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Obesity and Eating Disorders: Perceptions of Dieting Behaviours

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OBESITY AND EATING DISORDERS: PERCEPTIONS OF DIETING BEHAVIOUR

by

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ABSTRACT

Current public health discourse conceptualizes obesity as an illness, and weight loss and/or weight control are then by definition the treatment. Socio-economic status, experiences of social stigma and prejudicial medical care, a history of dieting attempts, and stress have been shown to moderate the relationship between higher weights and poor health. Additionally, weight loss practices in and of themselves are harmful to physical and psychological health. The risks of body dissatisfaction and the pursuit of weight loss are well demonstrated in developing eating pathology. This study investigated if perceptions of dieting behaviour of a hypothetical target are influenced by the target's body weight, participant belief in weight controllability, and being presented with different health messages regarding body weight. 402 female university students completed this (2 x 2 x 2) experimental study in which they were randomly assigned to receive one of two weight and health messages (weight based model of health vs. Health at Every Size), and randomly assigned to receive one of four scenarios depicting a hypothetical person 'Jody.' Jody was depicted as either normal weight or obese, and as either dieting or not dieting and participants completed a questionnaire about their perceptions of Jody and her attitudes and behaviours. Participants also completed a demographic questionnaire, the Antifat Attitudes Test, the Social Attitudes Towards Appearance Questionnaire, and the Restraint Scale. Results demonstrated that the lack of dieting behaviour in thinner Jody was almost universally seen as unhealthy, but if she was heavier there was much more variance in the perceptions of her health and her lack of weight control behaviours. Qualitative responses demonstrated that obese Jody's dieting behaviour would be seen by participants as an eating disorder if she was thinner, and that

her weight concern and pursuit of weight loss was positive, but her methods were too extreme. Participants would view her dieting behaviour differently based on her body size, with dieting being seen as negative or unhealthy if she were normal weight or thin, but if she were overweight or obese a lack of restrictive dieting is negative and unhealthy. Belief in weight controllability and prejudicial attitudes about body weight were related to perceiving the lack of dieting behaviours as risky regardless of Jody's body size, and antifat attitudes were related to perceiving Jody as a person more negatively (unattractive, lazy, stupid) when she was obese. Those who were presented with the weight based model of health message were more likely to perceive non-restrictive behaviours as negative (regardless of Jody's body weight). Results also suggest that participants were more likely to perceive obese Jody as Black, and as living in poverty, with participants more likely to perceive normal weight Jody as having a higher socioeconomic status. Although it was hypothesized that the dieting behaviours of obese Jody would be perceived as healthy, the key finding was actually in regard to perceptions of her *lack* of dieting. When Jody was not dieting and normal weight she was seen as healthy and praised for her positive behaviours, but when her BMI was obese and she was not dieting, there was considerable uncertainty as to her health, solely based on her body weight. This study also demonstrates the enigmatic notion of an 'ideal' or 'in between' in terms of body image and pursuit of weight loss. Too much body hatred was seen as negative, but too much body love was also regarded as negative. There is a paradoxical belief that somehow a person can love their body, but at the same time should still try to change it.

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The Weight-Based Model of Health

Fatness as illness. Current public health discourse conceptualizes obesity as an illness of 'epidemic proportions', and weight loss and/or weight control is now touted as a public health concern. Medical science now operates under a weight-based model of health in which people are classified into various categories of (un)healthy body weights using Body Mass Index (BMI), which is a simple weight/height formula: mass[kg]/height[m]^2. BMI is used as the main measure of fatness, and much research using this formula claims the reliability/validity of BMI as a measure of adiposity (see Cattarin & Thompson, 2007; Schwartz & Brownell, 2004; Stice, Cameron, Killen, Hayward, & Taylor, 1999). This weight-based model purports that physical health is only possible within a small range of medically defined acceptable body weights. Currently, the universal cut-offs as determined by the World Health Organization (WHO) for what is deemed healthy (or normal weight) is a BMI between 18.5 to 24.9, with the remaining categories identifying unhealthy body weights: underweight is a BMI of 18.4 or under; overweight is a BMI of 25 to 29.9; obese class I is a BMI of 30 to 34.9; obese class II is a BMI of 35 to 39.9; and obese class III is a BMI of 40 and above. Obesity science is the emerging discipline of research and practice founded on the assumption that higher body weights are a diseased state, and works to understand this disease and its comorbidities, and to develop, test, and refine obesity treatments (e.g., weight loss treatments). Obesity science posits that the overweight cut-off indicates the weight at which people face

increased risk of disease, and the obese cut-off indicates the weight at which people face increased risk of death (World Health Organization, 2000).

Quetelet's Index of Fatness (now commonly known as BMI) was developed in the mid-1800s by Belgian statistician Adolphe Quetelet (Oliver, 2006). BMI was then popularized in the 1940s in the United States by the Metropolitan Life Insurance Company as a tool to assess general risk (and resulting premiums) across large populations based on weight for life insurance policy holders (Oliver, 2006). The BMI tables that we adhere to today were normed on a population of life insurance policy holders who were predominantly young adults, affluent, White, and residing on the American East Coast (Rothblum, 1994). BMI was not developed to be able to make assessments about health for specific individuals, and has not been found to be a valid measure of individual body fat or health status (Evans, Rich, Davies, & Allwood, 2008; Harrison, 2012; Nevill, Stewart, Olds, & Holder, 2006; Oliver, 2006). However, medicine consistently uses BMI as a measure of adiposity, despite this measure being unable to distinguish between body fat, muscle mass, and skeletal mass (Nevill, Stewart, Olds, & Holder, 2006; Prentice & Jebb, 2001). At the individual level, in particular, there is a lack of consistent evidence for the validity of BMI as a direct measure of adiposity among children and among adults (Chiumello, & Heymsfield, 1997; Deurenberg et al., 2001; Pietrobello, Faith, Allison, Gallagher, Freedman & Sherry, 2009).

Although the medical model of body weight and health seems to be simple and self-evident, a more critical analysis of the components of this model indicates that its constructs and relationships are not well articulated, nor do they meet the standard for being evidence based. Although it is well established in the literature that there is an

association between obesity and increased risk for many diseases and mortality, inferring causation is very problematic. Obesity science purports that obesity on its own leads to illness and premature death (hence its designation as a disease); however, the biological/physiological mechanism by which adipose tissue actually causes disease and death is not known, and this causal relationship is mostly speculative and hypothetical given the lack of evidence demonstrating how exactly adiposity causes disease. There are the exceptions of joint stress (due to excess weight wearing on joints), and certain breast cancers that are linked to estrogen excess (as fat cells store estrogen) (Campos, Saguy, Ernsberger, Oliver, & Gaesser, 2006). Conversely, adipose tissue could be understood as a resource, as it is needed for body temperature regulation, and healthy pregnancy. Epidemiological studies over the years have shown that obesity is actually associated with better outcomes for several diseases (Bacon, 2010; Bacon & Aphramor, 2011). In a population of 1727 men aged 50 to 79 years who were followed for nine years, it was found that systolic blood pressure was only predictive of ischemic heart disease in non-obese men and those with hypertension, and those with a BMI greater or equal to 27 had lower all-cause and heart disease mortality rates than those with hypertension and a BMI less than 27 (Barrett-Connor & Khaw, 1985). Another study that followed 373 participants with Type II diabetes over 14 years found that those with a BMI under 21.2 (for women) and under 22.7 (for men) had the highest rates of being prescribed antidiabetic medication and the highest all-causes mortality rates (Ross, Langer, & Barrett-Connor, 1997). Those with an obese BMI (greater than 32.2 for women, and greater than 31 for men) actually had a lower all-cause mortality rate after 14 years compared to those who were overweight (BMI between 27.3 and 32.3 for women,

between 22.7 and 27.8 for men) (Ross, Langer, & Barrett-Connor, 1997). Literature reviews have also demonstrated that higher BMI is actually associated with better survival (lower all-cause mortality) among those with chronic kidney disease (Beddhu, 2004) and those undergoing hemodialysis (Schmidt & Salahudeen, 2007). Obesity is also purported to be linked to (and perhaps even cause) cardiovascular disease; however, several studies and meta-analyses have demonstrated what is termed an obesity paradox in regard to prognosis, in which overweight and obese patients with cardiovascular disease have better prognoses than thinner patients (decreased cardiovascular disease events and lower mortality, better survival rates and faster recovery time after heart surgery) (Barry, Baruth, Beets, Durstine, Liu, & Blair, 2014; Gruberg et al., 2005; Lavie, Milani, & Ventura, 2007; Lavie, Osman, Milani, & Mehra, 2003; Lavie et al., 2015).

Some types of body fat have even been found to potentially provide some health benefits. Subcutaneous thigh and hip fat have been found to be negatively correlated with risk of cardiovascular disease among adult men and women (Seidell, Perusse, Despres, & Bouchard, 2001; Terry, Stefanick, Haskell, & Wood, 1991). Being overweight or obese may be especially protective for older adults; an analysis of a population-based longitudinal health study of 5888 adults 65 and older (from the Cardiovascular Health Study) found that those who were overweight or obese (compared to normal or underweight) at baseline (65 years of age) had longer life expectancy, more years of healthy life (number of years in which a person was in good health), and more years of active life expectancy (expected number of years with no difficulties with activities of daily living) (Diehr, O'Meara, Fitzpatrick, Newman, Kuller, & Burke, 2007). Another study examined 32,154 male veterans over 75 years of age from the Ambulatory Care

Quality Improvement Project to assess the relationship between body weight and health-related quality of life (as measured by: the SF-36, a 36-item questionnaire in eight domains: physical functioning, role-physical, bodily pain, general health perception, vitality, social functioning, role-emotional, and mental health; three of the five scales of the Seattle Angina Questionnaire: physical limitation, angina frequency, and disease perception; The Seattle Obstructive Lung Disease Questionnaire; and the Hopkins Symptom Depression Checklist-20) (Arterburn, McDonnell, Hedrick, Diehr, & Fihn, 2004). They found that overweight and obese patients had better health-related quality of life compared to those who were normal weight, with underweight patients having the poorest outcomes (Arterburn et al., 2004). Research has also found that the relative risk of mortality associated with greater body-mass index declines with age, with even obesity researchers suggesting that the BMI cut-offs for overweight and obesity may not be appropriate for older adults (Arterburn et al., 2004; Flegal, Williamson, Pamuk, & Rosenberg, 2004; Heiat, Vaccarino, & Krumholz, 2001).

Claims are also made that it is the individual behaviours of poor diet and lack of exercise that (are assumed to) cause obesity that have an adverse effect on people's health, so obesity itself is not the direct cause of illness and death, but a by-product of overeating and inactivity which are the real culprits for ill health. This causal explanation is plausible, given that it is well established that exercise and nutrition can have significant impacts on individual health. The inherent problem with this assumed relationship, however, is that it ignores the possibility that poor diet and lack of exercise occur among non-obese people, and that these behaviours can have adverse effects on people's health even if they are not obese. Further, the variables of body weight and

diet/exercise are often confounded in the literature because of the assumed self-evident relationship, in that obesity research often measures BMI of participants but then conclusions are drawn about the effects of diet and exercise even though these variables are not measured (see Adams et al., 2006; Despres, Golay, & Sjostrom, 2005; McElroy, Kotwal, Malhotra, Nelson, Keck, & Nemeroff, 2004).

Major health authorities such as the Centers for Disease Control (CDC), the National Institute of Health (NIH), the World Health Organization (WHO), and the American Medical Association (AMA) now classify obesity (defined by a BMI of 30 or more) as a chronic disease. The label of disease is thought to externalize the condition from the individual, which then removes the shame and blame associated with it, but this does not bear out in the case of obesity because it is still framed as resulting from particular unhealthy behaviours. The disease label does not remove the attribution that obesity is something that is chosen by the individual, and therefore the individual could 'chose' to not be obese through the appropriate behaviours. The etiology of this disease is explained within a behaviourist paradigm that sees the body like a machine, and the science of weight loss is based on the 'energy imbalance' model (calories in minus calories out). In this model, excess body fat is said to be caused by excessive energy intake (individual eating habits) and inadequate energy expenditure (individual exercise habits) (see Prentice & Jebb, 1995; World Health Organization, 2000). A review of the literature that examined the relationship between caloric intake and BMI concluded that a positive relationship between energy intake and body weight or weight gain exists, yet this relationship is not consistent, and among non-clinical samples this relationship is even more inconsistent and relatively weak, with no longitudinal studies linking calories

consumed to body weight or BMI (Drewnowski, Almoiron-Roig, Marmonier, & Lluch, 2008). One large-scale study of female nurses did find a negative correlation between BMI and hours per week spent exercising (Hu, Willett, Li, Stampfer, Colditz, & Manson, 2004), which does suggest that exercise can have some influence on body weight, but this relationship is not consistent enough across the literature to lend itself to broad causal conclusions. A majority of the research that does demonstrate a positive relationship between caloric intake and BMI is among clinical treatment-seeking samples of binge eaters (Dingemans, Bruna, & van Furth, 2002; Gladis, Wadden, Vogt, Foster, Kuehnel, & Bartlett, 1998). The inconsistency of this relationship between energy intake and BMI does suggest that there is some relationship between energy intake and body weight, but making generalized claims that all human body weight is a function of calories in and calories out is not supported by the data.

There is an abundance of studies demonstrating that reducing caloric intake and increasing caloric expenditure can lead to short-term weight loss, and these results are generalized to then make claims that increased caloric intake and reduced caloric expenditure then must cause an increase in body weight (see Brehm, Seeley, Daniels, & D'Alessio, 2003; Dunn, Hannan, Sherwood, Pronk, & Boyle, 2006; Ello-Martin, Roe, Ledikwe, Beach, & Rolls, 2007; Jeffery et al., 2000; Nemet, Barkan, Epstein, Friedland, Kowen, & Eliakim, 2005 for examples). Other reviews of this literature have not found that the evidence from randomized experiments or epidemiological studies supports the assertion that individual caloric intake is reliably related to obesity, and there is a marked lack of research examining the correlations or associations between individual caloric intake/expenditure and their body weight or BMI without the presence of a dieting or

weight loss intervention (Keith et al., 2006). One study examining 9 to 14 year old girls and boys did find an association between calories consumed and activity levels with weight gain over a one year period; however, these associations were quite small (Berkey et al., 2000), and the interpretation of these results is confounded by puberty; it is natural for boys and girls to increase caloric intake and weight during this period of growth. Studies with children have not been able to demonstrate that caloric intake or exercise was related to their weight (see Gard & Wright, 2005 for review). Children 9 to 14 years old who skipped breakfast had lower daily calorie intakes compared to children who ate breakfast every day; however, they were actually found to have higher BMIs compared to children who ate breakfast despite their reduced calorie intake (Berkey, Rockett, Gillman, Field, & Colditz, 2003). A large scale study of 137,593 youth aged 10 to 16 across 34 countries found no relationship between fruit, vegetable, or soft-drink consumption and weight status, and actually found that an increased consumption of sweets was negatively related to BMI (Janssen et al., 2005). Other older large scale studies of adults have not found that heavier people ate more calories than thinner people (Braitman, Adlin, & Stanton, 1985; Wooley & Wooley, 1984). Even more recent reviews of the literature are consistent with these older findings. One review that examined 30 observational studies investigating the relationship between food intake and BMI among adolescents and adults found a weak or inconsistent relationship: ten of the studies found that increased food intake was moderately related to increased BMI, four studies found the opposite effect where increased food intake was related to lower BMI, 11 studies found no relationship between food intake and BMI, and five studies found inconsistent relationships between food intake and BMI (Togo, Osler, Sorensen, & Heitmann, 2001). Another review of the

literature that examined 17 epidemiological studies investigating the relationship between BMI and fruit/vegetable intake among children and adults found an no relationship among BMI and fruit/vegetable intake in children, and a very weak relationship (if present) or an inconsistent relationship between fruit/vegetable consumption and BMI in adults (Tohill, Seymour, Serdula, Kettel-Khan, & Rolls, 2004). In an older study comparing male and female drinkers to non-drinkers, it was found that on average the drinkers consumed more daily calories, but there was no significant difference in weight between the two groups (Gruchow, Sobocinski, Barboriak, & Scheller, 1985).

Errors in self-report of caloric intake are often espoused as a reason for finding inconsistent or seemingly contradictory relationships between food intake and body weight, but a study investigating the accuracy of food intake recall among women actually found that in general women overestimate (not underestimate) energy intake, and obese women were actually the most accurate in recalling energy intake (Conway, Ingwersen, Vinyard, & Moshfegh, 2003). This same study also found that overall the obese women were also consuming fewer calories overall comparted to overweight and normal weight women (Conway et al., 2003). Other research examining dieting practices has further suggested that overweight people actually consume fewer calories and engage in more restrictive eating than normal weight individuals (Gaesser, 2009).

Given the poorly supported relationship between individual energy intake/expenditure and body weight, the ‘energy imbalance model’ said to explain weight gain or weight loss should be questioned. If food intake and exercise habits are not reliably and consistently related to body weight, the core tenets of the calories-in minus calories-out model are unsubstantiated. If this is the case, this ‘body as a machine’

thinking is more theoretical than practical in nature, and it should not be possible to predict individual weight loss or gain by monitoring calories. However, despite the uncertainty of evidence, obesity science speaks with great certainty and precision when making generalizations about the impact of food intake and exercise on an individual's body weight (Gard & Wright, 2005). Research makes specific claims about the effects of exercise, despite only a very small amount of research investigating the effectiveness of exercise treatments independent of caloric restriction, for example: "if an individual engages in moderately brisk walking (4 mph pace) for 45 minutes 4 times a week for a year, and does not increase caloric consumption, an energy deficit resulting in weight loss (depending on the person's body weight) of approximately 18lb will result." (Rippe & Hess, 1998, p. 16).

The literature does not suggest that a relationship between body weight and health is non-existent, but the causal conclusions that medical science makes in terms of obesity *causing* ill health are questionable. There is no medical or psychological problem that *only* overweight or obese people develop. Data and statistics about the number of fat people in our society and the occurrence of diseases or ill health states come from epidemiological research. Epidemiology is the study of the patterns of disease occurrence and the factors that seem to be related to the transmission, development, and severity of these diseases within populations. By and large, epidemiology relies on correlational data to understand the origin and spread of diseases. The correlational data between obesity prevalence in a population and disease incidence suggests a possible link between body size and health in a given population; however, this population data does not provide

sufficient information about the impact of adiposity and changes in adiposity on the health status of *individuals*.

The WHO classifies obesity as a disease because it is associated with an increased incidence of certain diseases compared to populations that are not obese, but there is a tendency for epidemiological data to be reported as conferring risks to individuals instead of population risks (Gard & Wright, 2005). Although the relative risk of death for a population of those with a BMI above 30 is about two to three times greater than for a comparable population of those with a BMI of less than 30, this does not mean that an *individual* with a BMI of 30 or above is two to three times more likely to die than an individual with a BMI of less than 30 (Gard & Wright, 2005). Further examination of the relative risk of death shows that the relationship with BMI is actually curvilinear, in that the relative risk of dying is greatest for those who are very thin (with a BMI of less than 20) or very heavy (BMI in the high 30s or greater), with the 'overweight' BMI category (BMI between 25 and 30) actually having the lowest risk or mortality (Barry, Baruth, Beets, Durstine, Liu, & Blair, 2014; Campos, Saguy, Ernsberger, Oliver, & Gaesser, 2006; Gard & Wright, 2005; Seidell, Hautvast, & Deurenberg, 1989).

According to the epidemiological data, the highest mortality risk is actually associated with being underweight (BMI < 18.5), more than even for those with high BMIs (above 35) (Campos et al., 2006; Flegal, Graubard, Williamson, & Gail, 2005). A systematic review and meta-analysis of 141 studies examining the association between BMI and all-cause mortality found that the pattern of epidemiological data shows that the lowest mortality risk was the overweight BMI category (BMI of 25-29.9), and that even obese grade 1 (BMI of 30-34.9) had a lower mortality risk than the normal weight BMI

category (Flegal, Kit, Orpana, & Graubard, 2013). When collapsing all obesity categories together (BMI of ±30), the mortality risk is slightly higher than the normal weight and overweight BMI categories, but this is due to the higher mortality risks for those on the extremely high end of the BMI scale (BMI of 40 or higher) (Flegal et al., 2013). In North America, more than half of those who are classified as obese fall within the obese class 1 (BMI of 30-34.9) category, and actually experience a lower mortality risk than those of 'normal weight' (Flegal et al., 2013). These findings call into question the claims of obesity being such an 'epidemic,' and the suggestion that it confers such a high risk of death that then necessitates weight loss.

The correlation between obesity prevalence and the incidence of certain 'associated' diseases suggests that there is a possible link between body size and health in a given population, but the claim that obesity is *causing* these diseases is not empirically supported by the research. For causality to be inferred, the following criteria need to be met: the association between the risk factor (in this case fatness) and the outcome (in this case 'obesity-related diseases' such as heart disease, hypertension, and diabetes or death) must not be due to confounding influences; the results must be replicable; and there must be a plausible explanation for the process mediating the relationship between the risk factor and the outcome (Kazdin, Kraemer, Kessler, Kupfer, & Offord, 1997).

Obesity research fails to meet all three of these criteria. Confounding influences of socio-economic status, experiences of social stigma and prejudicial medical care, a history of dieting attempts, and stress (which is in itself related to low socio-economic status and social stigma) have been shown to moderate the relationship between higher weights and poor health (Campos et al., 2006; Ernsberger, 2009; Rail, 2012). Although

the research seems to show a consistent pattern of the association between higher weights and poor health, this association is often weak, and statistics on obesity prevalence (existing cases among a population) are compared to disease incidence (new cases among a population) which makes the link difficult to interpret because we do not know the effect of changing weights on the development and spread of diseases (Gard & Wright, 2005). Longitudinal studies also yield conflicting data, where the relationship between poor health and higher weights is not consistent across the sexes, different ethnic groups, and occupations (Campos et al., 2006; Ernsberger, 2009; Rail, 2012). Finally, obesity science is unable to provide a plausible explanation for the biological process through which fatness or adipose tissue *causes* ill health. Medical science is currently not able to explain what exactly it is about adiposity that leads to these 'obesity-related diseases,' and often causal explanations are rooted in the overeating/sedentary argument of the causes of obesity (Ernsberger, 2009).

Dieting as treatment. As a result of obesity (or being too fat or heavy) being defined as illness, treatment is therefore weight loss, and prevention is weight control. Current public health policy in North America recommends weight loss through energy-restriction diets for all individuals with a BMI above 30 (American College of Obstetricians and Gynecologists, 2005; Institute of Medicine, 2009; Lau, Douketis, Morrison, Hramiak, Sharma, & Ur, 2007; National Institutes of Health, 1998). Obesity treatments are based on the energy imbalance model, in which it is assumed that by being in a state of energy deficit (consuming less calories than you are expending) weight loss will occur. There are three general types of medical weight loss treatments: behavioural treatments (i.e., dieting), medication, and bariatric surgery. The focus of this review and

subsequent study will centre around dieting. By far the most prescribed, and the most researched, obesity treatments are the individualized behavioural treatments (reducing calories in, sometimes in addition to increasing calories expended). These treatments espouse that weight loss is achievable, sustainable, and will improve individual health. These beliefs persist in medicine, and in the general public, despite a lack of evidence demonstrating that significant weight loss is possible for more than a very small proportion of people and that it is possible to maintain for a significant amount of time (Ernsberger & Koletsky, 1999; Mann, Tomiyama, Westling, Lew, Samuels, & Chatman, 2007). There are also no data to demonstrate that formerly obese persons experience reduced risk of mortality even if they have lost weight (Bacon & Aphramor, 2011; Campos et al., 2006; Tomiyama, Ahlstrom, & Mann, 2013), and individuals who achieve weight loss through methods such as liposuction do not experience improved health as a result of the weight loss (Klein et al., 2004). A review of the National Health and Nutrition Examination Survey data actually found that mortality increased among obese persons who lost weight, which further demonstrates that weight loss (whether sustained or as part of weight cycling) can contribute significantly to mortality (Ingram & Mussolino, 2010).

Research evidence over the last 50 years suggests that only about five to ten percent of those who engage in weight loss treatments will be successful in significant (more than 10 percent of their body weight) and long term (more than 1 year) weight loss (Anderson, Konz, Frederich, & Wood, 2001; Garner & Wooley, 1991; Mann, Tomiyama, Westling, Lew, Samuels, & Chatman, 2007; Stunkard & McLauren-Hume, 1959; Tomiyama et al., 2013). This 90-95 percent ‘failure rate’ is often attributed to

participants' inability to exert willpower and maintain their diets for an extended period of time, again, despite the evidence that shows that weight regain occurred in well controlled studies despite participants maintaining their calorie reduced diet (Bacon, 2010; Howard et al., 2006).

Not only is the evidence lacking to support the effectiveness of weight loss treatments, weight loss practices in and of themselves can be harmful to physical and psychological health (Lowe & Timko, 2004; McFarlane, Polivy, & McCabe, 1999). Dieting and weight cycling have been shown to increase the risk for disease and early mortality (Ernsberger & Koletsky, 1999; Lyons, 2009), and dieting/food restriction is a well-known risk factor for the development of eating pathology (Harrison, 2012; Mann et al., 2007; Striegel-Moore & Bulik, 2007). The ineffectiveness of weight loss treatments for obesity is further exemplified by research showing that dieting attempts are prospectively linked to an *increase* in weight (Bacon, 2010; Garner & Wooley, 1991; Howard et al., 2006; Pietilainen, Saarni, Kaprio, & Rissanen, 2012; Stice, et al., 1999). The empirical evidence surrounding the (in)effectiveness and consequences of dieting suggests that the main treatment for obesity is not only not 'curing' this disease, it may be further contributing to the condition it is attempting to 'treat.' This is in line with other research that shows that dieting/weight loss attempts are actually more common among those of higher body weights compared to their thinner counterparts (Mann et al., 2007; Morgan et al., 2002; Presnell, Bearman, & Stice, 2004).

