 20-item Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). Participants answered on a scale of 1 (Very slightly or not at all) to 5 (Extremely) how often they felt a variety of positive and negative feelings over the past few weeks. This measure was assessed as a potential mediator between mindset and EPSI, but the mediation was not supported and PANAS will not be assessed or discussed further.

3.3 ANALYSIS

Analysis was done in SPSS version 27. First, data were organized into scales and subscales. Alphas for all scales were above .7 which makes their reliability acceptable (Taber, 2018). The scales and their alphas, means, and standard deviations are summarized in Table 3 below.

Table 3

Descriptive statistics for measures in Study 1

Scale	Number of Items	Cronbach's Alpha	Mean	SD
Mindset Development	3	.873	3.659	1.134
Approach Goal Orientation	3	.809	3.827	.783
Avoidance Goal Orientation	3	.814	3.424	.986
Demonstration Approach Goal Orientation	3	.823	3.586	.866
Demonstration Avoidance Goal Orientation	3	.894	3.257	1.022
Expectancy-Value Beliefs	13	.911	5.185	.996
EPSI Binge Eating	7	.898	1.453	.974
EPSI Cognitive Restraint	3	.714	1.323	.990
EPSI Restricting	6	.827	.820	.825
EPSI Excessive Exercise	5	.856	.981	.970
EPSI Body Dissatisfaction	7	.898	1.687	1.117
EPSI Negative Attitude Towards Obesity	5	.899	1.194	1.078

Next, the data were checked for outliers. All scales were checked for values that were +/- 3 SD from their mean. There were no outliers.

Correlations between variables were checked next. Skewness and kurtosis were also calculated. See Tables 4 and 5 for these results.

Table 4*Bivariate correlations for Study 1 measures*

		GM	Dev Ap	Dev Av	Dem Ap	Dem Av	EVB	BE	CR	R	EE	Gend	Age	BD	NO
GM	Pearson Correlation	1													
Dev Ap	Pearson Correlation	.076	1												
Dev Av	Pearson Correlation	-.010	.485**	1											
Dem Ap	Pearson Correlation	-.062	.541**	.524**	1										
Dem Av	Pearson Correlation	-.100*	.360**	.560**	.638**	1									
EVB	Pearson Correlation	.000	.437**	.253**	.354**	.205**	1								
BE	Pearson Correlation	-.042	.074	.095*	.128**	.128**	-.003	1							
CR	Pearson Correlation	-.035	.214**	.196**	.225**	.199**	.432**	.112**	1						
R	Pearson Correlation	-.025	.070	.059	.107**	.124**	.044	-.047	.260**	1					
EE	Pearson Correlation	.028	.278**	.148**	.253**	.189**	.396**	.109**	.474**	.214**	1				
Gend	Pearson Correlation	-.140**	-.088*	-.021	-.019	.021	-.022	.124**	-.020	-.059	-.193**	1			

		GM	Dev Ap	Dev Av	Dem Ap	Dem Av	EVB	BE	CR	R	EE	Gend	Age	BD	NO
Age	Pearson Correlation	-.161**	-.136**	-.018	-.063	.012	-.031	-.077	.050	-.094*	-.109**	.057	1		
BD	Pearson Correlation	-.067	.065	.121**	.148**	.169**	.058	.595**	.219**	.091*	.079	.348**	.002	1	
NO	Pearson Correlation	-.154**	.012	.085*	.109**	.087*	.060	.293**	.186**	.168**	.203**	-.118**	.130**	.257**	1

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

GM = growth mindset; Dev Ap = development approach; Dev Av = development avoidance; Dem Ap = demonstration approach; Dem Av = demonstration avoidance; EVB = expectancy-value beliefs; BE = Binge Eating; CR = Cognitive Restraint; R = Restricting; EE = Excessive Exercise; Gend = gender; BD = Body Dissatisfaction; NO = Negative Attitude Toward Obesity

Table 5*Skewness and kurtosis of Study 1 measures*

	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Mindset	.039	.102	-.535	.203
Dev Ap	-.732	.102	.812	.203
Dev Av	-.410	.102	-.319	.203
Dem Ap	-.526	.102	.151	.203
Dem Av	-.245	.102	-.626	.203
EPSI BE	.595	.102	-.379	.203
EPSI CR	.650	.102	-.197	.203
EPSI R	1.213	.102	1.152	.203
EPSI EE	.992	.102	.339	.203

Dev Ap = Development Approach goal orientation; Dev Av = Development Avoidance goal orientation; Dem Ap = Demonstration Approach goal orientation, Dem Av = Demonstration Avoidance goal orientation; EPSI BE = EPSI Binge Eating; EPSI CR = EPSI Cognitive Restraint; EPSI R = EPSI Restricting; EPSI EE = EPSI Excessive Exercise

3.4 RESULTS

To assess Hypothesis 1 – that those with more growth mindsets would engage more in maladaptive weight management behaviours than with more fixed mindsets – the mindset total score for each participant was split into three categories. As recommended by previous research (e.g., Dweck et al., 1995), those with fixed mindsets were considered to be participants with scores of 1 to 3, those with growth mindset were participants with scores of 4 to 6, and those with undetermined mindsets were participants with scores 3.1-3.9 (however, these participants were not hypothesized on and so will not be discussed further). Using descriptive statistics and one-way ANOVAs, results suggest that those with more fixed (vs. growth) mindsets had higher means in Binge Eating, Cognitive Restraint, and Restricting, whereas those with more growth (vs. fixed) mindsets had higher means in Excessive Exercise. While interesting, none of these differences were significantly different. Thus, Hypothesis 1 was not supported in this way.

Implicit in Hypothesis 1 is that implicit mindset would have a direct impact on maladaptive weight management behaviours. To test this, as well as the other hypotheses that suggested goal orientation would mediate the relationship between mindset and maladaptive weight management behaviours, Hayes PROCESS macro model 4 (version 3.5) was used with bootstrapping analysis (5000 replications; Hayes, 2018). Specifically, a parallel mediation was done with mindset as the independent variable (X), goal orientations as the mediators (development approach, development avoidance, demonstration approach, demonstration avoidance; M), and relevant EPSI subscales as the dependent variables (Cognitive Restraint, Excessive Exercising, Binge Eating, Restricting; Y). The covariates were Body Dissatisfaction, Negative Attitude Toward Obesity, gender (dichotomous), and age.

An important part of the Hayes (2018) mediation method is the bootstrapping – a “method that involves repeatedly sampling from the data set and estimating the indirect effect in each resampled data set” (Preacher & Hayes, 2008, p. 880) – as it is robust against violations of normality (more so than regular regression; Taylor et al., 2008). This method bases confidence intervals on bootstrapped percentiles rather than fixed distances from the mean (i.e., bootstrapping does not assume the sampling distribution is normal whereas regular regression does), which helps reduce Type I error as well (Preacher & Hayes, 2008). As the scales were somewhat skewed, and we performed several analyses on the same dependent variables, bootstrapping partially alleviates potential concerns for inaccurate results. Further, significance for the main analysis examining variables that directly impact engagement in maladaptive weight management behaviour was also assessed with Bonferroni corrections to reduce the chance of Type I error (i.e., false positives; Tabachnick & Fidell, 2013; Armstrong, 2014). This was done by dividing the original p value by the number of EPSI subscales used in analysis ($.05/4 =$

.0125). While this did not generally change the overall pattern of results, where significance of variables differs in the results it is noted.

The results of the EPSI item rating survey suggested that Cognitive Restraint and Excessive Exercising were the most proactive, persistent, and effortful behaviours (i.e., the behaviours that those with growth mindsets and development goal orientation were expected to engage in), therefore results for Hypothesis 1, 2a, and 2b will focus on those subscales. For contrast and testing Hypothesis 1, 3a, and 3b, Binge Eating and Restricting will be examined as the behaviours that those with fixed mindsets and demonstration goal orientation were expected to engage in.

Within Hypothesis 1 is the idea that implicit mindset (growth vs. fixed) should have a direct impact on maladaptive weight management behaviours. This was not supported, as summarized in Table 6.

Table 6

Summary of growth mindset effects on EPSI subscales in Study 1

Mindset	Cognitive Restraint	Excessive Exercise	Binge Eating	Restricting
GM Direct Effect	NS	NS	NS	NS
GM Indirect Effects	NS	NS	NS	NS

NS = non-significant; GM = growth mindset

Hypothesis 2a was not supported either. Growth mindset did not predict engagement in development approach ($b = .039, p = .181$) or development avoidance ($b = -.002, p = .962$) goals.

Hypothesis 3a was partially supported in that fixed mindset did predict engagement in

demonstration avoidance goals ($b = -.082, p = .033$), but did not predict engagement in demonstration approach goals ($b = -.041, p = .207$)⁷.

Results show that development approach goal orientation has a direct impact on Cognitive Restraint⁸ and Excessive Exercise. This partially supports H2b (i.e., those with development orientation goals would take on proactive, persistent, and effortful behaviours). The hypothesis implies that both types of development orientation goals would do these behaviours, however, since only development approach goals did, the hypothesis is only partially supported. Hypothesis 3b stated that those with demonstration type goal orientations would engage in behaviours requiring low levels of proactivity, persistence, and effort, but the results did not support this. Figure 6 illustrates the results.

⁷ Bonferroni corrections were not used to assess implicit mindset's impact on goal orientation as these hypotheses were more clearly defined before analysis, so the significance level for that analysis remains at $p = .05$.

⁸ With the Bonferroni correction, development approach goal orientation does not have a significant direct impact on Cognitive Restraint.

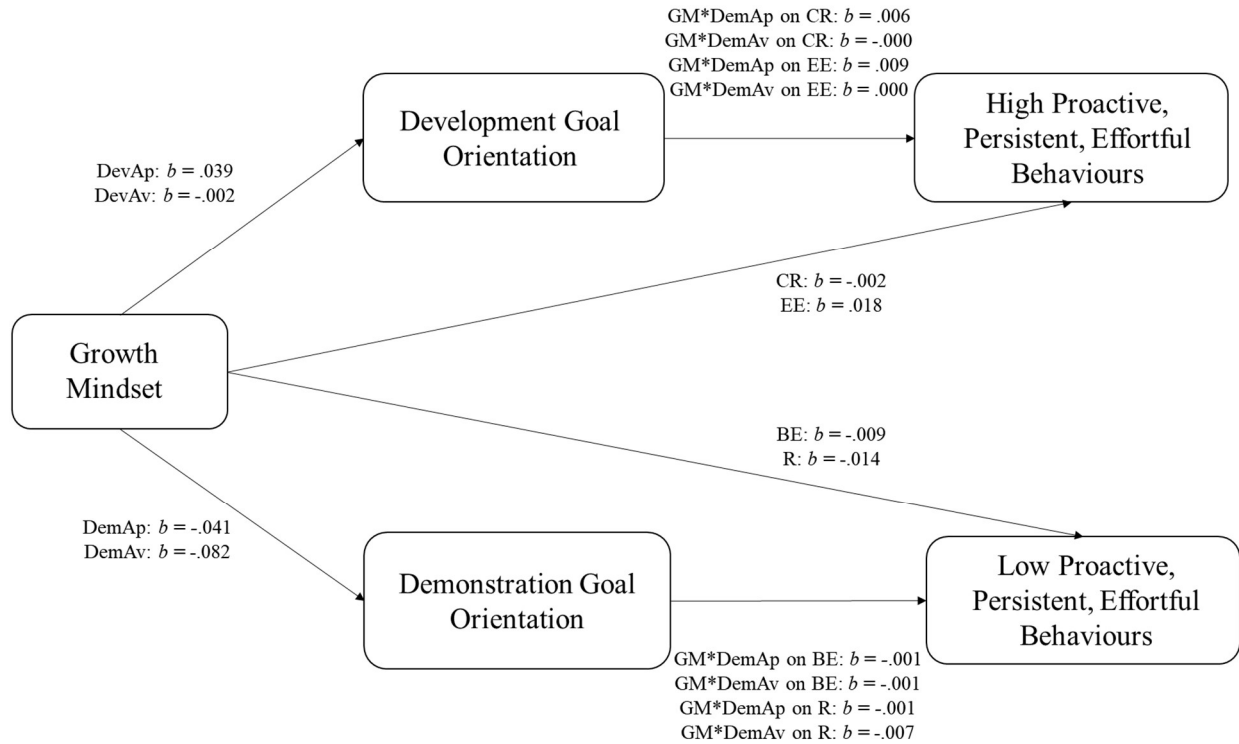


Figure 6

Summary results of study 1

Note: BE, CR, EE, R indicate which model the results are for.

In regards to covariates, there are several significant relationships, as shown in Tables 7 and 8. First, Negative Attitude Toward Obesity is significantly and positively related to all EPSI subscales. Body Dissatisfaction is significantly and positively related to Cognitive Restraint and Binge Eating. Age is inversely related to all except Cognitive Restraint, and most significantly impacts Restricting, which suggests that as participants get older they are less likely to engage in Restricting, Binge Eating, and Excessive Exercising. Finally, gender has a significant and negative relationship only with Excessive Exercise. Due to the way this is coded (males=1, females=2), it means that males were more likely than females to engage in Excessive Exercise.

Table 7*Summary of results for Study 1*

Variable	Cognitive Restraint	Excessive Exercise	Binge Eating	Restricting
GM	NS	NS	NS	NS
Dev Ap	Sig. ($p = .014$)*	Sig. ($p < .001$)	NS	NS
Dev Av	NS	NS	NS	NS
Dem Ap	NS	NS	NS	NS
Dem Av	NS	NS	NS	NS
BD	Sig. ($p < .001$)	NS	Sig. ($p < .001$)	NS
NO	Sig. ($p = .007$)	Sig. ($p < .001$)	Sig. ($p < .001$)	Sig. ($p < .001$)
Gender	NS	Sig. ($p < .001$)	NS	NS
Age	NS	Sig. ($p = .027$)*	Sig. ($p = .014$)*	Sig. ($p = .008$)
Overall	Sig. ($p < .001$)	Sig. ($p < .001$)	Sig. ($p < .001$)	Sig. ($p < .001$)

GM = Growth mindset; Dev Ap = Development Approach; Dev Av = Development Avoidance; Dem Ap = Demonstration Approach; Dem Av = Demonstration Avoidance; BD = Body Dissatisfaction; NO = Negative Attitude Towards Obesity; Overall = Overall Model Significance
 *Not significant with Bonferroni correction ($p = .0125$)

Table 8*Summary of significant variables for Study 1*

Maladaptive Weight Management Behaviour (MWMB)	Sig. Variables
Cognitive Restraint	+Dev Ap*, +BD, +NO
Excessive Exercise	+Dev Ap, +NO, -Gender, -Age*
Binge Eating	+BD, +NO, -Age*
Restricting	+NO, -Age

+/- indicates a positive or negative relationship between the indicated variable and the EPSI subscale; Dev Ap = development approach goal orientation; BD = Body Dissatisfaction; NO = Negative Attitude Toward Obesity
 * Not significant with Bonferroni correction ($p = .0125$)

3.5 STUDY 1 DISCUSSION

The results show little support for the hypotheses. Hypothesis 1 was not supported as growth mindset did not have a significant direct effect on any of the chosen EPSI subscales nor did those with a growth mindset engage in more maladaptive weight management behaviours

than those with fixed mindsets. Hypothesis 2a was not supported as growth mindset did not predict development-type goals, but Hypothesis 3a was partially supported in that growth mindset negatively significantly predicted demonstration avoidance goal orientation (but not demonstration approach). In other words, those with a more fixed mindset should be more likely to engage in demonstration avoidance goal orientation than those with a more growth mindset. Further, despite non-significant relationships, the correlations suggest that the anticipated relations between mindset type and goal orientation type were in the hypothesized direction (most positively associated with development approach and most negatively associated with demonstration avoidance). This generally matches findings in the literature that suggest growth mindsets should be more related to development goals and fixed mindsets should be more related to demonstration goals (Dweck & Grant, 2008; Burnette et al., 2013; Beruchashvili et al., 2014).

Hypothesis 2b was partially supported, as development approach goal orientation had a positive significant relationship with proactive, persistent and effortful behaviours of Cognitive Restraint and Excessive Exercise, but development avoidance did not. Hypothesis 3b was not supported as demonstration approach and demonstration avoidance goal orientation did not have a significant impact on the behaviours requiring low levels of proactivity, persistence, and effort – Binge Eating and Restricting.

When looking at the overall models, it is seen that models for Cognitive Restraint, Excessive Exercise, Binge Eating, and Restricting were all significant. This suggests that the combination of mindset, goal orientation, and the covariates do significantly impact EPSI behaviours, but not in the hypothesized way. One potential reason for the non-significant results is that the study may be underpowered. Specifically, post hoc power analysis using mindset's effect sizes on the maladaptive weight management behaviours suggests that for this study to

have more significant effects there would have needed to be at least approximately 900 participants recruited.⁹

3.6 PRETEST AND STUDY 1 SUMMARY

In Study 1, it was expected that growth mindsets would have development orientation goals and subsequently engage in maladaptive weight management behaviours that require more proactivity, persistence, and effort. From the EPSI item ratings, it was found that Excessive Exercise and Cognitive Restraint were considered to be high on all three of those characteristics, whereas Binge Eating and Restricting were considered to be low on those characteristics. Direct and indirect effects from implicit mindset to EPSI behaviours were non-significant. However, the results of Study 1 do show that development approach goal orientation had positive direct impacts on Cognitive Restraint and Excessive Exercise (the behaviours requiring high levels of proactivity, persistence, and effort). In contrast to expectations, demonstration goal orientations did not have significant impacts on Binge Eating or Restricting (the behaviours requiring low levels of proactivity, persistence, and effort). Study 2 will seek to examine an alternative configuration of the relationships between mindset, goal orientation, and EPSI behaviours by using goal orientation as a moderator instead of a mediator. As well, study 2 will further examine the potential role for EVB in determining behaviours (see Appendix A for a preliminary exploration on this using Study 1 data).

