

The Effects of Different Discourses on Fat Stigma

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Abstract

Stigmatizing discourses place personal responsibility on fat people to change their bodies (Frederick et al., 2020). Furthermore, systemic physical restrictions are exclusive and contribute to hyper(in)visibility (Gailey & Harjunen, 2019). The present research measures the effects of different weight loss discourses on body satisfaction, internalized stigma, need to control weight and emotions of fat people. The study is a between-subjects experiment with three conditions: health, fitting-in and control. Participants read a magazine article, fabricated by the researchers to deliver a weight loss message representing one of the three conditions. Data was gathered via questionnaire using PROLIFIC ACADEMIC. Responses from 298 participants were analyzed, collected from mostly female (two not specified) participants aged 17-78. A BMI of 30 was required. No significant results were found for the hypotheses. Therefore, we cannot conclude significant differences in body and emotion variables elicited by health or fitting-in discourses. Nevertheless, literature analysis demonstrates that the impact of anti-fat discourse should not be overlooked. Overall, this study contributes to the literature on fat stigma and health frames of fat. It proposes novel questions regarding the impact of fitting-in discourse. We suggest furtherance of manipulations using social media should be considered. Implications for theoretical development include considering the effects of fear frames within health discourse.

Key words: Fat, stigma, health, discourse, fitting-in, body satisfaction, internalized stigma, need to control weight, emotions

The Effects of Different Discourses on Fat Stigma

Why do celebrities lose weight? Most often, a quest for better health is stated as the motivating factor. The implication of this mirrors the aggressive discourse seen in mass and social media, and government interventions which frame fat bodies as faulty, inherently unhealthy and requiring change (Frederick et al., 2020). Central to this discourse is the fat stigma within our society. Medicalization of fat bodies escalated fatphobia when "obesity" was classified as a disease (Stoll & Egner, 2021), which alongside the process of othering has contributed to a culture of hatred and blame against fat people (Gailey, 2022). Less talked about in social discourse are the physical restrictions placed on fat people through systemic factors. Clothing, furniture, public transport and medical access present limits through exclusive sizing. Conversations around health, space discrimination and fat loss impact fat people by contributing to internalized fatphobia and self-blame. In this study, we investigate how magazine articles about weight loss effect emotions and body-related cognitions of fat people. Participants will be assigned to one of two conditions, either a health motivation frame or a frame of physically fitting-in to public spaces.

Fat people are demonized through societally held negative attributions, which posit fat people as lazy, undisciplined, unattractive and unsuccessful (Gailey, 2022; Pausé, 2017). Use of "fat" reinforces the neutrality of the word and of large body sizes (Pausé, 2017; Zafir & Jovanovski, 2022). Avoidance of the word denies the acceptability of fatness and the fat experience. "Overweight" has normative connotations, implying a correct or optimum weight (Zafir & Jovanovski, 2022). "Obesity" was voted as a disease requiring intervention and eradication, conceptualizing the body size with connotations based on capitalistic value and cost to health care (Stoll & Egner, 2021) therefore, contributing to fat phobia. A Body-Mass-Index

(BMI) of 25 is considered “overweight” (World Health Organization, 2020). While BMI is used in this study, this is done with the recognition that BMI does not account for individual differences due to race, sex, age, muscle mass or fat distribution on the body (Rothman, 2008).

Health Discourse

In western culture, the weight-normative approach to health dominates (Zafir & Jovanovski, 2022) in which weight is considered integral to health. For example, the biomedical model and the public health crisis frame are mirrored in social discourses such as news, magazines and social media rhetoric. These models suggest fat is dangerous, inherently unhealthy, cannot coexist with health, is within individual control, and that fat people have a social responsibility to lose weight (Frederick et al., 2020). For example, the biomedical model defines a “Healthy Weight” with the idea that lower weight equals lower health risk and stresses the importance of pursuing the Healthy Weight for collective gain (Rodgers, 2016). Blame is directed towards fat people for rising costs of healthcare and other societal issues (Gailey, 2022). This judgment was prominent during the COVID-19 pandemic in which panic and scarce resources saw prejudiced rhetoric exacerbated in public discourse. Government campaigns identified fat people as being at greater risk than thin people of death or adverse effects of COVID-19. Small scale studies identified “obesity” as a risk factor for COVID-19, yet did not control for discrimination in medical settings or replicate the studies (Gailey, 2022). Results of studies which found such connections were highly visible during the pandemic, due to fear increasing the public demand for trustworthy advice. This discourse contributes to the common view of fat people as a ‘burden’ and ‘drain’ on public resources.