Although the discourse of the 'obesity epidemic' is framed as a problem that can affect 'everyone, everywhere,' treatments targeting this epidemic are gendered (Rail, 2012). The samples in obesity treatment studies are almost entirely comprised of white

women, even when attempts are made to recruit diversity in sex and ethnicity (see Bish, Blanck, Seruda, Marcus, Kohl III, & Khan, 2005; Foster, Wadden, & Vogt, 1997; Friedman, Reichmann, Costanzo, Zelli, Ashmore, & Musante, 2005; Gadde, Fanciscy, Wagner II, & Krishnan, 2003), and research has found that health care professionals are more likely to recommend weight loss treatments to their obese female as compared to their obese male patients (Galuska, Will, Serdula, & Ford, 1999). Not only are women targeted by weight-loss and obesity research more than men, women are also more likely to self-select themselves into these treatments or research studies. This is not surprising given that research has found that most of the people (but women in particular) who engage in weight loss practices are not motivated by improving health, but want to improve physical appearance and social acceptance (Berman, 1975; Brink & Ferguson, 1998; Donaghue & Allen, 2016; Georgiadis, Biddle, & Stavrou, 2006; Grave et al., 2004; LaRose, Leahey, Hill, & Wing, 2013; Tinker & Tucker, 1997; Vartanian, Wharton, & Green, 2012).

Women have always been the central targets of the beauty, weight loss, and cosmetic surgery industries given the (ever increasing) rigidness of the beauty standards applied to women, and the centrality of appearance in the evaluation (and self-evaluation) of women (Boero, 2007). It has been long argued that the maintenance of these feminine norms of appearance serves to oppress women, because focusing on achieving (near impossible) standards of external beauty to satisfy the male gaze subdues women as a whole, keeping them focused on being ‘beautiful’ instead of characteristics like being intelligent, strong, or fighting gender inequality (e.g., Bordo, 1993; Murray, 2007). This trend can be seen exemplified in the historical record, as the cultural beauty and thinness

ideal placed on women gets thinner and more impossible during periods where women are making social gains (e.g., during suffrage and in the 1960-70s) (Wolf, 1997).

In particular, the moral imperative of thinness subdues women by keeping them hungry, yet they submit to this hunger 'voluntarily' so they can achieve an ever elusive ideal of beauty and desirability (Wolf, 1997). However, the oppressive appearance norms placed on women are now justified using the rhetoric of the obesity epidemic and concerns for individual and public health (Rail, 2012). One study examining the relationship between internalized body norms and health actually found that among obese white women, stronger internalization of body norms and weight stigma was strongly related to 'obesity-associated' diseases and mortality (Muennig, 2008).

Social Determinants of Health and Weight Discrimination

The epidemiological data does indicate that there is a positive correlation between higher weights and disease and mortality in Western populations. However, the simple causal model posited by medicine that obesity (either on its own or through the assumed behaviours of overeating and inactivity) causes disease and early death is not supported by the research. There is a substantial amount of research to support the assertion that socioeconomic status (SES) (and associated discrimination) is the mediator for the relationship between weight and health.

SES/poverty and weight discrimination. In modern Western societies, socioeconomic status has a substantial link with body weight. Trends in recent research have shown that low socioeconomic status is strongly correlated with higher body weights (An, 2015; Bammann et al., 2013; Sobal, 1991; Sobal & Stunkard, 1989; Wardle, Waller, & Jarvis, 2002). A systematic review of this literature found that this relationship

between higher body weights and lower SES is common in studies with populations from higher-income countries (i.e., Canada, Australia, the U.S., the U.K., Switzerland), but actually found that the opposite association (higher body weight is correlated with higher SES) is more common in lower-income countries (i.e., India, Mexico, Bahrain) (Cohen, Rai, Rehkopf, & Abrams, 2013). This relationship also seems to be gendered in that the relationship between low SES and higher body weight is consistent for adult women, but for men, some studies found low SES and higher body weight were related, others found no relationship between SES and body weight, with other studies finding that higher SES and higher body weights were linked among males (An, 2015; Boylan, Gill, Hare-Brunn, Andersen, & Heitmann, 2014; Brennan, Henry, Nicholson, Kotowicz, & Pasco, 2010; Fradkin, Wallander, Elliott, Tortolero, Cuccaro, & Schuster, 2015; Grabner, 2012; Laaksonen, Sarlio-Lahteenkorva, & Lahelma, 2004; Sobal & Stunkard, 1989; Wardle, Waller, & Jarvis, 2002; Zahnd, Rogers, Smith, Ryhers, Botchway, & Steward, 2015). More recent research reviews have found a trend that the relationship between lower SES and higher body weights is growing stronger over time, particularly for men (Banks, Marmot, Oldfield, & Smith, 2006; Ernsberger, 2009). This relationship between higher body weight and lower SES can also be extended to children. Since the mid-to-late 1980s, research has shown that there is a strong correlation between higher body weights in children and lower SES of their parents (Bammann et al., 2013; Fradkin et al., 2015; Gortmaker, Must, Perrin, Sobol, & Dietz, 1993). This trend in research points to a phenomenon of overweight/obesity (particularly among women) being concentrated among those in the lower social classes.

This correlation between lower SES and higher body weights is often interpreted as meaning that living in poverty causes obesity. For those living in poverty there are several barriers to participating in physical activity such as living in environments or neighbourhoods of high crime and pollution, and less time and financial resources to participate in leisure time physical activity. Large scale population-based studies have found that lower average neighbourhood SES/higher community-level economic hardship are associated with higher individual BMI for people living in those neighbourhoods (Crespi, Wang, Seto, Mare, & Gee, 2015; Shih, Dumke, Goran, & Simon, 2013). There are also many barriers to accessing and preparing nutritious foods: a marked lack of access to grocery stores in low-income neighbourhoods (i.e., 'food deserts') and the high cost of more nutritious fresh foods, as well as the lack of time, resources, and knowledge to prepare meals (particularly for multiple family members) from fresh ingredients. Low-income neighborhoods are found to have fewer grocery stores (particularly ones that sell fresh foods), and the stores that are available in these neighbourhoods offer a much smaller variety of nutritious food options (Barratt, 1997; O'Dwyer & Coveney, 2006). Food purchasing patterns also suggest that compared to those with higher SES, those with lower SES purchase less food that is high in fibre and low in fat, salt, and sugar, and they purchase less variety in the types of fruits/vegetables as well as purchasing fresh fruits/vegetables less frequently (Turrell, Hewitt, Patterson, Oldenburg, & Gould, 2002). Jeffrey, French, Forster, and Spry (1991) also found that among their sample of 4647 working men and women, those of lower SES consumed more dietary fat and engaged in fewer hours of leisure time exercise.

Sorensen (1995) posited that although there is some evidence to suggest that poverty can cause fatness, there is a compelling argument to be made that fatness also leads to poverty. The discrimination and stigma experienced by those of higher body weights results in lower employment and income. The stigmatization of those who are overweight is a socially acceptable prejudice in Western society (Brochu & Morrison, 2007; Puhl & Brownell, 2001) in which individuals openly hold and express negative attitudes towards those who are overweight, with health policy often reinforcing these negative attitudes and discriminatory actions (Blaine & Williams, 2004; Crandall, 1991, 1994; Langlois, Kalakanis, Rubenstein, Larson, Hallam & Smoot, 2000). Recent research suggests that the prevalence of weight discrimination in the U.S. is equal to, or even exceeds, discrimination based on race or gender (Puhl, Andreyeva, & Brownell, 2008). These heavier individuals experience prejudice and discrimination throughout their lives from childhood to adulthood (Langlois et al., 2000; Musher-Eizenman, Holub, Miller, Goldstein, & Edwards-Leeper, 2004; Puhl, Moss-Racusin, Schwartz & Brownell, 2008), and in many areas of their lives including employment, health care, and education (Brochu & Morrison, 2007). In a sample of 833 undergraduate students at two different universities in the U.S., normal-weight students were more likely to receive familial financial support compared to overweight and obese students, and this discrepancy was stronger for female compared to male students, even when controlling for parents' education, income, race, and family size (Crandall, 1991). A nationally representative random sample of 10,039 U.S. men and women was followed for 7 years from the ages of 16 to 24. Results showed after 7 years men and women who were heavier at 16 were less likely to be married at 24, and women who were heavier at 16 were more likely to be

living in poverty and to have a lower income, and completed fewer years in school at 24 years old (Gortmaker et al., 1993). This relationship is robust even when controlling for baseline SES and intelligence test scores (Ernsberger, 2009; Gortmaker et al., 1993).

It has also been posited as an alternative explanation that fatness indirectly causes poverty because fatness causes chronically poor health, and these chronic health conditions brought on by obesity then lead to poverty. This possibility has been examined in research and it was found that heavier young men and women were no more likely than their thinner peers to have chronic health problems, and those adolescents who did have chronic health conditions did not have significantly different rates of marriage, completion of post-secondary education, or income level than adolescents who did not (Gortmaker et al., 1993). Further research has also demonstrated that fatness is related to social mobility, in that adults who are living in a lower social class than their parents are more likely to have a higher BMI compared to adults who are living in a higher social class than their parents (Karnehed, Rasmussen, Hemmingsson, & Tynelius, 2008; Stunkard & Sorensen, 1993). This pattern of research suggests that it is fatness that comes first, and lower SES follows because of social stigma and discrimination. This is further exemplified in the intersection of race, poverty, and obesity. Racialized groups (such as First Nation populations and people of colour) have on average higher BMIs, and are also more likely to have a lower SES, compared to white populations. The combination of fat stigma, racism, and classism further magnify the discrimination they experience, and their higher levels of obesity are blamed on their poverty or their traditional (non-white) cultural attitudes and behaviours (Cohen, Perales, & Steadman, 2005; Ernsberger, 2009). Weight stigma is then often used to mask these forms of racial,

cultural, class, or gender discrimination under the guise of the ‘war on obesity’ or concern for health (Bombak, 2014; Cohen et al., 2005).

Not only is higher body weight linked with lower SES, the relationship between low SES and poor health is well documented in research. Low SES is one of the strongest predictors of cardiovascular disease and premature death (Banks et al. 2006; Lantz et al., 1998), certain cancer diagnoses at later and more severe stages (Barry & Breen, 2005), the development of diabetes (Stringhini et al., 2013), early death in men with diabetes (Rosengren, Welin, Tsipogianni, & Wilhelmsen, 1989), and negative diabetes outcomes (Walker, Gebregziabher, Martin-Harris, & Egede, 2004; Kivimaki et al., 2015). In a review of the epidemiological research linking higher body weights to poor health outcomes, Ernsberger (2009) concluded that once SES is taken into account, the data actually suggest that being heavier is not related to poor health outcomes, but being underweight was a significant contributor to premature death.

Discriminatory health care. Not only does the inclusion of SES compel a rethinking of the assumption that fatness causes illness and premature death, but a further examination of the interventions and treatments for obesity and the patient-practitioner relationship suggest that they can also have negative implications for the health of heavier individuals.

Negative attitudes toward heavier individuals are not only commonplace and socially acceptable among the general public, but also among health care providers and mental health professionals. Harvey and Hill (2001) found that the top two perceived causes of obesity reported by the general practitioners and clinical psychologists in their sample were physical inactivity and overeating; their participants shared a general

perception that for overweight patients to be able to lose weight they needed to recognize their weight as a problem and take personal responsibility. Other studies have also found that health care providers often endorse stereotypes about overweight and obese patients believing that they make poor food choices and are inactive (Garner & Nichol, 1998; Culbertson & Smolem, 1999; Schwartz, et al., 2003), and that they could lose weight with effort and changing of eating and exercise habits (Culbertson, & Smolen, 1999; Schwartz et al., 2003). Health care providers are also found to report more pessimistic expectations for overweight and obese patients' treatment compliance, and expect them to put in less effort (Wigton & McGaghie, 2001; Schwartz et al., 2003) Overweight patients are not unaware of the negative attitudes held by health care providers. As compared to normal weight patients, overweight patients reported that physicians show less comfort and warmth and increased hostility towards them and attribute their excess weight to laziness (Hebl, Xu, & Mason, 2003).

Weight bias by psychotherapists has been shown to affect clinical judgements and treatment planning for heavier patients. When all other patient characteristics were held constant, mental health workers were much more likely to assign negative symptoms to obese patients, as compared to overweight or normal weight patients, with obese patients being judged to exhibit more agitation, emotional behaviour, inadequate hygiene, self-injurious behaviour, and other inappropriate behaviours than non-obese patients (Hassel, Amici, Thurston, & Gorsuch, 2001; Young & Powell, 1985). Clinical psychologists have also been found to rate overweight female patients more negatively than average weight female patients with all other characteristics held constant (Davis-Coelho, Waltz & Davis-Coelho, 2000).

These negative health care provider attitudes and behaviours can have serious implications for overweight patients' quality of care. Their care is compromised not only by the health care providers' negative attitudes and behaviours towards their heavier patients, but by patients' own attempts to avoid interactions in which they feel they may be treated negatively, perceptions which can lead heavier patients to avoid seeing their doctors when needed (Fontaine, Faith, Allison, & Cheskin, 1998; Hebl et al., 2003; Ostbye, Taylor, Yancy, & Krause, 2005). Overweight and obese female patients also reported expecting harsher judgements from male health care providers and reported more anxiety and more frequent avoidance of seeing their health care provider if he was a male (Hebl et al., 2003).

Not only is the patient-practitioner relationship negatively affected by weight bias, the weight-loss treatments so often prescribed for overweight and obese patients are not innocuous. Treatments to attenuate this 'obesity epidemic' are centred around monitoring and regulating individual people's bodies and behaviours. These interventions to prevent or reduce obesity reproduce the discourse of the obesity epidemic as stemming from individual moral failings, and perpetuate symptoms of eating pathology such as strict monitoring of caloric intake and expenditure and constant scrutinizing of individual body weight (and weight fluctuations). Evaluations of these obesity-prevention programs often focus on weight loss as a key outcome measure, without assessing psychological symptoms, but reviews of this literature then concludes that there is no evidence which demonstrates that these obesity prevention initiatives are harmful for children's mental health (Butryn & Wadden, 2006; Carter & Bulik, 2008). Given that almost none of these anti-obesity interventions assess potential negative psychological outcomes, the

overwhelming trend of evidence that dieting is a precursor to eating pathology is drawn upon to support the assertion that obesity-prevention programs that teach reduction in calories and increase in activity can be harmful and lead to eating pathology (Butryn & Wadden, 2006). One study of a CBT-based weight loss program for children found that it caused an increase in restrained eating as measured by the Dutch Eating Behaviour Questionnaire (DEBQ); however, this was interpreted by the researchers as evidence that the program was successful in helping children develop behaviours necessary for weight control (Braet & VanWinckel, 2000). Qualitative research with school-aged children purports that eating pathology can be attributed to information they received from school-based healthy weight initiatives, although their methodology does not allow for robust causal conclusions (Pinhas, McVey, Walker, Morris, Katzman, & Collier, 2013). Other school-based research has indicated that there is a marked increase in experiencing and committing weight-related teasing among children in schools where healthy weight or obesity prevention initiatives are implemented (McVey, Tweed, & Blackmore, 2007; McVey, Walker, Beyers, Harrison, Russell-Mayhew, & Simkins, 2013; Pinhas, et al., 2013).

These (ineffective) weight loss treatments are not only problematic in that they do not produce long-term or sustainable weight loss, but they can also induce chronic yo-yo dieting and weight cycling. Some weight loss is possible for most dieters in the short-term, but when the weight comes back in the long-term, it is attributed to individual failure which then leads these individuals to engage in further dieting practices. This cycle of gaining and losing weight has been linked to medical health problems such as increased blood pressure and cardiovascular problems, as well as psychological health

problems such as depression and eating disorders (Bacon & Aphramor, 2011; Lyons, 2009; Wooley & Garner, 1991). Large scale studies have found that accounting for the effect of weight cycling (which is more likely to occur in heavier people) can explain all the excess mortality associated with obesity in their data (Diaz, Mainous, & Everett, 2005; Lissner et al., 1991). Weight cycling is also identified as the reason why those who engage in dieting practices are heavier in the long run than those who do not (Garner & Wooley, 1991; Pietilainen, et al., 2012; Polivy & Herman, 2002; Stice et al., 1999). This would suggest that heavier individuals would benefit from not engaging in weight loss treatments at all, as these treatments seem to be causing some of the harm they are purporting to prevent/treat.

Prejudicial medical care for heavier patients not only manifests itself in the ineffective and harmful weight loss treatments prescribed by health care providers, but also in the delay or denial of treatment to these patients for medical conditions unrelated to body weight. Physicians have been found to be less likely to perform pelvic exams and cancer screenings on their heavier female patients compared to their thinner ones (Adams, Smith, Wilbur, & Grady, 1993), and almost 20 years later physicians are still found to be less likely to perform breast cancer and cervical cancer screening or provide certain vaccinations for fat patients compared to their thinner patients (Amy, et al., 2006; Ostbye, et al., 2005). Certain health care providers and facilities even have weight restrictions in place for providing certain treatments or surgeries in that those with a BMI over 30 or 35 are either denied treatment or surgery until they lose weight, or they must participate in a mandated weight loss treatment program to be eligible to receive the treatment or surgery (Brochu & Esses, 2009). These harmful treatments and

discriminatory policies persist despite the lack of empirical evidence, because they are fuelled by the automatic legitimacy afforded to biomedical discourses and perspectives, and health care professionals (even those who are specialized in the science of obesity) still base medical treatment on stereotypes about fat (Gard & Harrison, 2012; Hebl et al., 2003).

Dieting, Obesity, and Eating Disorders

Dieting as a risk factor. In contrast to obesity science which purports a universal desirability of weight control or weight loss because of the health risks of obesity, psychological research in the domain of eating disorders has long purported that dietary restraint/restrictive eating is psychologically and physically harmful, and is a core risk factor in the development of eating pathology. Psychological research has identified that the key risk factors for the development or worsening of eating pathology are: the internalization of the cultural thin ideal, body dissatisfaction, increases in body weight, and dieting attempts (Striegel-Moore & Bulik, 2007). Psychology also identifies the core features of eating disorders as: body image disturbance marked by a fear of fat or drive for thinness and weight and shape concerns, dietary restriction or a loss of control of eating, and engaging in extreme efforts and behaviours to control weight or shape (Striegel-Moore & Bulik, 2007). Diagnostic criteria for Anorexia Nervosa outline three essential features of this disorder: persistent energy intake restriction; intense fear of gaining weight or becoming fat, or persistent behaviour that interferes with weight gain; and a disturbance in self-perceived weight or shape (American Psychiatric Association, 2013). However, diagnostic criteria for Anorexia Nervosa require that the individual has a significantly low body weight, which is defined using the BMI categories. Adults are

not considered to have a significantly low body weight unless their BMI is below 18.5, which means that even if an individual presents with all the other diagnostic criteria (restriction of food and other extreme efforts to lower or control weight, fear of fat, and weight and shape concerns), they are not considered to have Anorexia if their BMI is not below the cut-off for 'normal weight'.

Diagnostic criteria for Bulimia Nervosa also outline three essential features of this disorder: recurrent episodes of binge eating, recurrent inappropriate compensatory behaviours to prevent weight gain, and self-evaluation that is unduly influenced by body shape and weight (American Psychiatric Association, 2013). These episodes of binge eating and inappropriate compensatory behaviours must occur at least once a week for 3 months to meet diagnosis for Bulimia Nervosa. Although there are no weight requirements for a diagnosis of Bulimia Nervosa, determining what is considered an episode of 'binge eating' is largely based on the clinician's judgement. Binge eating is defined as eating in a discrete period of time, an amount of food that is definitely larger than most individuals would eat in a similar period of time under similar circumstances and must be accompanied by a sense of lack of control (American Psychiatric Association, 2013). Given that research has shown that a patient's weight affects clinical judgements in terms of assigning symptoms, negative personality traits, and expectations for compliance and treatment outcomes (Davis-Coelho, Waltz & Davis- Coelho, 2000; Hassel et al., 2001; Schwartz et al., 2003; Young & Powell, 1985), it could be expected that the eating patterns of heavier patients are more likely to be judged to be bingeing than the eating behaviour of thinner patients.

Prevalence of eating disorders has been increasing in the last 15-20 years, and has been found to be increasing among those of younger ages, populations of colour, and men (Hesse-Biber, Leavy, Quinn, & Zoino, 2006). This is particularly concerning as eating disorders are the most fatal of all the psychiatric disorders, with a mortality rate of 5-10% after 10 years and 20% after 20 years for those diagnosed with Anorexia (Birmingham, Su, Hlynsky, Goldner, & Gao, 2005; Costin, 1997). Given that dieting is a precursor to developing eating pathology, acute focus should be placed on dieting behaviours. A review of the literature on dieting prevalence found that about 40-45% of adult women and 20-25% of adult men, and 50-65% of adolescent girls report currently trying to lose weight (French & Jeffrey, 1994). Further, about 50-75% of adult women and about 45% of adult men report having tried to lose weight at least once in their lifetime (French & Jeffery, 1994). More recent research confirms these trends; a study of 177 college students found that previous dieting was reported by 72% of women and 41% of men (Varnado-Sullivan, Savoy, O'Grady, & Fassnacht, 2010). Rates of body dissatisfaction among young children (particularly girls) are also troubling. A review of research suggests that about 42% of girls in grades one through three think they are too fat, and about 80% of ten year old children think they are too fat (Giovanelli & Osterag, 2009).

However, body dissatisfaction among heavier people is not found to motivate 'healthy' weight loss as is often assumed. In one qualitative study investigating Scottish adolescents' motivations for weight loss, positive health outcomes or health benefits were not discussed by the teens, but reducing experiences of teasing and being able to shop for clothes (among girls) and participate in sports (among boys) were emphasized as benefits of losing weight (Willis, Backett-Milburn, Gregory, & Lawton, 2006). Further, Atlantis,

Barnes, and Ball (2008) found among their sample of Australian adults that perceiving themselves as overweight was actually a barrier to engaging in leisure-time physical activity (LTPA), counter to their hypothesis that those who perceive themselves as thin or normal weight would be less likely to engage in LTPA because there are fewer perceived benefits to weight loss. A similar trend was found among college students in the United States, in that men and women who perceived themselves to be heavier than they are were more likely to engage in extreme dieting, vomiting, and use of diet pills and laxatives, and less likely to engage in exercise than men and women who had more accurate self-perceptions (Wharton, Adams, & Hampl, 2008).

Sociocultural models of eating disorder etiology emphasize the risks of the thin ideal in leading to body dissatisfaction, which can then induce dietary restraint/restrictive eating (Striegel-Moore & Bulik, 2007). The cultural thin ideal is not only the idealization of thinness, but the vilification of fatness that is prominent in Western and industrialized cultures. Specifically, the sociocultural model describes this process in several steps: first is the exposure to the cultural thin ideal; this thin ideal is then internalized; this internalization of the thin ideal then leads to a discrepancy between the self and the ideal (particularly given this ideal is becoming impossibly thin); this discrepancy leads to body dissatisfaction; which then leads to dietary restraint and restriction to try to achieve this ideal (Striegel-Moore & Bulik, 2007). This concept of the ‘cultural thin ideal’ is understood as an attractiveness ideal that is targeted at women (and White women in particular), and this messaging is said to come from mass media (sources like magazines, television, movies, and music videos), and the fashion industry. Yet with the medicalization of body weight and medical discourses constructing the ‘ideal weight’ as

an objective BMI number (between 18.5 and 24.9) it can be said that the contemporary cultural thin ideal is not only communicated as an attractiveness ideal, but is also as a 'health ideal.'

Obesity and eating disorders. The literature on weight loss/control attitudes and behaviours gives conflicting messages from obesity science and from eating disorder research. Medical science purports weight loss/control as a health behaviour to treat or prevent the epidemic of the disease of obesity, but psychological science has long shown the psychological (and medical) dangers of pursuing weight loss and the cultural thin ideal. This contradiction around the messages of pursuing weight loss is further exemplified when examining the eating disorder literature that discusses obesity.

Eating disorder research consistently demonstrates that body dissatisfaction, weight concern, experiencing weight-related teasing, perceived pressure to be thin, and a history of dieting/weight loss attempts all increase as BMI or body weight increases (Cattarin & Thompson, 2007; Johnson & Wardle, 2005; Paxton, Schutz, Wertheim, & Muir, 1999; Polivy & Herman, 2002; Stice, Mazotti, Krebs, & Martin, 1998; Stice, Mazotti, Weibel, & Agras, 1999; Stice & Shaw, 2002). This effect (although varying in strength, particularly when comparing women to men) is also found among non-White samples (Akan & Grilo, 1995; French, Story, Neumark-Sztainer, Downes, Resnick & Blum, 1996; Wilfley, Schreiber, Pike, Streigel-Moore, Wright, & Rodin, 1996), adult men (Jones, Vigfusdottir, & Lee, 2004; McCabe & Ricciardelli, 2001; Presnell, Bearman & Stice, 2004; Smith, Thompson, Raczynski & Hilner, 1999), male and female children (Jones, Vigfusdottir, & Lee, 2004; Presnell, Bearman & Stice, 2004; Schur, Sanders, & Steiner, 2000), and male and female adolescents (Stice & Bearman, 2001; Stice, Presnell,

& Spangler, 2002). Taken together, this pattern indicates that as an individual's body weight or BMI increases, so too do the risk factors for developing an eating disorder.

When reviewing more recent eating disorder research, it can be seen that this pattern of evidence is interpreted differently if participants/the sample are overweight/obese compared to if they are normal weight. In particular, a negative body image or body dissatisfaction in an overweight or obese person is interpreted in the eating disorder literature not as having negative psychological implications, but as a realistic and even expected self-perception that is a motivation to engage in weight loss. Some seminal and highly cited studies on obesity in prominent eating disorder journals make statements such as "weight dissatisfaction could be considered the result of an appropriate cognitive appraisal in women who weigh an average of 84 kg (185 lb.), and their dissatisfaction could be considered understandable" (Foster et al., 1997, p. 84).