The shift in goal orientation's role is for a couple of reasons. First, goal orientation was largely found to not be a significant mediator between implicit mindset and maladaptive weight management behaviours. However, goal orientation did have significant impacts on engagement in maladaptive weight management behaviours. Considering that the goal orientations were

⁹ G*Power version 3.1.9.6 was used for the post hoc power analysis, for both here and in the General Discussion.

directionally, if not significantly, aligned with implicit mindset as expected, it was proposed that enhancing (i.e., manipulating) the most correlated goal orientations had potential to clarify relationships between implicit mindset, goal orientation, and maladaptive weight management behaviours.

CHAPTER 4: STUDY 2

Study 2's purpose was to further test the relationships among growth mindset, goal orientations, and maladaptive weight management behaviours. Specifically, this pre-registered¹⁰ study sought to determine if goal orientation moderated the relationship between growth mindset and maladaptive weight management behaviours (AsPredicted, 2021). Study 2 was a longitudinal experiment, with participants completing a survey and manipulation at time 1 (T1), completing four food and exercise 24-hour recall forms over the span of two weeks, and lastly completing a final survey at time 2 (T2). Hypothesis 1 was to be examined again. As Hypotheses 2 and 3 were related to testing mediation, they are not applicable to this study. Thus, the following hypotheses were used instead for Study 2's moderation. Figure 7 illustrates this conceptual model.

Hypothesis 4: Development approach goal orientation will moderate the relationship between growth mindset and maladaptive weight management behaviours, such that those with this goal orientation will be more likely to engage in maladaptive weight management behaviours that require high levels of proactivity, persistence, and effort.

Hypothesis 5: Demonstration avoidance goal orientation will moderate the relationship between growth mindset and maladaptive weight management behaviours, such that those with this goal orientation will be more likely to engage in maladaptive weight management behaviours that require low levels of proactivity, persistence, and effort.

¹⁰ <https://aspredicted.org/blind.php?x=w2hd8b>

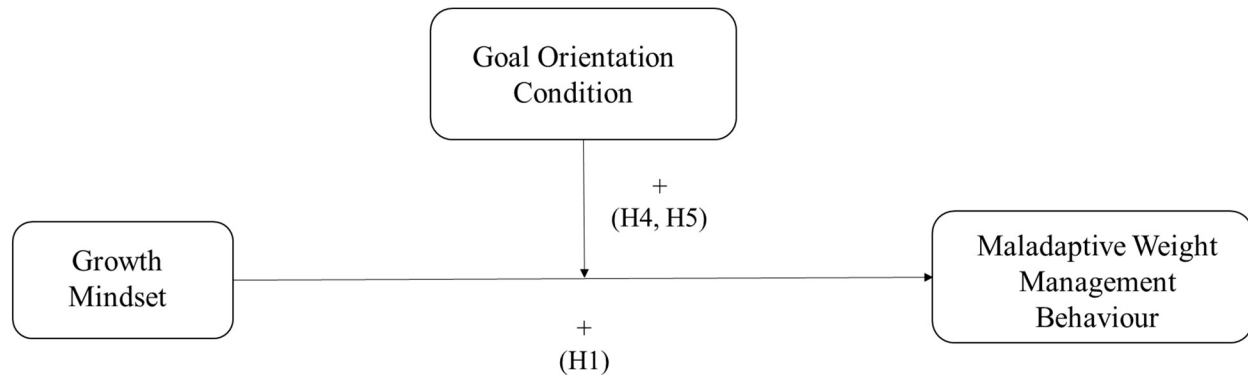


Figure 7

Conceptual moderation model for Study 2

4.1 PARTICIPANTS

Study 2 participants were undergraduate students from the university's business school's student research participation program. Participants were recruited in two waves. The first wave started in early March and the second wave started in mid-March. Participants were given approximately equal amounts of time (five weekdays for the first and last surveys, 24 hours for the behaviour forms) to complete each survey in the study and the behaviour forms were given on the same day for each wave (more details below). As these waves were analyzed together, herein they will be discussed as one group.

The aim was to collect two hundred participants, which was achieved in the first survey (n=214 at T1), however, for several reasons the final sample was short of this (e.g. retention issues; n=171 at T2). First, as per pre-registration, participants who failed two or more attention checks (n=4 at T1, n=2 at T2) were removed (resulting in samples of n=210 at T1 and n=169 at T2 for a sample of 211 different participants). Secondly, for comparative analysis it was important that participants completed surveys at T1 *and* T2, therefore participants who completed only the T1 survey (n=42) were removed as well. Further, there was one participant whose T2 survey was acceptable but they had failed attention checks at T1, and so they were

removed from the entire set. The final sample of participants that completed both surveys was $n=168$ [$M_{\text{age}} = 23.47$, $SD = 5.84$, 97 (57.7%) female, 2 (1.2%) participants chose non-binary/third gender].

4.2 PROCEDURE

After ethical approval, participants were invited to join the study through the business school's research program. In the email invitation, students were randomly split into one of two conditions: development approach or development avoidance – these orientations were chosen as they were the most correlated with mindset in Study 1. Participants received .5 course credit for every survey they completed (up to three full credits – 3% bonus to an undergraduate course) and were entered into a draw for a \$500 Amazon gift card if they completed all surveys. In the consent form of the final survey it was added that even if participants missed some of the behaviour forms they would still be eligible to enter a draw for a \$200 Amazon gift card if they completed the last survey.

There were six parts to the study: the first survey (T1), four behaviour form surveys, and the final survey (T2). In the first survey, participants completed measures as in Study 1 (i.e., mindset, goal orientation, EPSI, EVB, PANAS), and then completed the manipulation. The survey ended with demographics and a reminder to watch for the next part of the study. Also in the first survey, participants were asked to provide their phone number so that they could be informed via text message when the surveys were ready for them.

The next part of the study was the behaviour forms, which took place over the two weeks following the initial survey. On certain selected days (in order: Tuesday, Sunday, Wednesday, Friday) participants were sent text messages (through an online text message website: Text-Em-All) and email messages (through the university research system so no student emails were

related to the data) letting them know the next survey was ready. These forms asked participants to fill in what they ate and drank that day, any supplements they took, any exercise they did, as well as a few EPSI-related questions (e.g., “did you plan your day around exercising” for Excessive Exercise; “do you have an idea of how many calories you ate today” for Cognitive Restraint). The forms were the same for both conditions but the message at the top of each form was differentiated based on condition as it was meant as a reinforcement for the manipulation. The top of the development approach form read “Welcome back! By doing this survey, your effort and diligence are earning you course credit as you work toward your goal,” and the demonstration avoidance form read “Welcome back! By doing this survey, your performance demonstrates you are earning your course credit by showing how you are doing with your goal.”

Finally, the week following the last behaviour form participants were invited to complete the last survey. This last survey had all the same measures as the first survey, except it did not have the manipulation.

4.3 MANIPULATION

Participants saw one of two messages about weight management and were asked to write down their own weight management goal to work on for the next few weeks. Participants were also given a few example goals and a list of goal orientation-related words to assist with their goal writing. The message and lists are below.

Development Approach (Demonstration Avoidance): *Eating, exercise, and health-related goals can be approached in a variety of ways. For this study, you are being asked to write down an eating, exercise, or other health-related goal that focuses on learning new skills or improving your abilities to achieve your goal (focuses on performing well using the abilities you have to*

avoid failing to reach your goal). You are asked to keep this goal in mind and try to reach it over the next few weeks.

Some examples of this type of goal include:

- I will work on my ability to cook healthy food (I will not eat unhealthy food).*
- My goal is to achieve a new personal best in my weight-lifting exercises (My goal is to demonstrate that I exercise well).*
- My goal is to improve skills that develop good health (My goal is to use my skills to avoid poor health).*

The list below has some words that may help you write your goal. Try to use some of them when writing your goal below.

- Develop (Demonstrate)*
- Work toward (Perform)*
- Learn (Avoid)*
- Effort (Show)*
- Success (Appear)*
- Achieve (Will Not)*
- Improve (Display)*
- Increase (Quit)*
- Persist (Fail to)*
- Approach (Prove)*
- Ability (Signal)*

This goal was included (as much as possible due to length limitations) into the text messages sent to let participants know the next survey was ready. Emails and texts were sent at

approximately 8pm MST. The messages looked similar to the below. Note that the demonstration approach group was asked to complete “forms” while those in the demonstration avoidance condition were asked to complete “records.”

Hi, The next Eating and Exercising Behaviour Study survey is ready! Log into Sona or use the link to do the survey called "Eating and Exercising Behaviour Form/Record X." Answer based on what you did TODAY (date message was sent). You have until 9pm MST tomorrow (date of next day) to do it. As a reminder, your goal included: (Participant goal)

Survey link: (link to website to sign in for survey)

If you have any questions, please contact the researcher at j.chernishenko@uleth.ca.

Thank you for your participation!

Participants were sent one reminder email and text the next day between 3 and 4pm MST to complete the survey.

A manipulation check comparing the T2 measured goal orientation of participants in each condition indicates that the manipulation was partly unsuccessful (T1 development approach = 4.19; T2 development approach = 4.12, difference was not significant – $p = .115$; T1 demonstration avoidance = 4.07, T2 demonstration avoidance = 4.11, difference was significant – $p = .045$). Participants in both conditions reported higher levels of demonstration avoidance goal orientation than development approach goal orientation. Comparing T1 and T2 goal orientation scores, it appears that the demonstration avoidance condition caused an increase in demonstration avoidance goal orientation, and a slight decrease in development approach goal orientation. It also appears that the development approach condition caused a slight decrease in

development approach goal orientation and not much change in the demonstration avoidance goal orientation.

4.4 ANALYSIS AND RESULTS

Analysis was done in SPSS version 27. First, correlations and descriptive statistics were assessed. These can be found in Tables 9, 10, and 11.

Paired sample t-tests were done to compare means from T1 and T2. Results show that development approach did not significantly change between T1 and T2 ($p = .115$), but the difference for demonstration avoidance was significant ($p = .045$), which suggests the goal orientation manipulation may not have had much influence on participants' goal orientations. Mindset did not significantly change either ($p = .443$), which suggests the manipulation did not significantly affect mindset. Binge Eating ($p = .001$) and Cognitive Restraint ($p = .038$) both significantly differed between T1 and T2 as well. In contrast, Excessive Exercise ($p = .927$) and Restricting ($p = .127$) did not. The t-tests subtract T2 from T1 (i.e., T1-T2), so that positive scores meant T1 was larger and negative scores meant that T2 was larger. Overall, this shows that demonstration avoidance increased, and that Binge Eating and Cognitive Restraint decreased.

Table 9*Bivariate correlations of selected variables, including T2 EPSI subscales*

Scale		T2							T1				Gender	Age	T1 BD	T1 NO
		T1 GM	GoCon	T2 BE	T2 CR	T2 R	T2 EE	EVB	T1 BE	T1 CR	T1 R	T1 EE				
T1	Pearson	1														
GM	Correlation															
GoCon	Pearson	-.006	1													
	Correlation															
T2 BE	Pearson	.014	-.034	1												
	Correlation															
T2 CR	Pearson	-.114	.018	.059	1											
	Correlation															
T2 R	Pearson	-.210**	-.131	-.015	.054	1										
	Correlation															
T2 EE	Pearson	.049	.016	.146	.383**	-.043	1									
	Correlation															
T2	Pearson	.026	-.039	-.066	.376**	-.083	.382**	1								
EVB	Correlation															
T1 BE	Pearson	.056	-.096	.764**	.082	.024	.060	.076	1							
	Correlation															
T1 CR	Pearson	-.023	-.101	.091	.705**	.057	.187*	.262**	.206**	1						
	Correlation															
T1 R	Pearson	-.241**	-.082	-.138	.112	.794**	.017	-.082	-.056	.097	1					
	Correlation															
T1 EE	Pearson	-.034	-.061	.168*	.347**	.072	.724**	.323**	.157*	.341**	.099	1				
	Correlation															

Scale		T2							T1				Gender	Age	T1 BD	T1 NO	
		T1 GM	GoCon	T2 BE	T2 CR	T2 R	T2 EE	EVB	T1 BE	T1 CR	T1 R	T1 EE					EVB
T1	Pearson	-.036	-.007	-.019	.312**	-.015	.353**	.711**	.040	.226**	-.026	.432**	1				
EVB	Correlation																
Gender	Pearson	-.146	-.007	.213**	.040	.223**	-.160*	.003	.178*	.068	.190*	-.218**	-.052	1			
	Correlation																
Age	Pearson	-.166*	-.009	-.043	.051	.008	-.155*	.043	.034	.040	-.037	-.155*	.030	.020	1		
	Correlation																
T1 BD	Pearson	-.041	.023	.352**	.126	.084	-.147	.018	.511**	.156*	.076	-.074	.036	.358**	-.016	1	
	Correlation																
T1 NO	Pearson	-.001	-.082	.153*	.198**	.029	.182*	.153*	.287**	.314**	.039	.284**	.180*	-.231**	-.028	.062	1
	Correlation																

** . Correlation is significant at the 0.01 level (2-tailed). * . Correlation is significant at the 0.05 level (2-tailed).

GM = Growth Mindset; GoCon = Goal Condition (0=development approach, 1=demonstration avoidance); T1 = Time 1 Score; T2 = Time 2 Score; BE = Binge Eating; CR = Cognitive Restraint; EE = Excessive Exercising; R = Restricting; EVB = Expectancy-value Beliefs; BD = Body Dissatisfaction; NO = Negative Attitude Toward Obesity

Table 10

Bivariate correlations of selected variables, including EPSI subscale difference scores

Scale		T1 GM	GoCon	T1 EVB	T2 EVB	BE Diff	CR Diff	R Diff	EE Diff	Gender	Age	T1 BD	T1 NO
T1 GM	Pearson Correlation	1											
GoCon	Pearson Correlation	-.006	1										
T1 EVB	Pearson Correlation	-.036	-.007	1									
T2 EVB	Pearson Correlation	.026	-.039	.711**	1								
BE Diff	Pearson Correlation	-.060	.088	-.086	-.206**	1							
CR Diff	Pearson Correlation	-.115	.156*	.102	.136	.175*	1						

Scale		T1 GM	GoCon	T1 EVB	T2 EVB	BE Diff	CR Diff	R Diff	EE Diff	Gender	Age	T1 BD	T1 NO
R_Diff	Pearson Correlation	.047	-.077	.017	-.003	.098	-.035	1					
EE Diff	Pearson Correlation	.112	.104	-.112	.075	.142	.334**	-.068	1				
Gender	Pearson Correlation	-.146	-.007	-.052	.003	.055	-.039	.052	.080	1			
Age	Pearson Correlation	-.166*	-.009	.030	.043	-.111	.012	.071	.001	.020	1		
T1 BD	Pearson Correlation	-.041	.023	.036	.018	-.220**	-.045	.012	-.097	.358**	-.016	1	
T1 NO	Pearson Correlation	-.001	-.082	.180*	.153*	-.190*	-.161*	-.015	-.140	-.231**	-.028	.062	1

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

GM = Growth Mindset; GoCon = Goal Condition (0=development approach; 1 = demonstration avoidance); EVB = Expectancy-value Beliefs; T1 = Time 1 Scores; T2 = Time 2 Scores; Diff = Difference Scores (T2-T1); BE = Binge Eating; CR = Cognitive Restraint; R = Restricting; EE = Excessive Exercise; BD = Body Dissatisfaction; NO = Negative Attitude Toward Obesity

Table 11

Means, SDs, alphas, skewness, and kurtosis of selected variables for Study 2

Scale	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
T1 GM	3.804	1.291	-.056	.187	-.929	.373
GoCon	.548	.499	-.193	.187	-1.987	.373
T1 BE	1.444	.854	.509	.187	-.182	.373
T1 CR	1.550	.941	.349	.187	-.264	.373
T1 R	1.237	.900	.518	.187	-.599	.373
T1 EE	1.618	1.026	.470	.187	-.686	.373
T1 EVB	5.736	.960	-1.200	.187	1.961	.373
T2 BE	1.282	.868	.799	.187	.019	.373
T2 CR	1.435	.913	.445	.187	-.253	.373
T2 R	1.169	.902	.847	.187	.199	.373
T2 EE	1.613	1.015	.411	.187	-.538	.373

Scale	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
T2 EVB	5.616	.987	-1.141	.187	2.590	.373
BE Diff	-.162	.592	-.521	.187	1.837	.373
CR Diff	-.115	.713	-.541	.187	2.113	.373
R Diff	-.069	.578	.176	.187	1.652	.373
EE Diff	-.005	.759	.446	.187	2.021	.373
Gender	1.60	.515	-.149	.187	-1.366	.373
Age	23.47	5.836	1.898	.189	3.893	.376
T1 BD	1.634	.991	.382	.187	-.730	.373
T1 NO	1.193	.961	.770	.187	.125	.373

GM = Growth Mindset; GoCon = Goal Condition (0=development approach, 1=demonstration avoidance); T1 = Time 1 Score; T2 = T2 Score; Diff = Difference Score (T2-T1); BE = Binge Eating; CR = Cognitive Restraint; EE = Excessive Exercise; R = Restricting; EVB= Expectancy-value Beliefs; BD = Body Dissatisfaction; NO = Negative Attitude Toward Obesity

Study 2 aligns with Study 1 in examining Cognitive Restraint and Excessive Exercise EPSI subscales as the behaviours requiring high levels of proactivity, persistence, and effort. For Study 2, these behaviours will be used to test H4. Similarly, as in Study 1, Binge Eating and Restricting will be used as the behaviours requiring low levels of proactivity, persistence, and effort. These behaviours will be used to test H5.