Weight normative frames of health are used to justify fatphobia. Fatphobia is a social construct encompassing learned hatred, fear, and oppression of fat bodies. This contributes to fat

stigma: defined as discrimination of people due to their size (Pausé, 2012). Fatphobia is often hidden behind concern for health. For example, fat women explain experiences in the workplace including rude comments, unsolicited advice about diets and exercise, and inappropriate observations about weight behind thinly veiled, unwarranted concerns for health (Gailey, 2022). The medicalization of fat means it is seen as morally important to prevent or reduce fatness for improved health (Gailey, 2022). Negative effects of fat stigma on mental and physical health contradict public health frames (Pausé, 2017). In medical settings, fat people often contend with restricted access to cancer screening, eating disorder diagnoses and vaccines (Lee & Pausé, 2016). Davis-Coelho et al., (2000) found that psychologists predicted lower effort from fat clients, poorer prognosis and treatment goals regarding body image and self-acceptance more than for people of other sizes. Fat stigma originated through association with negative attitudes held against Black persons - particularly Black women - in the 18th century, preceding health concerns (Strings, 2012). These factors indicate the importance of questioning health discourse contributions to fat stigma, so this study investigates the effects of health discourse on women.

Fitting-in Discourse

Alongside the health discourse, our study seeks to identify emotional and cognitive responses to discourse regarding space discrimination. Physical restriction (i.e., not fitting-in) further marginalizes fat people by removing access to parts of the world (Pausé, 2017). For example, MRI scanners are not always available in hospitals in inclusive sizes. Experiences such as not fitting-into exclusive clothing sizes, chairs in restaurants, airplane seats and public bathrooms are some examples of physical restrictions. This is a form of symbolic violence, often prompting feelings of shame, anxiety and being “abnormal” (Gailey, 2022). Systemic violence is created and maintained through physical barriers contributing to discrimination in school and the

workplace, reducing access to opportunities and progression. This cycle reinforces the label of fat people as lazy and unproductive (Gailey, 2022). Studying the emotional impact of physically not fitting-in will increase understanding of how fat stigma causes harm.

This research contributes to existing literature, by experimentally measuring the effects of health frames of weight loss discourse on immediate emotional and psychological factors. The research measures aspects of a sociocultural model for body image and eating concerns through empirical testing of internalized stigma and weight control beliefs (Rodgers, 2016). Furthermore, no studies are known to us at present which measure the effects of discourse about fitting-in.

Social-Effects of Discourse

The importance of social discourse can be understood through constructionism, whereby beliefs and truths develop through attribution of context and meaning to language (Zafir & Jovanovski, 2022). Discourse encompasses written and spoken communication (Zafir & Jovanovski, 2022). Interviews with young people demonstrate that social context including healthcare professionals and school discourse impact meaning that children associate with weight related words (Stuij et al., 2020). An analysis of health care professional's attitudes towards aged-care work demonstrates the role of language and social discourse in forming and maintaining stigma of perceived out groups, and demonstrates how media can influence judgment (Manchha et al., 2022). Attitudes of negative valuation (i.e., perceptions of worth) and judgments of normality (of the other group) were influenced by the media. Discourse creates and maintains social understanding of weight, which shows the impact of social discourse on stigmatized groups including fat people must be researched.

Outcome Variables

In this project, as a group three factors were identified: psychological, emotional, and body-related which result from discourse. In my paper, I focused on two clusters of outcomes. Firstly, the impact of health and fitting-in discourse on body-related factors including body satisfaction and shame, internalized stigma and need to control weight. Secondly, the emotional cluster identifies anger towards self, the celebrity and the system, hope, guilt, envy and sympathy.