A study that investigated treating the negative body image of obese women with Cognitive-Behavioural Therapy (CBT) states that "some amount of body dissatisfaction is not unrealistic given their obesity." (Rosen, Orosan & Reiter, 1995, p. 33). Even though more than 82% of their sample scored more than one standard deviation above the norm for adult community women on the Body Dysmorphic Disorder Examination (BDDE), and all the women in their sample endorsed moderate to severe levels (rating of 4 to 6 on a 0-6 scale) of distressing dissatisfaction and preoccupation with appearance (on the BDDE), the researchers claim that "BDD is inappropriate for obese persons who are more than mildly overweight because the disorder refers to concern about imagined or minimal physical defects" (Rosen, Orosan, & Reiter, 1995, p. 26) and that "[c]ompared to

the normal weight, obese persons have real, not imagined, weight problems" (Rosen, Orosan, & Reiter, 1995, p. 27).

This (sometimes very severe) negative body image among overweight/obese persons (particularly women) is framed in the eating disorder literature not only as "clinically insignificant" (Foster et al., 1997, p. 84), but also as a positive outcome that motivates fat individuals to engage in weight loss. Prominent researchers have made claims that "the life dissatisfaction, social liabilities, and body image distress produced by obesity are beneficial in that they motivate people to lose weight" (Schwartz & Brownell, 2004, p. 43), "the psychological and social fallout from obesity, including mood and body image problems, stigma, and discrimination create negative states that people will relieve by losing weight" (Schwartz & Brownell, 2004, p. 53), and that there is "theoretical and empirical support for the stance that there may be beneficial aspects of some degree of body image dissatisfaction in predicting weight loss and exercise behavior" (Schwartz & Brownell, 2004, p. 53). Although the evidence of prospective studies does indicate that body dissatisfaction and perceived pressure to be thin are predictive of dieting/weight loss behaviours, the evidence overwhelmingly shows that the pursuit of weight loss that is motivated by these negative cognitive states is dangerous to psychological and physical health (Presnell, Bearman, & Stice, 2004; Stiegel-Moore, & Bulik, 2007; Whaton, Adams, & Hampl, 2008).

The weight loss behaviours of caloric restriction and monitoring that are encouraged for overweight or obese persons and labeled as "health behaviour changes" (see Schwartz & Brownell, 2004) are not qualitatively different from those that are seen as risky or dangerous for normal or underweight individuals. Although dietary restraint is

labeled as ‘healthy weight control’ in the context of obesity, the operational definition of dieting is the same regardless of body size. Dieting has been defined as “a state of negative energy balance between caloric intake and expenditure, which is necessary for weight loss to occur” (Presnell & Stice, 2003, p. 166). The energy imbalance model of body weight is now taken up in eating disorder research, which can be seen in claims that “[the fact that] uncontrollable overeating contributes to the risk for obesity follows logically from the energy balance theory of body mass” (Stice, Presnell, & Spangler, 2002, p. 131), and “episodes of uncontrollable overeating produce a positive energy balance that eventually leads to obesity” (Stice, Presnell, & Spangler, 2002, p. 135). This adoption of the energy imbalance model lends itself to applying false stereotypes about fatness (overeating and inactivity), which can be seen in researchers’ claims that “a tendency toward overconsumption […] is necessary for elevated adiposity” (Stice, Presnell, & Spangler, 2002, p. 135).

Dieting and restrictive eating practices are said to play a causal role in the development of eating disorders, but are also claimed to slow population increases in obesity (Johnson & Wardle, 2005). Other research has suggested that eating disorder and obesity researchers should pool their expertise to “determine the best way to facilitate healthy dietary restraint” (Wilfley et al., 1996, p. 386), and that further research is needed to determine “whether modifications of body image concerns will foster appropriate weight loss behaviors among obese individuals [and to] produce healthy weight loss [without resulting in] an unhealthy preoccupation with body weight” (Smith, Thompson, Raczynski, & Hilner, 1999, p. 80). The treatment for the negative body image of

overweight/obese individuals is now seen as weight loss, as opposed to having a positive body image regardless of body weight.

Eating disorder research now advocates for weight loss treatments for heavier individuals to achieve a positive body image and reduce experiences of stigma and discrimination. Several research studies led by prominent eating disorder researcher Eric Stice claim that "interventions that promote healthy weight management skills (e.g., regular moderate exercise and reduced fat consumption) should decrease body dissatisfaction by reducing rates of obesity" (Stice & Shaw, 2002, p. 990), and that "a healthy weight intervention, which promotes lasting decreases in caloric intake and increases in exercise as a way of achieving a healthier body weight and body satisfaction" (Stice, Shaw, Burton, & Wade, 2006, p. 264). It is even claimed that there are "advantages of the healthy ideal, such as less illness and greater social acceptance" (Stice, Shaw, Burton, & Wade, 2006, p. 267).

This discourse places the onus on individuals to solve the problem of social stigma and discrimination through individual behaviours that are purported to remove them from the deviant or stigmatized social group. Group membership is perceived as temporary because this deviant identity (being fat) is assumed to be acquired through choice; thus, there is then no responsibility placed on society to change the prejudiced attitudes and behaviours towards that group. These stigmatized individuals and groups then focus their energy on escaping the oppression by changing their body size instead of fighting cultural prejudice. The internalized fat stigma has been found to be just as severe, or even more so, among overweight/obese persons than fat stigma displayed by thinner individuals in society (Carels, Young, Wott, Harper, Gumble, Wagner Hobbs, &

Clayton, 2009). Beliefs in weight controllability, character flaws, and unattractiveness have been found to be just as prevalent among heavier individuals (Carels et al., 2009; Carels, Burmeister, Oehlhof, Hinman, LeRoy, Bannon, Koball, & Ashrafloun, 2013; Lillis, Luoma, Levin, & Hayes, 2010). Unlike other marginalized identities (e.g., being a person of colour, being LGBT), overweight/obese individuals are not able to find protection or pride in their marginalized group's identity because of this belief in being able to escape this flawed identity though the 'right choices' of diet and exercise. However, the emergence of the fat acceptance movement has made great strides in uniting those with the marginalized identity of 'fat' to promote inter-group pride and fight societal prejudice instead of focusing on changing their bodies (Afful & Ricciardelli, 2015; Stürmer, Simon, Loewy, & Jörger, 2003).

Not only is a negative body image framed as a motivator for weight loss in fat individuals, a positive body image for overweight/obese individuals is framed as having negative implications for weight loss or weight control, because it is thought that "an overweight person with no body dissatisfaction may feel less determined to make health behavior changes than someone with a moderate level of body dissatisfaction" (Schwartz & Brownell, 2004, p. 53), and "if subjects learned to 'accept' their obesity, they might abandon their weight control efforts already in place and gain weight" (Rosen, Orosan, & Reiter, 1995, p. 28). This assertion is problematic in that it espouses weight loss (or being thin) as the answer to social stigma and positive self-image. However, Schwartz and Brownell (2004) found in their review of body image and obesity that those few who were overweight or obese in the past but then lost weight do not ultimately achieve the same positive body image as someone who was never overweight or obese.

This conceptualization of negative body image as a motivation for weight loss (and positive body image as having negative implications for weight loss for overweight/obese persons) also manifests in racialized ways in the eating disorder literature. Historically, eating disorder research has found that there is lower prevalence of dieting practices and body dissatisfaction among populations of colour, particularly among Black women compared to White women (French, Story, Neumark-Sztainer, Downes, Resnick & Blum, 1996; Furnham & Baguma, 1994; Morgan et al., 2002; Smith, Thompson, Raczynski & Hilner, 1999; Streigel-Moore & Bulik, 2007; Wilfley, Schreiber, Pike, Streigel-Moore, Wright, & Rodin, 1996). This trend has generally been interpreted as protecting women of colour from eating disorders, and is said to partially explain why there is a lower prevalence of eating disorders among Black women in particular. However, in the eating disorder literature on obesity, this trend (of less dieting and less body dissatisfaction) coupled with the higher on average BMIs for populations of colour is almost universally interpreted as a problem. Wilfley and colleagues (1996) found that the Black women in their sample consistently reported less body dissatisfaction at each level of overweight than did White women. This finding led them to make the claim that "black women may live in an environment permissive of overweight which may have negative indications for weight control" (Wilfley, Schreiber, Pike, Streigel-Moore, Wright, & Rodin, 1996, p. 386). French and colleagues (1996) found a similar trend in their study of ethnic differences in dieting/weight loss practices in adolescents, in that Black adolescents had a lower prevalence of dieting than White adolescents. This also led them to make the claim that "ethnic differences in sociocultural standards of attractive body weight/shape for women underlie the observed ethnic

differences in obesity and dieting" (French et al., 1996, p. 316). These claims are further echoed in another study by Smith and colleagues (1999) investigating the body image of both Black and White men and women. Their data also indicated that Black women were less dissatisfied with their bodies at each level of overweight/obese compared to White women, which led the researchers to conclude that "greater acceptance of higher body weight and higher levels of body satisfaction at heavier weights may contribute to the high rates of obesity observed within this group" (Smith et al., 1999, p. 72). These claims echo the concerns espoused by obesity science, in that body satisfaction (particularly among heavier women) will lead to overconsumption and obesity.

In addition to assuming that body dissatisfaction or a negative body image has positive implications for motivating the pursuit of weight loss in fat individuals, the assumption that fatness is caused by overeating and inactivity is prevalent in the eating disorder literature on obesity. The DSM-V clearly states in their preamble to the section of Feeding and Eating Disorders that "[o]besity (excess fat) results from the long-term excess of energy intake relative to energy expenditure," yet they immediately contradict this energy imbalance model by then stating that "[a] range of genetic, physiological, behavioural, and environmental factors that vary across individuals contributes to the development of obesity" (American Psychiatric Association, 2013, p.329). This causal assumption of fatness then leads to beliefs in the controllability of body weight, and even eating disorder researchers recommend dietary restraint for overweight or obese individuals. It should be particularly concerning that those who are expert in the harms of pursuing thinness and engaging in restrictive eating practices are encouraging (and even prescribing) these same behaviours for fat individuals. In reference to promoting

restrictive eating practices, researchers have stated that “Concerns about eating disorders—specifically, anorexia and bulimia—must be balanced against concerns about the epidemic of obesity in the American population” (Grabe, Ward, & Shibley Hyde, 2008, p. 471). So although it is known that the pursuit of weight loss is a contributor to developing eating disorders, researchers are reluctant to dissuade heavier people from these same practices.

In reviewing the contemporary eating disorder literature on obesity, I would purport that a dichotomy now exists in perceptions of body image and dietary restraint between thin (i.e., underweight or normal weight) and fat (i.e., overweight and obese). The risk perceived in the pursuit of weight loss is now skewed, in that the perceived risks of obesity (i.e., disease and early death) are seen to be worse than the risks of eating pathology. This position is really exemplified in eating disorder researchers’ claims that “[c]oncerns about eating disorders—specifically, anorexia and bulimia—must be balanced against concerns about the epidemic of obesity in the American population, including the population of American women” (Grabe, Ward, & Shibley Hyde, 2008, p. 471) in reference to thin ideal internalization and prescribing of dieting practices. What we ‘know’ about eating pathology and risk factors from decades of research is not seen to hold true for heavier people; pursuit of weight loss and dietary restraint is framed as a health behaviour for fat people but a risk factor for thin people. What were once seen as protective factors against developing or worsening of eating pathology in populations of colour (less internalization of the thin ideal, body satisfaction, and not engaging in dieting practices) are construed as ‘problematic’ in the context of obesity because it is thought that this will prevent them from trying to change.

Health at Every Size

With the preponderance of this discourse of "obesity as a disease of epidemic proportions," an alternative paradigm has emerged in response to the medicalization of body weight. *Health At Every Size® (HAES)* (Bacon, 2010) emphasizes holistic health over weight, and denounces the idea that just having a BMI over 25 or 30 means you are unhealthy or diseased. Given that traditional restrictive dieting promoted by medicine and public health has not resulted in lowered BMI or increased health, HAES advocates for adopting healthful behaviours (not dietary restraint) to improve health, regardless of whether weight is lost or gained. This position is supported by large scale population-based national longitudinal studies in the U.S. and the U.K that have demonstrated that when practicing four basic healthy habits (consuming 5+ servings of fruits and vegetables/day, moderate drinking of less than 2 drinks per day, not smoking, and not being sedentary) there is no difference in cardiovascular morbidity and mortality and all-cause mortality across the BMI categories over the 20+ years that participants were followed (Khaw, Wareham, Bingham, Welch, Luben, & Day, 2008; King, Mainous, Carnemolla, & Everett, 2009; Matheson, King, & Everett, 2012). Further large scale national studies in the U.S that followed 25714 adult men and 116564 adult women over more than 20 years have demonstrated that cardiovascular fitness (as measured by the maximal exercise treadmill test), regardless of BMI, predicts cardiovascular morbidity and mortality for men (Wei et al., 1999) and women (Hu et al., 2004).

The Health at Every Size paradigm has started to change the narrative around weight and health, which can be seen reflected in the pattern of research. The proliferation of studies examining the relationship between higher weights and poor

health (framed mostly as a causal relationship) and the search for effective weight loss treatments occurred in the early to mid-90's corresponding with the decision that obesity is a disease epidemic and a public health problem. The dominant perspective through much of this time is that the objective 'facts' about weight and health are known, in that it is an established fact that obesity stems from overeating and inactivity and that it causes morbidity and mortality. This narrative impeded more in depth and critical research into the complex relationship between weight and health through the late 90s, but with the emergence of the Health at Every Size paradigm in the early 2000s a shift in this perspective started to occur in which researchers to started engaging in more critical and in depth research which contradicted the 'facts' that were established in the 90s about weight and health.

HAES is a paradigm that is founded on four assumptions about weight, eating, exercise and health that contradict the assumptions of obesity science: 1) body size, shape, appetite, and taste are marked by natural diversity across people; 2) dieting for weight loss is ineffective and unhealthy regardless of size; 3) intuitive and non-restrictive eating improves health; and 4) health and well-being are complex and are shaped by physical, social, and psychological interactions (Bacon, 2010). Three core principles of practicing under the HAES paradigm are: 1) intuitive and non-restrictive eating, 2) active embodiment and enjoyable movement, and 3) self-love and body acceptance (Bacon, 2010).

In contrast to the conventional wisdom that external regulation and restraint is the method for weight control or weight loss, HAES teaches people to rely on their internal cues of hunger, satiety, and taste. Intuitive eating encourages people to make connections

between what they eat and how they feel, focusing on aspects of mood, energy, fullness, comfort eating, appetite, hunger, and pleasure (Bacon & Aphramor, 2011). Learning intuitive eating (also known as 'mindful eating') is a process as people unlearn their reliance on external cues and self-imposed restriction to decide when, what, and how much to eat. The value of intuitive eating has been demonstrated in the literature, with studies showing that those who practice intuitive eating as opposed to dietary restraint have better nutrient intake (Smith, & Hawks, 2006) and reduced eating disorder symptomatology (Bacon et al., 2002; Provencher et al., 2009). Further, intuitive eating has not been found to be associated with weight gain (Bacon, Stern, Van Loan, Keim, 2005; Goodrick, Poston, Kimball, Reeves, & Foreyt, 1998; Provencher et al., 2009).

The second principle of active embodiment under a HAES approach encourages people to find ways to incorporate enjoyable methods of being active into their lives instead of focusing on structured exercise. Physical activity is promoted as a means of achieving physical and psychological benefits independent of weight loss, and to help individuals heal a negative and distrustful relationship many heavier people have with their bodies (Bacon & Aphramor, 2011). The goal of physical activity is enjoyment in movement and not relying on external cues or goals of weight loss to determine what types of physical activity to engage in or for how long.

The third principle of self-love and body acceptance is also contrary to the conventional wisdom of obesity science that promotes body dissatisfaction as a motivation for change. As previously discussed, research evidence actually suggests that body dissatisfaction can result in extreme and dangerous weight loss methods, and conversely self-acceptance and self-esteem are linked to self-care and adopting positive

health behaviours (Goss & Allen, 2010; Leary, Tate, Adams, Allen, & Hancock, 2007). When you encourage people to love the body they have (even when it differs from a desired or cultural ideal), self-care is strengthened and the adoption of healthy habits is more likely to be sustained long-term even in the absence of weight loss (Bacon, 2010; Bacon & Aphramor, 2011; Bacon et al., 2005).

There have been eight published randomized-controlled-trial evaluations of HAES programs in the peer-reviewed literature. However, these studies have so far only been conducted with samples of primarily White overweight or obese women in North America, and further research is needed to include more diverse samples in regard to gender and ethnic background to ensure that the positive outcomes of these non-dieting interventions are robust and generalizable. A HAES (sometimes called a non-diet intervention) program has been compared to traditional dieting interventions (Bacon et al., 2002, 2005; Goodrick et al., 1998; Tanco et al., 1998), a social support dieting group (Provencher et al., 2007, 2009), a dieting education group (Ciliska, 1998), cognitive-behavioural dieting treatment (Rapaport et al., 2000), and no intervention control (Ciliska, 1998; Goodrick et al., 1998; Provencher et al., 2007, 2009; Tanco et al., 1998). Outcome measures assessed were physiological: LDL, blood pressure, and cholesterol (Bacon et al., 2002, 2005; Ciliska, 1998; Rapaport et al., 2000); eating and exercise behaviours: binge eating, dietary restraint and disinhibition, nutrient intake, and activity level (Bacon et al., 2002, 2005; Ciliska, 1998; Goodrick et al., 1998; Provencher et al., 2007, 2009; Rapaport et al., 2000; Tanco et al., 1998); psychological: self-esteem, depression, anxiety, and body dissatisfaction (Bacon et al., 2002, 2005; Ciliska, 1998; Rapaport et al., 2000; Tanco et al., 1998); as well as body weight/BMI (Bacon et al.,

2002, 2005; Ciliska, 1998; Goodrick et al., 1998; Provencher et al., 2007, 2009; Rapaport et al., 2000; Tanco et al., 1998).

Results of these evaluation studies have shown the body weight or BMI of those participating in the HAES groups did not significantly lower or change from before to after the intervention (Bacon et al., 2002, 2005; Ciliska, 1998; Goodrick et al., 1998; Provencher et al., 2007, 2009; Rapaport et al., 2000; Tanco et al., 1998). However, compared to other dieting interventions, participating in these HAES programs reduced binge eating (Bacon et al., 2002, 2005; Ciliska, 1998; Goodrick et al., 1998), dietary restraint (Provencher et al., 2007, 2009), and body dissatisfaction (Bacon et al., 2002, 2005; Ciliska, 1998; Tanco et al., 1998), and improved self-esteem (Bacon et al., 2002, 2005; Ciliska, 1998) and activity level (Bacon et al., 2002, 2005; Goodrick et al., 1998; Rapaport et al., 2000). Even in the absence of weight loss, HAES interventions were shown to improve the overall physical and psychological health of participants above any traditional dieting treatment with no adverse outcomes found (Bacon & Aphramor, 2011).

Not only have evaluation studies of HAES programs found improvements in health regardless of no weight being lost, the low attrition rates compared to traditional dieting treatments further support the value of adopting this new paradigm that focuses on health instead of weight. Of these five published randomized-control trials comparing HAES programs to traditional dieting treatments, attrition rates for the HAES condition ranged from 8% to 16%, but attrition rates for the dieting condition ranged from 21% to 42% (see Bacon & Aphramor, 2011 for review). These dropout rates are consistent with the obesity literature, in which dieting interventions are often plagued by high attrition rates, with one expert NIH panel concluding that attrition rates are quite high (low range

of about 25%, high range of about 80%), and continually increase with follow-up periods (National Institutes of Health, 1992). A 1999 review of behavioural medicine treatments found an average attrition rate of 32% for dieting interventions, with a range of 10% to 59% (Davis & Addis, 1999), and a more recent review of the obesity literature finding an average attrition rate of 36% for dieting interventions (Hession, Rolland, Kulkarni, Wise, & Broom, 2009). This difference in attrition rates has been attributed to the feeling of failure participants get in the dieting treatment when they do not lose weight, or do not lose the desired amount of weight. Compared to traditional dieting treatments, participants in a HAES program reported much less feeling of failure or disappointment, and much higher satisfaction with the program (Bacon et al., 2002; Provencher et al., 2007).

The HAES paradigm espouses focusing all aspects of health (physical, mental, emotional well-being), practicing healthy habits and behaviours, and not worrying about weight control or weight loss. A key quote from Health at Every Size illustrates this point well: “If an individual’s weight is problematic from a health perspective, the best way to address it is to improve health behaviours and let the weight settle where it may” (Bacon, 2010, p. 266).

Current Study

The current study investigates the dichotomy of the perceptions of the pursuit of weight loss that has emerged in the eating disorder literature since the beginning of the discourse about the ‘obesity epidemic’ and the official stance of medical and health authorities of defining obesity as illness. Biomedical discourses are afforded automatic legitimacy in our culture (Foucault, 1973), and the biomedical discourse of obesity

centres around the energy imbalance model and individual behaviours to explain the etiology of this 'disease.' This discourse has now inflected our understandings of fatness among the general public and even in academia (Murray, 2008). Excess weight is now unquestionably seen as a health problem that is under individual control, and even eating disorder research is now recommending diets, caloric restriction, and monitoring of food and exercise for fat people. Weight stigma is now publicly endorsed as a health initiative, and there is a lack of critical analysis of how this 'obesity as illness/dieting as treatment' discourse may be fuelling weight bias and incidence of eating disorders in Western culture by promoting a "health thin ideal" and inciting more people to engage in the pursuit of weight loss. This current medical perspective of dieting as a health behaviour may be causing us to overlook the risk of dieting as the first step to developing an eating disorder.

The dichotomy in the perceptions of the pursuit of weight loss for thin and fat people appears in the discourses taken up in eating disorder research, but no study to date has examined this contradiction of the perceptions of dieting behaviour in practice. The current experimental study attempts to answer the following two principal research questions:

1) Are antifat attitudes and beliefs about the causes of body weight related to the perceptions of dieting behaviour of thin and fat targets?
2) Do biomedical 'obesity as illness' messages influence the perceptions of dieting behaviour of thin and fat targets?

A secondary research question explores the association between individuals' own restrained eating, internalization of appearance norms, and antifat attitudes:

3) Are antifat attitudes and belief in weight controllability associated with an individual's restrained eating and internalization of appearance norms?

A tertiary research question explores ethnicity attributions related to antifat attitudes and perceptions of dieting behaviour:

4) Are participants' inferences regarding a hypothetical target's ethnicity related to antifat attitudes and/or a hypothetical target's weight and dieting behaviours?

These research questions are explored using experimental methods to examine the relationship between pre-existing attitudes about fatness, restrained eating, sociocultural attitudes towards appearance norms, and perceptions of a hypothetical target's dieting behaviour.

For this study it was hypothesized that:

1. The dieting behaviour of thinner targets will be perceived as more risky, unhealthy, negative, and abnormal than the dieting behaviour of heavier targets.
2. Belief in weight controllability will be predictive of perceiving the dieting behaviour and body dissatisfaction of heavier targets as healthy.
3. Presenting participants with weight-based model of health messaging will be predictive of participants perceiving the dieting behaviour of heavier targets as healthy, and the non-dieting behaviour of thinner and heavier targets as unhealthy.
4. Presenting participants with a holistic and weight-independent view of health messaging will lead participants to perceive the dieting behaviour of thinner and heavier targets as unhealthy, and perceive their non-dieting behaviour as healthy.
5. Participants' level of restrained eating, antifat attitudes, belief in weight controllability, and internalization of appearance norms will be positively interrelated.

Method

Participants

A sample of 434 female students from the University of Windsor was recruited for this study. Eighteen participants were excluded from the analysis because they were incorrect in the manipulation check items, and eight further participants were excluded as they did not complete any items on the perceptions of dieting behaviour measures. The analyses revealed that six participants were influential outliers on one or more of the measures (see results section for in depth analysis) and were also excluded. The final sample size for this study was $N = 402$. The participant demographics are presented in Table 1. This study only recruited a female sample to focus on a single gender as this is the first study of its kind, and there is a dearth of literature with males to guide hypotheses, and the proportion of male students in the participant pool likely would not have allowed a sufficient sample to achieve adequate power for statistical analyses.

Materials

Demographic Questionnaire. Participants were asked to indicate their age, ethnicity, height, weight, and year and program of study (see Appendix A).

Antifat Attitudes Test. Weight bias and belief in weight controllability were measured using Lewis, Cash, Jacobi and Bubb-Lewis' (1997) Antifat Attitudes Test (AFAT). This questionnaire assesses cognitive, affective, and behavioural dispositions towards overweight individuals, with no items concerning individual's judgements of their own body weight. The AFAT consists of 47 items that yields an overall mean score as well as scores on three subscales: social/character disparagement (15 items ascribing socially undesirable personality characteristics to and social disregard for persons who

Table 1
Participant demographics

Variable	Statistics
Age	*M* = 20.5, *SD* = 3.72 (Range: 18-49 years old)
Ethnicity	73% White/European decent, 7.5% Middle Eastern , 6% Black/African-Canadian, 5% South Asian, 4.5% East Asian, 1% First Nations/Aboriginal, 1% Hispanic/Latino, 1% mixed, 1% other
Program of Study	41% Social Science, 15% Natural Science, 9% Social Work, 8% Human Kinetics, 8% Arts/Humanities, 4% Business, 4% Nursing, 4% Disability Studies, 2% Education, 1% Communications, 4% unidentified
Year of Study	28% 1st year, 26% 2nd year, 23% 3rd year, 19% 4th year, 3% 5th year and above, 1% unidentified
BMI	*M* = 24.7, *SD* = 5.89 (Range: 15.51-58.27)

are fat), physical/romantic unattractiveness (10 items reflecting perceptions that persons who are fat are unattractive and unacceptable as romantic partners), and weight control/blame (9 items that tap beliefs concerning whether fat people are responsible for their weight). Each item is answered using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores reflecting stronger endorsement of antifat attitudes. Items 2, 21, 31, 37, 40, 42, 45, and 47 are reverse scored. Lewis et al. (1997) reported that the AFAT has good psychometric properties, with coefficient alphas of the overall scores and subscale scores ranging from .82 to .95. The coefficient alpha for the AFAT in the current study was α=.94. The AFAT scale is included in Appendix B.