To test Hypothesis 1, a similar procedure was used as in Study 1. Using descriptive statistics and one-way ANOVAs suggests that those with a more fixed (vs. growth) mindset at T1 engaged more in Cognitive Restraint and Restricting at T2, whereas those with a more growth mindset engaged more than fixed mindsets in Binge Eating and Excessive Exercise at T2. As in Study 1, while these results may be interesting, engagement in maladaptive weight management behaviours did not significantly differ between fixed and growth mindsets.

As reported in the pre-registration, Hayes (2018) PROCESS Macro model 1 (version 3.5, 5000 bootstrapping) was used to assess if goal orientation (W) moderated the relationship between mindset (X) and maladaptive weight management behaviours (i.e., EPSI subscales; Y). Analyses were run twice – once with the T2 EPSI scores as the dependent variable and once with the difference between T1 and T2 EPSI scores as the dependent variable. To find the difference scores, T1 was subtracted from T2 scores (i.e., $T2 - T1$), which meant that positive scores meant T2 was larger and negative scores meant that T1 was larger.

For the moderation analysis, even though mindset did not significantly differ between T1 and T2, the mindset measure from T1 was used to reduce the chance of an altered mindset from the experimental manipulation influencing results (i.e., to isolate the effect of the manipulation on goal orientation). The covariates for the models with difference scores were gender, age, Body Dissatisfaction, and Negative Attitude Toward Obesity. The models with T2 scores had T1

EPSI subscale scores in addition the other covariates to account for the effect previous behaviours could have on subsequent behaviours. A dichotomized gender variable, including only males and females, was used to more clearly examine the effect of gender. This meant that two participants who identified as third gender/binary were not included in the moderation analysis. Body Dissatisfaction and Negative Attitudes Toward Obesity have been shown in previous literature (e.g., Forbush et al., 2013a) to influence weight management behaviours, and were readily available to be used as they were included in the EPSI measurement.

Finally, as in Study 1, variables that directly impacted engagement in maladaptive weight management behaviour were also assessed with Bonferroni corrections to reduce the chance of Type I error (i.e., false positives; Tabachnick & Fidell, 2013; Armstrong, 2014). This was done by dividing the original p value by the number of EPSI scales ($.05/4 = .0125$). While this generally did not change the overall pattern of results, it is noted where the correction alters the significance of variables in the results.

Results for Study 2 are summarized in Tables 12, 13, and 14 (full regression tables are in Appendix B). The results show that goal condition (development approach vs. demonstration avoidance) did not moderate the relationship between mindset and any of the maladaptive weight management behaviours at T2 or result in significant differences between T1 and T2. It is also shown that implicit mindset did not directly impact any of the maladaptive weight management behaviours included in analysis. Thus, Hypotheses 1, 4, and 5 were not supported through this regression model. Discussion will now turn to variables that were influential in participants' behaviours.

For Cognitive Restraint, Excessive Exercise, Binge Eating, and Restricting at T2, the only variable that had a significant impact on engagement in these behaviours was participants'

respective scores at T1. That is, the best predictor of engagement in these behaviours at T2 was engagement in them at T1. The overall models for each behaviour were significant, suggesting the variables involved combined, with emphasis on the influence of previous behaviours, have important influences on these behaviours, but not in the hypothesized manner.

When looking at models with difference scores (i.e., T2-T1), there is some more variation in which variables impacted maladaptive weight management behaviours. First, the goal condition had a positive significant impact on the Cognitive Restraint difference score, and Negative Attitude Toward Obesity had a negative significant impact¹¹. Additionally, for the Binge Eating difference scores, Body Dissatisfaction had a negative significant impact. The overall models for Cognitive Restraint and Binge Eating were significant, suggesting the combined effects of the variables involved have important influences on these behaviours, but not in the hypothesized manner. For Excessive Exercise and Restricting, the overall models were non-significant for the Excessive Exercise and Restricting difference scores. Figures 8 and 9 illustrate the results.

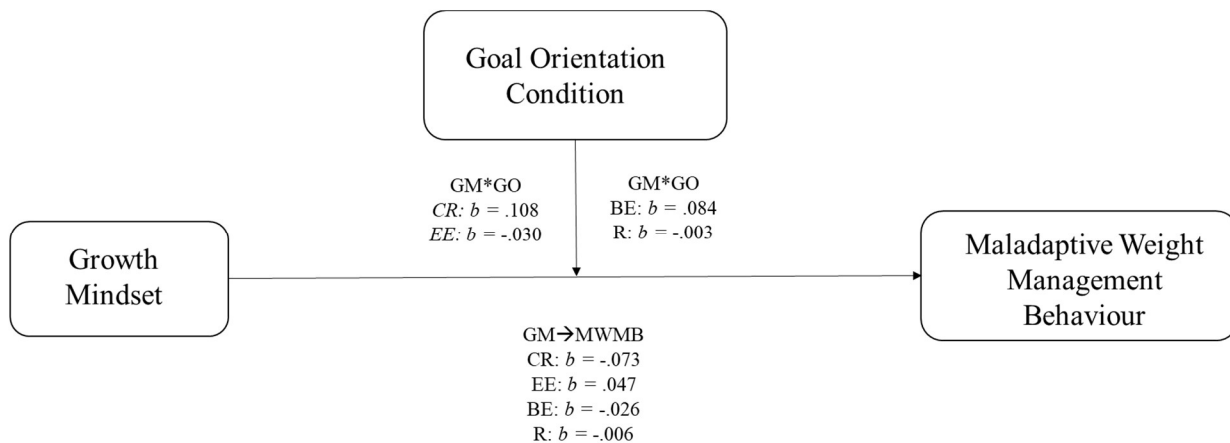


Figure 8

Moderation results for EPSI subscale T2 scores as the dependent variable

Note: BE, CR, EE, R indicate which model the results are for.

¹¹ These impacts were non-significant with the Bonferroni correction.

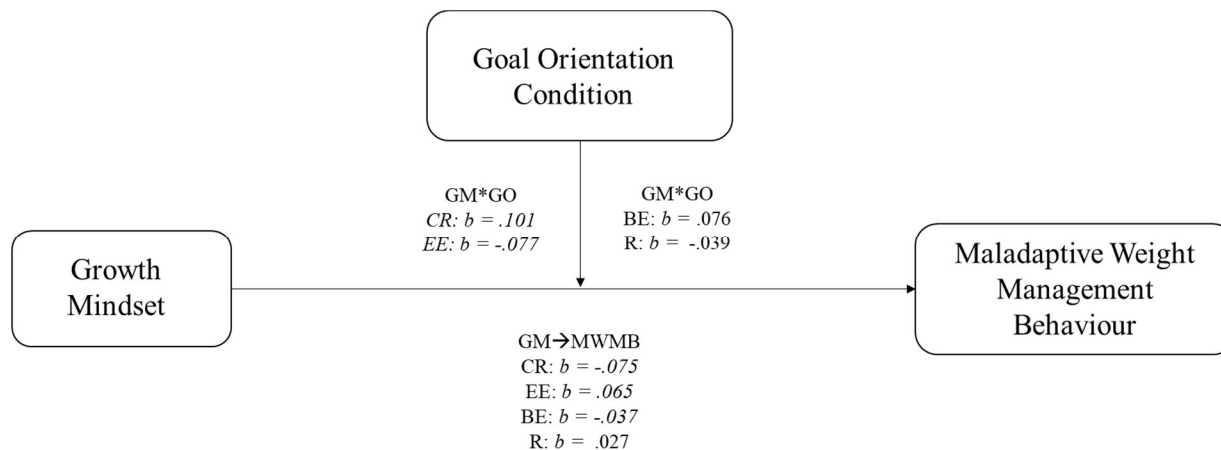


Figure 9

Moderation results for ESPI subscale difference scores as the dependent variable

Note: BE, CR, EE, R indicate which model the results are for.

Table 12

Summary tables of significant variables for T2 ESPI subscale scores in Study 2

T2 ESPI Subscale	T1 GM	GC	GM* GC	T1 Age	T1 M/F	T1 BD	T1 NO	T1 ESPI subscale	Overall model
Cognitive Restraint	NS	NS	NS	NS	NS	NS	NS	Sig. ($p < .001$)	Sig. ($p < .001$)
Excessive Exercise	NS	NS	NS	NS	NS	NS	NS	Sig. ($p < .001$)	Sig. ($p < .001$)
Binge Eating	NS	NS	NS	NS	NS	NS	NS	Sig. ($p < .001$)	Sig. ($p < .001$)
Restricting	NS	NS	NS	NS	NS	NS	NS	Sig. ($p < .001$)	Sig. ($p < .001$)

NS = Non-significant; Sig. = Significant; ESPI = Eating Pathology Symptoms Inventory; GM = Growth Mindset; GC = Goal Condition; M/F = Male/Female; BD = T1 Body Dissatisfaction; NO = T1 Negative Attitude Toward Obesity; T1 ESPI = respective T1 ESPI subscale

Table 13

Summary tables of significant variables for ESPI difference scores (T2-T1) in Study 2

ESPI Subscale	GM	GC	GM* GC	Age	M/F	T1 BD	T1 NO	Overall Model
---------------	----	----	--------	-----	-----	-------	-------	---------------

Cognitive Restraint Diff.	NS	Sig.($p = .048$)*	NS	NS	NS	NS	Sig.($p = .026$)*	Sig.($p = .046$)*
Excessive Exercise Diff.	NS	NS	NS	NS	NS	NS	NS	NS
Binge Eating Diff.	NS	NS	NS	NS	NS	Sig.($p = .005$)	NS	Sig.($p = .006$)
Restricting Diff.	NS	NS	NS	NS	NS	NS	NS	NS

NS = Non-significant; Sig. = Significant; EPSI = Eating Pathology Symptoms Inventory; GM = Growth Mindset; GC = Goal Condition; M/F = Male/Female
* Not significant with Bonferroni correction ($p = .0125$)

Table 14

Summary of significant variables in Models 1 for Study 2

Maladaptive Weight Management Behaviour (MWMB)	Sig. Variables Model 1 (T2 scores)	Sig. Variables Model 1 (T2-T1 difference scores)
Cognitive Restraint	+T1 CR	+GC*, -NO*
Excessive Exercise	+T1 EE	NA
Binge Eating	+T1 BE	-BD
Restricting	+T1 R	NA

+/- indicates a positive or negative relationship between the indicated variable and the EPSI subscale; GC = goal condition; NA = no variables were significant in that model; CR = Cognitive Restraint; EE = Excessive Exercise; BE = Binge Eating; R = Restricting; BD = Body Dissatisfaction; NO = Negative Attitude Toward Obesity; T1 = score at time 1; T2 = scores at T2
* Not significant with Bonferroni correction ($p = .0125$)

4.5 SUMMARY OF MODEL 1

While the hypothesized relationships were non-significant, interesting findings were still found for EPSI scores at T2. Notably, engagement in the selected behaviours at T1 was the most influential factor for their engagement at T2. It is possible that a few weeks was not long enough for behaviours to significantly change. It is also possible that the manipulation was not strong enough, or that there is a more influential variable that could be manipulated for bigger impact. It could also be that participants were not actively or rigorously pursuing their goal. Examining the

difference scores gives some insight into this. For example, in Cognitive Restraint, Negative Attitude Toward Obesity had a negative impact on engagement. At first, it may seem strange to suggest that when participants have a more neutral or positive attitude toward obesity, the more they engage in Cognitive Restraint. However, considering the results of Study 1, perhaps these participants who engage in Cognitive Restraint are more focused on the process of weight management rather than the particular outcome. In other words, it may be possible that these participants take an approach-type of strategy to weight management, striving toward, and focusing on, achieving a certain body shape or weight rather than avoiding overweight or obese states. This would align with the development approach goal orientation having a positive relationship with Cognitive Restraint (in Study 1). However, this does not explain the results of Study 2 which suggest that demonstration avoidance goal orientation was positively related to Cognitive Restraint differences between T1 and T2.

The results on Cognitive Restraint warrant further discussion and research. Study 2's findings contrast with Study 1 where Negative Attitude Toward Obesity had a positive impact on Cognitive Restraint engagement. Potentially, there is an underlying difference in the samples that was not captured in this research (age is discussed as potential differences in a section below).

Also interesting is that Body Dissatisfaction had a negative relationship with Binge Eating, which was unexpected as higher Body Dissatisfaction has been linked to Binge Eating (Naumann et al., 2018; Srivastava et al., 2021). This also contrasts with Study 1 where Body Dissatisfaction did have a positive impact on Binge Eating engagement. Potentially, having a goal shifts behaviours to be more deliberate (e.g., more proactive, persistent, or effortful) which could reduce binge eating behaviours (which were perceived to be more reactive, less persistent, and less effortful). Further, recalling that age had an inverse relationship with Binge Eating, it is

possible that due to the relatively younger sample in Study 2 it may be expected these participants engage in Binge Eating for reasons other than those measured here.

Given the results in the main analysis, and considering the exploratory mediation results from study 1 (see Appendix A), EVB was also used for exploratory analysis in Study 2 in an attempt to gain deeper understanding into the relationships between the mindset, goal orientation, and maladaptive weight management behaviours.

4.6 EXPLORATORY ANALYSIS WITH EXPECTANCY-VALUE BELIEFS (EVB) AS MEDIATOR

Extant literature has linked EVB and weight management behaviours (e.g., Orvidas et al., 2018; Thomas et al., 2019). For this research, exploratory analysis was done using Hayes (2018) Process Macro model 7 to assess whether goal orientation (W) moderated the relationship between mindset (X) and (T2) EVB (M) to differentially impact maladaptive weight management behaviours (Y). As with the main analysis's Model 1, analyses were run twice – once for T2 maladaptive weight management behaviours and once for the maladaptive weight management behaviour difference scores. Also as before, Body Dissatisfaction, Negative Attitude Toward Obesity, age, and a (dichotomous) gender were used as covariates.

Model 7 was chosen as an extension of Study 1's exploratory analyses that examined EVB as a secondary mediator in serial mediation after goal orientation. In Study 2, instead of being a primary mediator, goal orientation became a moderator (because it was manipulated) and EVB became the sole mediator. The conceptual model for the moderated mediation is shown below in Figure 10. A summary of the results in in Table 15.

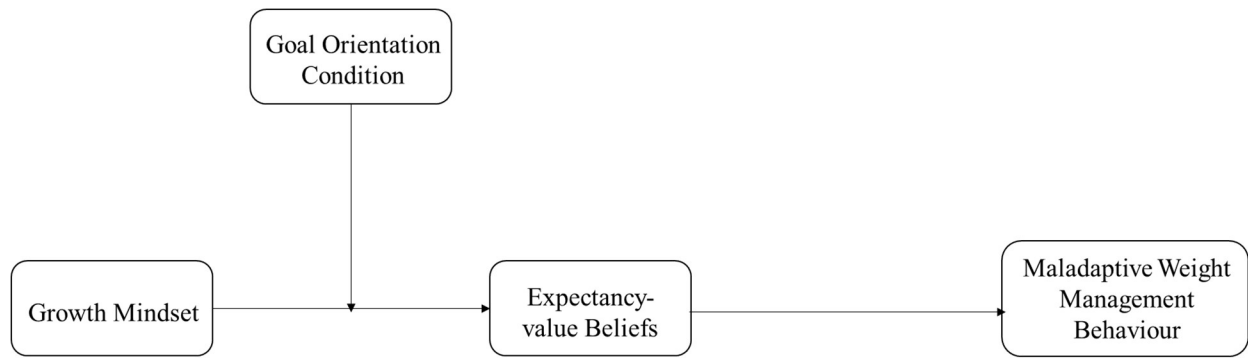


Figure 10

Moderated mediation conceptual model

4.6.1 RESULTS

First, some variance is found in the models with respect to predicting EVB scores at T2. While T1 Binge Eating and T1 Restricting did not, T1 Cognitive Restraint and T1 Excessive Exercise scores did significantly increase T2 EVB scores. Second, in reviewing the mediation effects, EVB did not mediate the relationship between mindset and Binge Eating, Cognitive Restraint, Restricting, or Excessive Exercise.

The index of moderated mediation was not significant for any model, either with the dependent variables as maladaptive behaviours at T2 or as the difference scores between T1 and T2. This suggests that the moderated mediation was not well-defined in this dataset or does not exist. As such, effects of individual variables and interactions of variables will be examined for a closer look at the results. Figures 11 and 12 below illustrate the results. Full regression tables for model 7 are in Appendix B.

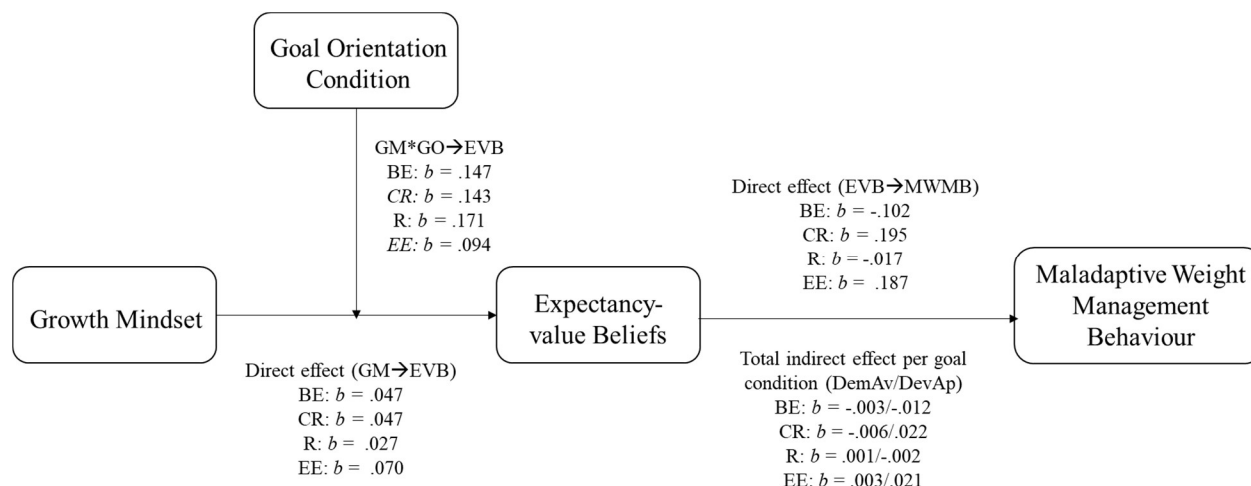


Figure 11

Results for exploratory analysis with T2 scores as the dependent variables

Note: BE, CR, EE, R indicate which model the results are for.