Internalized Stigma

Health frames of weight loss may increase internalized fat stigma. Furthermore, physical restrictions themselves contribute to internalized fat stigma. Hyper(in)visibility is a form of othering whereby a person is concurrently exposed and ignored (Pausé, 2017). Internalized stigma is predicted when hyper(in)visibility creates a liminal state due to this paradox (Gailey & Harjunen, 2019). Fat bodies are continuously scrutinized and questioned in media articles, on social media and within the biomedical model of fatness. Simultaneously, fat people's physical and emotional needs are ignored and rejected through physical barriers, and symbolic structural hierarchies (Gailey, 2022). Hyper(in)visibility operates alongside social demand for the individual to change, implicated through weight normative frames of health. This contributes to the liminal state in which one is expected to change to fit societal demands (Gailey & Harjunen, 2019). Celebrity interviews and social media posts which emphasize self-control and guilt when discussing weight loss reflect a personal responsibility frame. This frame may both contribute to and reflect internalized stigma by implying that inability to lose weight is a personal moral failure on behalf of the individual (Gailey, 2022; Gailey & Harjunen, 2019; Rodgers, 2016). These factors contribute to internalized fat stigma, and may be perpetuated by both health and fitting-in discourse of weight loss.

Shame

Internalized stigma may play a role in feelings of shame and body dissatisfaction (Dakanalis et al., 2015). Internalization of social norms is mediated by shame. Internalized media-ideal messages resulted in scrutinization of one's body from an outsider's view and negative emotion leading to feelings of shame (Dakanalis et al., 2015). Therefore, language which promotes health normative frames of weight loss in the media may cause shame and body dissatisfaction. However, contrasting research found that appearance framed advice in public media resulted in increased shame, above the effects of weight loss advice in a health frame (Aubrey, 2010). This research will explore the connection between media messages and shame, as well as media messages and body dissatisfaction.

It is unclear how discourse around fitting-in may affect shame. Research focuses on physical restrictions themselves contributing to negative affect (Gailey, 2022). Less research is available on how the importance of fitting-in is talked out in public discourse, therefore this study aims to open this conversation. Being unable to physically fit in may direct focus to external traits. On one hand, this could contribute to internalized fat phobia, for example when encountering exclusive sizing of clothes which favors smaller bodies. Western culture has long placed importance on physical attractiveness in attaining success, especially for females, and attractiveness has conventionally been associated with the thin body (Rodgers, 2016). This is reflected in clothing and fashion, which reinforce the thin ideal. Fitting-in discourse recognizes the inevitability of encountering these circumstances, which may elicit various reactions from readers depending on their understanding of weight bias. Objectification theory suggests attention on external traits would elicit negative feeling (Aubrey, 2010). On the other hand, it

may bring some hope or comfort to readers who are aware and frustrated by the exclusive bias in the fashion industry.

Intention to Control Weight

Frames of fatness in public discourse can affect intentions to control weight. A sociocultural model describes need to control weight and belief in controllability of weight as two important factors which contribute to pressures to maintain a “healthy” weight alongside internalization of anti-fat attitudes (Rodgers, 2016). Public health interventions focus on personal responsibility which contributes to belief in these factors. For example, the personal responsibility frame advocates control of weight through diet and exercise (Frederick et al., 2020). Fat negative frames such as the public health crisis frame and the personal responsibility frame appears to increase intention to diet. Manipulations using fabricated news media articles demonstrated that a fat-positive frame of fatness resulted in fewer intentions to diet following hypothetical weight gain, compared to participants in a control condition (Frederick et al., 2020). On the other hand, weight neutral frames such as the Health at Every Size (HAES) perspective which posits fatness as not inherently unhealthy, and often beyond individual control does not have the same impact on intention to diet or exercise (Frederick et al., 2020). Dieting intentions are important to study because of negative physical and mental health effects caused by diets, disordered eating and weight fluctuations (Gailey, 2022).