Restraint Scale. Restrained eating (restricting food intake in order to control body weight) was assessed using Herman and Polivy's (1975) 11-item Restraint Scale. This scale assesses the extent to which participants exhibit behavioural and attitudinal concern about dieting and weight loss and control. Specifically, the measure assesses dieting and weight history (6 items) as well as concern over food and eating (5 items). Higher scores indicate more severe restrained eating, with a score of 0 indicating no restrained eating. Herman and Polivy (1975) reported moderate to good psychometric properties, with coefficient alphas of the overall scale of .75, and .68 for the diet and weight history subscale, and .62 for the concern with food and eating subscale. Correlations between subscales was reported at $r = .48$ ($p < .01$). The coefficient alpha for the RS in the current study was α=.74.The complete measure with scoring instructions can be found in Appendix C.

Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-3). Awareness and endorsement of societal appearance standards were measured using the Sociocultural Attitudes Towards Appearance Questionnaire-3 (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). This standardized scale contains 30 items that yields a total score and four subscales: internalization-general (9 items: 3, 4, 7, 8, 11, 12, 15, 16, 27), internalization-athlete (5 items: 19, 20, 23, 24, 30), information (9 items: 1, 5, 9, 13, 17, 21, 25, 28, 29), and pressures (7 items: 2, 6, 10, 14, 18, 22, 26). Each item is answered on a 5-point Likert scale, with higher scores indicating more internalization/endorsement. Validation studies have reported good psychometric properties, with the coefficient alphas for the subscales and the total score all above .92 (Thompson et al., 2004). The coefficient alpha for the AFAT in the current study was α=.97. The complete measure can be found in Appendix D.

Dieting Vignettes. Participants were presented with one of four vignettes that describe 'Jody' who is a 22 year old female. Experimental conditions were created by manipulating her personal information describing her weight, with Jody being presented as either normal weight (BMI of 21) or obese (BMI of 34). Descriptions of her body image and dieting behaviour were manipulated so that she presented as experiencing body dissatisfaction and engaging in restrictive eating to achieve weight loss, or she presented as experiencing body satisfaction and engaging in intuitive eating and not trying to achieve weight loss. Descriptions of Jody's thoughts and behaviours (for the restrictive eating conditions) were based on diagnostic criteria for Anorexia Nervosa and Bulimia Nervosa from the DSM-5 (American Psychiatric Association, 2013). The complete dieting vignettes can be found in Appendix E.

Perceptions of Dieting Behaviour. Participants' perceptions of a hypothetical target 'Jody' were assessed using several items on a semantic differential scale (Healthy/Unhealthy, Positive/Negative, Risky/Not Risky, Normal/Abnormal). Each of the semantic differential items was followed with an open-ended question asking participants to identify which specific attitudes or behaviours they identify as pertaining to that specific label (i.e., what behaviours they perceive as risky, what behaviours they perceive as normal). Additional semantic differential scales were used to assess participants' perceptions of Jody as a person (Normal/Abnormal, Friendly/Unfriendly, Lazy/Hardworking, Smart/Stupid, Unattractive/Attractive). Additional open ended questions asked participants to explain under which circumstances they might perceive Jody's behaviour differently, and specifically referring to gender (if she were male) and weight (if her weight were different). A manipulation check item was included to verify that participants perceived Jody's BMI as how it was presented. Participants were also be asked to infer Jody's ethnicity. The coefficient alpha for the combination of the dependent variables was α=.82.The complete measure can be found in Appendix F.

Weight and Health Messages. Participants were presented with one of two different descriptions about weight and health. Content for these messages was adapted from World Health Organization materials (WHO fact sheet, 2013) to accurately reflect the position of the weight-based model of health, and from Health at Every Size materials (Bacon, 2010) to accurately reflect the position of the weight-independent view of health. These messages were accompanied by six items to assess participants' understanding and agreement with the messages they were presented with (herein referred to as Agree). The coefficient alpha for the agreement questions in the current study was α=.86.The

complete descriptions for each message and the Agree questions are included in Appendix G.

Procedure

Participants were recruited via the Psychology Participant Pool system (see Appendix H for advertisement) in the Fall 2014 semester. This study was presented in an online format using FluidSurveys, a survey-hosting service based in Canada. When participants chose to sign up to participate in this study, they were sent an email link to the survey, and upon opening the link they were asked to read the informed consent form (Appendix I), and to indicate agreement or disagreement to participate by clicking the appropriate box. Participants were prompted to print the consent form and keep it for their records. This study was formally cleared by the University of Windsor Research Ethics Board,

Once they consented to participate, participants were first asked to complete the AFAT, and following this they were randomly assigned to receive one of the two messages of weight and health and the manipulation check items (weight-based model vs. weight-independent view of health) (Appendix G). Following this, participants were randomly assigned to receive one of the four dieting vignettes through the FluidSurveys "randomize" function, which ensures random assignment, but equal distribution among conditions. After the vignette, the questionnaire assessing perceptions of Jody and her dieting behaviour followed (Appendix F). This was then followed by the Restraint Scale (Appendix C) and then the SATAQ-3 (Appendix D). Finally, participants completed the demographic questionnaire (Appendix A). Once participants completed all the questionnaires they were provided with a letter of information containing a summary of the research and the contact information of the researchers (Appendix J). Participants

who were assigned to the WHO message condition were then presented with the HAES message at the very end of the survey to provide them with an alternative understanding of the relationship between weight and health. Participants who chose to withdraw from the survey were still forwarded to the letter of information. Participants had to complete 80% of the survey items to be forwarded on to the page to collect their contact information so they could receive the bonus points, a requirement which was clearly indicated in the consent form and at the beginning of the study. After participants completed the study .5 bonus marks were credited to their account through the online Psychology Participant Pool system.

Design

This study was a 2 (health messaging) x 2 (weight manipulation) x 2 (dieting manipulation) between-subjects experimental study. First, participants were randomly assigned to receive one of two weight and health messages (weight-based model of health vs. weight-independent model of health). Secondly, participants were randomly assigned to one of four experimental conditions (description of Jody) with her weight (normal weight vs. obese) and her dieting behaviour (restrictive vs. non-restrictive) being experimentally manipulated to produce four scenarios. See illustration below for illustration of experimental conditions.

Weight-Based Model of Health		
	Weight Manipulation	
Dieting Manipulation	**Normal weight**	**Obese**
Restrictive		
Non-restrictive		

Weight-Independent Model of Health		
	Weight Manipulation	
Dieting Manipulation	**Normal weight**	**Obese**
Restrictive		
Non-restrictive		

Results

Preliminary Analyses

Manipulation checks

Examination of the manipulation check data indicated that 18 participants incorrectly identified Jody's BMI as it was presented in the vignette. When Jody was presented as having an obese BMI, five participants indicated that Jody had a normal BMI, and six participants indicated that she was underweight. When Jody was presented as having a normal BMI, four participants indicated she was underweight, two indicated she was overweight, and one indicated she was obese. These 18 participants were removed from data analyses as their recognition of her BMI is crucial in examining their perceptions of her dieting behaviour.

Missing data and outliers

If participants did not complete large sections (70% or more) or entire questionnaires they were removed from the analysis. To examine the pattern of remaining missing data, Little's MCAR test was applied to analyze missing data at the item level. There were eight participants who did not complete entire measures so were removed from analysis. This test was not significant, $X^2(13387)$, (N = 408) =13118.602, $p > .05$, which indicates that the data were missing completely at random. Expectation maximization was then used to impute data for missing items.

The data were then examined for extreme outliers on the AFAT, RS, and SATAQ. Z-scores above |3.29| for composite scores of these scales indicated that these were influential outliers, and six participants were removed from the analyses. The final sample included in this study was N = 402.

Semantic differential items

Perceptions of Jody were assessed using semantic differential items. These variables were constructed to be on a continuous scale, but did not approximate a normal distribution which did not allow for an ANOVA or MANOVA to be conducted. These variables had a binomial distribution, so a median split was conducted to create binomial outcomes. These binomial outcome variables were then analysed using logistic regression (see Main Analyses section).

Assumptions of logistic regression

The assumption of independence of errors is not assessed statistically, but is assumed given that participants were randomly assigned to only one experimental condition and there was independence of observations. The assumption of linearity of the logit is assessed only for continuous variables, so this was tested by creating a log transformation of the continuous predictor variables (AFAT, SATAQ, and RS) and running a logistic regression for each dependent variable (JodyHealthy, Jody ED, Unhealthy_Healthy, Not Risky_Risky, Negative_Positive, Abnormal_Normal, JodyNormal, JodyFriendly, JodyHardworking, JodySmart, JodyAttractive) in which the predictors were the interaction between each predictor and the log of itself. If the interaction term is significant in the logistic regression this indicates that the assumption has been violated. All interaction terms across all logistic regressions were non-significant ($p > .05$), so it can be said this assumption has been met. Finally, the assumption of non-multicollinearity (not having high correlations among predictor variables) was assessed by examining the Tolerance and VIF values of the AFAT, RS, and SATAQ for each of the dichotomous dependent variables assessing Jody. All of the

Tolerance values were greater than 0.1 and all of the VIF values were less than 10, indicating that the assumption of multicollinearity was not violated.

Reliability analyses

Cronbach's alpha for responses on the AFAT, RS, SATAQ, Agree, and the dichotomous dependent variables (DVs) were computed to assess internal reliability of these scales. Based on the reliability coefficients obtained, it can be said that these scales showed very good reliability as all values were above α=.80, except for the Restraint Scale which initially had inadequate reliability (α = .54). This can be assumed to be due to the large variance of correlation coefficients for item 1 ("How many pounds over your desired weight were you at your maximum weight?") with the other scale items. By deleting this item from the scale, Cronbach's α for the RS increased to α = .74. All further references to the Restraint Scale refer to the scale with item 1 removed. Table 2 displays the means, standard deviations, and reliability coefficients for these scales.

Main Analyses

Cross-tabulation analyses were conducted to count the number of participants assigned to each experimental condition. See Table 3 for a breakdown of number of participants (*n*) per condition.

Agreement with weight message

Participant agreement with the weight/health message that they were presented with was calculated by aggregating the responses to the six agreement items presented immediately after (see Appendix G). Agreement was not significantly different between the WHO message (M = 3.82, SD = .75) and the HAES message (M = 3.90, SD = .75), $t(1, 400)=-1.046$, $p > .05$. Participant BMI was not significantly related to agreement with

Table 2
Means, standard deviations, and reliability coefficients

Scale	*M*	*SD*	Cronbach's α
AFAT	1.81	.46	.94
SATAQ	3.09	.91	.97
RS	22.15	8.7	.74
Agree	3.86	.75	.86
DVs	*	*	.82

* not applicable for dichotomous variables

Table 3
Crosstabulation of n size for all experimental conditions

		Message Condition		
Weight Condition	Dieting Condition	HAES	WHO	Total
Normal	Restrictive	54	45	99
	Non-Restrictive	43	61	104
	Total	97	106	203
Obese	Restrictive	54	48	102
	Non-Restrictive	50	47	97
	Total	104	95	199
	Total	201	201	402

the WHO message, $r(201) = -.10$, $p > .05$, but was weakly positively correlated with agreement with the HAES message $r(201) = .14$, $p < .05$. Additionally, agreement with the WHO message was positively correlated with the AFAT weight control/blame subscale, $r(201) = .19$, $p < .01$, and with the SATAQ Internalization Athlete subscale, $r(201) = .15$, $p < .05$. Agreement with the HAES message was also negatively correlated with AFAT Total, $r(201) = -.23$, $p < .01$, the Physical/Romantic Unattractiveness subscale, $r(201) = -.25$, $p < .01$, and the Weight Control/Blame subscale, $r(201) = -.25$, $p < .01$.

Logistic Regressions-Research Question 1 and 2

This section outlines the main quantitative analyses conducted to answer the principal research questions in this study ("Are antifat attitudes and beliefs about the causes of body weight related to the perceptions of dieting behaviour of thin and fat targets?" and "Do biomedical 'obesity as illness' messages influence the perceptions of dieting behaviour of thin and fat targets?") For each of the dichotomous dependent variables asking about Jody (see Table 4), a logistic regression was used. Backward stepwise entry method is the most appropriate method to apply when there is no theory or previous evidence to suggest which predictors would be significant. For each logistic regression analysis the final step/model was chosen for interpretation based on the best model fit, and the best classification ability based on the backwards stepwise entry method in which only significant predictors are left. The predictor variables entered into each regression analysis are listed in Table 5. These analyses tested the predictions in the first four hypotheses concerning how the health messages presented, Jody's body weight, and participant antifat attitudes would affect perceptions of Jody's dieting behaviour.

Table 4

Dependent variables analysed with logistic regression

Questionnaire Item	Variable
Do you think Jody has an eating disorder? Yes/No	Jody ED
Do you think Jody is healthy? Yes/No	Jody Healthy
Thinking about the scenario you read about Jody, please complete the following items to reflect your thoughts about her attitudes and behaviours. For each pair of words, indicate your response on the scale provided	
Healthy---------- Unhealthy	Healthy_Unhealthy
Risky---------- Not Risky	Risky_NotRisky
Negative---------- Positive	Negative_Positive
Normal---------- Abnormal	Normal_Abnormal
Thinking about Jody as a person, please complete the following items to reflect your personal attitudes. For each pair of words, indicate your response on the scale provided.	
Normal---------- Abnormal	JodyNormal_Abnormal
Friendly---------- Unfriendly	JodyFriendly_Unfriendly
Lazy----------Hardworking	JodyLazy_Hardworking
Smart---------- Stupid	JodySmart_Stupid
Unattractive---------- Attractive	JodyUnattractive_Attractive

Table 5

Predictor variables entered into the regression equations

Weight condition
Dieting condition
Message condition
Weight condition x Dieting condition
Dieting condition x Message condition x Weight condition
Weight condition x Dieting condition x AFAT_Total
Weight condition x Dieting condition x AFAT_Blame
Weight condition x Dieting condition x AFAT_Physical
Weight condition x Dieting condition x AFAT_Social

In binary logistic regression, each category for the dichotomous variables is coded as 0 or 1. The category that is assigned the value of 1 is the category for which the prediction is being made. Therefore, for the variable of JodyED, 'Yes' was coded as 0 and 'No' was coded as 1, so the output is interpreted as predicting the likelihood of participants choosing No to "Do youthink Jody has an eating disorder?" Dichotomous predictor variables are coded the same way, in which each category is coded as 0 or 1, and predictions are being made based on the category coded with 1. Table 6 outlines the binomial coding for each categorical variable.

The standardized regression coefficient (β) denotes the strength of the predictor variable in the model, with S.E. being the standard error of the β value. β represents the change in the logit of the outcome variable associated with a one-unit (1 SD) change in the predictor variable. The Wald statistic and significance value denotes whether the β coefficient is significantly different from 0, in which a significance of less than .05 indicates the β coefficient is significantly different from 0 and can be said to be making a significant contribution to the prediction of the outcome. Exp(β) denotes the odds ratio, which indicates the change in odds resulting from a one-unit change in the predictor. An odds ratio greater than 1 indicates that as the predictor increases, the odds of the outcome occurring increase, and when the odds-ratio is less than 1 it indicates that as the predictor increases the odds of the outcome occurring decrease (the outcome in this case is the response on the DV coded as 1).

The dieting condition, weight condition, and antifat attitudes were found to be significant predictors of whether participants saw Jody has having an eating disorder (see Table 7.1). A main effect for dieting was significant in that when Jody was not dieting,

Table 6

Binomial coding of dichotomous variables

Variable	0	1
JodyED	Yes	No
JodyHealthy	Yes	No
Healthy_Unhealthy	Unhealthy	Healthy
Risky_NotRisky	Risky	Not Risky
Negative_Positive	Negative	Positive
Normal_Abnormal	Abnormal	Normal
JodyNormal_Abnormal	Abnormal	Normal
JodyFriendly_Unfriendly	Unfriendly	Friendly
JodyLazy_Hardworking	Lazy	Hardworking
JodySmart_Stupid	Stupid	Smart
JodyUnattractive_Attractive	Unattractive	Attractive
Dieting Condition	Restrictive	Non-restrictive
Weight Condition	Obese BMI	Normal BMI
Message Condition	WHO	HAES

Table 7.1

Significant predictors for JodyED based on final logistic regression model

Dependent Variable	Predictors	β	S.E.	Wald	Sig.	Exp(β)
JodyED (1=No)	Dieting condition	4.461	.445	100.629	.000	86.769
	Weight x Dieting condition x AFAT_Total	-8.420	2.902	8.420	.004	.000
	Weight x Dieting condition x AFAT_Blame	7.981	2.910	7.525	.006	2926.190

participants were much more likely to say she did not have an eating disorder. Dieting also interacted with the weight condition and antifat attitudes. When Jody was not dieting, having higher antifat attitudes was predictive of being more likely to say she did have an eating disorder regardless of her size, but when Jody was dieting and normal weight, having higher overall antifat attitudes was predictive of being more likely to say she did not have an eating disorder. The second interaction with weight control/blame attitudes is similar, in that when Jody was obese and not dieting, those withhigher weight control/blame beliefs were more likely to say she did have an eating disorder, but when she was normal weight and dieting, having higher weight control/blame beliefs predicted that she was not seen as having an eating disorder.

When predicting when participants would respond “no” to whether Jody was healthy (see Table 7.2), a main effect for dieting and weight condition, as well as an interaction with antifat attitudes were significant predictors. A main effect for weight signifies that when Jody was obese, participants were more likely to say she is not healthy, and the main effect for dieting signifies that when Jody was dieting, participants were more likely to say that she was not healthy. The interaction between weight condition, dieting condition, and physical/romantic unattractiveness beliefs reveals that when Jody was not dieting and obese, those with higher physical/romantic unattractiveness beliefs were more likely to say she was not healthy.

Participants were also asked to indicate on a bipolar scale whether they perceived Jody’s attitudes and behaviours as healthy or unhealthy, which was transformed into a binomial variable. Dieting and weight condition were significant predictors in this model (see Table 7.3). The main effect for dieting denotes that, overall, participants were more

Table 7.2

Significant predictors for JodyHealthy based on final logistic regression model

Dependent Variable	Predictors	β	S.E.	Wald	Sig.	Exp(β)
JodyHealthy (1=No)	Weight condition	-.740	.367	4.067	.000	.477
	Dieting condition	-1.831	.349	27.589	.000	.160
	Weight condition x Dieting condition x AFAT_Physical	-.742	.245	9.158	.002	.476

Table 7.3

Significant predictors for Healthy_Unhealthy based on final logistic regression model

Dependent Variable	Predictors	β	S.E.	Wald	Sig.	Exp(β)
Healthy_Unhealthy (1=Healthy)	Dieting condition	.565	.251	5.958	.025	1.759
	Dieting condition x Weight condition	.532	.286	3.454	.48	1.932

likely to say Jody's behaviours are unhealthy when she was dieting. However, the interaction denotes that when Jody was normal weight, her behaviours were perceived as unhealthy when she was dieting, and healthy when she was not dieting. However, if she was presented as obese and not dieting, participants were more likely to say her behaviours are unhealthy.

Dieting condition, weight condition, and antifat attitudes were significant predictors of perceptions of Jody's attitudes and behaviours as risky (see Table 7.4). Again, the main effect for dieting condition reveals that, overall, participants are more likely to say her behaviours are not risky when she is not dieting. The dieting by weight interaction reveals that when Jody is normalweight, her dieting is perceived as risky and her not dieting is perceived as not risky, but when she is obese and not dieting, participants are more likely to perceive her behaviours as risky. Further, the weight and diet conditions interacted with overall antifat attitudes. When Jody was depicted as not dieting, having higher overall antifat attitudes is predictive of being more likely to perceive this as risky (regardless of body size), but when Jody was presented as normal weight and dieting, having higher overall antifat attitudes was predictive of being more likely to say her behaviours are not risky.

Dieting condition, message condition, weight condition, and antifat attitudes all significantly predicted if Jody's attitudes and behaviours are perceived as positive (see Table 7.5). A main effect for the message condition indicated that those who were presented with the HAES message were more likely to view her behaviours as positive. The main effect for dieting shows that participants are more likely to view her behaviours as positive when she was presented as not dieting. The interaction between dieting and

Table 7.4
Significant predictors for Risky_NotRisky based on final logistic regression model

Dependent Variable	Predictors	β	S.E.	Wald	Sig.	Exp(β)
Risky_NotRisky (1=Not Risky)	Dieting condition	1.420	.281	25.511	.000	4.135
	Dieting condition x Weight condition	2.085	.932	5.006	.025	8.042
	Dieting condition x Weight condition x AFAT_Total	-2.052	1.032	3.958	.047	.128

Table 7.5
Significant predictors for Negative_Positive based on final logistic regression model

Dependent Variable	Predictors	β	S.E.	Wald	Sig.	Exp(β)
Negative_Positive (1=Positive)	Message condition	.742	.305	5.910	.015	2.100
	Dieting condition	3.313	.342	93.647	.000	2.100
	Dieting condition x Weight condition	3.291	.966	11.607	.001	26.866
	Dieting condition x Weight condition x AFAT_Social	-1.567	.555	7.972	.005	.209

weight indicates that when Jody was obese and not dieting, participants were less likely to perceive her non dieting behaviours as positive. When accounting for the effect of social/character disparagement beliefs in this interaction, it was found that when Jody was normal weight and dieting, having higher social/character disparagement beliefs was predictive of perceiving her behaviours as positive.

Only dieting and weight condition were significant predictors of whether Jody's attitudes and behaviours were seen as normal (see Table 7.6). Jody's behaviours are more likely to be perceived as normal when she is not dieting. The interaction reveals that when Jody is normal weight and not dieting her behaviours are perceived as normal, and when she is dieting her behaviours are perceived as abnormal. However, when Jody is presented as obese and not dieting her behaviours are less likely to be perceived as normal.

In addition to the questions specifically investigating perceptions of Jody's attitudes and behaviours, additional questions inquired about participants' perceptions of Jody as a person. These items asked participants to think about Jody as a person, and how they perceived her as a whole. The following sections will outline the results of these questions. The dieting condition and weight condition were significant predictors of whether Jody was perceived as normal (see Table 7.7). Overall, when Jody was presented as not dieting, she was more likely to be perceived as normal, but the interaction reveals that when Jody is obese and not dieting, she is less likely to be perceived as normal. There were significant main effects for the dieting and weight conditions in predicting if Jody was perceived as friendly (see Table 7.8). Participants were more likely to perceive Jody as friendly when she was presented as not dieting. However, participants were less

Table 7.6
Significant predictors for Normal_Abnormal based on final logistic regression model

Dependent Variable	Predictors	β	S.E.	Wald	Sig.	Exp(β)
Normal_Abnormal (1=Normal)	Dieting condition	1.624	.266	37.357	.000	5.076
	Dieting condition x Weight condition	2.675	1.024	6.817	.009	14.508

Table 7.7
Significant predictors for JodyNormal_Abnormal based on final logistic regression model

Dependent Variable	Predictors	β	S.E.	Wald	Sig.	Exp(β)
Jody Normal_Abnormal (1=Normal)	Dieting condition	1.536	.264	33.886	.000	4.647
	Dieting condition x Weight condition	.832	.318	6.835	.009	2.298

Table 7.8
Significant predictors for JodyFriendly_Unfriendly based on final logistic regression model

Dependent Variable	Predictors	β	S.E.	Wald	Sig.	Exp(β)
Jody Friendly_Unfriendly (1=Friendly)	Dieting condition	2.556	.257	99.294	.000	12.888
	Weight condition	-.478	.245	3.810	.05	.620

likely to perceive her as friendly when she was normal weight, although the main effect for dieting was considerably stronger than the main effect for weight.

The dieting condition, and the interaction between the dieting and weight condition with antifat attitudes were significant predictors of whether Jody was perceived as hardworking (see Table 7.9). When Jody was presented as not dieting, participants were much less likely to perceive her as hardworking, but when she was presented as dieting, participants were about equally as likely to perceive her as lazy or hardworking. The three-way interaction between the weight and dieting condition and antifat attitudes reveals that when Jody was presented as obese and not dieting, having higher overall antifat attitudes was predictive of being less likely to say she is hardworking. The second three-way interaction between the weight and dieting condition and weight control beliefs revealed that when Jody was presented as not dieting, and when she was presented as obese and not dieting, having higher weight/control blame beliefs was predictive of being more likely to perceive Jody as lazy.

The dieting condition, and the three-way interaction between weight, dieting, and antifat attitudes were significant predictors of whether Jody was perceived as smart (see Table 7.10). The main effect for dieting condition indicates that when Jody is not dieting, participants are more likely to view her as smart. The three-way dieting condition by weight condition by antifat attitudes interaction reveals that when Jody is presented as normal weight and dieting, participants with higher antifat attitudes are also less likely to perceive her as smart. The diet by weight by social/character disparagement beliefs interaction functioned slightly differently in this model. When Jody was presented as

Table 7.9
Significant predictors for JodyLazy_Hardworking based on final logistic regression model

Dependent Variable	Predictors	β	S.E.	Wald	Sig.	Exp(β)
Jody Lazy_Hardworking (1=Hardworking)	Dieting condition	-1.481	.300	24.393	.000	.227
	Weight condition x Dieting condition x AFAT_Total	2.086	.869	5.759	.016	8.051
	Weight condition x Dieting condition x AFAT_Blame	-1.486	.711	4.371	.037	.226

Table 7.10
Significant predictors for JodySmart_Stupid based on final logistic regression model

Dependent Variable	Predictors	β	S.E.	Wald	Sig.	Exp(β)
JodySmart_Stupid (1=Smart)	Dieting condition	.879	.247	12.629	.000	2.409
	Dieting condition x Weight condition x AFAT_Total	1.286	.743	2.994	.044	3.617
	Dieting condition x Weight condition x AFAT_Social	-1.632	.930	3.084	.049	.195

obese and dieting, having higher social/character disparagement beliefs was predictive of participants being less likely to view her as smart.

Weight condition, dieting condition, and antifat attitudes were all significant predictors of whether Jody was perceived as attractive (see Table 7.11). The main effect for weight shows that when Jody was presented as normal weight, participants were more likely to perceive her as attractive, over all. The interaction between weight and dieting condition and overall antifat attitudes reveals that when Jody was normal weight and not dieting, those with higher overall antifat attitudes were more likely to see her as attractive, but if she was normal weight and dieting, those with higher antifat attitudes were less likely to see her as attractive. As well, when Jody was presented as obese and not dieting, those with higher overall antifat attitudes were much less likely to perceive her as attractive. The diet and weight interaction with physical/romantic unattractiveness beliefs revealed that when Jody was presented as obese, having higher physical/romantic unattractiveness beliefs was predictive of being less likely to see her as attractive (regardless of dieting condition). But when Jody was presented as normal weight and not dieting, having higher physical/romantic unattractiveness beliefs was predictive of participants being more likely to view her as attractive.