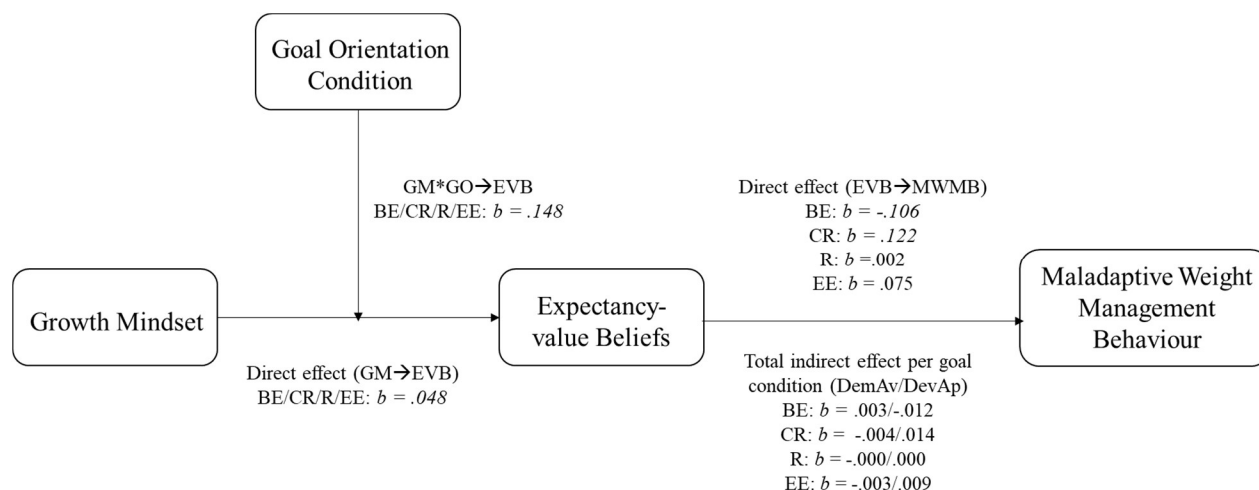


Figure 12

Results for exploratory analysis with difference scores as the dependent variables

Note: BE, CR, EE, R indicate which model the results are for.

Table 15

Summary of significant variables in Models 7 for Study 2

Maladaptive Weight Management Behaviour (MWMB)	Sig. Variables Model 7 (T2 scores)	Sig. Variables Model 7 (T2-T1 difference scores)
Cognitive Restraint	+GM*, +EVB, +T1 CR	+EVB*, -NO

Excessive Exercise	+EVB, +T1 EE	NA
Binge Eating	-EVB*, +T1 BE	-EVB*, -BD
Restricting	+T1 R	NA

+/- indicates a positive or negative relationship between the indicated variable and the EPSI subscale; EVB = expectancy-value beliefs; GM = growth mindset, EVB = expectancy-value beliefs; CR = Cognitive Restraint; EE = Excessive Exercise; BE = Binge Eating; R = Restricting; BD = Body Dissatisfaction; NO = Negative Attitude Toward Obesity; T1 = score at time 1; T2 = score at T2; NA = no variables were significant in that model
* Not significant with Bonferroni correction ($p = .0125$)

4.6.2 SUMMARY OF MODEL 7

The results for engagement at T2 show that EVB, more than mindset, directly impacts engagement in the proactive, persistent, and effortful behaviours of Cognitive Restraint and Excessive Exercise. Also interesting to note is that EVB scores had a negative impact on Binge Eating¹², which could indicate that having higher expectations of oneself and valuing the outcome more could induce a sense of proactivity, persistence, or effort that Binge Eating was not perceived to have. Similar to the model 1 analysis, model 7 results suggest that the best predictor of engagement in the weight management behaviours at T2 was engagement in them at T1.

When exploring the differences between T1 and T2, there are some variations to report. Notably, while EVB still has a positive effect¹³, it is also shown that Negative Attitude Toward Obesity has a negative impact on engagement in Cognitive Restraint. Similarly, while EVB still has a significant negative effect¹⁴, Body Dissatisfaction was also found to have a significant negative effect on engagement in Binge Eating. This, as noted earlier, is an interesting finding as it was unexpected based on previous literature (e.g., Andrés & Saldaña, 2014) and contrasts with Study 1's results. Future research may wish to look into this further.

¹² This effect was not significant with the Bonferroni correction.

¹³ This effect was not significant with the Bonferroni correction.

¹⁴ This effect was not significant with the Bonferroni correction.

4.7 STUDY 2 NOTES AND DISCUSSION

One thing to note is that prevalence of maladaptive weight management behaviours overall ($M_{T1} = 1.22$, $M_{T2} = 1.13$) and for each of the subscales examined here (Cognitive Restraint $M_{T1} = 1.55$, $M_{T2} = 1.44$; Excessive Exercise $M_{T1} = 1.62$, $M_{T2} = 1.61$; Binge Eating $M_{T1} = 1.44$, $M_{T2} = 1.28$; Restricting $M_{T1} = 1.24$, $M_{T2} = 1.17$)¹⁵ were low. For context, 1 in the EPSI meant participants “Rarely” did the behaviour in the past four weeks.¹⁶ This is a limitation as the low prevalence does not allow for much downward movement. Therefore, that we did detect significant effects for some behaviours and that the behaviours reduced (albeit slightly) between T1 and T2 is potentially noteworthy.

For transparency, it is also important to note that the journal entries for food and exercise were not used in analysis, nor were the Cognitive Restraint or Excessive Exercise questions that were used in the forms. For simplicity and anonymity, participants were asked to enter food entries into an online Qualtrics survey form. Analysis was attempted by putting food entries into a popular food tracking app, however, inconsistencies and lack of detail in the entries left much guesswork in this analysis which would significantly reduce accuracy and legitimacy of the results. The food entries were then coded using clear EPSI items (e.g., skipping two meals in a row). The overall low amount of engagement in the selected behaviours limited the value of these data. For similar reasons, the Cognitive Restraint and Excessive Exercise questions were not analyzed either. Further, as the EPSI-related questions were meant to be analyzed in relation to the food entries, lack of clarity of the food entries prevented this analysis from being

¹⁵ Means for subscales not examined in these results were also low with Purging $M_{T1} = .21$ $M_{T2} = .17$; and Muscle Building $M_{T1} = .94$, $M_{T2} = .88$.

¹⁶ T-tests were also run on the main EPSI subscales for scores 2+ and results were similar (Cognitive Restraint $MT_1 = 2.53$, $MT_2 = 2.56$; Excessive Exercise $MT_1 = 2.93$, $MT_2 = 2.81$; Binge Eating $MT_1 = 2.64$, $MT_2 = 2.69$; Restricting $MT_1 = 2.58$, $MT_2 = 2.62$)

meaningful. Future plans may include re-running Study 2 with a larger sample and, potentially, having participants enter food entries into a food tracking app themselves to enhance entry accuracy.

Overall, the findings of this study show preliminary support for the idea that shifting consumers' focus to the process (vs. outcome) of behaviours, or increasing what individuals expect of themselves, has the potential to reduce reactive maladaptive behaviours (e.g., Binge Eating, Restricting) and increase proactive maladaptive behaviours (e.g., Cognitive Restraint, Excessive Exercise).

CHAPTER 5: COMPARISON OF STUDIES ON GENDER AND AGE

Another way to approach this research is to consider closer examination of gender differences maladaptive weight management behaviours. Using Study 1 data, one-way ANOVAs comparing the means of the EPSI subscales (i.e., Binge Eating, Cognitive Restraint, Restricting, and Excessive Exercise) shows differing levels of engagement by gender. Specifically, females were engaging in Binge Eating more than males, and males were engaging in Cognitive Restraint, Restricting, and Excessive Exercising more than females. The differences in engagement for Binge Eating and Excessive Exercising were significant. However, it should be noted that while the absolute mean differences are rather small (i.e., generally ranging from .2 to .4), as engagement in the overall behaviours was low it might be worthwhile delving further into gender differences in the future. Recall also that those with a more fixed mindset (vs. growth mindset) engaged more in Binge Eating, Cognitive Restraint, and Restricting, whereas those with more growth mindsets had higher means in Excessive Exercise. With that in mind, it may be interesting to note that males were slightly higher in growth mindset than females, and also appear to engage more in Excessive Exercising.

In Study 2, results were a bit different. This study, at both T1 and T2, showed females engaging more in Binge Eating, Cognitive Restraint, and Restricting, whereas males were engaging more in Excessive Exercise. Here, too, mean differences were small, generally with scores differing about .4 between genders. As in Study 1, there were a few significant differences in engagement between genders. In particular, Binge Eating, Restricting, and Excessive Exercising were significantly different between males and females. Recall that results from Study 2 suggested that those with a more fixed (vs. growth) mindset at T1 engaged more in Cognitive Restraint and Restricting, at T2, whereas those with a more growth (vs. fixed) mindset

engaged more in Binge Eating and Excessive Exercise at T2. As in Study 1, males tended to have higher growth mindsets, which aligns with males engaging more in Excessive Exercise but does not explain why those with higher growth mindset also engaged more in Binge Eating in this sample. For Binge Eating, it is possible that the differing impact of Body Dissatisfaction between Study 1 and Study 2 is influencing the role of implicit mindset or a variable not captured in this research. However, future research could examine this.

That Study 1 and Study 2 differed in specific behaviour engagement, could suggest that there was something different about the samples. Notably, as previously mentioned, Study 2 used a younger sample which may have influenced results. For this reason, participants under 30 in Study 1 (n=285) were compared to the older participants in Study 1 (n=294) to see how age impacted maladaptive weight management behaviour engagement. One-way ANOVAs comparing the means of each behaviour suggested that Restricting and Excessive Exercising significantly differed between age groups. Results also show the younger sample engaged more in Binge Eating, Restricting, and Excessive Exercising. Mean differences between groups, however, was quite small, generally ranging from .03 to .2. In Study 1, age was inversely related to those three behaviours which adds support to this new finding.

To further examine the differences between Study 1 and Study 2, the moderation analysis (using Hayes PROCESS macro model 1) from Study 2 was repeated using Study 1 data. As Study 1 did not use a goal condition and only measured each goal orientation separately, analyses were run twice to include both relevant goal orientations – development approach and demonstration avoidance. Specifically, analyses were run using the Study 1 youth sample (i.e., those under 30, n=285) with implicit mindset as the independent variable (X), development approach or demonstration avoidance as the moderator (W), and the EPSI subscales as the

dependent variables (Y). Table 16 below shows the significant variables in these models as compared to results from Study 2.

Table 16

Study 1 moderation analysis compared to Study 2 moderation analysis

Maladaptive Weight Management Behaviour (MWMB)	Study 1 (DevAp)	Study 1 (DemAv)	Sig. Variables (T2 scores)	Sig. Variables (T2-T1 difference scores)
Cognitive Restraint	+DevAp, +BD, +NO*	+DemAv*, +BD, +NO*	+T1 CR	+GC*, -NO*
Excessive Exercise	+DevAp, +NO	+DemAv, +NO, -Gender	+T1 EE	NA
Binge Eating Restricting	+BD, +NO +NO, -Age	+BD, +NO +DemAv*, +NO, -Age	+T1 BE +T1 R	-BD NA

+/- indicates a positive or negative relationship between the indicated variable and the EPSI subscale; DevAp = development approach goal orientation; DemAv = demonstration avoidance goal orientation; GC = goal condition; NA = no variables were significant in that model; CR = Cognitive Restraint; EE = Excessive Exercise; BE = Binge Eating; R = Restricting; BD = Body Dissatisfaction; NO = Negative Attitude Toward Obesity; T1 = score at time 1; T2 = scores at T2
* Not significant with Bonferroni correction ($p = .0125$)

Even using a younger subset of Study 1's sample, there are opposing discrepancies between the significant variables in Study 1 and Study 2. For example, Negative Attitude Toward Obesity has a positive influence on engagement in Cognitive Restraint in Study 1 and a negative influence in Study 2. Similarly, Body Dissatisfaction has a positive influence in Study 1 and a negative influence in Study 2 on engagement in Binge Eating. This suggests there is some underlying difference in the samples that future research may wish to look into. For example, it is possible that the manipulation changed some participant characteristics that was not measured in these studies. Alternatively, there may be something different between youthful samples of all types of people (Study 1) compared to a youthful sample made up only of undergraduate students (Study 2).

On a final note of comparison between these studies, it is interesting to note that Cognitive Restraint was significantly positively impacted by development approach goal orientation in Study 1 and by demonstration avoidance in Study 2. This contrasting finding may be useful for future researchers or practitioners interested in deciphering influences on maladaptive weight management behaviours related to Cognitive Restraint.

CHAPTER 6: GENERAL DISCUSSION

Altering one's behaviour is not an easy thing to do. Studies have shown that those embarking on journeys of weight management often encounter setbacks and failures (e.g., Burnette, 2010; Burnette & Finkel, 2012), and it is at those junctions where individual characteristics influence who continues and who gives up. Through two studies, this research examined the relationships among implicit mindset, goal orientation, and maladaptive weight management behaviours. In Study 1, it was expected that goal orientation would mediate the relationship between implicit mindset and maladaptive weight management behaviours, such that those with growth (fixed) mindsets would have development-type (demonstration-type) goals and consequently engage in maladaptive weight management behaviours that required (did not require) proactivity, persistence, and effort. Study 2 sought to extend findings from Study 1, this time examining goal orientation as a moderator of the relationship between implicit mindset and maladaptive weight management behaviours. It was expected that those in the development goal orientation condition would engage more in maladaptive weight management behaviours that required proactivity, persistence, and effort, whereas those in the demonstration goal orientation condition would engage in behaviours that did not require as much proactivity, persistence, and effort. Findings suggest the hypotheses were generally not supported. Suggested reasons for the results and their implications, as well as limitations of the studies and future research directions will be discussed next.

In Study 1, results showed that implicit mindset did not have a direct impact on maladaptive weight management behaviours, thus Hypothesis 1 was not supported. Although during theorizing goal orientations were grouped together by their standpoint (development and demonstration), for actual analysis it was clearer to separate them for more nuanced results and

allow for more rigorous analysis by accounting for the effects of the other goal orientations. Notably, this led to determining that the only goal orientation implicit mindset did predict was development avoidance goal orientation, which provided partial support for Hypothesis 3a (Hypothesis 2a was not supported because implicit mindset did not predict either development-type goal orientation). From the Pretest, the maladaptive weight management behaviours for hypothesis testing were determined. Namely, Cognitive Restraint and Excessive Exercise were perceived as proactive, persistent, and effortful behaviours, while Binge Eating and Restricting were perceived as behaviours that did not require those characteristics. Hypothesis 2b received partial support in that development approach goal orientation predicted engagement in Cognitive Restraint and Excessive Exercise (Hypothesis 3b was not supported as neither demonstration-type goal orientation predicted engagement in Binge Eating or Restricting).

In Study 2, support for hypotheses fared similarly to Study 1. Hypothesis 1 was again not supported. Additionally, Hypotheses 4 and 5, which suggested development approach goal orientation and demonstration avoidance goal orientation would moderate the relationship between implicit mindset and their respective maladaptive weight management behaviours, were not supported either.

Exploratory results from Study 2 suggests that EVB, more than implicit mindset, plays a significant role in engagement in certain maladaptive weight management behaviours. Particularly notable (because the effect was the same using scores from T2 with T1 as a covariate and using the T2-T1 difference score) is the positive significant role EVB has in predicting engagement in Cognitive Restraint and the negative significant role it has in predicting engagement in Binge Eating. These findings highlight the potential importance of believing the behaviour can help an individual achieve something, and also valuing the behaviour itself, could

increase engagement in it. This may be an important distinction. Merely believing one's attributes are malleable may not lead to behaviours to make that change but believing that a particular set of behaviours can lead to change might increase engagement in those behaviours.

6.1 LIMITATIONS

While this research had strengths, such as pre-registration, diverse samples, and longitudinal data collection, it also had limitations. One such limitation is that participants in Study 1 were recruited from an online platform (Prolific Academic), which previous literature has noted may be cause for caution due to self-selection, bots, and potential generalizability issues (Peer et al., 2017). With this in mind, this research included attention checks to check for participant attention and a captcha to prevent bots. Further, recent research suggests that Prolific Academic may be better quality than other panels (Peer et al., 2017; Palan & Schitter, 2018). Additionally, the second study recruited students – a younger sample – which may have impacted comparability of the studies as age was found to impact engagement in maladaptive weight management behaviours. However, as the results remain largely the same, discussing the studies together seems feasible.