Guilt

In health frames of weight loss, blame is placed on the individual receiving the message (Gailey, 2022). Guilt and feeling like a burden are recurring emotions identified by fat people in research (Gailey, 2022; Gailey & Harjunen, 2019; Pausé, 2012). Due to societal pressures, inability to achieve weight loss goals can cause feelings of personal failure. Physical restrictions

may also increase feelings of guilt, for example one might be made to feel like a burden when needing extra assistance in health care (Gailey, 2022; Pausé, 2017). On the other hand, discourse regarding physical restriction and lack of access, implicates the social and political structures that do not make space for fat people. Therefore, the conversation does not burden the individual with the responsibility to change. Inclusive discourse may open conversation to strengthen the movement towards increasing accessibility. So combined, spatial discrimination discourse may have different effects than health discourse.

Overview of the Study and Hypotheses

Consistent with the literature, it was hypothesized that celebrity discourse describing weight loss motivation would elicit different emotional and body-related cognitions dependent on content. Content of the discourse provided was manipulated in the form of magazine articles, including one which centers health as motivation for weight loss, and the other a desire to “fit in” physically, and a control. Health motivation frames were predicted to elicit stronger feelings of body dissatisfaction, need to control weight, anger towards self and the celebrity and feelings of guilt including feeling like a burden, shame and internalized stigma, followed by the fitting-in condition and then the control condition. Content which centers physical restriction (fitting-in discourse) was predicted to elicit anger towards the system, hope and sympathy above the health condition, with smallest associations in the control.

Method

Participants

We collected participants using convenience sampling through the United States based PROLIFIC ACADEMIC platform online. A total of 302 participants completed the study. A sample of 298 responses was able to be used, four were removed due to incomplete answers. The

sample ranged in age from 17-78 ($M = 41$, $SD = 13$), consisting of 300 females and two participants who chose not to specify. Before the collection of participants in PROLIFIC we specified a minimum BMI of 30 to enter the study, which is categorized as “obese” by the WHO (World Health Organization, 2020). The participants’ weight ranged from 87 to 430 pounds ($M = 221$, $SD = 13$). The study received ethics approval from the Ethics Committee of Psychology.

Procedure & Design

In this study, a between-subjects experimental design with three conditions was used. The independent variables in this study are the weight discourses: health and fitting-in, and a control group. A random assignment was made among the three conditions. The dependent variables were divided into two clusters. The first cluster includes body-related aspects including body image satisfaction, internalized stigma, and the need to control weight. The second cluster includes emotion variables: anger towards self, anger towards the celebrity, anger towards the system, hope, guilt due to feeling like a burden, guilt that they are overweight, envy of the celebrity, envy of other people, sympathy towards the celebrity.

Participants were given informed consent with the right to withdraw, ensuring anonymity and safety. For their participation in the study, individuals were paid. Before starting the questionnaire, they were asked some demographic questions such as their BMI and age. In the next step, each participant was randomly assigned to one of the three conditions in which different ‘made-up’ magazine articles are displayed: control ($N = 101$), health discourse ($N = 101$), or fitting-in discourse ($N = 100$). The allocation was completed using the online survey tool Qualtrics. The researchers created the fabricated celebrity ‘Olivia Turner’ and a matching fabricated magazine article about her weight loss. All the articles started with the same paragraph which made up the entirety of the control group (Appendix A, Figure A1). The health and the

fitting-in discourses added a second paragraph including ‘Oliver Turner’s’ motivation for weight loss (see Appendix A, Figure A2 and Figure A3 for health and fitting-in discourses, respectively). All participants read the article assigned to them and then answered questions. Finally, there was a debriefing for the participants in which the aims of the study were explained and they were thanked for their participation.

Materials

Body Image State Scale

The translated Body Image State Scale (BISS; Bardi et al., 2021) is used to measure the individual’s evaluation of their physical appearance at a certain moment in time (state body image). It uses a 6-item measure, rated on a 7-point Likert scale. Each item begins with “right now, I feel”. An example would be: “right now, I feel (extremely dissatisfied to extremely satisfied) with my physical appearance”. The phrasing for rating differs each time, a second example would be “extremely physically attractive to extremely physically unattractive”. The score is derived from the mean of each item, with higher scores indicating higher body satisfaction and lower scores indicating lower body satisfaction. Two items are reverse scored (5,6). The BISS shows good psychometric properties with a Cronbach’s alpha of 0.77, and adequate goodness-of-fit. Sufficient convergent and construct validity was found. In our study a sufficient Cronbach’s alpha of 0.917 was found.