To further examine the predictive value of each regression model the classification tables were examined (see Table 8). The response of each participant on each DV is predicted using the given regression model with the significant predictors, and then compared to their actual response to determine how accurate the model is in predicting a participant's response.

Table 7.11
Significant predictors for JodyUnattractive_Attractive based on final logistic regression model

Dependent Variable	Predictors	β	S.E.	Wald	Sig.	Exp(β)
Jody Unattractive_Attractive (1=Attractive)	Weight condition	.840	.247	11.853	.001	2.338
	Weight condition x Dieting condition x AFAT_Total	-2.254	.972	5.373	.020	.015
	Weight condition x Dieting condition x AFAT_Physical	2.002	.800	6.263	.012	7.403

Table 8
Classification tables for all regression models

Observed		Predicted		Percentage Correct
		Do you think Jody has an eating disorder?		
		Yes	No	
Do you think Jody has an eating disorder?	Yes	174	9	95.1
	No	28	189	87.6
	Overall percentage			91.0
		Do you think Jody is Healthy?		
		Yes	No	
Do you think Jody is Healthy?	Yes	94	82	53.4
	No	10	216	95.6
	Overall percentage			77.1
		Unhealthy_Healthy		
		Unhealthy	Healthy	
Unhealthy_Healthy	Unhealthy	181	40	81.9
	Healthy	117	64	35.4
	Overall percentage			60.9
		NotRisky_Risky		
		Not Risky	Risky	
NotRisky_Risky	Not Risky	223	26	89.6
	Risky	77	76	49.7
	Overall percentage			74.4
		Negative_Positive		
		Negative	Positive	
Negative_Positive	Negative	184	40	82.1
	Positive	19	159	89.3
	Overall Percentage			85.3
		Normal_Abnormal		
		Normal	Abnormal	
Normal_Abnormal	Normal	149	55	73.0
	Abnormal	52	146	73.7
	Overall Percentage			73.4
		JodyNormal_Abnormal		
JodyNormal_Abnormal		Normal	Abnormal	
	Normal	149	59	71.6
	Abnormal	52	142	73.2
	-Overall Percentage			72.4
		JodyFriendly_Unfriendly		
		Unfriendly	Friendly	
JodyFriendly_Unfriendly	Unfriendly	173	67	72.1
	Friendly	28	134	82.7
	Overall Percentage			76.4

		JodyLazy_Hardworking		
		Lazy	Hardworking	
JodyLazy_Hardworking	Lazy	269	1	99.6
	Hardworking	131	1	.8
	Overall Percentage			67.2

		JodySmart_Stupid		
		Stupid	Smart	
JodySmart_Stupid	Stupid	138	76	64.5
	Smart	80	108	57.4
	Overall Percentage			61.2

		JodyUnattractive_Attractive		
		Unattractive	Attractive	
JodyUnattractive_Attractive	Unattractive	137	75	64.6
	Attractive	76	114	60.1
	Overall Percentage			62.4

When using the regression model to classify participant's responses it was found that the model is very good as classifying whether participants would view Jody as having an eating disorder (at about 91% accuracy). The model for JodyHealthy was also able to very accurately classify participants who indicated "no," but was less accurate in classifying those who indicated 'yes.' A similar pattern was found for classifying whether participants perceived Jody's attitudes and behaviours as healthy or unhealthy, and well as risky or not risky. The models are accurate in classifying those who viewed her attitudes and behaviours as unhealthy and not risky, but were much less accurate in classifying those who viewed her attitudes and behaviours as healthy or risky. There is more variance unaccounted for in the models for those who indicate she is a healthy person or that her behaviours are healthy, or for those who identify her behaviours as risky. The models for predicting whether participants viewed Jody's attitudes and behaviours as negative/positive and normal/abnormal are fairly accurate in their classifications, as well as the models for predicting if Jody was seen as normal/abnormal and friendly/unfriendly. The model for JodyLazy_Hardworking was only accurate in classifying those who indicated she was lazy. This is likely due to the lack of variance among 'lazy' responses, but there is much more variance among the 'hardworking' responses. The models for predicting whether participants viewed Jody as smart/stupid and as unattractive/attractive were less accurate in classifying responses at less than 70% accuracy. The models for these variables are not capturing enough variance to be able to accurately determine participants' responses.

Correlational Findings-Research Question 3

Correlational analyses were conducted to examine the relationship between the predictor variables (RS, AFAT, SATAQ), along with participant BMI, and participant agreement (with the HAES message and the WHO message) (See Table 9). These analyses tested the relationships predicted in hypothesis five that participants' level of restrained eating, antifat attitudes, belief in weight controllability, and internalization of appearance norms would be positively interrelated.

The pattern of correlations shows that each scale (RS, AFAT, and SATAQ) and its subscales were highly positively correlated with each other, which is to be expected and is consistent with the reliability analyses. Participants' overall antifat attitudes or their belief in weight controllability were not found to be correlated with restrained eating, but were significantly positively related to internalization of appearance norms (albeit weakly, as all correlations were below $r = .25$). However, a moderate positive correlation was found between participants' restrained eating and their internalization of appearance norms, which indicates that increased history of dieting and concern over food and eating is related to increased awareness and endorsement of societal appearance norms.

Participant BMI was found to be significantly negatively correlated with their antifat attitudes (AFAT total and all subscales), and positively correlated with endorsement of appearance norms (SATAQ Total, internalization general, and pressures) though these relationships were weak, as all correlation coefficients were less than |.25|. Participant BMI was found to be significantly positively related to restrained eating (RS total and subscales), with a moderately strong relationship which indicates that

Table 9

Correlations between RS, AFAT, SATAQ, and participant BMI

	Variable	1	2	3	4	5	6	7	8	9	10	11	12
1	AFAT Total	-											
2	AFAT Social/ Character Disparagement	.87**	-										
3	AFAT Weight Control/Blame	.85**	.60**	-									
4	AFAT Physical/ Romantic Unattractiveness	.89**	.66**	.73**	-								
5	RS Total	.02	.01	.02	.00	-							
6	RS Dieting/Weight History	-.01	.00	-.01	-.03	.95**	-						
7	RS Concern with Food/Eating	.07	.04	.08	.08	.63**	.36**	-					
8	SATAQ Total	.18**	.09	.19**	.21**	.34**	.26**	.37**	-				
9	SATAQ Internalization General	.16**	.08	.15**	.20**	.35**	.26**	.40**	.91**	-			
10	SATAQ Internalization Athlete	.22**	.13*	.24**	.23**	.13**	.06	.24**	.72**	.66**	-		
11	SATAQ Information	.20**	.10*	.22**	.21**	.20**	.16**	.19**	.77**	.55**	.34**	-	
12	SATAQ Pressures	.03	-.02	.02	.06	.39**	.32**	.37**	.84**	.76**	.56**	.44**	-
13	Participant BMI	-.21**	-.13**	-.23**	-.20**	.47**	.47**	.25**	.13**	.11**	.02	.06	.22**

* $p < .05$
** $p < .01$

participants with a higher BMI/heavier body weight reported a stronger tendency to engage in more dieting/restrained eating and experience more concern over food and eating.

Assumptions about Jody's and Ethnicity/Social Class-Research Question 4

To answer research question 4 the pattern of responses to items asking for attributions of Jody's ethnicity and social class were examined. Participants overwhelmingly assumed Jody was White (n = 333, 83%), with 6% (n = 24) assuming she was Black, and 5.5% indicating that they could not determine her ethnicity based on the information provided. The remaining participants indicated they thought she was Hispanic (2.5%), South Asian (.5%), East Asian (1.5%), Middle Eastern (.5%), or First Nations/Aboriginal (.5%). There was no effect for the message that participants received (HAES vs WHO), and among participants who assumed she was White, there was no significant difference across the four weight/dieting conditions (X^2 (1, N = 333) = .306, $p > .05$). However, 50% of those participants who did assume she was African-Canadian/Black were presented with the scenario of Jody as obese and not dieting (see Table 10). With only 11.5% of participants assuming that Jody was an ethnicity other than White, and only 24 participants who indicated they believed she was African-Canadian/Black, other statistical analyses were not possible as it did not afford the statistical power required.

The majority of participants assumed Jody to be middle class (69.5%, n =279), followed by upper middle class (12%, n = 49), working class (8.5%, n = 34) and lower middle class (8.5%, n = 34). Jody's weight was related to perceptions of her social class, $\chi^2(5, N = 402) = 14.691$, $p < .05$. Jody was more likely to be obese for participants who

Table 10
Participant inferences of Jody's ethnicity by weight condition and dieting condition

Ethnicity	Diet	Weight	N	%
Caucasian/White	Non Restrictive	Normal	82	24.5
		Obese	71	21
	Restrictive	Normal	91	27.5
		Obese	89	27
African-American/Black	Non Restrictive	Normal	5	21
		Obese	12	50
	Restrictive	Normal	2	8
		Obese	5	21

perceived her as poor, working class, and lower middle class, and for those who perceived her as middle class, upper middle class, or rich, Jody was more likely to be normal weight (See Table 11). Perceptions of Jody's social class was not found to be significantly related to dieting condition, χ^2 (5, N = 402) = 9.016, $p > .05$.

Coding Jody's Attitudes and Behaviours from Open-Ended Questions

To further support the quantitative analyses of the logistic regressions to answer research questions one and two, open-ended questions were used. Following each semantic differential item, participants were then asked to indicate which of Jody's attitudes and behaviours from the scenario they identified as healthy/unhealthy, risky/not risky, negative/positive, and normal/abnormal. Responses were coded using a thematic content analysis by a single-rater. Content analysis was used to code participants' open-ended responses into discrete categories which summarize and systematize the data (Smith, 2008). The first step was to identify each individual attitude or behaviour of Jody's listed by participants in their response. Since the scenarios presented a finite number of attitudes and behaviours that Jody displayed for participants to respond with, a top-down approach was used to derive the codes for these questions. However, sometimes participants would infer something that was not directly mentioned in the scenario, so in addition a bottom-up approach was used in which any responses provided by participants that were not directly drawn from the attitudes and behaviours listed in the scenario were also included in the coding. Each attitude or behaviour mentioned was then classified into one of the two poles for the particular question (e.g., healthy or unhealthy; risky or not risky; negative or positive; normal or abnormal). Frequency counts across experimental conditions were then tabulated to examine the most common responses for

Table 11
Participant inferences of Jody's social class by weight and dieting conditions

Social Class	Weight Condition	Dieting Condition	*N*
Poor/Living in poverty	Normal	Restrictive	1
		Non-Restrictive	1
	Obese	Restrictive	3
		Non-Restrictive	0
Working Class	Normal	Restrictive	8
		Non-Restrictive	8
	Obese	Restrictive	10
		Non-Restrictive	8
Lower Middle Class	Normal	Restrictive	4
		Non-Restrictive	4
	Obese	Restrictive	11
		Non-Restrictive	15
Middle Class	Normal	Restrictive	65
		Non-Restrictive	80
	Obese	Restrictive	66
		Non-Restrictive	68
Upper Middle Class	Normal	Restrictive	20
		Non-Restrictive	11
	Obese	Restrictive	12
		Non-Restrictive	6
Rich/Upper Class	Normal	Restrictive	1
		Non-Restrictive	0
	Obese	Restrictive	0
		Non-Restrictive	0

each item. Since the coding was done by a single rater, reliability analyses were not conducted. See Appendix K for the complete list of categories derived from the content analysis and the tables displaying the specific responses and frequency counts for the responses to these open-ended questions about Jody's attitudes and behaviours.

The first open-ended question specifically asked participants to identify which attitudes and behaviours they see as healthy or unhealthy. When Jody was normal weight and not dieting participants generally identified more attitudes and behaviours as healthy than unhealthy. The most common healthy attitudes and behaviours identified were her level of physical activity, not being obsessed with her appearance/weight, eating according to her internal hunger/fullness cues, and her self-confidence. The most common attitudes and behaviours identified as unhealthy were that she doesn't monitor food/exercise and doesn't restrict any foods. When Jody was normal weight and dieting participants identified more of her attitudes and behaviours as unhealthy than healthy. The most common attitudes and behaviours identified as healthy was that she was active, was concerned with her body weight, restricted certain foods, and that she monitored her food and exercise. The most common attitudes and behaviours identified as unhealthy was extreme caloric restriction, excessive exercise, that she hates her body, is obsessed with her weight/appearance, and weighs herself often. When Jody was obese and not dieting participants almost equally identified attitudes and behaviours as healthy and unhealthy. The most common attitudes and behaviours identified as healthy was that she is active, has self-confidence, not obsessed/concerned with her weight/appearance, and eats according to her internal cues of hunger and fullness. The most common attitudes and behaviours identified as unhealthy was that she is not restricting certain types of

foods, she is not concerned with her weight, she doesn't monitor her food/exercise, and she is not physically active. When Jody was obese and dieting the attitudes and behaviours most commonly identified as healthy are that she is active, that she is concerned with her weight, and that she monitors her food and exercise. Participants identified more behaviours as unhealthy than healthy, but often qualified their responses by saying that the behaviours they identified as unhealthy are because they are too extreme, but not that she shouldn't engage in these behaviours at all. The attitudes and behaviours most commonly identified as unhealthy are extreme caloric restriction, she hates her body, excessive exercise, avoiding social activities, and restricting/forbidding certain types of foods.

The second open-ended question asked participants to identify which attitudes and behaviours they see as risky or not risky. When Jody was normal weight and not dieting the attitudes and behaviours most commonly identified as not risky was that she was active, not concerned/obsessed with her body weight, she eats according to her internal hunger/fullness cues, and her self-confidence. The attitudes and behaviours that were identified as risky was not she was not monitoring her food and exercise, that she doesn't restrict any foods, and that she is not active. When Jody was normal weight and dieting the most common attitudes and behaviours identified as not risky was that she was active, but the attitudes and behaviours identified as risky was extreme caloric restriction, excessive exercise, restricting/forbidding foods, she hates her body, and avoids social activities. When Jody was obese and not dieting attitudes and behaviours identified as not risky was that she was active, eats according to her internal hunger/fullness cues, and her self-confidence; however, the attitudes and behaviours identified as risky is that she eats

according to her internal hunger/fullness cues, she doesn't monitor her food/exercise, she is not active, and is not concerned with her weight. When Jody was obese and dieting the most common response for attitudes and behaviours identified that are not risky was that she was active, but the attitudes and behaviours identified as risky was extreme caloric restriction, excessive exercise, she hates her body, and restricts/forbids certain foods. The attitudes and behaviours identified as risky were said to be too extreme (in terms of things like caloric restriction and exercise), but were seen to be acceptable or not risky if less extreme.

The third open-ended question asked participants to identify specific attitudes and behaviours they see as negative or positive. When Jody was normal weight and not dieting it was seen that not monitoring food and exercise was negative, but the attitudes and behaviours identified as positive were that she was active, not concerned/obsessed with her body weight/appearance, self-confidence, eats according to internal hunger/fullness cues, and that she engages in social activities. When Jody was normal weight and dieting the attitudes and behaviours identified as negative were excessive exercise, she hates her body, extreme caloric restriction, she avoids social activities, and she weighs herself often; however, the attitudes and behaviours identified as positive was that she is concerned with her weight, she monitors her food/exercise, and that she is physically active. When Jody was obese and not dieting the attitudes and behaviours identified as negative was that she does not monitor her food or exercise, she's not concerned with her body weight, doesn't restrict any foods, and doesn't count her calories; however, the attitudes and behaviours identified as positive is that she has self-confidence, is physically active, and is not obsessed with her body weight/appearance.

When Jody was obese and dieting, attitudes and behaviours seen as negative are that the excessive exercise, extreme caloric restriction, she hates her body, restricting/forbidding foods, weighs herself often, and avoids social activities; however, the attitudes and behaviours identified as positive is that she is physically active, and is concerned with her body weight.

The fourth open-ended question asked participants to identify which attitudes and behaviours they identify as normal or abnormal. When Jody was normal weight and not dieting attitudes and behaviours identified as abnormal was not she is not concerned with her weight/appearance; however, being physically active, eating according to her internal hunger/fullness cues, and not calorie counting were identified as normal. When Jody was normal weight and dieting, excessive exercise, extreme caloric restriction, and extreme body hatred were identified as abnormal; however, being concerned with her weight/appearance, and being physically active were the most common attitudes and behaviours identified as normal. When Jody was obese and not dieting, commonly identified attitudes and behaviours as abnormal were not being concerned with her body weight, not monitoring her food/exercise, and not restricting any foods; on the other hand, commonly identified attitudes and behaviours that are normal were being physically active, eating according to internal hunger/fullness cues, and not calorie counting. When Jody was obese and dieting, her excessive exercise, extreme caloric restriction, and avoiding social activities were identified as abnormal; however, being concerned with her body weight, being physically active, and monitoring her food/exercise were identified as normal.

Circumstances that Would Change Perceptions

At the end of the questionnaire, participants were asked three open-ended questions to explore under what circumstances they would perceive Jody differently and why. These questions were not tied to a specific hypothesis or research question, but sought to elicit more qualitative data to support and contextualize the quantitative findings. Responses to each question were categorized as “yes” or “no” and reasons given by participants were analysed using a thematic content analysis in which responses were classified into common themes/responses. Frequency counts across participants and experimental conditions were tabulated.

For the question asking participants if they would perceive Jody differently if she were male, a loglinear analysis was conducted to examine the effect of the message, weight, and dieting conditions on participant yes/no responses. A loglinear analysis is an extension of chi-square when there are three or more variables. This analysis revealed that for this item there was no association of the main effects of message, weight, and dieting condition, and no two- or three-way interactions, as all chi-square tests were non-significant. This indicated that there is no association between the experimental variables and participants’ yes/no responses. See Appendix L detailed tables listing all participant responses and frequency counts.

When participants indicated that they would not perceive Jody differently if she were male, the most common reason given is that since the behaviours are the same their perception would not change with a change in the person’s gender, and it was often emphasized that it is not unusual for men to also be very concerned with their appearance/body weight. Participants who indicated that they would perceive Jody

differently if she were male supported this response with the statement that women are more concerned (or men are less concerned) with their weight/appearance, that it is biologically natural for men to be heavier and consume more calories than women, and that there is more social pressure on women to be thin than men.

For the question asking if participants would perceive Jody differently if she were a different body size, a loglinear analysis revealed that there are significant associations between participants' yes/no responses and the three experimental conditions. Being presented with the WHO message was associated with responding yes to this question, $\chi^2(1, N=390)=4.726$, $p<.05$, z=-2.141, being presented with Jody as normal weight was associated with responding yes, $\chi^2(1, N=390)=5.723$, $p<.05$, z=2.349, and being presented with Jody as not engaging in dieting behaviour was associated with responding yes, $\chi^2(1, N=390)=15.509$, $p<.05$, z=3.907. Participants who responded no to this question (in that a change in body weight would not change their perceptions) emphasized that the behaviours of the person would be the same, so a change in body size would not change the situation. However, participants who responded that yes a change in body weight would change their perceptions clearly displayed a double standard in terms of dieting behaviour (or lack thereof). When Jody was normal weight participants responded that her dieting behaviour would be less negative if she was heavier, and that her lack of dieting behaviour would be more negative if she was heavier. When Jody was obese participants responded that her dieting behaviour would be an eating disorder if she was thinner, and that her lack of dieting behaviour would be understandable or positive if she was thinner.

Additionally, participants were asked a general open-ended question asking under what circumstances they would perceive Jody's attitudes and behaviours differently. 201 participants responded to this question and indicated under what circumstances they would perceive Jody differently. When Jody was normal weight the most common response was that they would perceive her differently if she was heavier/overweight/obese. When Jody was obese and not dieting, the most common responses were that participants would perceive her differently if she thought more about her diet/exercise/body weight, or that if she had unhealthy eating and exercise habits. When Jody was obese and dieting the most common response was that participants would perceive her differently if she were thinner because she would then be unhealthy, or that if she had unhealthy habits where she was not trying to change her body.

Finally, participants were given one open-ended question at the end of the questionnaire where they were free to write anything else they thought was important for the researchers to know. Out of 402 participants, only 164 had a response to this item. When Jody was normal weight and not dieting participants emphasized that her self-confidence is positive, but if she was dieting participants emphasized the risk for an eating disorder, When Jody was obese and not dieting participants emphasized that her self-confidence is positive but that she should still try to lose weight to be healthy, and if she was dieting participants emphasized that her weight loss behaviours were extreme and unhealthy and could lead to an eating disorder.

Discussion

Although there was no specific hypothesis in regard to a main effect for the dieting condition, overall it was found that the dieting condition had quite a significant effect on participants' perceptions. When Jody was presented as dieting she was more likely to be seen as having an eating disorder, less likely to be seen as healthy, and her behaviours were more likely to be seen as unhealthy, risky, negative, and abnormal. This pattern is expected, given that the two dieting scenarios were presented as two extreme ends of a continuum (with absolutely no dieting or extreme dieting), so participants' perceptions of her dieting behaviour should indicate they recognize that it is generally extreme and unhealthy. Overall effects for the dieting and weight conditions also revealed several stereotypes about body weight and weight loss. When Jody was presented as not dieting she was more likely to be perceived as friendly, smart, but also more likely to be perceived as lazy. Additionally, when Jody was presented as normal weight she was more likely to be perceived as both friendly and attractive.

The primary research question this study sought to answer was if antifat attitudes and beliefs about the causes of body weight are related to the perceptions of dieting behaviour of thinner and heavier individuals from hypothetical scenarios, and if biomedical 'obesity as illness' messages influence these perceptions. The first hypothesis was that the dieting behaviour of thinner targets would be perceived as more risky, unhealthy, negative, and abnormal than the dieting behaviour of heavier targets. The pattern of quantitative results supported this hypothesis. Several dieting condition by weight condition interactions demonstrated that it was the perceptions of Jody when she was not dieting that differed across the weight conditions. When Jody was dieting her

behaviours were generally perceived as unhealthy, risky, negative, and abnormal, whether she was normal weight or obese. This can be attributable to the fact that the attitudes and behaviours in the dieting scenario were quite extreme, which left little room for variance in the interpretation of these behaviours. Also, when Jody was depicted as normal weight and not dieting, her behaviours were generally seen as healthy, not risky, positive, and normal. However, when Jody was presented as obese and not dieting there was significant ambivalence as to whether these behaviours were healthy, not risky, positive, and normal. Only when Jody was obese and not dieting was there ambivalence about whether she was healthy or normal, and whether her lack of weight control were healthy, not risky, positive, or normal. So instead of directly supporting the hypothesis that the dieting behaviours of heavier targets would be perceived as more healthy, the effect revealed in the quantitative analyses was that the lack of dieting behaviour in thinner Jody was almost universally seen as healthy, but if she was heavier there was much more variance in the perceptions of her health and her lack of weight control behaviours.

This pattern is mirrored in the open-ended questions, where several participants who were presented with the obese and dieting scenario explicitly stated that "if she were thinner she would have an eating disorder." These comments show that disordered eating attitudes and behaviours are not identified as such in heavier people, simply because of their body size. The perception that eating disorders can only occur in those with thinner bodies is exemplified in the DSM in that a diagnosis of Anorexia Nervosa still requires an underweight BMI, and those who do fit diagnostic criteria with higher BMIs are labeled as "atypical" solely based on their body size (American Psychiatric Association, 2013).

This ‘atypical’ label further contributes to the idea that the same behaviours in a larger body are not given the same consideration, and that larger bodies with disordered eating attitudes and behaviours are somehow outside the norm. Eating disorders are mental illness diagnoses, and a person’s level of suffering (or the presence/absence of this illness) cannot, and should not, be determined by their body weight.

Responses to the open-ended questions also support the hypothesis that Jody’s body weight influences the perceptions of her dieting or non-dieting behaviour. The overall pattern of responses did indicate that her non-dieting behaviours (no caloric counting or restriction, intuitive eating, casual activity) and her body confidence (when she was normal weight or obese) were perceived as healthy, not risky, positive, and normal. Also, the dieting behaviours, regardless of weight, were generally identified as unhealthy, risky, negative, and abnormal, and in particular, the extreme body hatred and caloric restriction were seen as excessive. When Jody was dieting, her excessive weight loss behaviours and body hatred were generally identified as negative regardless of her size, but participants’ responses were often qualified, suggesting that while she should be concerned about her weight and health and should attempt weight maintenance or weight loss, her behaviours were just too extreme in this scenario. This pattern was exemplified in participants’ responses when Jody was presented as obese and dieting, in that overall her extreme dieting behaviours and body hatred were identified as unhealthy/risky/negative/abnormal, but weight concern, being physically active, and monitoring and restricting foods to a degree was identified as healthy or positive. Participant responses showed a pattern such that a complete absence of weight concern, and no food monitoring or restriction was perceived to be unhealthy, risky, and negative,

even when she was presented as normal weight. The risk perceived in the absence of weight concern, and a lack of weight control behaviours (through monitoring and restricting of foods) was that these attitudes and behaviours would likely lead to bingeing/obesity.

Given that all participants were only presented with one scenario (based on the between-subjects design employed), participants were also explicitly asked if a change in Jody's body weight would change their perceptions. This is a particularly important question for this study as it directly gets at participants' self-reported beliefs on how body weight can change perceptions of the same behaviours without using deception often employed in social psychological experiments. Quantitative analyses did reveal that being presented with the WHO message, with Jody as normal weight, or with Jody as not dieting, were significantly associated with participants stating that a change in Jody's body weight would change their perceptions. When Jody was presented as normal weight and not dieting, participants who indicated that yes they would perceive her differently if she were a different body size were quite clear in saying that if she were heavier they would perceive her non-restrictive behaviours as negative or unhealthy. As well, when Jody was presenting as normal weight and dieting participants who indicated that yes they would perceive her differently if she were a different body size responded that her restrictive behaviours would be less negative and more understandable if she were obese. When Jody was presented as obese, participants who indicated that yes they would perceive her differently if she were a different body size responded that if she were thinner, then she shouldn't have to worry about her weight or health. Furthermore, if she was presented as obese and dieting the pattern of responses for those who indicated that

yes they would perceive her differently if she were a different body size clearly stated that if she were thinner she would have an eating disorder. These responses exemplify the double standard purported earlier in the introduction, in that attitudes and behaviours that meet criteria for an eating disorder are not perceived to be an eating disorder if the person is heavier.