Another limitation is the lack of hypothesis support, which could be for a few reasons. First, it may be from the conceptual link between implicit mindset and goal orientation. Previous literature has linked growth mindset to mastery-type goals and fixed mindset to performance-type goals (Dweck & Grant, 2008; Burnette et al., 2013; Beruchashvili et al., 2014), which are conceptually linked to development and demonstration goals, respectively. As the measure for goal orientation was adapted from the original, there is potential for the adaptation to not as clearly measure the intended goal orientation. Despite this, correlations were in the expected directions, such that the most positively related goal orientation to growth mindset was

development approach and the most negatively related was demonstration avoidance, which suggests that the adaptation was at least somewhat successful and did differentiate between goal types. An alternative explanation could be that participants have strong preconceived notions about how they should answer questions about weight management goals, regardless of their personal implicit mindset. For example, using US national survey data, Auster-Gussman and Rothman (2018) found that approximately three-quarters of their representative US respondents had growth mindset beliefs about weight, even though literature suggests implicit mindsets are approximately evenly split among Western populations (Dweck & Grant, 2008). Conditioned responses about how to go about weight management or frame goals, may also have played a role in how participants answered what their goals were. For instance, participants may have preferred to choose goals that were more positively framed (e.g., “My aim is to develop my ability to achieve my goal”) instead of ones that may be perceived to be more negatively framed (e.g., “My goal is to avoid demonstrating inability to achieve my goal”).

The overall effect sizes were also small which may limit the usefulness of this research. First, participants were not engaging in many maladaptive weight management behaviours, and those they did engage in they did not do too often. In Study 1, this likely contributed to small significant or non-significant effect sizes – an idea which is supported by the post hoc power analysis suggesting the study could be underpowered. In Study 2, this likely contributed to small significant and non-significant effect sizes as well, and also the very small and non-significant movement between T1 and T2 on most maladaptive weight management behaviours. Further, the small sample size used in Study 2 could have contributed to non-significant effects. Power analysis suggests that to achieve significant effects (based on effect sizes in Study 1), Study 2 would have needed many more participants (e.g., approximately 600 participants to achieve a

significant effect for Excessive Exercise; approximately 900 to achieve a significant effect for Restricting).

Contributing to these small effect sizes could be certain participant biases. There is the potential that participants did not report every behaviour they engaged in, perhaps due to reluctance to admit engaging in such maladaptive behaviours. Alternatively, participants may have forgotten behaviours they did as the survey asks them to remember over the past four weeks. It may also be the case that the prevalence of the particular maladaptive weight management behaviours are quite low in the samples. Galmiche et al.'s (2019) international systematic review (using weighted means of populations) suggests that the yearly prevalence of eating disorders is approximately 2% for women and .7% for men. Although their analysis was based on diagnosable eating disorders and many may go undiagnosed (e.g., for their weight or not having “extreme” enough symptoms), Galmiche et al.'s (2019) analysis does provide some potential insight into why behaviours are low – the samples may actually not have those with more disordered eating behaviours in them.

When looking at limitations, it should also be considered if the manipulation in Study 2 was strong enough. Relatedly, there may not have been enough time between T1 and T2 to see meaningful differences in behaviours. Participants were given a small blurb about goal setting at T1 and asked to write down a goal tied to the goal orientation condition they were in. Then, over the next two weeks when they were texted to fill out a behaviour form, they were reminded of as much of their goal as would fit into the text. This, combined with the short time period and the low prevalence of maladaptive weight management behaviours could have contributed to the non-significant changes and the non-significant results. It is also possible participants did not form any real attachment or commitment to the goal and so did not actively try to change their

behaviour as a result. There was no check in the second survey (T2) to see if they felt they achieved or made progress toward their goal, and there was nothing during the study to hold them accountable for pursuing their goal. For future research, recruiting participants with existing health goals, or those who want to make health goals, may help researchers to see change over time when participants are actively pursuing their goal.

Also related to the manipulation in Study 2 is that the demonstration orientation condition read “Welcome back! By doing this survey, your performance demonstrates you are *earning* your course credit by showing how you are doing with your goal” (emphasis added here). The word “earning” can be interpreted as being either development-type orientation or growth mindset, which could have reduced the demonstration-type orientation (or fixed mindset) effect that was intended.

It could also be pertinent to note that in regards to implicit mindset’s effect, prior research (e.g., Burnette, 2010; Hooper et al., 2017; Thomas et al., 2019) has used domain-specific (i.e., weight- or health-related) implicit mindset measures when they found relations between implicit mindset and weight management behaviours. However, recent research (Chernishenko et al., 2021) used the same measure as this research (i.e., Kind of Person implicit mindset; Dweck et al., 1995) to find a significant relationship between implicit mindset and maladaptive weight management behaviours. Further, this research looks at the relationship between implicit mindset and particularly maladaptive weight management behaviours, which, to the author’s knowledge, is less researched and so may not follow the same pattern as previous research that studies healthier, or more adaptive, weight management behaviours.

6.2 IMPLICATIONS AND FUTURE RESEARCH

There are several theoretical and practical implications from this research. First, the relationship between implicit mindset and goal orientation may not be as clear as expected. Future research should look specifically at the relationship between implicit mindset and the standpoints goal orientation model to examine their relationship. Additionally, future researchers may find it beneficial to create weight-management-specific goal orientation measures that can be widely used for consistency and validity across research studies.

Considering the largely non-significant results of this research, future researchers may consider studying populations that are known to have maladaptive weight management behaviours (e.g., those with eating disorders), and assess the roles of implicit mindset and goal orientation in that specific setting. Overall, as maladaptive weight management behaviours were low in the participants in this research, studying changes in samples that have higher engagement in these behaviours may show a clearer relationship between implicit mindset and maladaptive weight management behaviours.

The non-significant results of this research are also interesting to consider in relation to previous research. Specifically, the article by Chernishenko et al. (2021) notes significant interactions between perfectionism and growth mindset that increase engagement in maladaptive weight management behaviours, as well as significant, though modest main effects of growth mindset on such behaviours. Future researchers may find it interesting to examine other characteristics or traits that growth mindset could interact with to increase engagement in certain behaviours, or attempt to replicate the effects found in Chernishenko et al. (2021).

EVB proved to be an interesting variable in relation to engaging in maladaptive weight management behaviours. Recent research by Thomas et al. (2019) showed that EVB mediated

the relationship between growth mindset and healthy eating. While growth mindset did not predict EVB in this research (as it did in Thomas et al.'s 2019 study), future research may find exploring the relationship between these two variables useful to determine the nuances of their relationship and the potential outcomes from their combination. In particular, future research may examine EVB as the independent variable instead of implicit mindset. While mindset may indicate the type of expectations individuals could have of themselves (e.g., as demonstrated by Thomas et al., 2019), to build on this research specifically EVB could be useful to examine the direct relationship between expectations, values, and maladaptive behaviour. Preliminary exploration on this front using data from this research suggests that EVB may act similarly to how implicit mindset was expected to act. Specifically, EVB was found to have positive relationships with Cognitive Restraint and Excessive Exercise (the highly proactive, persistent, and effortful behaviours), and a negative relationship with Binge Eating (one of the behaviours requiring low levels of proactivity, persistence, and effort).

These preliminary results of EVB may suggest that using a domain-specific measure for weight management beliefs (as has been used in other research but not here) could be beneficial to target the most applicable belief systems for accurate results. Another aspect to consider is the wording of the belief measurements. EVB indicates beliefs about oneself specifically, which could differ from beliefs about people in general. For example, Li et al. (2020) found that there is universal and non-universal beliefs about achieving ideal body weights, noting that this mindset differs from the growth versus fixed mindset dichotomy and can lead to differences in support for discriminatory weight policies (e.g., those who weight more, pay more).

With all that said, it could still be fruitful to further research the relationship between implicit mindset and maladaptive weight management behaviours. Much research in this area

focuses on the benefits a growth mindset can have, such as increasing healthy eating (Thomas et al., 2019) and increasing persistence in dieting (Burnette, 2010). Some research has started looking at potential negative outcomes of having a growth mindset in the weight management domain, such as creating more negative perceptions of people who were obese (Hooper et al., 2017) and enhancing perfectionism's effects on engagement in maladaptive weight management behaviour (Chernishenko et al., 2021).

6.3 CONCLUSION

This research examined the relationships among implicit mindset, goal orientation, and maladaptive weight management behaviours, providing an initial investigation into how these personal characteristics may lead to behaviours that have the potential to harm individuals. More research is needed to further understand the links between these variables and their impact on maladaptive behaviours.

REFERENCES

- Andrés, A., & Saldaña, C. (2014). Body dissatisfaction and dietary restraint influence binge eating behavior. *Nutrition Research, 34*(11), 944-950.
<https://doi.org/10.1016/j.nutres.2014.09.003>
- Armstrong, R. A. (2014). When to use the Bonferroni correction. *Ophthalmic & Physiological Optics, 34*, 502-508. doi: 10.1111/opo.12131
- AsPredicted. (2020). How mindset and goal orientation influence maladaptive weight management. <https://aspredicted.org/blind.php?x=fn4sx3>
- AsPredicted. (2021). Mindset, goal orientation, and maladaptive weight management study 2. <https://aspredicted.org/blind.php?x=w2hd8b>
- Auster-Gussman, L. A., & Rothman, A. J. (2018). Understanding the prevalence and correlates of implicit theories of weight in the United States: Insights from a nationally representative sample. *Psychology & Health, 33*(4), 483-498.
<https://doi.org/10.1080/08870446.2017.1373112>
- Babij, A. D., Burnette, J. L., & Hoyt, C. L. (2020). Failing and feeling bad: How we think about experiencing negative emotions during setbacks. *Motivation and Emotion, 44*, 436-452.
<https://doi.org/10.1007/s11031-019-09789-3>
- Beruchashvili, M., & Moisiso, R. (2013). Is planning an aid or an obstacle? Examining the role of consumers' lay theories in weight loss. *Journal of Consumer Affairs, 47*(3), 404-431.
<https://doi.org/10.1111/joca.12014>
- Beruchashvili, M., Moisiso, R., & Heisley, D. D. (2014). What are you dieting for? The role of lay theories in dieters' goal setting. *Journal of Consumer Behaviour, 13*(1), 50-59.
<https://doi.org/10.1002/cb.1457>
- Burnette, J. L. (2010). Implicit theories of body weight: Entity beliefs can weigh you down. *Personality and Social Psychology Bulletin, 36*(3), 410-422.
<https://doi.org/10.1177/0146167209359768>
- Burnette, J. L., & Finkel, E. J. (2012). Buffering against weight gain following dieting setbacks: An implicit theory intervention. *Journal of Experimental Social Psychology, 48*(3), 721-725. <https://doi.org/10.1016/j.jesp.2011.12.020>
- Burnette, J. L., O'Boyle, E. H., VanEpps, E. M., Pollack, J. M., & Finkel, E. J. (2013). Mind-sets matter: A meta-analytic review of implicit theories and self-regulation. *Psychological Bulletin, 139*(3), 655-701. <https://doi.org/10.1037/a0029531>

- Chernishenko, J., Mesler, R. M., & Basil, D. Z. (2021, *in press*). I can be perfect! Implicit mindset moderates the relationship between perfectionism and consumers' maladaptive weight management behavior. *Personality and Individual Differences*, 183.
- Duchi, L., Lombardi, D., Paas, F., & Loyens, S. M. M. (2020). How a growth mindset can change the climate: The power of implicit beliefs in influencing people's view and action. *Journal of Environmental Psychology*, 70(101461), 1-14. <https://doi.org/10.1016/j.jenvp.2020.101461>
- Dweck, C. S., Chiu, C., & Hong, Y. (1995). Implicit theories and their role in judgments and reactions: A world from two perspectives. *Psychological Inquiry*, 6(4), 267-285. https://psycnet.apa.org/doi/10.1207/s15327965pli0604_1
- Dweck, C. S., & Grant, H. (2008). Self-theories, goals, and meaning. In J. Shah & W. Gardner (Eds.), *Handbook of Motivation Science* (pp. 405-416). New York, NY: Guilford Press.
- Elliot, A. J., & McGregor, H. A. (2001). A 2x2 achievement goal framework. *Journal of Personality and Social Psychology*, 80(3), 501-519. <https://doi.apa.org/doi/10.1037/0022-3514.80.3.501>
- Forbush, K. T., Wildes, J. E., Pollack, L. O., Dunbar, D., Luo, J., Patterson, K., Petruzzi, L., Pollpeter, M., Miller, H., Stone, A., Bright, A., & Watson, D. (2013a). Development and validation of the eating pathology symptoms inventory (EPSI). *Psychological Assessment*, 25(3), 859-878. <https://doi.org/10.1037/a0032639>
- Forbush, K. T., Wildes, J. E., Pollack, L. O., Dunbar, D., Luo, J., Patterson, K., Petruzzi, L., Pollpeter, M., Miller, H., Stone, A., Bright, A., & Watson, D. (2013b). Supplemental material for: Development and validation of the eating pathology symptoms inventory (EPSI). *Psychological Assessment*, 25(3), 859-878. <http://dx.doi.org/10.1037/a0032639.supp>
- Foreich, F. V., Vartanian, L. R., Zawadzki, M. J., Grisham, J. R., & Touyz, S. W. (2018). Psychological need satisfaction, control, and disordered eating. *British Journal of Clinical Psychology*, 56(1), 53-68. <https://doi.org/10.1111/bjc.12120>
- Galmiche, M., Déchelotte, P., Lambert, G., & Tavolacci, M. P. (2019). Prevalence of eating disorders over the 2000-2018 period: A systematic review. *The American Journal of Clinical Nutrition*, 109(5), 1402-1413. <https://doi.org/10.1093/ajcn/nqy342>
- Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). New York, NY: Guilford Publications.
- Hooper, N., Crumpton, A., Robinson, M. D., & Meier, B. P. (2018). A weight-related mindset increases negative attitudes toward obese people. *Journal of Applied Social Psychology*, 48(9), 488-493. <https://doi.org/10.1111/jasp.12528>

- Howe, L. C., & Menges, J. I. (2020, August). Mindsets about remote work predict employee well-being in home office: Evidence from the COVID-19 pandemic. *Microsoft*. <https://www.microsoft.com/en-us/research/publication/mindsets-about-remote-work-predict-employee-well-being-in-home-office-evidence-from-the-covid-19-pandemic/>
- Huang, J. L., Curran, P. G., Keeney, J., Poposki, E. M., & DeShon, R. P. (2012). Detecting and deterring insufficient effort responding to surveys. *Journal of Business and Psychology*, 27, 99-114. <https://doi.org/10.1007/s10869-011-9231-8>
- Korn, R. M., & Elliot, A. J. (2016). The 2x2 standpoints model of achievement goals. *Frontiers in Psychology*, 7, 1-12. <https://doi.org/10.3389/fpsyg.2016.00742>
- Lee, J. S., Keil, M., & Wong, K. E. (2020). When a growth mindset can backfire and cause escalation of commitment to a troubled information technology project. *Information Systems Journal*. <https://doi.org/10.1111/isj.12287>
- Li, S. (K.), Kokkoris, M. D., & Savani, K. (2020). Does everyone have the potential to achieve their ideal body weight? Lay theories about body weight and support for price discrimination policies. *Organizational Behavior and Human Decision Processes*, 157, 129-142. <https://doi.org/10.1016/j.obhdp.2020.01.012>
- Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological Methods*, 17(3), 437-455. doi: 10.1037/a0028085
- Murphy, M. C., & Dweck, C. S. (2016). Mindsets shape consumer behavior. *Journal of Consumer Psychology*, 26(1), 127-136. <http://dx.doi.org/10.1016/j.jcps.2015.06.005>
- Naumann, E., Svaldi, J., Wyszka, T., Heinrichs, M., & von Dawans, B. (2018). Stress-induced body dissatisfaction in women with binge eating disorder. *Journal of Abnormal Psychology*, 127(6), 548–558. <https://doi.org/10.1037/abn0000371>
- Nussbaum, A. D., & Dweck, C. S. (2008). Defensiveness versus remediation: Self-theories and modes of self-esteem maintenance. *Personality and Social Psychology Bulletin*, 34(5), 599-612. <https://doi.org/10.1177/0146167207312960>
- Orvidas, K., Burnette, J. L., & Russell, V. M. (2018). Mindsets applied to fitness: Growth beliefs predict exercise efficacy, value, and frequency. *Psychology of Sport and Exercise*, 36, 156-161. <https://doi.org/10.1016/j.psychsport.2018.02.006>
- Pahljina-Reinić, R., & Kolić-Vehovec, S. (2017). Average personal goal pursuit profile and contextual achievement goals: Effects on students' motivation, achievement emotions, and achievement. *Learning and Individual Differences*, 56, 167-174. <https://doi.org/10.1016/j.lindif.2017.01.020>