Weight Bias Internalization Scale

The Weight Bias Internalization Scale (WBIS; Durso & Latner, 2008) measures the degree to which participants believe negative stereotypes in the form of self-statements about people being “overweight” and “obese” (BMI of 25 and higher) apply to themselves (internalized weight biases). It is an 11-item measure, rated on a 7-point Likert scale. Items included multiple

areas of content: acceptance/ rejection of weight status, desire for change, effect of perceived weight status on mood, perceived personal value, ease of life, public appearance and social interaction, and recognition of existence and unfairness of weight stigma. An example item would be “I hate myself for being overweight”, rated from 1, standing for strongly disagree to 7, standing for strongly agree. Items 1 and 9 were reverse scored. Psychometric properties are sufficient with an internal consistency (Cronbach’s alpha = 0.90). Adequate construct validity was found. In our study a sufficient Cronbach’s alpha of 0.913 was found.

Questionnaire to Measure Need to Control Weight

To measure need to control weight and dieting intentions a 6-item measure rated on a 7-point Likert scale was used, ranging from strongly disagree to strongly agree, as seen in Table A1. Items 2 and 5 were reverse scored. The reliability was sufficient with a Cronbach's alpha of 0.901. The items can be seen in Table A1 (Appendix A).

Questionnaire to Measure Emotions

To measure the emotions: anger (towards self, celebrity, system), hope, guilt (about being a burden, overweight), envy (the celebrity, other non-fat people) and sympathy towards the celebrity, we used our own scales. We included a 14-item measure rated on a 7-point Likert scale ranging from strongly disagree to strongly agree. To measure anger six items were used. Item two was reversed scored. To measure hope one item was used. For guilt four items were used and Items 2 and 4 were reversed scored, and to measure envy four items were used. For sympathy towards the celebrity one item was planned to be used, but it was not included. The items can be seen in Table A2 (Appendix A). In our study a Cronbach's alpha of 0.125 was found.

Results

Preliminary Analysis

Reliability of dependent variables was computed using Cronbach's alpha (Table 1). Items were excluded due to negative correlations with the total scale. In total, exclusions included the following items: 5 and 6 from body satisfaction, 2 and 5 from need to control weight, 2 and 6 from emotion. Removal of item 6 meant that variable hope was no longer included in the analysis. 2 and 4 were removed from guilt. Following these exclusions, internal consistency was good for all variables. The variable sympathy was lost during the data collection and has been dropped from the analysis. See Table B1 (Appendix B) for descriptives including means and standard deviations for each condition. Manipulation and attention checks were not included in data collection. Therefore, results should be interpreted with caution.

Table 1
Reliabilities (Cronbach's Alpha)

Means	Number of Items	Cronbach's Alpha
Body satisfaction	6	(.942)
Need to control weight	6	(.853)
Internalized stigma	9	(.820)
Emotion	4	(.628)
Guilt	4	(.577)
Envy	4	(.857)

A preliminary analysis checked assumptions for each analysis. The design of the study satisfied the assumption of independent random sampling, participants were randomly assigned to the conditions of each hypothesis. We used Levene's test to check the homogeneity of variance for each variable. We found a non-significant result for all body-related variables (body satisfaction: $F(2, 296) = 0.994, p = .371$, need control weight: $F(2, 296) = 0.315, p = .730$,

internalized stigma: $F(2, 298) = 0.607, p = .546$, guilt: $F(2, 296) = 0.090, p = .914$, envy: $F(2, 296) = .510, p = .601$). Anger towards self and celebrity were measured as one variable; emotion with a non-significant result of $F(2, 295) = 0.710, p = .493$. Overall, homoscedasticity was satisfied.