When participants were asked generally about other circumstances that would change their perceptions of Jody, the most common response given was that if her body weight were different they would perceive her attitudes and behaviours differently. For this question, when participants were presented with Jody as normal weight, they explicitly stated that if she were heavier they would perceive her behaviours differently (where her dieting would be seen as less dangerous or her not dieting would be seen as unhealthy). This response was also mirrored among participants who were presented with Jody as obese, in that when she was engaging in restrictive dieting, participants explicitly stated that if she were thinner her behaviours would be unhealthy. There was a divergent pattern of responses in regards to perceptions of Jody's body image: self-confidence was generally identified as positive regardless of body size, but it was also often suggested that regardless of body size, Jody should care about her weight (because a complete lack of concern is believed to lead to weight gain).

Among those participants who responded that a change in Jody's body weight would not change their perceptions of her, reasons given were quite consistent across experimental conditions. The answers given emphasized that even with a change in body size the behaviours would be the same, and that their perceptions were based specifically on her behaviours regardless of the physical qualities the person. When Jody was

presented as dieting, participants who indicated that their perceptions of Jody would not change based on her body weight emphasized that regardless of her size she had (or was at risk for) an eating disorder because of her extreme dieting behaviours.

Although Jody's weight loss behaviours were generally perceived as extreme, which is not surprising given that the scenario was written to exemplify DSM criteria for an eating disorder, participants also believed that a complete lack of concern with body weight and no monitoring or restricting of foods whatsoever was also problematic. No weight concern, no restricting of foods, or no calorie counting/restriction seems to be perceived as a loss of control or bingeing, or as leading to such behaviours. This suggests that there is a belief that there must exist an ideal 'in between' where some weight concern and weight control is positive or healthy, but just not too much (and not none at all). This points to a dichotomy that exists in perceptions of eating/exercise in that people are either dieting/monitoring or they are bingeing/have lost control.

The second hypothesis predicted that belief in weight controllability would be related to perceiving the dieting of the obese Jody as healthy. Although the effect was not very strong, there was a significant effect of overall antifat attitudes on whether she was seen to have an eating disorder. Given that the dieting scenario clearly exemplifies criteria for an eating disorder, there was not much variance in participants' responses; however, those with more prejudicial beliefs about weight were less likely to identify obese/dieting Jody as having an eating disorder. However, when Jody was obese and not dieting, those with more prejudicial beliefs about weight were actually more likely to say she had an eating disorder. This effect could be due to the vague nature of the term 'eating disorder,' in that it was not specifically asked if they believed she had Anorexia,

and therefore they could be attributing another eating disorder to Jody like Binge Eating Disorder (which has gotten much more attention in the public discourse on obesity with its official introduction into the DSM-V). Antifat attitudes were found to be related to perceptions of Jody's behaviours when she was not dieting, in that stronger prejudicial attitudes about body weight were related to seeing the lack of dieting behaviours as risky regardless of her body size.

Antifat attitudes were more often found to be significantly related to perceptions of Jody as a person, as opposed to her behaviours. Prejudicial beliefs about physical attractiveness of heavier people were found to be related to perceiving obese/not dieting Jody as not healthy. Given the link between perceived attractiveness and perceived health (especially for women) (Cunningham, 1986; Hume & Montgomerie, 2001; Nedelic & Beaver, 2014), those who more strongly believe that heavier people are unattractive, may also be more likely to believe that heavier people are unhealthy. Those with more prejudicial weight beliefs, and particularly beliefs about weight control, were more likely to perceive Jody as lazy when she was not dieting, and when she was obese and not dieting she was least likely to be seen as hardworking. This is not surprising, given that if someone believes body weight is under individual control, they would perceive those as not exerting that control as being lazy. It is important to note that the regression/model for the lazy/hardworking variable was the least predictive, particularly for the hardworking response, which is likely due to the lack of variance for the lazy response (with much more variance among hardworking). Socially desirable responding could be influencing responses, in that participants were more hesitant to explicitly state that she was lazy, and instead had more variance in their responses if she was hardworking.

Antifat attitudes influenced perceptions of Jody as smart/stupid in several ways. Overall, those higher in antifat attitudes were less likely to see obese Jody as smart/more likely to see her as stupid. However, when Jody was depicted as normal weight and dieting, those with higher antifat attitudes were less likely to see her as smart/more likely to see her as stupid. This could be attributed to the belief that since she is normal weight she should not have to diet (particularly in such an extreme way), and several participants stated in the open-ended questions that she was thin so she didn't have to worry about her weight/health. Unsurprisingly, antifat attitudes were found to be related to perceptions of Jody as attractive/unattractive. Those with stronger physical/romantic unattractiveness beliefs about higher body weight were less likely to perceive obese Jody as attractive regardless of whether or not she was dieting. Also, having higher physical/romantic unattractiveness beliefs were predictive of being more likely to view normal weight and not dieting Jody as attractive. Additionally, although not a very strong effect, when Jody was normal weight, those with higher overall antifat attitudes were more likely to see dieting Jody as unattractive and not dieting Jody as attractive. So when Jody was depicted as normal weight, those with more prejudicial beliefs about weight and attractiveness could have been interpreting her body confidence (when she is not dieting) as indicative that she must be attractive, and her body hatred (when she is dieting) as indicative that she must be unattractive.

The third and fourth hypotheses predicted that the type of weight and health message with which participants were presented would influence their perceptions of Jody's dieting behaviours. That is, being presented with the WHO message that obesity is an illness in which weight loss/maintenance/control is the treatment would lead

participants to perceive obese Jody's dieting as more healthy, and being presented with the HAES message that weight is independent of health (and is not an illness) with healthy habits being the focus would lead participants to perceive obese Jody's dieting as less healthy. Overall, this hypothesis was not supported. In the open-ended questions the behaviours that participants identified as healthy/unhealthy, risky/not risky, or normal/abnormal did not manifest in different patterns across the message conditions. The absence of an overall effect in these responses for the message condition is likely due to the extreme behaviours presented in the two scenarios, which left little room for a 'grey area', as her dieting behaviours were quite severe. However, an effect was detected when asking if Jody's behaviours were negative or positive. The message condition was found to be a significant predictor, in that participants who were presented with the WHO message were more likely to view Jody's behaviours as negative, and those who were presented with the HAES message were more likely to view her behaviours as positive. This was a significant effect but was not very strong. Also, when participants were asked to identify the attitudes and behaviours that were positive or negative, those who were presented with the WHO message more often identified the non-restrictive behaviours as negative (even when Jody was normal weight). This further demonstrates that under the paradigm of fatness as illness and dieting as treatment, a complete absence of weight/food/exercise monitoring and food restriction is perceived negatively (and likely seen as leading to weight gain/bingeing/loss of control). The information in the WHO message is the dominant way that weight and health are understood in contemporary culture, and these beliefs are already deeply internalized by most individuals in our society, so presenting this particular health messaging to participants serves to reinforce

already internalized beliefs. It is likely that the message manipulation did not have the hypothesized effect because the internalized beliefs we hold about weight and health are learned and reinforced over a lifetime, so a one-time presentation of a one-page information sheet will not significantly change a person's beliefs. Therefore, as an experimental manipulation the WHO message and HAES message cannot be assumed to be equal, as when we contextualize them within the dominant public health discourse, the information in the WHO message is dominant with the HAES message seen as more fringe.

Although beliefs about body weight and health are often framed as objective and scientific, prejudices about social groups or outgroups (in this case obesity/obese people) are often more emotional than intellectual (Allport, 1979; Dovidio & Gaertner, 1999; Leyens, Paladino, Rodriguez-Torres, Vaes, Demoulin, Rodriguez-Perez, & Gaunt, 2000; Talaska, Fiske, & Chaiken, 2008). Attempting to change prejudices which are rooted in emotion by presenting facts or scientific data is often not an effective strategy. A more accurate and nuanced scientific understanding of the true (and very complex) nature of the relationship between body weight and health, and the physical and psychological consequences of weight prejudice for individuals, is necessary. This type of research is important to contributing to change the cultural (and medical) discourses of obesity as illness, but fat hatred (like any other prejudice) is emotional and cannot be changed with facts alone.

The second research question for this study asked if participant antifat attitudes were associated with participants' own restrained eating and internalization of appearance norms. It was hypothesized that participants' level of restrained eating, antifat attitudes,

and internalization of appearance norms would be positively interrelated. The correlations between these variables did reveal that there was a weak but positive relationship between antifat attitudes and internalization of appearance norms, but antifat attitudes was not related to participants' restrained eating. However, a relationship between internalization of appearance norms and restrained eating indicated that more internalization of these norms was associated with a history of restrained eating/dieting. Given that the Antifat Attitudes Test contains externalizing questions about 'other people,' it is not surprising that this was not found to be related to participants' own individual and internal weight concern and dieting behaviours. However, the Sociocultural Attitudes Towards Appearance Questionnaire is designed to get at internalized and individual beliefs about appearance and attractiveness, so it is therefore related to individuals' own weight concern and dieting behaviours. Participants with higher BMI were found to show less antifat attitudes, and participants with higher BMI were found to show higher internalization of appearance norms and more history of diet and weight concern. Although some of these correlations were weak, this pattern is consistent with that seen in most dieting research, whereby those with higher body weights/BMI are more likely to have negative body image/weight concern, and are more likely to have a history of dieting (Cattarin & Thompson, 2007; Johnson & Wardle, 2005; Paxton, Schutz, Wertheim, & Muir, 1999; Polivy & Herman, 2002; Stice, Mazotti, Krebs, & Martin, 1998; Stice, Mazotti, Weibel, & Agras, 1999; Stice & Shaw, 2002).

The third research question sought to explore participants' assumptions regarding Jody's ethnicity and social class in relation to her presented weight and behaviours. The large majority of participants assumed that she was White (83%), with the next most

common response being that they thought she was Black (6%), and then 5.5% of participants indicating they could not identify her ethnicity from the information given. The finding that the majority of participants perceived her as White is likely due to participants projecting their own ethnicity onto Jody as the majority of the sample was white. However, given that 'Jody' can be perceived as a 'White' name, and the default perception is often White when no ethnicity information is given, this also contributes to the large majority assuming she was White. There was no significant effect of the message, weight, or dieting condition on whether she was perceived as White. However, of the 6% of the sample that did perceive Jody as Black, 50% of these participants were presented with the scenario where Jody was obese and not dieting. Quantitative analyses could not be performed as there was insufficient statistical power with so few cases, but even among this small number of participants, the pattern suggests the endorsement of the stereotype of Black women being more likely to be heavier and less likely to be dieting. Further, participants' perceptions of Jody's social class was in line with stereotypes about body weight. Although the large majority of participants assumed she was middle class, being obese made participants more likely to see her as being in a lower social class and being normal weight made participants more likely to see her as being in a higher social class.

Although they were not directly related to a specific hypothesis for this study, further open-ended questions sought to explore the influence of gender on perceptions of Jody. Although the experimental conditions were not found to significantly influence whether participants would perceive Jody differently if she were male, the overall pattern of yes responses and no responses to the question "Would you perceive Jody differently if she

were male?" illustrates the intersection of body weight and gender. The yes responses to this question overwhelmingly acknowledge how gender intersects with body weight in that there is more social pressure on women to be thin, and that women care more and men care less about their body weight (e.g., higher thin internalization among women). However, biological explanations also appeared among these responses, such as: men are biologically/naturally larger/more muscular than women, and that men need to consume more calories than women. These biological explanations served to justify why women should be thinner than men, and therefore pursuit of thinness is more understandable among women (as their 'natural' shape should be smaller/thinner).

'No' responses to this question were consistent with no responses to the other open-ended questions (Would you perceive Jody differently if she were a different body weight? Under what other circumstances would you perceive Jody differently?), in that participants emphasized that their perceptions would not change because the behaviours are the same. These participants explicitly stated that even if Jody were John, the person/situation would be the same because the behaviours are the same. The pattern of 'no' responses demonstrates that these participants believe that behaviours can be analysed and understood in the absence of considering the whole person, and that behaviours can be looked at objectively without consideration of the individual (and their social identities) who is committing these behaviours. These responses also emphasized that like women, men also face social pressure to be thin/attractive, and that weight concern/pursuit of weight loss is positive for both men and women (in that it's perceived to be in the pursuit of health). Although sociocultural pressure for thinness/attractiveness is experienced by all individuals regardless of gender, it is a false comparison to equate

the social pressures/internalization of the thin ideal experienced by men and women. Equating the social pressures for thinness/attractiveness put on men and women in our culture and the resulting internalization of these ideals erases the differences in expectations for what typical masculine or feminine attractiveness is, and it serves to diminish the more severe social consequences women in society experience when they do not conform to these norms. If we believe that social pressure to be thin and internalization of weight concern is equal for men and women, what does that mean for our perceptions of the more common and often more extreme behaviours women and girls engage in for the pursuit of thinness?

Finally, participants were given a last opportunity to identify any other information they thought was important for the researcher to know. Although many participants left the final question blank ("Is there anything about Jody that you think is important that you would like to tell us?), the pattern of available responses to this question further supports the pattern of results across the rest of the survey questions. When Jody was presented as dieting, several participants indicated that she needs help/support, and that she is trying to 'fit in' by dieting/trying to lose weight. Given that the study's sample was solely comprised of women, they can likely identify with the extreme sociocultural pressure for women to be thin/attractive and the belief that being thin (or thinner) will result in positive social outcomes (Engeln-Maddox, 2006; Puhl & Brownell, 2003; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). However, when Jody was presented as not dieting, several participants felt that it was important to indicate that although her body confidence is positive, she still needs to care about her weight/health (whether she was normal weight or obese). When Jody was obese and not dieting it was

emphasized even more that she needs to lose weight to be healthy, but that it is positive that she has self-confidence. These responses further illustrate this belief of an ideal 'in between,' in that when it comes to body weight too much body hatred is negative, but too much body confidence is also negative. The belief that a positive body image prevents or hinders weight loss has been found in the published research literature on body image (as discussed in the literature review in the introduction), and this study demonstrates that this belief is also internalized by many women in this sample: Love yourself, but not too much, otherwise you won't want to change (i.e., lose weight).

Implications

This study is the first to use an empirical research design to demonstrate an ambivalence in the self-report perceptions of the pursuit of weight loss. Although it was hypothesized that the dieting behaviours of obese Jody would be perceived as healthy, the key finding was actually in regard to perceptions of her *lack* of dieting. Overall there was a clear pattern that the dieting behaviours were perceived as extreme and unhealthy; however, when Jody was normal weight she was seen as healthy and praised for her positive behaviours, but when her BMI was obese, there was considerable uncertainty as to her health, solely based on her body weight.

This study also demonstrates the enigmatic notion of an 'ideal' or 'in between' in terms of body image and pursuit of weight loss. Eating disorder literature often purports that a negative body image is a motivator for weight loss in heavier individuals, and participants in this study often mirrored this belief. Too much body hatred was negative, but too much body love was also regarded as negative. There is a paradoxical belief that somehow a person can love their body, but at the same time should still try to change it.

Particularly when the person is obese, there was a hesitant praise for the extreme body hatred and dieting behaviours. Jody was often praised for having 'the right idea,' but it was perceived that she's just being a little too extreme with it.

This notion that there is a 'balance' that should be achieved in terms of body image and the pursuit of weight loss serves to rationalize the paradox that now exists between obesity science touting dieting/weight loss as a health behaviour and eating disorder research demonstrating the clear risk of negative body image and the pursuit of weight loss. There is no evidence to support the idea that there is this 'in between' that can be achieved with regard to dieting (and there is a complete lack of evidence that long term weight loss is even achievable), but the 'obesity as a disease epidemic' discourse has so deeply permeated our culture that even in the absence of this evidence, we are still driven to find 'the right amount' of dieting. The American Academy of Pediatrics has recently changed its recommendations for obesity treatment based on their literature review that found all forms of diet and weight talk are bad for young people and increase the risk for eating disorders (Golden, Schneider, & Wood, 2016). Their recommendation is to instead focus talk on healthy lifestyle behaviours and not weight, except the focus of this 'healthy lifestyle' talk is still predominantly targeted at those in heavier bodies (Golden, Schneider, & Wood, 2016). This is still problematic, as 'healthy eating' is often interpreted by individuals as restriction, and/or with the ultimate goal of weight management/loss (Bisogni, Jastran, Seligson, & Thompson, 2012). Despite the compulsion of obesity science to find a 'balance,' no amount of dieting or pursuit of weight loss is safe. Decades of eating disorder research have demonstrated that "although every diet doesn't lead to an eating disorder, *every eating disorder begins with a diet*"

(Fraser, 1997, p. 234). It is not realistic to continue to investigate how to pursue weight loss in a 'healthy way,' it does not exist.

The results of this study also demonstrate that there is a general lack of body trust and a misunderstanding of intuitive eating. It was believed that following internal hunger and fullness cues and not restricting foods necessarily means that Jody was bingeing or only eating 'junk food.' The core principle of intuitive eating is being attuned to and eating according to internal bodily cues of hunger and fullness. However, the perception among participants was often that these internal cues cannot be trusted as they lead to overeating and only eating 'junk food' (particularly if Jody was presented as obese). True intuitive eating is about listening to your body when it tells you you're hungry and when it tells you you're full, following your personal tastes, and being in tune with your body's reaction to the types of food you ingest. Interestingly, this is the area where an 'in between' was not seen to be possible by participants – if we're not dieting/restricting then we are out of control and bingeing. Establishing and reinforcing body trust is key in reducing the acceptance of dieting practices as healthy given that dieting behaviours rely on external cues for eating (e.g., pre-determined time and amount of food to be consumed), and tell us that our internal cues are untrustworthy. Restriction should not be equated with healthy habits, given that any type of externally imposed restriction or forbidden foods/behaviours are psychologically unhealthy. Healthy habits cannot be equated with restriction or forbidding, but should be about *adding* (e.g., adding more fruits/vegetables to your food intake, adding enjoyable physical activity). By focusing on adding instead of restricting, we can avoid the inevitable link between restriction and negative implications for psychological well-being.

Limitations and Future Directions

The extreme behaviours described in the dieting scenario used in this study limited the ability to capture much variance in participants' perceptions. As such, the effects generally found for this study stemmed from the variability in perceptions of *not dieting*. The intention was to use two extreme ends of a continuum in the scenarios as this was the first study of its kind, so there were no previous studies to draw on to determine the possible range of what dieting behaviour is considered 'healthy.' Future research should include a range of scenarios describing varying degrees of dieting behaviour. This line of research will allow for an exploration of where this perceived "balance" or "healthy weight loss" lies for people of varying body weight.

Additionally, future research in this area must be more specific when using the term 'eating disorder.' There is some unexplained variance in participants' responses regarding if they believed Jody has an eating disorder, particularly when she was presented as obese, which limited the clarity of interpretation of some results. Since Binge Eating Disorder is now an official diagnosis in the DSM-V, and it has become much more prevalent in the public discourse, it is unclear what eating disorder may be ascribed to Jody (particularly if she is presented as obese).

This study only included undergraduate women in the sample, and the hypothetical target was a woman. This obviously limits the generalizability of the results of this study, but does provide a starting point to begin empirically investigating perceptions of dieting behaviour. Given the pattern of responses for the question asking if their perceptions would change if Jody were a male, future research should include hypothetical male targets to empirically examine how gender influences perceptions of

dieting behaviour, as well as what pursuit of weight loss behaviours may be considered more ‘acceptable’ for men.

An important direction for this line of research to pursue in the future would be to investigate health care providers’ (particularly those who work in the eating disorders/obesity fields) perceptions of dieting behaviour. Given the power and authority of certain types of providers to diagnose and treat eating pathology, their perceptions of risk in dieting behaviours is crucial to understanding how subscribing to the ‘obesity as a disease/weight loss as treatment’ discourse and weight bias can be a barrier to identifying and treating risky dieting behaviours among those with higher BMIs. The HAES model can be more explicitly integrated into eating disorder treatment and training of health professionals which could have a significant effect in tempering the weight stigma and discriminatory treatment experienced by those in heavier bodies. Although present in many smaller and independent organizations, large and mainstream eating disorder associations do not explicitly address or incorporate the HAES paradigm, and it is often seen as fringe or secondary to mainstream models of eating disorder treatment. Through education focusing on deconstructing the logical flaws in the weight-based model of health, and presenting the sound evidence-base demonstrating the inherent harms in dieting regardless of individual body size, cognitive dissonance between wanting to provide compassionate care and wanting patients to pursue behaviours to achieve thinness can be induced in health care providers to then produce a change in their practice whereby the choice is then to either provide compassionate care or to pursue thinness in their patients. Even if the belief in weight controllability is done away with (based on the proliferation of evidence that controlling body weight through behaviours is near

impossible for most), until health care disciplines abolish the notion that fatness is illness, it will be impossible to create substantive change in health care. Critical psychological research has an important role to play in dismantling the dichotomizing of ‘obesity and eating disorders’ as though they are mutually exclusive categories, as well as paradoxical belief that exists in health care that we can somehow simultaneously prevent both obesity and eating disorders.

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APPENDICES

Appendix A

Demographic Questionnaire

AGE: _____

Ethnicity:
□ White/European decent
□ Black/African-Canadian
□ Hispanic/Latino
□ South Asian
□ East Asian
□ Middle Eastern
□ First Nations/Aboriginal
□ Other (Please specify) _____

Program of study: _____
Year of study: □ 1 □ 2 □ 3 □ 4 □ Grad student □ Other. Please specify: _____

You approximate weight: _____
Indicate if this is in pounds (lbs) or kilograms (kg): □ pounds/lbs □ kilograms/kg

Your approximate height: _____
Indicate if this is in inches or centimetres: □ inches □ cm

Appendix B

Antifat Attitudes Test (AFAT)

The following pages contain a series of statements or opinions about fat people. On this questionnaire you are asked to indicate your own personal opinions. In other words, you should indicate *honestly* how much you agree or disagree with each of the opinion statements listed below. In order to complete the questionnaire, read each statement carefully and decide how much you personally disagree or agree. Using the scale provided, select your answer for each item.

There are no right or wrong answers—only opinions. Just give the answer that most accurately states your opinion. Remember, your responses are anonymous, so please be completely honest. Please give an answer to all of the statements.

A	B	C	D	E
Definitely Disagree	Mostly Disagree	Neither Agree Nor Disagree	Mostly Agree	Definitely Agree

1. There's no excuse for being fat.
2. If I were single, I would date a fat person.
3. Jokes about fat people are funny.
4. Most fat people buy too much junk food.
5. Fat people are physically unattractive.
6. Fat people shouldn't wear revealing clothing in public.
7. If someone in my family were fat, I'd be ashamed of him or her.
8. I can't stand to look at fat people.
9. If fat people don't get hired, it's their own fault.
10. Fat people are disgusting.
11. If I have the choice, I'd rather not sit next to a fat person.
12. Fat people don't care about anything except eating.
13. I'd lose respect for a friend who started getting fat.
14. Most fat people are boring.
15. I can't believe someone of average weight would marry a fat person.
16. Society is too tolerant of fat people.
17. When fat people exercise, they look ridiculous.
18. I hate it when fat people take up more room than they should in a theatre, or on a bus or plane.
19. Most fat people are lazy.
20. Most fat people don't care about anyone but themselves.
21. Fat people are just as competent in their work as anyone.
22. If fat people really wanted to lose weight they could.
23. Being fat is sinful.
24. It's disgusting to see fat people eating.
25. Fat people have no will power.
26. I prefer not to associate with fat people.
27. Fat people don't care about their appearance.
28. Most fat people are moody and hard to get along with.

29. If bad things happen to fat people, they deserve it.
30. Most fat people don't keep their surroundings neat and clean.
31. Society should respect the rights of fat people.
32. It's hard not to stare at fat people because they are so unattractive.
33. If I owned a business, I would not hire fat people because of the way they look.
34. I'd feel self-conscious being seen in public with a fat person.
35. The idea that genetics cause people to be fat is just an excuse.
36. I would not want to continue in a romantic relationship if my partner became fat.
37. The existence of organizations to lobby for the rights of fat people in our society is a good idea.
38. I don't understand how someone could be sexually attracted to a fat person.
39. If fat people knew how bad they looked, they would lose weight.
40. People who are fat have as much physical coordination as anyone.
41. Fat people are unclean.
42. Fat people should be encouraged to accept themselves the way they are.
43. Most fat people will latch onto almost any excuse for being fat.
44. It's hard to take fat people seriously.
45. Fat people do not necessarily eat more than other people.
46. Fat people obviously have a character flaw, otherwise they wouldn't become fat.
47. It makes me angry to hear anybody say insulting things about people because they are fat.

Appendix C

Restraint Questionnaire

Diet and Weight History

1. How many pounds over your desired weight were you at your maximum weight? *(score: 1 point/5 pounds)*

2. How often are you dieting?
   (score: 0-4)
   □ Never □ Rarely □ Sometimes □ Usually □ Always

3. Which best describes your behaviour after you have eaten a "not allowed" food while on your diet?
   (score: 0-2)
   □ Return to diet/I don't diet
   □ Stop eating for an extended period of time in order to compensate
   □ Continue on a splurge, eating other "not allowed" foods

4. What is the maximum amount of weight that you have ever lost within 1 month? *(score: 1 point/5 pounds)*

5. What is your maximum weight gain within a week? *(score: 1 point/5 pounds)*

6. In a typical week, how much does your weight fluctuate (maximum-minimum)? *(score: 1 point/5 pounds)*

Concern with Food and Eating

7. Would a weight fluctuation of 5 pounds affect the way you live your life?
   (score: 0-3)
   □ Not at all □ Slightly □Moderately □Very much

8. Do you eat sensibly in front of others and make up for it alone?
   (score: 0-3)
   □ Never □ Rarely □ Often □ Always

9. Do you give too much time and thought to food?
   (score: 0-3)
   □ Never □ Rarely □ Often □ Always

10. Do you have feelings of guilt after overeating?
    (score: 0-3)
    □ Never □ Rarely □ Often □ Always

11. How conscious are you of what you're eating?
    (score: 0-3)
    □ Not at all □ Slightly □ Moderately □ Extremely

Appendix D

Sociocultural Attitudes Towards Appearance Questionnaire-3

Please answer the following statements using the scale provided below. Please read each item carefully and think about how much it applies to you. Please answer as honestly as possible.