- Palan, S., & Schitter, C. (2018). Prolific.ac—A subject pool for online experiments. *Journal of Behavioral and Experimental Finance*, *17*, 22-27.
<https://doi.org/10.1016/j.jbef.2017.12.004>
- Parent, M. C., & Alquist, J. L. (2016). Born fat: The relations between weight changeability beliefs and health behaviors and physical health. *Health Education & Behavior*, *43*(3), 337-346. <https://doi.org/10.1177%2F1090198115602266>
- Park, J. K., & John, D. R. (2010). Got to get you into my life: Do brand personalities rub off on consumers? *Journal of Consumer Research* *37*(4), 655-669.
<https://doi.org/10.1086/655807>
- Park, J. K., & John, D. R. (2014). I think I can, I think I can: Brand use, self-efficacy, and performance. *Journal of Marketing Research*, *51*(2), 233-247.
<https://doi.org/10.1509%2Fjmr.11.0532>
- Park, J. K., & John, D. R. (2018). Judging a book by its cover: The influence of implicit self-theories on brand user perceptions. *Journal of Consumer Psychology*, *28*(1), 56-76.
<https://doi.org/10.1002/jcpy.1014>
- Peer, E., Brandimarte, L., Samat, S., & Acquisti, A. (2017). Beyond the Turk: Alternative platforms for crowdsourcing behavioral research. *Journal of Experimental Social Psychology*, *70*, 153-163. <https://doi.org/10.1016/j.jesp.2017.01.006>
- Perneger, T., Courvoisier, D., Hudelson, P., & Gayet-Ageron, A. (2015). Sample size for pre-tests of questionnaires. *Quality of Life Research*, *24*(1), 147-151.
<https://doi.org/10.1007/s11136-014-0752-2>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*, 879-891. <https://doi.org/10.3758/BRM.40.3.879>
- Rai, D., & Lin, C. (2019). The influence of implicit self-theories on consumer financial decision making. *Journal of Business Research*, *95*, 316-325.
<https://doi.org/10.1016/j.jbusres.2018.08.016>
- Song, Y., Lee, S. Y., & Kim, Y. (2019). Does mindset matter for using social networking sites?: Understanding motivations for and uses of Instagram with growth versus fixed mindset. *International Journal of Advertising*, *38*(6), 886-904.
<https://doi.org/10.1080/02650487.2019.1637614>
- Srivastava, P., Michael, M. L., Manasse, S. M., & Juarascio, A. S. (2021). Do momentary changes in body dissatisfaction predict binge eating episodes? An ecological momentary assessment study. *Eating and Weight Disorders – Studies on Anorexia, Bulimia and Obesity*, *26*, 395-400. <https://doi.org/10.1007/s40519-020-00849-z>

- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Pearson.
- Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, 48, 1273-1296. <https://doi.org/10.1007/s11165-016-9602-2>
- Taylor, A. B., MacKinnon, D. P., & Tein, J. (2008). Tests of the three-path mediated effect. *Organizational Research Methods*, 11(2), 241-269. <https://doi.org/10.1177%2F1094428107300344>
- Thomas, F. N., Burnette, J. L., & Hoyt, C. L. (2019). Mindsets of health and healthy eating intentions. *Journal of Applied Social Psychology*, 49(6), 372-380. <https://doi.org/10.1111/jasp.12589>
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063-1070. <https://doi.org/10.1037/0022-3514.54.6.1063>
- Wigfield, A., & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology*, 25(1), 68-81. <https://doi.org/10.1006/ceps.1999.1015>
- Witte, K. (1992). Putting the fear back into fear appeals: The extended parallel process model. *Communication Monographs*, 59, 329-349. <https://doi.org/10.1080/03637759209376276>

APPENDIX A

A.1 PARALLEL MEDIATION WITH COVARIATES

The parallel mediation model for Study 1 was also run without covariates. Hayes PROCESS Macro (version 3.5) model 4 in SPSS (version 27) was used for this analysis. First, bivariate correlations were assessed, as shown in Table A1.

Table A1

Bivariate correlations, means, standard deviations, and scale validity (Cronbach's alpha)

	Mean	SD	Alpha		GM	Dev Ap	Dev Av	Dem Ap	Dem Av	BE	CR	R	EE
GM	3.66	1.13	.873	Pearson	1								
				Correlation									
Dev App	3.83	.78	.809	Pearson	.076	1							
				Correlation									
Dev Av	3.42	.99	.814	Pearson	-.010	.485**	1						
				Correlation									
Dem App	3.57	.87	.823	Pearson	-.062	.541**	.524**	1					
				Correlation									
Dev Av	3.26	1.02	.894	Pearson	-.100*	.360**	.560**	.638**	1				
				Correlation									
BE	1.45	.97	.898	Pearson	-.042	.074	.095*	.128**	.128**	1			
				Correlation									
CR	1.32	.99	.714	Pearson	-.035	.214**	.196**	.225**	.199**	.112**	1		
				Correlation									
R	.82	.82	.827	Pearson	-.025	.070	.059	.107**	.124**	-.047	.260**	1	
				Correlation									
EE	.98	.97	.856	Pearson	.028	.278**	.148**	.253**	.189**	.109**	.474**	.214**	1
				Correlation									

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

GM = Growth Mindset; Dev Ap = Development Approach goal orientation; Dev Av = Development Avoidance goal orientation; Dem Ap = Demonstration Approach goal orientation, Dem Av = Demonstration Avoidance goal orientation; BE = Binge Eating; CR = Cognitive Restraint; R = Restricting; EE = Excessive Exercise.

Results are summarized below, showing which variables had a significant impact on the respective EPSI subscales. As in the main analysis, Bonferroni corrections were used as an additional check for Type 1 error on variables that directly impacted maladaptive weight management behaviours (not analysis for how implicit mindset impacts goal orientation) and deviations from normal significance (i.e., $p = .05$) are noted.

Table A2

Summary of growth mindset effects on EPSI subscales

Mindset	Cognitive Restraint	Excessive Exercise	Binge Eating	Restricting
GM Direct Effect	NS	NS	NS	NS
GM Indirect Effects	NS	NS	NS	NS

NS = non-significant; GM = growth mindset; Note: scores for mindset were coded such that higher scores = more growth mindset, as such the measure is being interpreted as participants having either high or low (i.e., fixed) growth mindset.

Table A3 summarizes the effects of implicit mindset on goal orientation. Hypothesis 2a was not supported. Growth mindset (i.e., scoring high on mindset) did not predict engagement in development approach ($b = .0562, p = .0666$) or development avoidance ($b = -.0084, p = .8158$) goals. Hypothesis 3a was partially supported in that (low growth) mindset did not predict engagement in demonstration approach goals ($b = -.0475, p = .1345$), but did predict engagement in demonstration avoidance goals ($b = -.0905, p = .0156$).

Table A3

Summary of mindset effects on goal orientation

With or without covariates	Development Approach	Development Avoidance	Demonstration Approach	Demonstration Avoidance
Mindset (models with covariates)	NS ($p = .1813$)	NS ($p = .9623$)	NS ($p = .2073$)	Sig. ($p = .0330$)

Mindset (models without covariates)	NS ($p = .0666$)	NS ($p = .8158$)	NS ($p = .1345$)	Sig. ($p = .0156$)
NS = Non-significant				

The results summarized in tables A4 and A5 show that development approach goal orientation has a direct impact on Cognitive Restraint and Excessive Exercise. This partially supports H2b (i.e., those with development orientation goals would take on proactive and persistent behaviours). The hypothesis implies that both types of development orientation goals would do these behaviours, however, as only development approach goals did, the hypothesis remains partially supported. Hypothesis 3b stated that demonstration type goals would engage in reactive, non-persistent, and non-effortful behaviours, but the results did not support this. It is interesting, though, that demonstration approach goal orientation had a significant relationship with Excessive Exercise. Also notable is that without covariates, the model for Restricting is non-significant.

Table A4

Summary of results

Subscale	GM	DevAp	DevAv	DemAp	DemAv	Overall
Cognitive Restraint	NS	Sig. ($p = .0189$)*	NS	NS	NS	Sig. ($p < .0001$)
Excessive Exercise	NS	Sig. ($p < .0001$)	NS	Sig. ($p = .0249$)*	NS	Sig. ($p < .0001$)
Binge Eating	NS	NS	NS	NS	NS	Sig. ($p = .0322$)*
Restricting	NS	NS	NS	NS	NS	NS

GM = growth mindset; DevAp = development approach; DevAv = development avoidance; DemAp = demonstration approach; DemAv = demonstration avoidance; Sig. = Significant, NS = Non-significant

* Not significant with Bonferroni correction ($p = .0125$)

Table A5*Summary of positive/negative significant relationships*

Maladaptive Weight Management Behaviour (MWMB)	Sig. Variables Model 4
Cognitive Restraint	+Dev Ap*
Excessive Exercise	+Dev Ap, +Dem Ap*
Binge Eating	NA
Restricting	NA

+/- indicates a positive or negative relationship between the indicated variable and the EPSI subscale; GM = growth mindset, Dev Ap = development approach; Dem Av = demonstration avoidance; NA = no variables were significant in that model
 *Not significant with Bonferroni correction

As would be expected with more variables, the R^2 statistics in the models with covariates suggest they explain more of why participants engage in the EPSI behaviours than the models with covariates. Table A6 below shows the comparison.

Table A6*Summary of R^2 results*

Subscale	R^2 without covariates	R^2 with covariates
Cognitive Restraint	.0702	.1182
Excessive Exercise	.0957	.1634
Binge Eating	.0210	.3861
Restricting	.0179	.0650

A.1.1 DISCUSSION

The results are similar to the models with covariates. Hypotheses 1 was not supported as growth mindset did not have a significant direct effect on the chosen EPSI subscales. Hypothesis 2a was not supported as growth mindset did not predict development-type goals, but hypothesis

3a was partially supported in that growth mindset negatively significantly predicted demonstration avoidance goal orientation (but not demonstration approach). Hypotheses 2b was partially supported, with development approach orientation having a positive significant relationship with proactive, persistent and effortful behaviours of Cognitive Restraint and Excessive Exercise, but development avoidance did not. Hypothesis 3b was not supported as demonstration approach and demonstration avoidance orientation did not have a significant impact on the reactive, low persistence, and low effort behaviours of Binge Eating or Restricting. Interestingly, demonstration approach orientation had a significant positive impact on engaging in Excessive Exercise. This is possibly due to the “approach” part of the goal orientation that strives to improve oneself through effort.

A.2 RESULTS FOR SINGLE MEDIATOR MODELS

As an alternative, but less robust, analysis, each goal orientation was run as a separate mediator using Hayes (2018) PROCESS macro model 4.

Results were also examined in single-mediator models. Further, significance for the main analysis was also assessed with Bonferroni corrections to reduce the chance of Type I error when examining which variables impact maladaptive weight management behaviours (Tabachnick & Fidell, 2013; Armstrong, 2014). This was done by dividing the original p value by the number of EPSI scales ($.05/4 = .0125$). While this did not generally change the overall pattern of results, where significance of variables differs in the results it is noted.

As with the parallel mediation in the main report, Cognitive Restraint and Excessive Exercising were examined here as the most proactive, persistent, and effortful behaviours and Binge Eating and Restricting were examined as their contrasts. It is noted here again that Binge Eating and Restricting were less clearly distinguished (from Purging and Muscle Building) for

being lower in proactivity, persistence, and effort. For parsimony, the two goal orientations most correlated with mindset – development approach and demonstration avoidance – will be summarized in the tables A7 and A8 below.

Table A7

Summary Table for development approach

EPSI Subscale	Growth Mindset	Development Approach	Overall Model	Indirect Effect of Mindset on EPSI
Cognitive Restraint	NS	Sig. ($p < .0001$)	Sig. ($p < .0001$)	NS
Excessive Exercise	NS	Sig. ($p < .0001$)	Sig. ($p < .0001$)	NS
Binge Eating	NS	NS	NS	NS
Restricting	NS	NS	NS	NS

NS = Non-significant

Table A8

Summary table for demonstration avoidance

EPSI Subscale	Growth Mindset	Demonstration Avoidance	Overall Model	Indirect Effect of Mindset on EPSI
Cognitive Restraint	NS	Sig. ($p < .0001$)	Sig. ($p < .0001$)	Sig. (CI -.0350 to -.0018)
Excessive Exercise	NS	Sig. ($p < .0001$)	Sig. ($p < .0001$)	Sig. (CI -.0346 to -.0011)
Binge Eating	NS	Sig. ($p = .0028$)	Sig. ($p = .0068$)	Sig. (CI -.0246 to -.0004)
Restricting	NS	Sig. ($p = .0032$)	Sig. ($p = .0108$)	Sig. (CI -.0207 to -.0006)

NS = Non-significant

A.2.1 GROWTH MINDSET AND GOAL ORIENTATIONS

The effect of mindset on development approach goal orientation was non-significant [$b = .0526$, $SE = .0286$, $p = .0666$, CI -.0036 to .1089]. The effect of mindset on demonstration

avoidance goal orientation was significant [$b = -.0905$, $SE = .0373$, $p = .0156$, $CI -.1639$ to $-.0172$].

A.2.2 PROACTIVE, PERSISTENT AND EFFORTFUL BEHAVIOURS

A.2.2.1 DEVELOPMENT APPROACH AND COGNITIVE RESTRAINT

With growth mindset as the independent variable (X), development approach as the mediator (M), and Cognitive Restraint as the dependent variable (Y), the overall effects were significant [$R^2 = .0486$, $F(2,576) = 14.7180$, $p < .0001$]. The direct [$b = -.0451$, $SE = .0356$, $p = .2057$, $CI -.1149$ to $.0248$] and indirect [$b = .0145$, $SE = .0096$, $CI -.0026$ to $.0359$] effects of mindset on the Cognitive Restraint was non-significant. The effect of development approach goal orientation on the Cognitive Restraint was significant [$b = .2762$, $SE = .0516$, $p < .0001$, $CI .1749$ to $.3774$].

A.2.2.2 DEVELOPMENT APPROACH AND EXCESSIVE EXERCISE

With growth mindset as the independent variable (X), development approach as the mediator (M), and Excessive Exercise as the dependent variable (Y), the overall model was significant [$R^2 = .0772$, $F(2,576) = 24.0846$, $p < .0001$]. The direct [$b = .0059$, $SE = .0343$, $p = .8630$, $CI -.0615$ to $.0734$] and indirect [$b = .0181$, $SE = .0112$, $CI -.0029$ to $.0413$] effects of mindset on the Excessive Exercise were non-significant. The effect of development approach goal orientation on the Excessive Exercise was significant [$b = .3435$, $SE = .0498$, $p < .0001$, $CI .2458$ to $.4413$].

A.2.2.3 DEMONSTRATION AVOIDANCE AND COGNITIVE RESTRAINT

With growth mindset as the independent variable (X), demonstration avoidance as the mediator (M), and Cognitive Restraint as the dependent variable (Y), the overall model result was significant [$R^2 = .0396$, $F(2,576) = 11.8901$, $p < .0001$]. For the Cognitive Restraint model,

the direct effect of mindset on Cognitive Restraint was non-significant [$b = -.0133$, $SE = .0358$, $p = .7114$, $CI -.0836$ to $.0571$], but the indirect effect was significant [$b = -.0173$, $SE = .0084$, $CI -.0350$ to $-.0018$]. The effect of demonstration avoidance goal orientation on the Cognitive Restraint was significant [$b = .1908$, $SE = .0398$, $p < .0001$, $CI .1128$ to $.2689$].

A.2.2.4 DEMONSTRATION AVOIDANCE AND EXCESSIVE EXERCISE

With growth mindset as the independent variable (X), demonstration avoidance as the mediator (M), and Excessive Exercise as the dependent variable (Y), the model was significant [$R^2 = .0378$, $F(2,576) = 11.3065$, $p < .0001$]. For the Excessive Exercise model, the direct effect of mindset on Excessive Exercise was non-significant [$b = .0406$, $SE = .0351$, $p = .2481$, $CI -.0284$ to $.1096$], but the indirect effect was significant [$b = -.0166$, $SE = .0084$, $CI -.0346$ to $-.0011$]. The effect of demonstration avoidance goal orientation on the Excessive Exercise was significant [$b = .1835$, $SE = .0390$, $p < .0001$, $CI .1069$ to $.2600$].

A.2.3 REACTIVE, NON-PERSISTENT, AND NON-EFFORTFUL BEHAVIOURS

A.2.3.1 DEVELOPMENT APPROACH AND BINGE EATING

With growth mindset as the independent variable (X), development approach as the mediator (M), and Binge Eating as the dependent variable (Y), the model was non-significant [$R^2 = .0078$, $F(2,576) = 2.2720$, $p = .1040$]. The direct effect of mindset on Binge Eating was non-significant [$b = -.0415$, $SE = .0357$, $p = .2459$, $CI -.01117$ to $.0287$], as was the indirect effect [$b = .0051$, $SE = .0044$, $CI -.0015$ to $.0158$]. The effect of development approach goal orientation on Binge Eating was non-significant [$b = .0969$, $SE = .0518$, $p = .0619$, $CI -.0048$ to $.1987$].

A.2.3.2 DEVELOPMENT APPROACH AND RESTRICTING

With growth mindset as the independent variable (X), development approach as the mediator (M), and Restricting as the dependent variable (Y), the model was non-significant [$R^2 =$

.0059, $F(2,576) = 1.7130, p = .1812$]. The direct effect of mindset on Restricting was non-significant [$b = -.0225, SE = .0303, p = .4582, CI -.0820$ to $.0370$], as was the indirect effect [$b = -.0040, SE = .0036, CI -.0012$ to $.0124$]. The effect of development approach goal orientation on Restricting was non-significant [$b = .0767, SE = .0439, p = .0811, CI -.0095$ to $.1630$].

A.2.3.3 DEMONSTRATION AVOIDANCE AND BINGE EATING

With growth mindset as the independent variable (X), demonstration avoidance as the mediator (M), and Binge Eating as the dependent variable (Y), the model was significant [$R^2 = .0172, F(2,576) = 5.0273, p = .0068$]. The direct effect of mindset on Binge Eating was non-significant [$b = -.0257, SE = .0357, p = .4719, CI -.0957$ to $.0444$], while the indirect effect was significant [$b = -.0107, SE = .0063, CI -.0246$ to $-.0004$]. The effect of demonstration avoidance goal orientation on Binge Eating was significant [$b = .1187, SE = .0396, p = .0028, CI .0410$ to $.1964$].

A.2.3.4 DEMONSTRATION AVOIDANCE AND RESTRICTING

With growth mindset as the independent variable (X), demonstration avoidance as the mediator (M), and Restricting as the dependent variable (Y), the model was significant [$R^2 = .0156, F(2,576) = 4.5668, p = .0108$]. The direct effect of mindset on Restricting was non-significant [$b = -.0095, SE = .0302, p = .7542, CI -.0688$ to $.0499$], while the indirect effect was significant [$b = -.0090, SE = .0053, CI -.0207$ to $-.0006$]. The effect of demonstration avoidance goal orientation on Restricting was significant [$b = .0992, SE = .0335, p = .0032, CI .0334$ to $.1651$].

One major difference in this analysis compared to the parallel mediation is that when each goal orientation was entered as a single mediator, demonstration avoidance goals significantly mediated the relationship between mindset and all maladaptive weight management

behaviours, which was not the case in the parallel mediation. Results of this showed that the indirect effect of mindset through demonstration avoidance goal orientation was significant on all four of the EPSI subscales used in analysis – Cognitive Restraint, Excessive Exercise, Binge Eating, and Restricting. Potentially, this suggests that if someone had a very strong demonstration avoidance goal orientation, they may be more likely to engage in more maladaptive behaviours in general.

Overall, it is notable that in both the parallel mediation and the single mediation, development approach goals had significant direct impacts on the proactive, persistent, and effortful behaviours as expected (i.e., Cognitive Restraint and Excessive Exercise).

A.3 FURTHER ANALYSES

Considering the low, albeit significant, fits of the single mediation model it was worthwhile exploring other variables that may explain the reasons for maladaptive weight management behaviours better. Reviewing the correlation table, it is seen that expectancy-value beliefs (EVB) are significantly and moderately related with the goal orientations. Theoretically, one's goal orientation could impact the outcomes they expect to attain (expectancy beliefs) and the values they place on certain outcomes (value beliefs). To more deeply explore the data and attempt to clarify results, a new model was proposed: mindset → goal orientation → EVB → maladaptive weight management behaviours (i.e., EPSI subscales). For clarity, no covariates were used in this analysis.

A.3.1 RESULTS OF NEW MODEL

To do this analysis, Hayes PROCESS macro model 6 was used (Hayes, 2018). As before, only the statistics for models of Cognitive Restraint, Excessive Exercise, Binge Eating, and Restricting will be discussed here. There will also be a focus on development approach and

demonstration avoidance goal orientations as they were the most correlated with growth mindset.

Summary tables are below, followed by more detailed statistics. As before, were Bonferroni

corrections change significance it is noted.

Table A9

Summary of serial mediation with development approach as goal orientation

Outcome Variable	Growth mindset	Development Approach	EVB	Overall Model
Growth mindset → Development Approach				
Development Approach	NS	-	-	NS
Growth mindset → Development Approach → EVB				
EVB	NS	Sig. ($p < .0001$)	-	Sig. ($p < .0001$)
Growth mindset → Development Approach → EVB → EPSI subscale				
Cognitive Restraint	NS	NS	Sig. ($p < .0001$)	Sig. ($p < .0001$)
Excessive Exercise	NS	Sig. ($p = .0027$)	Sig. ($p < .0001$)	Sig. ($p < .0001$)
Binge Eating	NS	Sig. ($p = .0345$)*	NS	NS
Restricting	NS	NS	NS	NS
* Not significant with Bonferroni correction ($p = .0125$)				

Table A10

Summary of serial mediation with demonstration avoidance as goal orientation

Outcome Variable	Growth mindset	Demonstration Avoidance	EVB	Overall Model
Growth mindset → Demonstration Avoidance				
EVB	Sig. ($p = .0156$)*	-	-	Sig. ($p = .0156$)*
Growth mindset → Demonstration Avoidance → EVB				
Demonstration Avoidance	NS	Sig. ($p < .0001$)	-	Sig. ($p < .0001$)
Growth mindset → Demonstration Avoidance → EVB → EPSI subscale				
Cognitive Restraint	NS	Sig. ($p = .0036$)	Sig. ($p < .0001$)	Sig. ($p < .0001$)
Excessive Exercise	NS	Sig. ($p = .0030$)	Sig. ($p < .0001$)	Sig. ($p < .0001$)
Binge Eating	NS	Sig. ($p = .0022$)	NS	Sig. ($p = .0150$)*
Restricting	NS	Sig. ($p = .0053$)	NS	Sig. ($p = .0258$)*
* Not significant with Bonferroni correction ($p = .0125$)				

A.3.1.1 GROWTH MINDSET EFFECTS ON EXPECTANCY-VALUE BELIEFS (EVB) AND GOAL ORIENTATION

The effect of mindset on development approach goal orientation was non-significant [$b = .0526$, $SE = .0286$, $p = .0666$, CI -.0036 to .1089]. The effect of mindset on demonstration avoidance goal orientation was negative and significant [$b = -.0905$, $SE = .0373$, $p = .0156$ ¹⁷, CI -.1639 to -.0172]. The effect of mindset on EVB was non-significant in the model with demonstration avoidance goal orientation [$b = .0180$, $SE = .0360$, $p = .6170$, CI -.0527 to -.0887] and in the model with development approach goal orientation [$b = -.0298$, $SE = .0330$, $p = .3674$, CI -.0946 to .0350].

A.3.1.2 GOAL ORIENTATION AND EVB

Development approach goal orientation had a positive and significant effect on EVB [$b = .5597$, $SE = .0478$, $p < .0001$, CI .4658 to .6536]. Demonstration avoidance had a positive and significant effect on EVB [$b = .2022$, $SE = .0399$, $p < .0001$, CI .1238 to .2807].

A.3.1.3 PROACTIVE, PERSISTENT, AND EFFORTFUL BEHAVIOURS

A.3.1.3.1 DEVELOPMENT APPROACH AND COGNITIVE RESTRAINT

With growth mindset as the independent variable (X), development approach as the first mediator (M1), EVB as the second mediator (M2), and Cognitive Restraint as the dependent variable (Y), the overall model was significant [$R^2 = .1889$, $F(3,575) = 44.6280$, $p < .0001$]. The direct effect of EVB on Cognitive Restraint was positive and significant [$b = .4140$, $SE = .0415$, $p < .0001$, CI .3324 to .4956]. The direct effects of growth mindset and direct effect of development approach goal orientation on cognitive restraint were non-significant ($p = .3199$ and

¹⁷ This is not significant with the Bonferroni correction.

$p = .4021$, respectively). All indirect effects for growth mindset on cognitive restraint were non-significant as well.

A.3.1.3.2 DEVELOPMENT APPROACH AND EXCESSIVE EXERCISE

With growth mindset as the independent variable (X), development approach as the first mediator (M1), EVB as the second mediator (M2), and Excessive Exercise as the dependent variable (Y), the overall model was significant [$R^2 = .1705$, $F(3,575) = 39.4098$, $p < .0001$]. The direct effect of EVB on Excessive Exercise was positive and significant [$b = .3310$, $SE = .0411$, $p < .0001$, CI .2502 to .4118]. The direct effect of growth mindset was not significant ($p = .6286$), but the direct effect of development approach goal orientation on Excessive Exercise was [$b = .1583$, $SE = .0525$, $p = .0027$, CI .0551 to .2614]. All indirect effects for growth mindset on Excessive Exercise were non-significant.

A.3.1.3.3 DEMONSTRATION AVOIDANCE AND COGNITIVE RESTRAINT

With growth mindset as the independent variable (X), demonstration avoidance as the first mediator (M1), EVB as the second mediator (M2), and Cognitive Restraint as the dependent variable (Y), the overall model was significant [$R^2 = .1998$, $F(3,575) = 47.8560$, $p < .0001$]. The direct effects of growth mindset on Cognitive Restraint was non-significant ($p = .5298$). The direct effect of EVB was positive and significant [$b = .4064$, $SE = .0379$, $p < .0001$, CI .3320 to .4808], as was the effect of demonstration avoidance on Restricting [$b = .1086$, $SE = .0371$, $p = .0036$, CI .0357 to .1815]. All indirect effects for growth mindset on Restricting were non-significant except for the growth mindset → demonstration avoidance → Cognitive Restraint path [CI -.0230 to -.0003] and the growth mindset → demonstration avoidance → EVB → Cognitive Restraint path [CI -.0162 to -.0006].

A.3.1.3.4 DEMONSTRATION AVOIDANCE AND EXCESSIVE EXERCISE

With growth mindset as the independent variable (X), demonstration avoidance goal orientation as the first mediator (M1), EVB as the second mediator (M2), and Excessive Exercise as the dependent variable (Y), the overall model was significant [$R^2 = .1702$, $F(3,575) = 39.3218$, $p < .0001$]. The direct effect of growth mindset on Excessive Exercise was non-significant ($p = .2969$). The direct effect of EVB on Excessive Exercise was positive and significant [$b = .3622$, $SE = .0378$, $p < .0001$, $CI .2879$ to $.4364$], as was the effect of demonstration avoidance [$b = .1102$, $SE = .0370$, $p = .0030$, $CI .0375$ to $.1830$]. All indirect effects for growth mindset on Restricting were non-significant except for the growth mindset → demonstration avoidance → Cognitive Restraint path [$CI -.0223$ to $-.0008$] and the growth mindset → demonstration avoidance → EVB → Excessive Exercise path [$CI -.0143$ to $-.0007$].

A.3.1.4 REACTIVE, NON-PERSISTENT, NON-EFFORTFUL BEHAVIOURS

A.3.1.4.1 DEVELOPMENT APPROACH AND BINGE EATING

With growth mindset as the independent variable (X), development approach as the first mediator (M1), EVB as the second mediator (M2), and Binge Eating as the dependent variable (Y), the overall model was non-significant [$R^2 = .0095$, $F(3,575) = 1.8467$, $p = .1376$]. The direct effects of growth mindset and EVB on Binge Eating were non-significant ($p = .2314$ and $p = .3187$, respectively). The direct effect development approach goal orientation on Binge Eating was positive and significant [$b = .1221$, $SE = .0576$, $p = .0345$ ¹⁸, $CI .0089$ to $.2353$]. All indirect effects for growth mindset on Binge Eating were non-significant.

A.3.1.4.2 DEVELOPMENT APPROACH AND RESTRICTING

With growth mindset as the independent variable (X), development approach as the first mediator (M1), EVB as the second mediator (M2), and Restricting as the dependent variable (Y),

¹⁸ This effect is not significant with the Bonferroni correction.

the overall model was non-significant [$R^2 = .0061$, $F(3,575) = 1.1773$, $p = .3177$]. The direct effects of growth mindset, development approach, and EVB on Restricting were non-significant ($p = .4665$, $p = .1552$, $p = .7391$, respectively). All indirect effects for growth mindset on Restricting were non-significant.

A.3.1.4.3 DEMONSTRATION AVOIDANCE AND BINGE EATING

With growth mindset as the independent variable (X), demonstration avoidance as the first mediator (M1), EVB as the second mediator (M2), and Binge Eating as the dependent variable (Y), the overall model was significant [$R^2 = .0180$, $F(3,575) = 3.5174$, $p = .0150$ ¹⁹]. The direct effects of growth mindset and EVB on Binge Eating were non-significant ($p = .4813$ and $p = .4771$, respectively). The direct effect demonstration avoidance goal orientation on Binge Eating was positive and significant [$b = .1246$, $SE = .0405$, $p = .0022$, $CI .0452$ to $.2041$]. All indirect effects for growth mindset on Binge Eating were non-significant, except for the growth mindset → demonstration avoidance → Binge Eating path [$CI -.0264$ to $-.0006$].

A.3.1.4.4 DEMONSTRATION AVOIDANCE AND RESTRICTING

With growth mindset as the independent variable (X), demonstration avoidance as the first mediator (M1), EVB as the second mediator (M2), and Restricting as the dependent variable (Y), the overall model was significant [$R^2 = .0160$, $F(3,575) = 3.1140$, $p = .0258$ ²⁰]. The direct effects of growth mindset and EVB on Restricting were non-significant ($p = .7470$ and $p = .6386$, respectively). The direct effect demonstration avoidance goal orientation on Restricting was positive and significant [$b = .0959$, $SE = .0343$, $p = .0053$, $CI .0286$ to $.1633$]. All indirect effects for growth mindset on Restricting were non-significant except for the growth mindset → demonstration avoidance → Restricting path [$CI -.0201$ to $-.0005$].

¹⁹ This effect is not significant with the Bonferroni correction.

²⁰ This effect is not significant with the Bonferroni correction.

A.3.2 DISCUSSION FOR NEW MODEL

The results of the new model with EVB added are similar to the single-mediator models. However, with this new model we may be able to better evaluate which methods of weight management involve more planning or cognitive work. As EVB was positively and significantly associated with the proactive, persistent, and effortful behaviours of Cognitive Restraint and Excessive Exercise, it appears that those who believe they can acquire the skills to manage their weight *and* value weight management and weight-management-related activities are more likely to engage in these types of behaviours.

APPENDIX B

B.1 STUDY 2 MODERATION TABLES

Overall, while the models for Cognitive Restraint, Excessive Exercise, and Restricting are significant at T2, and the models for Cognitive Restraint and Binge Eating were significant when considering differences between T1 and T2, the expected relationships between variables was not supported. These results are presented in full in tables B1 and B2 below.

Table B1

Moderation models for EPSI subscale scores at T2

Regression coefficients (standard errors) analyses ($N = 163$)						
	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = T2 Cognitive Restraint)						
Constant	.4850	.2910	1.6669	.0976	-.0898	1.0598
Growth Mindset	-.0729	.0402	-1.8131	.0718	-.1523	.0065
Goal Condition	.1737	.1016	1.7094	.0894	-.0270	.3743
Growth Mindset						
*Goal Condition	.1080	.0783	1.3786	.1700	-.0467	.2627
Age	.0016	.0087	.1841	.8542	-.0156	.0189
Gender	-.1235	.1175	-1.0513	.2948	-.3556	.1086
Body						
Dissatisfaction	.0381	.0555	.6874	.4929	-.0715	.1477
Negative						
Attitude Toward						
Obesity	-.0332	.0575	-.5774	.5645	-.1468	.0804
T1 Cognitive						
Restraint	.6918	.0568	12.1766	<.0001	.5796	.8040
<i>Model summary: $R^2=.5303$, $F(8,154)=21.7373$, $p < .0001$</i>						
<i>Test(s) of highest order unconditional interaction(s): $R^2_{\text{change}}=.0058$, $F(1,154)=1.9005$, $p=.6367$</i>						
Regression coefficients (standard errors) analyses ($N = 163$)						
	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = T2 Excessive Exercise)						
Constant	.6888	.3521	1.9564	.0522	-.0067	1.3844
Growth Mindset	.0465	.0446	1.0430	.2986	-.0416	.1345
Goal Condition	.1432	.1119	1.2789	.2029	-.0780	.3543
Growth Mindset						
*Goal Condition	-.0302	.0870	-.3475	.7287	-.2021	.1416
Age	-.0052	.0098	-.5356	.5930	-.0245	.0141

Gender	.0285	.1304	.2184	.8274	-.2290	.2860
Body						
Dissatisfaction	-.1005	.0610	-1.6481	.1014	-.2210	.0200
Negative						
Attitude Toward						
Obesity	-.0036	.0619	-.0573	.9544	-.1259	.1188
T1 Excessive						
Exercise	.7152	.0589	12.1403	<.0001	.5988	.8315

Model summary: $R^2=.5359$, $F(8,154)=22.2254$, $p < .0001$

Test(s) of highest order unconditional interaction(s): $R^2_{\text{change}}=.0004$, $F(1,154)=.1208$, $p=.7287$

Regression coefficients (standard errors) analyses ($N = 163$)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = T2 Binge Eating)						
Constant	.3653	.2541	1.4375	.1526	-.1367	.8673
Growth Mindset	-.0263	.0355	-.7399	.4605	-.0964	.0439
Goal Condition	.0858	.0892	.9624	.3373	-.0903	.2620
Growth Mindset						
*Goal Condition	.0842	.0687	1.2243	.2227	-.0516	.2200
Age	-.0121	.0077	-1.5772	.1168	-.0272	.0031
Gender	.1095	.1028	1.0644	.2888	-.0937	.3126
Body						
Dissatisfaction	-.0742	.0550	-1.3490	.1793	-.1828	.0345
Negative						
Attitude Toward						
Obesity	-.0524	.0501	-1.0453	.2975	-.1513	.0466
T1 Binge Eating	.8337	.0636	13.1128	<.0001	.7081	.9593

Model summary: $R^2=.6037$, $F(8,154)=29.3231$, $p < .0001$

Test(s) of highest order unconditional interaction(s): $R^2_{\text{change}}=.0039$, $F(1,154)=1.4990$, $p=.2227$

Regression coefficients (standard errors) analyses ($N = 163$)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = T2 Restricting)						
Constant	-.1363	.2552	-.5340	.5941	-.6403	.3678
Growth Mindset	-.0062	.0358	-.1743	.8619	-.0770	.0645
Goal Condition	-.1119	.0884	-1.2661	.2074	-.2865	.0627
Growth Mindset						
*Goal Condition	-.0033	.0686	-.0474	.9622	-.1387	.1322
Age	.0052	.0076	.6865	.4934	-.0098	.0202
Gender	.1348	.1039	1.2972	.1965	-.0705	.3401
Body						
Dissatisfaction	-.0058	.0480	-1.203	.9044	-.1006	.0891
Negative						
Attitude Toward						
Obesity	.0150	.0475	.3152	.7531	-.0789	.1089

T1 Restricting	.7801	.0528	14.7841	<.0001	.6758	.8843
<i>Model summary: R²=.6383, F(8,154)=33.9678, p < .0000</i>						
<i>Test(s) of highest order unconditional interaction(s): R²_{change}=.0000, F(1,154)=.0022, p=.9622</i>						