A	B	C	D	E
Definitely Disagree	Mostly Disagree	Neither Agree Nor Disagree	Mostly Agree	Definitely Agree

1. TV programs are an important source of information about fashion and ‘‘being attractive.’’
2. I’ve felt pressure from TV or magazines to lose weight.
3. I would like my body to look like the people who are on TV.
4. I compare my body to the bodies of TV and movie stars.
5. TV commercials are an important source of information about fashion and ‘‘being attractive.’’
6. I’ve felt pressure from TV or magazines to look pretty.
7. I would like my body to look like the models who appear in magazines.
8. I compare my appearance to the appearance of TV and movie stars.
9. Music videos on TV are an important source of information about fashion and ‘‘being attractive.’’
10. I’ve felt pressure from TV and magazines to be thin.
11. I would like my body to look like the people who are in the movies.
12. I compare my body to the bodies of people who appear in magazines.
13. Magazine articles are an important source of information about fashion and ‘‘being attractive.’’
14. I’ve felt pressure from TV or magazines to have a perfect body.
15. I wish I looked like the models in music videos.
16. I compare my appearance to the appearance of people in magazines.
17. Magazine advertisements are an important source of information about fashion and ‘‘being attractive.’’
18. I’ve felt pressure from TV or magazines to diet.
19. I wish I looked as athlethic as the people in magazines.
20. I compare my body to that of people in ‘‘good shape.’’
21. Pictures in magazines are an important source of information about fashion and ‘‘being attractive.’’
22. I’ve felt pressure from TV or magazines to exercise.
23. I wish I looked as athletic as sports stars.
24. I compare my body to that of people who are144 athletic.
25. Movies are an important source of information about fashion and ‘‘being attractive.’’
26. I’ve felt pressure from TV or magazines to change my appearance.
27. I try to look like the people on TV.

28. Movies stars are an important source of information about fashion and ‘‘being attractive.’’
29. Famous people are an important source of information about fashion and ‘‘being attractive.’’
30. I try to look like sports athletes.

Appendix E

Dieting Vignettes

Condition: Normal weight/restrictive eating

Jody is a 22 year old female who is 1.65m tall (5'5") and weighs 57kg (125lbs) (BMI = 21, normal weight). She is very concerned about her weight and hates her body, particularly her thighs and hips. If she passes by a mirror or reflective surface, she will often check out her 'fat areas'. She is very preoccupied with what food she eats for each meal and each day, and categorizes food as 'good' or 'bad' with 'bad' foods being strictly forbidden. She does not trust her body's hunger or fullness cues, and keeps a log of the calories of everything she eats and the calories burned for all activity she engages in. She is restricting her caloric intake to no more than one thousand calories each day, and in particular avoids eating any foods high in dietary fat or carbohydrates. If she exceeds her daily caloric limit she will often compensate by going on very long runs on the treadmill until she has burned off the extra calories from that day. She weighs herself on the bathroom scale each morning and evening to check for changes in weight and her mood heavily depends on whether she lost or gained weight that day. She avoids social activities with friends, in particular clothing shopping and eating in public.

Condition: Obese/restrictive eating

Jody is a 22 year old female who is 1.65m tall (5'5") and weighs 92.5kg (204lbs) (BMI = 34 , obese). She is very concerned about her weight and hates her body, particularly her thighs and hips. If she passes by a mirror or reflective surface, she will often check out her 'fat areas'. She is very preoccupied with what food she eats for each meal and each day, and categorizes food as 'good' or 'bad' with 'bad' foods being strictly forbidden. She does not trust her body's hunger or fullness cues, and keeps a log of the calories of everything she eats and the calories burned for all activity she engages in. She is restricting her caloric intake to no more than one thousand calories each day, and in particular avoids eating any foods high in dietary fat or carbohydrates. If she exceeds her daily caloric limit she will often compensate by going on very long runs on the treadmill until she has burned off the extra calories from that day. She weighs herself on the bathroom scale each morning and evening to check for changes in weight and her mood heavily depends on whether she lost or gained weight that day. She avoids social activities with friends, in particular clothing shopping and eating in public.

Condition: Normal weight/non restrictive eating

Jody is a 22 year old female who is 1.65m tall (5'5") and weighs 57kg (125lbs) (BMI = 21, normal weight). She does not concern herself with her weight and generally likes her body. She doesn't preoccupy herself with checking herself out in mirrors or other reflective surfaces, and doesn't obsess over what food she eats for each meal or each day, and no foods are considered "strictly forbidden". She eats according to her body's hunger and fullness cues, and does not restrict or monitor her daily caloric intake or expenditure. Occasionally she enjoys going for walks or jogs in her neighbourhood, but does not count calories burned while doing so, and when and how long she runs does not depend on trying to burn calories. She does not weigh herself and does not generally concern herself with small daily fluctuations in body weight. She enjoys social activities with friends, in particular clothing shopping and going out to restaurants.

Condition: Obese/non restrictive eating

Jody is a 22 year old female who is 1.65m tall (5'5") and weighs 92.5kg (204lbs) (BMI = 34 , obese). She does not concern herself with her weight and generally likes her body. She doesn't preoccupy herself with checking herself out in mirrors or other reflective surfaces, and doesn't obsess over what food she eats for each meal or each day, and no foods are considered "strictly forbidden". She eats according to her body's hunger and fullness cues, and does not restrict or monitor her daily caloric intake or expenditure. Occasionally she enjoys going for walks or jogs in her neighbourhood, but does not count calories burned while doing so, and when and how long she runs does not depend on trying to burn calories. She does not weigh herself and does not generally concern herself with small daily fluctuations in body weight. She enjoys social activities with friends, in particular clothing shopping and going out to restaurants.

Appendix F

Perceptions of 'Jody' Questionnaire

Thinking about the passage that you just read about Jody, please answer the following questions.

1. What was Jody's BMI?
   □ Underweight
   □ Normal weight
   □ Overweight
   □ Obese

2. What ethnicity do you think Jody is?
   □ White/European decent
   □ Black/African-Canadian
   □ Hispanic/Latino
   □ South Asian
   □ East Asian
   □ Middle Eastern
   □ First Nations/Aboriginal
   □ Other (Please specify) _____

3. Do you think Jody has an eating disorder?
   □Yes □ No

4. Do you think Jody is healthy?
   □Yes □ No

5. Thinking about the scenario you read about Jody, please complete the following items to reflect your thoughts about her attitudes and behaviours.
   For each pair of words, indicate your response on the scale provided. For the open-ended questions that follow, you can indicate the same attitudes and/or behaviours for any or all of the questions (if appropriate).
   Please be as honest as possible, and as specific as possible. You may refer to the description of Jody presented above.

   Healthy ----------Unhealthy

   6a. Which specific attitudes and behaviours do you identify as healthy/unhealthy?

   _____
   _____
   _____

Risky ----------Not Risky

6b. Which specific attitudes and behaviours do you identify as risky/not risky?

_____
_____
_____

Negative ----------Positive

6c. Which specific attitudes and behaviours do you identify as positive/negative?

_____
_____
_____

Normal ----------Abnormal

6d. Which specific attitudes and behaviours do you identify as positive/negative?

_____
_____
_____

6. Thinking about Jody *as a person*, please complete the following items to reflect your personal attitudes.
   For each pair of words, indicate your response on the scale provided.

   Normal ----------Abnormal

   Friendly ----------Unfriendly

   Lazy ----------Hardworking

   Smart----------Stupid

   Unattractive----------Attractive

For the following questions, please think carefully about how Jody was described to you, and if any change in circumstance would change your opinions about Jody and her attitudes and behaviours. Please be as specific as possible.

7. Would you perceive this situation differently if Jody was male? Why or why not?

_____
_____
_____

8. Would you perceive this situation differently if Jody was a different body size and weight? Why or why not?

   _____
   _____
   _____

9. Under what other circumstances would you perceive Jody's attitudes and behaviours about her body differently, and why?

   _____
   _____
   _____

10. Is there anything about Jody that you think is important that you would like to tell us? Please indicate that here.

    _____
    _____
    _____

Appendix G

Weight and Health Messages

Weight-Independent Model of Health (adapted from "The Health at Every Size Manifesto," Bacon, 2010)

HEALTH AT EVERY SIZE

Few of us are at peace with our bodies, whether because we're fat or because we fear becoming fat. There is an alternative to the war on obesity—Health at Every Size—which has proven to be much more successful at health improvement. The scientific research consistently shows that common assumptions underlying the war on obesity just don't stand up to evidence.

Assumption: "Overweight" and "obese" people die sooner than leaner people.
FALSE. Almost all epidemiologic studies indicate people in the overweight or moderately obese categories live at least as long—or longer—than people in the normal weight category. The most comprehensive review of the research found overweight to be associated with greater longevity than normal weight. Analysis of the National Health and Nutrition Examination Surveys I, II, and III, which followed the largest nationally representative cohort of U.S. adult, also determined that the "ideal" weight for longevity was in the "overweight" category.

Assumption: Being "overweight" or "obese" puts people at significant health risk.
FALSE. Epidemiological studies rarely acknowledge factors like fitness, activity, nutrient intake, weight cycling, or socioeconomic status when considering connections between weight and disease. Yet all play a role. When studies do control for these factors, increased risk of disease disappears or is significantly reduced. What is likely going on here is that these other factors increase disease risk at the same time they increase the risk of weight gain.

Assumption: Anyone who is determined can lose weight and keep it off.
FALSE. The vast majority of people who try to lost weight regain it, regardless of whether they maintain their diet or exercise program. This occurs in all studies, no matter how many calories or what proportions of fat, protein or carbohydrates are used in the diet, or what types of exercise programs are pursued. Many studies also show that dieting is a strong predictor of future weight gain.

Assumption: Weight loss will prolong life.
FALSE. No one has ever shown that losing weight prolongs life. Some studies actually indicate that intentional weight loss increases the risk of dying early from certain diseases.

Assumption: The only way for "overweight" people to improve health is to lose weight.
FALSE. Most health indicators can be improved through changing health behaviours, regardless of whether weight is lost. Lifestyle changes can reduce blood pressure, largely or completely independent of changes in body weight. Improvements in insulin sensitivity and blood lipids as a result of aerobic exercise training have been documented even in persons who actually gained body fat while participating in the intervention.

Assumption: Health is declining as a result of an "obesity epidemic."
FALSE. While it's true that we're moderately fatter than we used to be, life expectancy has increased dramatically during the same time period which our weight rose. Not only do we live longer than ever before, but we're healthier than ever and chronic disease is appearing much later in life. Death rates attributed to heart disease have steadily declined throughout the entire spike in obesity. Life expectancy is projected to continue to rise in the coming decades. We simply are not seeing the catastrophic consequences predicted to result from the "obesity epidemic."

What can you do?
Health at Every Size (HAES) acknowledges that well-being and healthy habits are more important than any number on the scale. Participating is simple:

1. **Accept your size.** Love and appreciate the body you have. Self-acceptance empowers you to move on and make positive changes.
2. **Trust yourself.** We all have internal systems designed to keep us healthy—and at a healthy weight. Support your body in naturally finding its appropriate weight by honoring its signals of hunger, fullness, and appetite.
3. **Adopt healthy lifestyle habits.** Find the joy in moving your body and becoming more physically vital in your everyday life. Eat when you're hungry, stop when you're full, and seek out pleasurable and satisfying foods. Tailor your tastes so that you enjoy more nutritious foods, staying mindful that there is plenty of room for less nutritious choices in the context of an overall healthy diet and lifestyle.
4. **Embrace size diversity.** Humans come in a variety of sizes and shapes. Open to the beauty found across the spectrum and support others in recognizing their unique attractiveness.

Weight-Based Model of Health (adapted from the World Health Organization fact sheet on Obesity and Overweight, 2013)

OBESITY AND OVERWEIGHT

Key facts

- Worldwide obesity has nearly doubled since 1980.
- In 2008, more than 1.4 billion adults, 20 and older, were overweight. Of these over 200 million men and nearly 300 million women were obese.
- 35% of adults aged 20 and over were overweight in 2008, and 11% were obese.
- 65% of the world's population live in countries where overweight and obesity kills more people than underweight.
- More than 40 million children under the age of five were overweight in 2011.
- Obesity is preventable.

What are overweight and obesity?

Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health.

Body mass index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m^2).

The World Health Organization definition is:

- a BMI greater than or equal to 25 is overweight
- a BMI greater than or equal to 30 is obesity.

What causes obesity and overweight?

The fundamental cause of obesity and overweight is an energy imbalance between calories consumed and calories expended.

What are common health consequences of overweight and obesity?

Raised BMI is a major risk factor for noncommunicable diseases such as:

- cardiovascular diseases (mainly heart disease and stroke), which were the leading cause of death in 2008;
- diabetes;
- musculoskeletal disorders (especially osteoarthritis - a highly disabling degenerative disease of the joints);
- some cancers (endometrial, breast, and colon).

How can overweight and obesity be reduced?

Overweight and obesity, as well as their related noncommunicable diseases, are largely preventable. Supportive environments and communities are fundamental in shaping people’s choices, making the healthier choice of foods and regular physical activity the easiest choice (accessible, available and affordable), and therefore preventing obesity.

At the individual level, people can:

- limit energy intake from total fats and sugars;
- increase consumption of fruit and vegetables, as well as legumes, whole grains and nuts;
- engage in regular physical activity (60 minutes a day for children and 150 minutes per week for adults).

Individual responsibility can only have its full effect where people have access to a healthy lifestyle. Therefore, at the societal level it is important to:

- support individuals in following the recommendations above, through sustained political commitment and the collaboration of many public and private stakeholders;
- make regular physical activity and healthier dietary choices available, affordable and easily accessible to all - especially the poorest individuals.

Agreement with Message Items

Please think about the information that you just read. If you need to you can scroll back up to the top of the page and review anything from the information presented to you.

Using the following scale please indicate your agreement with the information presented to you:

1	2	3	4	5
Definitely Disagree	Mostly Disagree	Neither Agree Nor Disagree	Mostly Agree	Definitely Agree

1. Overall I agree with the information presented to me.
2. I agree with the way the cause of obesity is presented.
3. I agree with the way the treatment of obesity is presented.
4. I learned something new about obesity from the information presented to me.
5. I believe the information presented to me is factually correct.
6. I believe the information presented to me is evidence/research-based.

Appendix H

Psychology Participant Pool Advertisement

Title: Perceptions of Health and Weight Loss Behaviours (online study)

This study is investigating the relationship between beliefs about health and weight, messaging about weight and health, and perceptions of a target's weight loss behaviours. Participation in this study requires you to complete several web-based questionnaires that should take no more than 30 minutes to complete. Participation in this study is one-time only, and you will not be contacted for follow-up questionnaires.
Participants will earn .5 points for participating in this study. At least 80% of the questionnaire items must be completed for participants to earn the .5 bonus marks.

Appendix I

Consent Form

University of Windsor

CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: Perceptions of Health and Weight Loss Behaviours

You are asked to participate in a research study conducted by Sandra Gotovac, M.A. and Dr. Kathryn Lafreniere, from the Department of Psychology at the University of Windsor as part of a dissertation project. If you have any questions or concerns about the research, please feel to contact Sandra Gotovac at 519-253-3000 x.2185 or gotovac@uwindsor.ca or the research supervisor Dr. Kathryn Lafreniere at 519-253-3000 x.2233 or lafren1@uwindsor.ca

PURPOSE OF THE STUDY

This study is investigating the relationship between beliefs in weight controllability and attitudes about fat with perceptions of risk in dieting and weight loss behaviours.

PROCEDURES

If you volunteer to participate in this study, you will be asked to:
Complete an online questionnaire that includes demographic information, attitudes about weight, and perceptions of health behaviours. Completion of the online questionnaires should take no more than 30 minutes. The online questionnaire can be completed at any computer of your choice and at any time before the end of the semester. Questionnaires will be completed individually and only require a one-time participation.

POTENTIAL RISKS AND DISCOMFORTS

There are no foreseeable physical, financial, or social risks to participating in this study. Some participants may experience some psychological or emotional discomfort answering questions about their dieting behaviour or attitudes about weight if they have pre-existing problems regarding weight loss, This is expected to be very minimal as nothing presented in this study is not already ubiquitous in the culture already. Participants are allowed to withdraw from the study at any time or are able to not answer any questions that make them too uncomfortable.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

There are no direct benefits to participating in this study. Participants may receive some educational benefits from completing this study as the letter of information will provide information and resources about Health at Every Size and obesity, Participants may learn valuable information about dieting and the pursuit of weight loss which could help them to rethink their own dieting practices.

COMPENSATION FOR PARTICIPATION

Participants who are registered with the Psychology Participant Pool will receive .5 bonus points for 30 minutes of participation. **You must complete 80% of the questionnaire items to be eligible to receive your .5 bonus marks.**

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission.
Compensation information will be kept in a separate database than questionnaire responses to ensure the survey data remains anonymous. Data will be kept on the researcher's password protected computer for 7 years. No other person (besides the research supervisor) will have access to the data.

PARTICIPATION AND WITHDRAWAL

The investigator may withdraw you from this research if circumstances arise which warrant doing so. Participants must complete at least 50% of the surveys to receive the .5 points. Participants may withdraw at any time without academic penalty, but if they withdraw before 80% of the survey is complete they will not receive bonus marks. Data that has already been entered into the online survey by the participant will be kept if they withdraw from the study or close their browser window.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

A summary of the research findings will be available to participants in the Spring of 2016. It will be made available to participants at the following website

Web address:
http://web4.uwindsor.ca/units/researchEthicsBoard/studyresultforms.nsf/VisitorView?OpenForm
Date when results are available: May 2016

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF RESEARCH PARTICIPANT/LEGAL REPRESENTATIVE

I understand the information provided for the study 'Perceptions of Health and Weight Loss Behaviours' as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study.

□ **I AGREE TO PARTICIPATE IN THIS STUDY (continue to questionnaires)**

□ **I DO NOT AGREE TO PARTICIPATE IN THIS STUDY (will exit you from this survey)**

PLEASE PRINT A COPY OF THIS FORM AND KEEP IT FOR YOUR RECORDS (you can use your browser's 'Print' option to print this page)

Appendix J
Letter of Information

THANK YOU!
Your participation in this study is greatly appreciated, and if you wish to pursue further information on this topic, you can look at the following references:

Bacon, L. (2010). *Health at Every Size.* Dallas: Benbella Books.

Ernsberger, P (2009). Does social class explain the connection between weight and health? In E. Rothblum & S. Solovay (Eds.) *The Fat Studies Reader* (pp. 25-36). New York: New York University Press.

French, S. A. & Jeffery, R. W. (1994). Consequences of dieting to lose weight: Effects of physical and mental health. *Health Psychology, 13,* 195-212.

Rothblum, E. D. (1994). "I'll die for the revolution but don't ask me not to diet": Feminism and the continuing stigmatization of obesity. In P. Fallon, M. A. Katzman, & S. C. Wooley (Eds.) *Feminist Perspectives on Eating Disorders* (pp.53-76). New York: Guilford Press.

Wooley, S. & Garner, D. (1991). Obesity treatment: The high cost of false hope. *Journal of the American Dietetic Association, 91,* 1248-1251.

If you have questions about your participation in the study please feel to contact Sandra Gotovac by phone at (519)253-3000 ext. 2185 or email at gotovac@uwindsor.ca, or Dr. Kathy Lafreniere by phone at (519)253-3000 ext. 2233 or email at lafren1@uwindsor.ca.
If you have questions about your rights as a research participant, you may contact the Research Ethics Coordinator at the University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948; email: ethics@uwindsor.ca

It is often very helpful to speak to someone about any difficulties or problems you may be having about body image and weight loss, and there are several community resources available that can help:

Student Counselling Centre at the University of Windsor
Room 293 2nd Floor CAW Student Centre
(519) 253-3000 Ext. 4616
Email: scc@uwindsor.ca
Website: www.uwindsor.ca/scc

Bulimia Anorexia Nervosa Association (BANA)
2109 Ottawa Street, Suite 400, Windsor, ON
(519) 969-2112
Email:info@bana.ca
Website: www.bana.ca

A brief user friendly summary of the initial findings of this study will be posted on the University of Windsor ethics webpage at www.uwindsor.ca/reb in the Spring of 2016. Click on "Study results" then click on "Participants/Visitors". Scroll down to Sandra Gotovac and click on the title to see the results.

Thank you again for your participation in this research.
PLEASE PRINT A COPY OF THIS PAGE AND KEEP IT FOR YOUR RECORDS (you can use your browser's 'Print' function to print this page).

Appendix K

List of Attitudes and Behaviours Categories from Content Analysis

1. Being active
2. Not active
3. Excessive exercise
4. Not concerned/obsessed with appearance/weight
5. Concerned/obsessed with appearance/weight
6. Self-confidence
7. Hates her body
8. Eats according to internal cues
9. No calorie counting
10. Caloric counting
11. Not restricting foods
12. Restricting certain types of foods
13. No caloric restriction
14. Caloric restriction
15. Engages in social activities
16. Avoids social activities
17. Doesn’t weigh herself
18. Weighs herself
19. Doesn’t monitor food/exercise
20. Monitoring food and exercise

Participant Responses to "Which specific attitudes and behaviours do you see as healthy/unhealthy?"

		HAES message		WHO message	
		Healthy	Unhealthy	Healthy	Unhealthy
Normal BMI	Non-Restrictive	Total N=43		Total N=61	
		-Active (67%) -Not concerned/ obsessed with appearance/weight (56%) -Eats according to internal cues (35%) -Self-confidence (33%) -No calorie counting (12%) -Not restricting foods (12%) -No caloric restriction (7%) -Engages in social activities (7%) -Doesn't weigh herself (5%)	-Doesn't monitor food/exercise (19%) -Not restricting foods (12%) -Not active (9%) -Eats according to internal cues (9%) -Not concerned/ obsessed with appearance/weight (7%) -No calorie counting (5%)	-Active (74%) -Not concerned/ obsessed with weight/appearance (59%) -Eats according to internal cues (44%) -Self-confidence (18%) -No calorie counting (15%) -Engages in social activities (13%) -Not monitoring food/exercise (11%) -No caloric restriction (8%) -Not restricting foods (8%) -Doesn't weigh herself (3%)	-Not restricting foods (25%) -Not monitoring food/exercise (18%) -No calorie counting (15%) -Eats according to internal cues (11%) -Not active (8%) -Not concerned/ obsessed with weight/appearance (7%) -No caloric restriction (5%)
	Restrictive	Total N = 54		Total N=45	
		-Restricting foods (24%) -Active (20%) -Concerned/ obsessed with weight/appearance (19%) -Monitoring of food/exercise (15%) -Calorie counting (7%) -Caloric restriction (4%)	-Caloric restriction (57%) -Hates her body (46%) -Excessive exercise (44%) -Concerned/ obsessed with weight/ appearance (35%) -Weighs herself (30%) -Restricting foods (15%) -Avoids social activities (15%) -Calorie counting (11%) -Monitoring of food/ exercise (7%)	-Active (20%) -Concerned/ obsessed with weight/appearance (13%) -Restricting foods (11%) -Monitoring of food/exercise (9%) -Calorie counting (4%)	-Caloric restriction (69%) -Hates her body (53%) -Avoids social activities (36%) -Weighs herself (33%) -Excessive exercise (33%) -Concerned/ obsessed with weight/appearance (16%) -Restricting foods (16%)

Obese BMI	Non-Restrictive	Total N = 50		Total N=47	
		-Active (50%) -Eats according to internal cues (38%) -Self-confidence (38%) -Not concerned/ obsessed with weight/appearance (36%) -Engages in social activities (14%) -No calorie counting (8%) -Not restricting foods (8%)	-Not restricting foods (38%) -Not concerned/ obsessed with weight/appearance (22%) -Not monitoring food/exercise (20%) -Not active (20%) -No calorie counting (8%) -Eats according to internal cues (8%) -No caloric restriction (6%)	-Self-confidence (51%) -Active (49%) -Not concerned/ obsessed with weight/appearance (43%) -Eats according to internal cues (28%) -Engages in social activities (11%) -No caloric restriction (4%) -No calorie counting (4%) -Doesn't weigh herself (4%)	-Not restricting foods (34%) -Not concerned/ obsessed with appearance/weight (30%) -Not monitoring of food/exercise (23%) -No caloric restriction (11%) -No calorie counting (9%) -Not active (9%) -Eats according to internal cues (6%) -Doesn't weigh herself (4%)
	Restrictive	Total N = 54		Total N=48	
		-Active (20%) -Concerned/ obsessed with weight/appearance (13%) -Monitoring of food/exercise (13%) -Restricting foods (13%) -Calorie counting (11%)	-Caloric restriction (63%) -Hates her body (63%) -Excessive exercise (43%) -Weighs herself (33%) -Avoids social activities (30%) -Restricting foods (24%) -Concerned/ obsessed with weight/ appearance (15%) -Calorie counting (13%)	-Active (23%) -Concerned/ obsessed with weight/appearance (17%) -Monitoring of food/exercise (15%) -Calorie counting (8%) -Caloric restriction (6%) -Restricting foods (6%)	-Hates her body (54%) -Caloric restriction (50%) -Excessive exercise (48%) -Avoids social activities (44%) -Restricting foods (38%) -Concerned/ obsessed with weight/appearance (21%) -Weighs herself (19%) -Calorie counting (13%)

Participant Responses to "Which specific attitudes and behaviours do you see as risky/not risky?"