Table B2

Moderation models for EPSI subscale difference scores (T2-T1)

Regression coefficients (standard errors) analyses (N = 163)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = Cognitive Restraint Difference Score)						
Constant	.3381	.3152	1.0729	.2850	-.2844	.9607
Growth Mindset	-.0746	.0437	-1.7045	.0903	-.1610	.0119
Goal Condition	.2192	.1101	1.9903	.0483	.0016	.4368
Growth Mindset						
*Goal Condition	.1013	.0852	1.1892	.2362	-.0670	.2695
Age	-.0009	.0095	-.0972	.9227	-.0197	.0178
Gender	-.1877	.1272	-1.4760	.1420	-.4389	.0635
Body						
Dissatisfaction	.0088	.0601	.1469	.8834	-.1098	.1275
Negative						
Attitude Toward						
Obesity	-.1330	.0592	-2.2444	.0262	-.2500	-.0159

Model summary: R²=.0870, F(7,155)=2.1109, p=.0455

Test(s) of highest order unconditional interaction(s): R²_{change}=.0083, F(1,155)=1.4141, p=.2362

Regression coefficients (standard errors) analyses (N = 163)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = Excessive Exercise Difference Score)						
Constant	-.0244	.3422	-.656	.9478	-.6985	.6536
Growth Mindset	.0649	.0475	1.3665	.1738	-.0289	.1587
Goal Condition	.1706	.1196	1.4263	.1558	-.0657	.4068
Growth Mindset						
*Goal Condition	-.0772	.0925	-.8343	.4054	-.2599	.1055
Age	.0029	.0103	.2830	.7776	-.0174	.0233
Gender	.1162	.1381	.8412	.4015	-.1566	.3889
Body						
Dissatisfaction	-.0946	.0652	-1.4496	.1492	-.2234	.0343
Negative						
Attitude Toward						
Obesity	-.0751	.0643	-1.1674	.2449	-.2022	.0520

Model summary: R²=.0569, F(7,155)=1.3369, p=.2364

Test(s) of highest order unconditional interaction(s): R²_{change}=.0042, F(1,155)=.6961, p=.4054

Regression coefficients (standard errors) analyses ($N = 163$)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = Binge Eating Difference Score)						
Constant	.3505	.2588	1.3543	.1776	-.1607	.8617
Growth Mindset	-.0368	.0359	-1.0242	.3073	-.1078	.0342
Goal Condition	.1073	.0904	1.1867	.2372	-.0713	.2860
Growth Mindset						
*Goal Condition	.0758	.0699	1.0833	.2803	-.0624	.2140
Age	-.0135	.0078	-1.7386	.0841	-.0289	.0018
Gender	.0885	.1044	.8472	.3982	-.1178	.2948
Body						
Dissatisfaction	-.1423	.0493	-2.8855	.0045	-.2398	-.0449
Negative						
Attitude Toward						
Obesity	-.0919	.0487	-1.8891	.0607	-.1880	.0042
<i>Model summary: $R^2=.1172$, $F(7,155)=2.9406$, $p = .0064$</i>						
<i>Test(s) of highest order unconditional interaction(s): $R^2_{\text{change}}=.0067$, $F(1,155)=1.1736$, $p=.2803$</i>						

Regression coefficients (standard errors) analyses ($N = 163$)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = Restricting Difference Score)						
Constant	-.3080	.2648	-1.1634	.2464	-.8310	.2150
Growth Mindset	.0265	.0367	.7214	.4718	-.0461	.0991
Goal Condition	-.0771	.0925	-.8332	.4060	-.2599	.1057
Growth Mindset						
*Goal Condition	-.0387	.0716	-.5410	.5893	-.1801	.1026
Age	.0078	.0080	.9816	.3278	-.0079	.0236
Gender	.0439	.1068	.4105	.6820	-.1672	.2549
Body						
Dissatisfaction	-.0021	.0505	-.0420	.9665	.1018	.0976
Negative						
Attitude Toward						
Obesity	-.0024	.0498	-.0485	.9613	-.1007	.0959
<i>Model summary: $R^2=.0156$, $F(7,155)=.3508$, $p = .9289$</i>						
<i>Test(s) of highest order unconditional interaction(s): $R^2_{\text{change}}=.0019$, $F(1,154)=.2926$, $p=.5893$</i>						

B.2 EXPLORATORY ANALYSIS WITH MODEL 7

Exploratory analysis was run to assess expectancy-value beliefs role as a potential mediator between implicit mindset and maladaptive weight management behaviours, with goal

orientation assessed as a moderator between implicit mindset and expectancy-value beliefs (EVB). Results are presented in full below in tables B3 and B4.

Table B3

Moderated mediation models for EPSI subscale scores at T2

Regression coefficients (standard errors) analyses ($N = 163$)						
	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = T2 expectancy-value beliefs)						
Constant	4.8625	.4436	10.9623	<.0001	3.9862	5.7387
Growth Mindset	.0471	.0613	.7688	.4432	-.0740	.1682
Goal Condition	-.0312	.1549	-.2015	.8405	-.3372	.2747
Growth Mindset						
*Goal Condition	.1431	.1194	1.1985	.2326	-.0928	.3789
Age	.0063	.0133	.4767	.6342	-.0199	.0326
Gender	.110	.1791	.6141	.5400	-.2438	.4639
Body						
Dissatisfaction	-.0319	.0846	-.3774	.7064	-.1990	.1352
Negative						
Attitude Toward						
Obesity	.0892	.0876	1.0175	.3105	-.0840	.2623
T1 Cognitive						
Restraint	.2440	.0866	2.8168	.0055	.0729	.4151
<i>Model summary: $R^2 = .0860$, $F(8,154) = 1.8115$, $p = .0788$</i>						
<i>Test(s) of highest order unconditional interaction(s): $R^2_{\text{change}} = .0085$, $F(1,154) = 1.4363$, $p = .2326$</i>						
Regression coefficients (standard errors) analyses ($N = 163$)						
	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = T2 Cognitive Restraint)						
Constant	-.4389	.3754	-1.1692	.2441	-1.1804	.3026
Growth Mindset	-.0842	.0388	-2.1684	.0317	-.1609	-.0075
T2 Expectancy-						
value Beliefs	.1951	.0509	3.8341	.0002	.0946	.2957
Age	.0005	.0084	.0595	.9526	-.0162	.0172
Gender	-.1510	.1134	-1.3319	.1849	-.3750	.0730
Body						
Dissatisfaction	.0452	.0536	.8438	.4001	-.0606	.1511
Negative						
Attitude Toward						
Obesity	-.0569	.0557	-1.0222	.3083	-.1670	.0531
T1 Cognitive						
Restraint	.6368	.0562	11.3315	<.0001	.5258	.7478

Model summary: R²=.5575, F(7,155)=27.9023, p<.0001

Index of moderated mediation (difference between conditional indirect effects): index=.0279, CI -.0178 to .0828

Regression coefficients (standard errors) analyses (N = 163)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = T2 expectancy-value beliefs)						
Constant	4.1608	.4728	8.7998	<.0001	3.2268	5.0949
Growth Mindset	.0696	.0598	1.1633	.2465	-.0486	.1878
Goal Condition	-.0357	.1503	-.2377	.8124	-.3327	.2612
Growth Mindset						
*Goal Condition	.0944	.1168	.8078	.4205	-.1364	.3252
Age	.0177	.0131	1.3500	.1790	-.0082	.0436
Gender	.2616	.1751	1.4946	.1371	-.0842	.6074
Body						
Dissatisfaction	-.0019	.0819	-.0228	.9818	-.1637	.1599
Negative						
Attitude Toward						
Obesity	.0859	.0832	1.0325	.3035	-.0784	.2502
T1 Excessive						
Exercise	.3275	.0791	4.1404	.0001	.1713	.4838

Model summary: R²=.1352, F(8,154)=3.0093, p=.0036

Test(s) of highest order unconditional interaction(s): R²_{change}=.0037, F(1,154)=.6525, p=.4205

Regression coefficients (standard errors) analyses (N = 163)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = T2 Excessive Exercise)						
Constant	-.0733	.4185	-.1751	.8613	-.8999	.7534
Growth Mindset	.0359	.0433	.8292	.4083	-.0497	.1215
T2 Expectancy-						
value Beliefs	.1865	.0581	3.2090	.0016	.0717	.3013
Age	-.0091	.0095	-.9545	.3413	-.0279	.0097
Gender	-.0152	.1271	-.1207	.9041	-.2665	.2358
Body						
Dissatisfaction	-.0958	.0591	-1.6217	.1069	-.2126	.0209
Negative						
Attitude Toward						
Obesity	-.0230	.0601	-.3829	.7023	-.1418	.0957
T1 Excessive						
Exercise	.6466	.0600	10.7741	<.0001	.5280	.7651

Model summary: R²=.5598, F(7,155)=28.1635, p < .0001

Index of moderated mediation (difference between conditional indirect effects): index=.0176, CI -.0246 to .0603

Regression coefficients (standard errors) analyses (N = 163)

	Coefficient	SE	t	p	LLCI	ULCI
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Dependent variable model (DV = T2 expectancy-value beliefs)

Constant	4.9760	.4529	10.9876	<.0001	4.0813	5.8706
Growth Mindset	.0465	.0633	.7346	.4637	-.0785	.1714
Goal Condition	-.0632	.1589	-.3979	.6912	-.3771	.2507
Growth Mindset						
*Goal Condition	.1468	.1225	1.1981	.2327	-.0952	.3888
Age	.0081	.0137	.5911	.5553	-.0189	.0351
Gender	.1569	.1833	.8560	.3933	-.2051	.5189
Body						
Dissatisfaction	-.0215	.0980	-.2192	.8268	-.2151	.1721
Negative						
Attitude Toward						
Obesity	.1607	.0893	1.8004	.0737	-.0156	.3371
T1 Binge Eating	.0311	.1133	.2748	.7838	-.1927	.2550

Model summary: R²=.0394, F(8,154)=.7894, p=.6127

Test(s) of highest order unconditional interaction(s): R²_{change}=.0090, F(1,154)=1.4356, p=.2327

Regression coefficients (standard errors) analyses (N = 163)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = T2 Binge Eating)						
Constant	.8972	.3351	2.6778	.0082	.2354	1.5591
Growth Mindset	-.0250	.0350	-.7154	.4755	-.0941	.0441
T2 EVB	-.1024	.0444	-2.3041	.0225	-.1902	-.0146
Age	-.0110	.0076	-1.4509	.1488	-.0260	.0040
Gender	.1147	.1014	1.1308	.2599	-.0856	.3150
Body						
Dissatisfaction	-.0784	.0541	-1.4496	.1492	-.1852	.0284
Negative						
Attitude Toward						
Obesity	-.0407	.0499	-.8147	.4165	-.1392	.0579
T1 Binge Eating	.8359	.0625	13.3745	<.0001	.7124	.9594

Model summary: R²=.6107, F(7,155)=34.7415, p < .0001

Index of moderated mediation (difference between conditional indirect effects): index = -.0150, CI -.0564 to .0080

Regression coefficients (standard errors) analyses (N = 163)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = T2 expectancy-value beliefs)						
Constant	5.0894	.4556	11.1715	<.0001	4.1894	5.9893
Growth Mindset	.0273	.0640	.4275	.6696	-.0990	.1537
Goal Condition	-.0897	.1578	-.5683	.5707	-.4015	.2221
Growth Mindset						
*Goal Condition	.1712	.1225	1.3979	.1642	-.0707	.4131
Age	.0067	.0136	.4914	.6238	-.0201	.0335
Gender	.2194	.1856	1.1823	.2389	-.1472	.5859

Body						
Dissatisfaction	-.0111	.0857	-.1292	.8974	-.1804	.1583
Negative						
Attitude Toward						
Obesity	.1794	.0849	2.1138	.0361	.0117	.3470
T1 Restricting	-.1416	.0942	-1.5034	.1348	-.3277	.0445

Model summary: $R^2=.0528$, $F(8,154)=1.0736$, $p=.3845$

Test(s) of highest order unconditional interaction(s): $R^2_{\text{change}}=.0120$, $F(1,154)=1.9541$, $p=.1642$

Regression coefficients (standard errors) analyses ($N = 163$)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = Restricting)						
Constant	-.0591	.3430	-.1723	.8635	-.7366	.6184
Growth Mindset	-.0055	.0358	-.1545	.8774	-.0763	.0653
T2 EVB	-.0168	.0449	-.3751	.7081	-.1055	.0718
Age	.0055	.0076	.7269	.4684	-.0095	.0206
Gender	.1348	.1038	1.2983	.1961	-.0703	.3399
Body						
Dissatisfaction	-.0078	.0480	-.1633	.8705	-.1027	.0870
Negative						
Attitude Toward						
Obesity	.0222	.0481	.4606	.6458	-.0729	.1172
T1 Restricting	.7839	.0525	14.9363	<.0001	.6803	.8876

Model summary: $R^2=.6348$, $F(7,155)=38.4950$, $p < .0001$

Index of moderated mediation (difference between conditional indirect effects): index = $-.0029$, CI $-.0261$ to $.0149$

Table B4

Moderated mediation models for EPSI subscale difference scores (T2-T1)

Regression coefficients (standard errors) analyses ($N = 163$)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = T2 expectancy-value beliefs)						
Constant	4.9787	.4514	11.0293	<.0001	4.0870	5.8705
Growth Mindset	.0484	.0627	.7730	.4407	-.0753	.1722
Goal Condition	-.0673	.1578	-.4264	.6704	-.3789	.2444
Growth Mindset						
*Goal Condition	.1483	.1220	1.2159	.2259	-.0927	.3894
Age	.0083	.0136	.6144	.5398	-.0185	.0352
Gender	.1608	.1822	.8828	.3787	-.1990	.5206
Body						
Dissatisfaction	-.0087	.0860	-.1013	.9194	-.1787	.1613

Negative
Attitude Toward

Obesity .1682 .0849 1.9814 .0493 .0005 .3358

Model summary: R²=.0389, F(7,155)=.8968, p=.5107

Test(s) of highest order unconditional interaction(s): R²_{change}=.0092, F(1,155)=1.4784, p=.2259

Regression coefficients (standard errors) analyses (N = 163)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = Cognitive Restraint Difference Score)						
Constant	-.2436	.4202	-.5796	.5630	-1.0736	.5865
Growth Mindset	-.0824	.0436	-1.8891	.0607	-.1685	.0038
T2 Expectancy- value Beliefs	.1216	.0557	2.1817	.0306	.0115	.2316
Age	-.0019	.0095	-.2016	.8405	-.0206	.0168
Gender	-.2146	.1269	-1.6918	.0927	-.4652	.0360
Body Dissatisfaction	.0108	.0599	.1802	.8572	-.1075	.1291
Negative Attitude Toward Obesity	-.1642	.0597	-2.7496	.0067	-.2822	-.0463

Model summary: R²=.0833, F(6,156)=2.3617, p=.0327

Index of moderated mediation (difference between conditional indirect effects): index=.0180, CI -0.0118 to .0552

Regression coefficients (standard errors) analyses (N = 166)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = Excessive Exercise Difference Score)						
Constant	-.4097	.4571	-.8962	.3715	-1.3126	.4933
Growth Mindset	.0661	.0474	1.3929	.1656	-.0276	.1598
T2 Expectancy- value Beliefs	.0753	.0606	1.2417	.2162	-.0445	.1950
Age	.0018	.0103	.1709	.8645	-.0186	.0221
Gender	.1167	.1380	.8455	.3992	-.1559	.3892
Body Dissatisfaction	-.0873	.0651	-1.3405	.1820	-.2160	.0414
Negative Attitude Toward Obesity	-.0935	.0650	-1.4387	.1522	-.2218	.0349

Model summary: R²=.0498, F(6,156)=1.3614, p = .2335

Index of moderated mediation (difference between conditional indirect effects): index=.0112, CI -0.0096 to .0387

Regression coefficients (standard errors) analyses (N = 163)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = Binge Eating Difference Score)						

Constant	.8988	.3413	2.6334	.0093	.2246	1.5730
Growth Mindset	-.0348	.0354	-.9820	.3276	-.1047	.0352
T2 EVB	-.1058	.0453	-2.3389	.0206	-.1952	-.1065
Age	-.0125	.0077	-1.6171	.1079	-.0277	.0028
Gender	.0957	.1030	.9287	.3545	-.1078	.2992
Body						
Dissatisfaction	-.1450	.0486	-2.9807	.0033	-.2411	-.0489
Negative						
Attitude Toward						
Obesity	-.0798	.0485	-1.6456	.1019	-.1757	.0160

Model summary: $R^2=.1329$, $F(6,156)=3.9849$, $p = .0010$

Index of moderated mediation (difference between conditional indirect effects): index = $-.0157$, CI $-.0596$ to $.0082$

Regression coefficients (standard errors) analyses ($N = 163$)

	Coefficient	SE	t	p	LLCI	ULCI
Dependent variable model (DV = Restricting Difference Score)						
Constant	-.3291	.3534	-.9312	.3532	-1.0273	.3690
Growth Mindset	.0275	.0367	.7500	.4544	-.0449	.1000
T2 EVB	.0022	.0469	.0469	.9626	-.0904	.0948
Age	.0078	.0080	.9727	.3322	-.0080	.0235
Gender	.0473	.1067	.4433	.6582	-.1635	.2580
Body						
Dissatisfaction	-.0020	.0504	-.0395	.9685	-.1015	.0975
Negative						
Attitude Toward						
Obesity	.0011	.0502	.0211	.9832	-.0982	.1003

Model summary: $R^2=.0093$, $F(6,156)=.2448$, $p = .9608$

Index of moderated mediation (difference between conditional indirect effects): index = $.0003$, CI $-.0198$ to $.0194$