		HAES message		WHO message	
		Not Risky	Risky	Not Risky	Risky
Normal BMI	Non-Restrictive	Total N=43		Total N=61	
		-Active (16%) -Not concerned/ obsessed with weight/appearance (14%) -Self-confidence (7%) -Eats according to internal cues (5%)	-Not monitoring food/exercise (23%) -No calorie counting (9%) -Not concerned/ obsessed with weight/appearance (5%) -Not restricting foods (5%) -Not active (5%) -Eats according to internal cues (5%)	-Active (25%) -Eats according to internal cues (25%) -Not concerned/ obsessed with weight/appearance (13%) -No calorie counting (7%) -Engages in social activities (7%) -No caloric restriction (5%) -Not restricting foods (5%) -Doesn't weigh herself (3%) -Self-confidence (3%)	-Not monitoring food/exercise (25%) -Eats according to internal cues (16%) -Not active (15%) -Not restricting foods (10%) -No calorie counting (8%) -Not concerned/ obsessed with weight/appearance (7%) -Doesn't weigh herself (5%)
	Restrictive	Total N = 54		Total N=45	
		-Active (7%) -Restricting foods (4%)	-Caloric restriction (54%) -Excessive exercise (48%) -Restricting foods (20%) -Weighs herself (17%) -Monitoring of food/ exercise (9%) -Hates her body (9%) -Calorie counting (7%) -Avoids social activities (4%)	-Active (7%) -Monitoring of food/exercise (4%) -Not monitoring of food/exercise (4%) -Weighs herself (4%)	-Caloric restriction (56%) -Excessive exercise (49%) -Restricting foods (31%) -Avoids social activities (18%) -Hates her body (11%) -Calorie counting (9%)

Obese BMI	Non-Restrictive	Total N = 50		Total N=47	
		-Active (14%) -Eats according to internal cues (14%) -Self-confidence (8%) -Not concerned/ obsessed with weight/appearance (6%) -No caloric restriction (4%) -Not restricting foods (4%) -Engages in social activities (4%)	-Eats according to internal cues (30%) -Not monitoring food/exercise (28%) -Not restricting foods (24%) -Not active (18%) -Not concerned/ obsessed with weight/appearance (14%) -No calorie counting (12%) -No caloric restriction (6%) -Doesn't weigh herself (4%)	-Active (34%) -Eats according to internal cues (6%) -Engages in social activities (4%) -Self-confidence (4%)	-Not restricting foods (34%) -Not monitoring of food/exercise (26% -No calorie counting (21%) -Not active (21%) -Eats according to internal cues (21%) -Not concerned/ obsessed with weight/appearance (9%) -Doesn't weight herself (9%)
	Restrictive	Total N = 54		Total N=48	
		-Active (4%) -Restricting foods (4%)	-Caloric restriction (59%) -Excessive exercise (54%) -Restricting foods (24%) -Hates her body (19%) -Avoids social activities (11%) -Monitoring of food/exercise (6%) -Calorie counting (4%) -Weighs herself (4%)	-Not monitoring of food/exercise (6%) -Active (4%)	-Excessive exercise (48%) -Caloric restriction (40%) -Hates her body (23%) -Restricting foods (13%) -Weighs herself (10%) -Avoids social activities (10%) -Concerned/ obsessed with weight/appearance (8%)

Participant Responses to "Which specific attitudes and behaviours do you see as negative/positive?"

		HAES message		WHO message	
		Negative	Positive	Negative	Positive
Normal BMI	Non-Restrictive	Total N=43		Total N=61	
		-Not monitoring food/exercise (14%)	-Active (47%) -Not concerned/ obsessed with weight/appearance (28%) -Self-confidence (26%) -Eats according to internal cues (21%) -Engages in social activities (9%) -No calorie counting (5%) -Not restricting foods (5%)	-Not monitoring of food/exercise (15%) -Not restricting foods (8%) -Eats according to internal cues (8%) -Not active (5%) -No caloric restriction (3%) -No calorie counting (3%)	-Active (38%) -Not concerned/ obsessed with weight/appearance (21%) -Self-confidence (21%) -Eats according to internal cues (15%) -Engages in social activities (10%) -No caloric restriction (10%) -Not monitoring food/exercise (7%)
	Restrictive	Total N = 54		Total N=45	
		-Excessive exercise (35%) -Hates her body (26%) -Caloric restriction (24%) -Concerned/ obsessed with weight/appearance (17%) -Avoids social activities (17%) -Weighs herself (13%) -Calorie counting (7%) -Restricting foods (7%)	-Restricting foods (11%) -Monitoring of food/ exercise (7%) -Active (5%) -Concerned/ obsessed with weight/appearance (4%) -Caloric restriction (4%)	-Excessive exercise (36%) -Hates her body (31%) -Caloric restriction (31%) -Avoids social activities (20%) -Restricting foods (18%) -Weighs herself (18%) -Calorie counting (4%)	-Concerned/ obsessed with weight/appearance (13%) -Monitoring of food/exercise (13%) -Restricting foods (7%) -Active (7%) -Calorie counting (4%)
Obese BMI	Non-Restrictive	Total N = 50		Total N=47	
		-Not monitoring of food/exercise (16%) -Not concerned/ obsessed with weight/appearance (14%) -Not restricting foods (10%) -No calorie counting (8%) -No caloric restriction (4%) -Not active (4%) -Eats according to internal cues (4%)	-Self-confidence (50%) -Active (30%) -Not concerned/ obsessed with weight/appearance (20%) -Engages in social activities (18%) -Eats according to internal cues (10%) -No calorie counting (6%) -Doesn't weigh herself (4%)	-Not monitoring food/exercise (23%) -Not restricting foods (21%) -No caloric restriction (17%) -No calorie counting (15%) -Not active (15%) -Not concerned/ obsessed with weight/appearance (13%) -Eats according to internal cues (4%)	-Self-confidence (45%) -Active (32%) -Not concerned/ obsessed with weight/appearance (17%) -Eats according to internal cues (13%) -Engages in social activities (11%) -No calorie counting (6%) -No caloric restriction (4%) -Doesn't weigh herself (4%)

	Restrictive	Total N = 54		Total N=48	
		-Excessive exercise (41%) -Caloric restriction (24%) -Hates her body (22%) -Avoids social activities (13%) -Restricting foods (11%) -Weighs herself (11%) -Concerned/ obsessed with weight/appearance (6%) -Calorie counting (4%)	-Active (17%) - Concerned/obsessed with weight/ appearance (15%) -Monitoring of food/ exercise (11%) -Calorie counting (4%) -Restricting foods (4%)	-Avoids social activities (29%) -Excessive exercise (25%) -Caloric restriction (23%) -Hates her body (17%) -Restricting foods (15%) -Weighs herself (15%) -Concerned/ obsessed with weight/appearance (13%) -Calorie counting (6%) -Monitoring of food/exercise (4%)	-Concerned/ obsessed with weight/appearance (23%) -Active (13%) -Restricting foods (10%) -Monitoring of food/exercise (8%)

Participant Responses to "Which specific attitudes and behaviours do you see as normal/abnormal?"

		HAES message		WHO message	
		Abnormal	Normal	Abnormal	Normal
Normal BMI	Non-Restrictive	Total N=43		Total N=61	
		-Not concerned/ obsessed with weight/appearance (16%) -Self-confidence (14%) -Not restricting foods (5%)	-Eats according to internal cues (35%) -Active (23%) -No calorie counting (9%) -Engages in social activities (7%) -Self-confidence (7%) -Not concerned/ obsessed with weight/appearance (5%) -No caloric restriction (5%)	-Not monitoring food/exercise (7%) -Not concerned/ obsessed with weight/appearance (5%) -Not restricting foods (3%)	-Active (28%) -Eats according to internal cues (26%) -No calorie counting (10%) -Not concerned/ obsessed with weight/appearance (8%) -Not monitoring food/exercise (5%) -Engages in social activities (5%) -Self-confidence (5%) -Doesn't weigh herself (3%)
	Restrictive	Total N = 54		Total N=45	
		-Excessive exercise (28%) -Caloric restriction (17%) -Hates her body (17%) -Avoids social activities (15%) -Restricting foods (7%) -Weighs herself (7%) -Calorie counting (4%)	-Concerned/ obsessed with weight/appearance (24%) -Active (7%) -Monitoring of food/ exercise (6%) -Calorie counting (6%) -Caloric restriction (4%) -Restricting foods (4%)	-Excessive exercise (42%) -Caloric restriction (33%) -Weighs herself (20%) -Hates her body (20%) -Avoids social activities (16%) -Restricting foods (9%)	-Concerned/ obsessed with weight/appearance (33%) -Active (11%) -Restricting foods (9%) -Monitoring of food/exercise (7%) -Calorie counting (7%) -Caloric restriction (4%)

Obese BMI	Non-Restrictive	Total N = 50		Total N=47	
		-Not concerned/ obsessed with weight/appearance (16%) -Not monitoring food/exercise (16%) -Self-confidence (10%) -Not restricting foods (6%) -Doesn't weigh herself (6%) -Not active (6%) -Caloric restriction (4%) -No caloric restriction (4%) -No calorie counting (4%) -Excessive exercise (4%)	-Active (28%) -Eats according to internal cues (24%) -Calorie counting (14%) -Self-confidence (12%) -No calorie counting (10%)	-Not monitoring food/exercise (17%) -Not concerned/ obsessed with weight/appearance (15%) -Not restricting foods (6%) -Not active (6%) -Eats according to internal cues (6%) -Doesn't weigh herself (4%)	-Eats according to internal cues (21%) -No calorie counting (17%) -Engages in social activities (15%) -Active (15%) -Not concerned/ obsessed with weight/appearance (6%) -No caloric restriction (6%) -Not monitoring food/exercise (4%) -Not restricting foods (4%) -Self-confidence (4%)
	Restrictive	Total N = 54		Total N=48	
		-Excessive exercise (20%) -Caloric restriction (15%) -Avoids social activities (15%) -Weighs herself (7%) -Hates her body (7%) -Calorie counting (6%) -Restricting foods (6%)	-Concerned/ obsessed with weight/appearance (43%) -Monitoring of food/exercise (11%) -Active (11%) -Hates her body (9%) -Restricting foods (7%) -Calorie counting (4%)	-Excessive exercise (23%) -Hates her body (17%) -Caloric restriction (13%) -Weighs herself (13%) -Restricting foods (10%) -Calorie counting (8%) -Avoids social activities (8%) -Concerned/ obsessed with weight/appearance (6%)	-Concerned/ obsessed with weight/appearance (29%) -Active (19%) -Caloric restriction (6%) -Monitoring of food/exercise (4%) -Restricting foods (4%) -Hates her body (4%)

Appendix L

Detailed Tables Displaying Participant Responses to Open-Ended Questions

Participant Responses to "Would you perceive this situation differently if Jody was male? Why or why not?"

		HAES message		WHO message	
Normal BMI	Non-Restrictive	Yes=15 -Men are less concerned/women are more concerned with looks/weight (*n*=6) -Men naturally have more muscle/are heavier (*n*=4) -Men can be just as concerned with women about their body image/size (*n*=3) -Men should be more physically active (*n*=3) -It's more acceptable for men to be heavier than women/less pressure on men to be thin (*n*=1) -Caloric restriction is worse for women because of having children (*n*=1)	No=27 -The behaviours are the same (*n*=8) -The person/ situation is the same (*n*=4) -Men can be just as concerned about their body image/size (*n*=3) -Everyone should have a positive body image (*n*=2) -The health risks are the same (*n*=2) -The weight is the same (*n*=1)	Yes=25 -Men are less concerned/women are more concerned about their body weight (*n*=13) -Men are naturally more muscular/heavier (*n*=8) -Men should be more physically active (*n*=4) -Men need to consume more calories than women (*n*=2) -More social pressure for women to be thin (*n*=1)	No=35 -The person/ situation is the same (*n*=14) -Men are less concerned/women are more concerned about their body weight (*n*=5) -The health is the same (*n*=4) -Everyone should have a positive body image (*n*=3) -The behaviours are the same (*n*=3) -The weight is the same (*n*=2) -Men can be just as concerned about their body as women (*n*=1) -Less social pressure for men to be thin (*n*=1)
	Restrictive	Yes=20 -Men are less concerned/women are more concerned with weight (*n*=15) -The behaviours are the same (*n*=6) -Men naturally have more muscle/are heavier (*n*=5) -Men need to consume more calories (*n*=2) -Men can be just as concerned about their body as women (*n*=1) -Men take better care of their bodies (*n*=1)	No=31 -Men can be just as concerned about their body as women (*n*=12) -The person/ situation is the same (*n*=6) -The health of the person is the same (*n*=5) -Regardless it is good to try and lose weight/be healthy (*n*=1)	Yes=16 -Men are less concerned/women more concerned about weight (*n*=8) -More social pressure for women to be thin (*n*=3) -Harder for women to lose weight than men (*n*=2) -Men need to consume more calories (*n*=1) -Caloric restriction is worse for women because of pregnancy (*n*=1)	No=28 -The behaviours are the same (*n*=10) -Men can be just as concerned about their bodies as women (*n*=9) -The health is the same (*n*=4) -The person/ situation is the same (*n*=1) -The weight is the same (*n*=1)

Obese BMI	Non-Restrictive	Yes=19 -Men are less concerned/women are more concerned about weight (*n*=9) -More social pressure for women to be thin (*n*=9) -Men naturally have more muscle/are heavier (*n*=4) -Men should be more physically active (*n*=1) -Harder for women to lose weight then men (*n*=1)	No=31 -The person/ situation is the same (*n*=8) -Everyone should have a positive body image (*n*=3) -Lack of concern about obesity is problematic regardless (*n*=3) -The health of the person is the same (*n*=3) -Men are less concerned with weight (*n*=2) -Men can be just as concerned about their bodies as women (*n*=2) -The behaviours are the same (*n*=2) -Regardless it is good to lose weight/be healthier (*n*=1) -Men are naturally more muscular/heavier than women (*n*=1) -More social pressure for women to be thin than men (*n*=1) -The body weight is the same (*n*=1)	Yes=13 -Men are less concerned/women are more concerned about weight (*n*=5) -Men are naturally more muscular/ heavier (*n*=3) -More social pressure for women to be thin (*n*=3) -More sympathy towards obese women than men in society (*n*=1) -More common for women to be obese (*n*=1)	No=34 -The person/ situation is the same (*n*=17) -Regardless it is good to try to lose weight/be healthier (*n*=3) -Men are less concerned/women are more concerned about body weight (*n*=2) -More social pressure for women to be thin (*n*=2) -Lack of concern about weight is problematic regardless (*n*=2) -The weight is the same (*n*=2) -The health is the same (*n*=2) -Everyone should have a positive body image regardless (*n*=1) -Men can be just as concerned as women about their bodies (*n*=1) -The behaviours are the same (*n*=1)

	Restrictive	Yes=19 -Men are less concerned/women are more concerned with body weight (*n*=15) -More social pressure on women to be thin (*n*=2) -Men are naturally more muscular/ heavier (*n*=1) -Men need to consume more calories than women (*n*=1) -More common for women to be obese (*n*=1) -Men should be more physically active (*n*=1)	No=34 -The behaviours are the same (*n*=14) -Men can be just as concerned as women about their body size (*n*=11) -The person/ situation is the same (*n*=4) -The health of the person is the same (*n*=4) -Men are less concerned with being thin (*n*=1) -More social pressure for women to be thin (*n*=1) -The weight is the same (*n*=1)	Yes=19 -Men are less concerned/women are more concerned about their body weight (*n*=12) -More social pressure for women to be thin than men (*n*=4) -Men are naturally more muscular/ heavier (*n*=2) -The person/ situation is the same (*n*=1) -Men should be more physically active (*n*=1)	No=27 -Men can be just as concerned about their bodies as women (*n*=9) -The behaviours are the same (*n*=9) -The person/ situation is the same (*n*=3) -The weight is the same (*n*=3) -More social pressure for women to be thin (*n*=2) -The health is the same (*n*=2) -Men are less concerned/women are more concerned about body weight (*n*=1) -Lack of concern about obesity is problematic regardless (*n*=1)

Participant Responses to "Would you perceive this situation differently if Jody was a different body size and weight? Why or why not?"

		HAES message		WHO message	
Normal BMI	Non-Restrictive	Yes=30 -If she were heavier I would perceive her behaviours as worse (*n*=14) -If she were heavier I would think she would be more concerned about her weight/health (*n*=8) -Weight matters for health (*n*=3) -If she were heavier I would praise her more for her attitudes/behaviours (*n*=3)	No=12 -Regardless of size self-confidence is good (*n*=5) -Weight doesn't matter/the person is the same (*n*=3) -The behaviours are the same (*n*=2)	Yes=48 -If she were heavier I would perceive her behaviours less positively (*n*=38) -If she were heavier she should be more concerned about her weight/health (*n*=5) -If she were so heavy that functioning is impaired then there would be a problem (*n*=2)	No=12 -The behaviours are the same (*n*=4) -Regardless of size self-confidence is good (*n*=3) -Regardless of size a bad diet and no exercise is bad for you (*n*=2)
	Restrictive	Yes=27 -If she were heavier her weight concern would be more understandable (*n*=20) -If she were heavier I would perceive her behaviours as less severe (*n*=2)	No=25 -The behaviours are the same (*n*=9) -Regardless of size more women care about their weight (*n*=6) -Regardless of size she has an eating disorder (*n*=5) -Weight doesn't matter/the person is the same (*n*=2)	Yes=25 -If she were heavier her weight concern would be more understandable (*n*=8) -If she were thinner I would think she had an eating disorder (*n*=4) -If she were heavier I would perceive her behaviours as less severe (*n*=3) -She is thin so she shouldn't have to worry about her weight (*n*=3) -If she were heavier I would praise her more for her behaviours (*n*=2)	No=19 -The behaviours are the same (*n*=7) -Regardless of size most women care about their weight (*n*=4) -Regardless of size she has an eating disorder (*n*=2)
Obese BMI	Non-Restrictive	Yes=25 -If she were thinner I would perceive her behaviours as more positive (*n*=17) -If she were thinner she wouldn't have to worry about her weight (*n*=4) -If she was so heavy that her functioning is impaired then there is a serious problem (*n*=2)	No=21 -Weight doesn't matter/the person is the same (*n*=7) -The behaviours are the same (*n*=7) -Regardless of size, self-confidence is good (*n*=5)	Yes=33 -If she were thinner I would perceive her behaviours more positively (*n*=26) -If she were thinner I would think she has an eating disorder (*n*=2)	No=14 -Weight doesn't matter/the person is the same (*n*=4) -The behaviours are the same (*n*=3) -Regardless of size self-confidence is good (*n*=2) -The issue is health not size (*n*=2)

	Restrictive	Yes=20 -If she were thinner I would think she had an eating disorder (*n*=10) -If she were thinner I would perceive her behaviours as worse (*n*=5) -If she were thinner she wouldn't have to worry about her weight (*n*=3)	No=32 -The behaviours are the same (*n*=20) -Regardless of size most women care about their weight (*n*=5) -Regardless of size she has an eating disorder (*n*=3)	Yes=27 -If she were thinner I would think she has an eating disorder (*n*=11) -If she were thinner she shouldn't have to worry about her weight (*n*=5) -If she was thinner I would perceive her behaviours as more severe/worse (*n*=4) -If she were taller it would balance out her weight (*n*=3)	No=20 -The behaviours are the same (*n*=7) -Regardless of size she has an eating disorder (*n*=5) -Regardless of size most women care about their weight (*n*=4) -Weight doesn't matter/the person is the same (*n*=2)

Participant Responses to "Under what other circumstances would you perceive Jody's attitudes and behaviours about her body and weight differently and why?"

		HAES message	WHO message
Normal BMI	Non-Restrictive	-If she were overweight/obese/heavier (*n*=9) -If she had an eating disorder (*n*=5) -If she thought more about her diet and exercise/her weight (*n*=4) -If she were older (*n*=2) -If she had a health condition (*n*=2) -If she was inactive (*n*=2) -If she were younger (*n*=2)	-If she were overweight/obese/heavier (*n*=13) -If she thought more about her diet and exercise /weight (*n*=5) -If she had an eating disorder (*n*=5) -If she were underweight she would be unhealthy (*n*=5) -If she had unhealthy eating and exercise habits (*n*=4) -If she were older (*n*=3) -If she was unfriendly/not socially active (*n*=2) -If she were younger (*n*=2)
	Restrictive	-If she were overweight/obese/heavier (*n*=11) -If she had an eating disorder (*n*=3) -If she had a health condition (*n*=2) -If she were younger (*n*=2) -If she were a body builder/athlete (*n*=2) -If she practiced healthy weight loss behaviours (*n*=2)	-If she were overweight/obese/heavier (*n*=7) -Environmental factors leading to stress (*n*=4) -External factors (medications, genetics, diseases) can influence weight (*n*=3) -If she was a different ethnicity (*n*=3) -If she were younger (*n*=3) -If she were underweight she would be unhealthy (*n*=2)
Obese BMI	Non-Restrictive	-If she thought more about her diet and exercise/weight (*n*=7) -If she had unhealthy eating and exercise habits (*n*=6) -If she had a health condition (*n*=5) -If she were taller it would balance out her weight (*n*=3) -If she were older (*n*=2) -If she were a different ethnicity (*n*=2)	-If she thought more about her diet and exercise/weight (*n*=8) -If she had unhealthy eating and exercise habits (*n*=4) -External factors (medications, genetics, diseases) can influence weight (*n*=3) -If she had an eating disorder (*n*=3) -If she hated her body but did nothing to change it (*n*=2) -Her positive body image would be more understandable if she was not obese (*n*=2) -If she was unfriendly/not socially active (*n*=2) I would perceive her less negatively/more healthy if she was not obese (*n*=2) -Her positive body image is more positive because she is obese (*n*=2)
	Restrictive	-If she were thinner she would be unhealthy (*n*=6) -If she hated her body but did nothing to change it (*n*=5) -If she practiced healthy weight loss behaviours (*n*=4) -External factors (medications, genetics, diseases) can influence weight (*n*=2)	-If she had unhealthy eating and exercise habits (*n*=4) -External factors (medications, genetics, diseases) can influence weight (*n*=4) -If she were a body builder/athlete (*n*=4) -If she had a health condition (*n*=3) -If she was a different ethnicity (*n*=3) -If she were younger (*n*=2) -If she practiced healthy weight loss behaviours (*n*=2)

Participant Responses to "Is there anything about Jody that you think is important that you would like to tell us?"

		HAES message	WHO message
Normal BMI	Non-Restrictive	-Jody's body confidence is a positive thing (*n*=3) -She is a positive role model (*n*=2) -She needs to eat better/exercise more for her health (*n*=1) -She is normal/typical (*n*=1)	-Jody's self-confidence is positive (*n*=3) -Can't understand why she doesn't care about what others think everyone cares about other's opinions (*n*=3) -She needs to eat better/exercise more for her health (*n*=2) -She should change her behaviours (*n*=2) -Being thin doesn't mean you're healthy (*n*=2) -I need more detail about Jody to be able to judge her (*n*=1) -Great that she loves her body but still needs to practice healthy eating and exercise habits (*n*=1) -She is normal/typical (*n*=1) -Regardless of size Jody should love her body (*n*=1) -Rare to see a woman with body confidence (*n*=1) -Eating healthy and exercising are important (*n*=1) -She is athletic (*n*=1) -Her attitudes/behaviours are negative (*n*=1)
	Restrictive	-She has an eating disorder/will develop and eating disorder (*n*=6) -She hates her body/cares too much about her weight (*n*=5) -She is trying to lose weight in an unhealthy way (*n*=4) -She is depressed (*n*=3) -Regardless of your size you should love your body (*n*=2) -She is trying to be accepted/fit in (*n*=2) -I need more detail about Jody to be able to judge her (*n*=1) -She is normal/typical (*n*=1) -Weight is not a measure of health (*n*=1) -She needs help/support (*n*=1)	-She hates her body/cares too much about her appearance (*n*=4) -She has an eating disorder/will develop and eating disorder (*n*=3) -I need more detail about Jody to be able to judge her (*n*=2) -She needs help/support (*n*=2) -Regardless of size Jody should love her body (*n*=1) -Eating healthy and exercising are important (*n*=1) -She is losing weight in an unhealthy way (*n*=1) -She is trying to be accepted/fit in (*n*=1)

Obese BMI	Non-Restrictive	-As long as she's healthy it's ok (*n*=5) -It's rare to see a woman her size with body confidence (*n*=4) -Those around her should encourage her to lose weight/be healthy (*n*=2) -She is normal/typical (*n*=1) -Regardless of size she should love her body (*n*=1) -Her self-confidence is positive (*n*=1) -Eating healthy and exercising are important (*n*=1)	-She needs to lose weight for her health (*n*=3) -Nothing wrong with loving your body at a larger size (*n*=3) -It's great that she loves her body, but she still needs to lose weight (*n*=2) -She doesn't care about her health (*n*=2) -Those around her should encourage her to lose weight/get healthy (*n*=2) -She is unhealthy because of her weight (*n*=1) -I need more detail about Jody to be able to judge her (*n*=1) -If she was taller she wouldn't be so obese (*n*=1) -She should change her behaviours (*n*=1) -If she avoids mirrors she must hate her body (*n*=1) -She is normal/typical (*n*=1) -She is a positive role model (*n*=1) -Jody is a person regardless of her size (*n*=1) -Regardless of size Jody should love her body (*n*=1) -As long as she's healthy it's ok (*n*=1) -She is athletic (*n*=1) -Her attitudes/behaviours are negative (*n*=1)
	Restrictive	-She needs help/support (*n*=7) -She is losing weight in an unhealthy way (*n*=6) -She has an eating disorder/will develop an eating disorder (*n*=6) -She is normal/typical (*n*=3) -She is trying to be accepted/fit in (*n*=3) -She is depressed (*n*=2) -I need more detail about Jody to be able to judge her (*n*=1) -Regardless of size Jody should love her body (*n*=1) -It's positive that she is trying to lose weight/be healthy (*n*=1) -She hates her body/cares too much about her appearance (*n*=1)	-She has an eating disorder/will develop an eating disorder (*n*=8) -She needs help/support (*n*=6) -She is losing weight in an unhealthy way (*n*=4) -She hates her body/cares too much about her appearance (*n*=2) -She needs to lose weight for her health (*n*=1) -She is normal/typical (*n*=1) -Regardless of size Jody should love her body (*n*=1) -She is depressed (*n*=1) -It's positive that she is trying to lose weight/be healthy (*n*=1) -She is trying to be accepted/fit in (*n*=1)

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