We used a Shapiro Wilkes test to check the normality assumption of each distribution. We found a significant result for body satisfaction: $W = 0.914 (p < .001)$, need control weight: $W = 0.918 (p < .001)$, internalized stigma: $W = 0.971 (p < .001)$, guilt: $W = 0.974 (p < .001)$ and envy: $W = 0.966 (p < .001)$. Anger towards self and celebrity were measured as one variable under emotion with a significant result of $W = 0.967 (p < .001)$. Therefore, we cannot reject the null hypothesis of a non-normal distribution. Analysis of variance (ANOVA) is robust against violations of normality; however, results should be interpreted with acknowledgment of this violation.

Main Analysis

A number of ANOVAs were performed to test the main effect of the three conditions (health, fitting-in and control) on each body-related variable. For body satisfaction, the ANOVA suggested there may be a significant effect between at least two groups: $F(2, 296) = 3.10, p = .047, \eta_p^2 = 0.020$. However, post hoc comparisons using the Bonferroni correction found that there were no significant differences in the mean scores for control and health: $t(2, 297) = -1.769, p = .234$, control and fitting-in: $t(2, 297) = -2.399, p = .051$, or health and fitting-in: $t(2, 297) = -0.633, p = 1$. Furthermore, the marginal means plot reveals considerable error bars (Figure 1) so there does not appear to be meaningful differences between the groups. For all other variables we found no significant effects: need to control weight: $F(2, 296) = 1.05, p =$

.352, $\eta^2 = 0.007$, internalized stigma: $F(2, 298) = 1.22, p = .296, \eta^2 = 0.008$) as can be seen in Figure 1, 2 and 3 respectively.

Figure 1

Mean Body Satisfaction

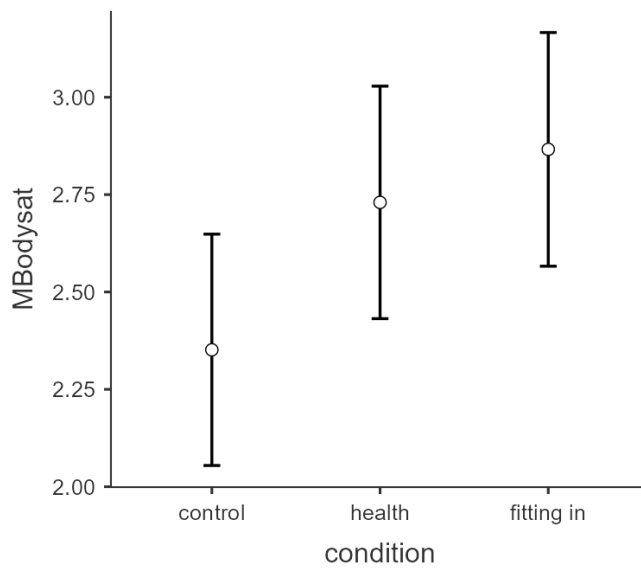


Figure 2

Mean Intention to Control Weight

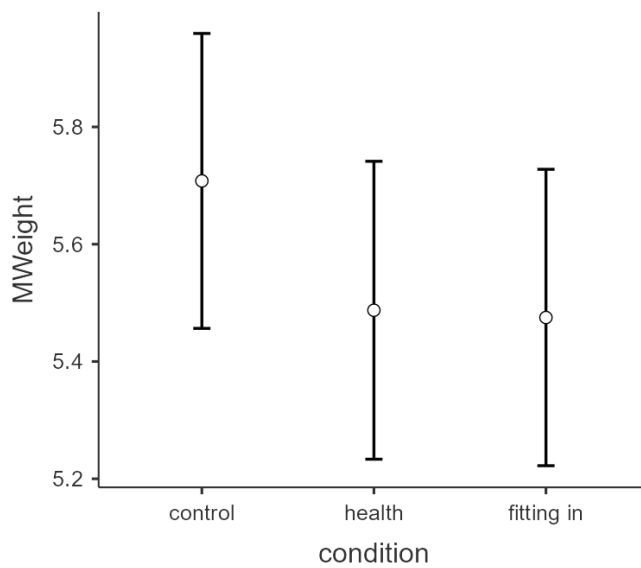
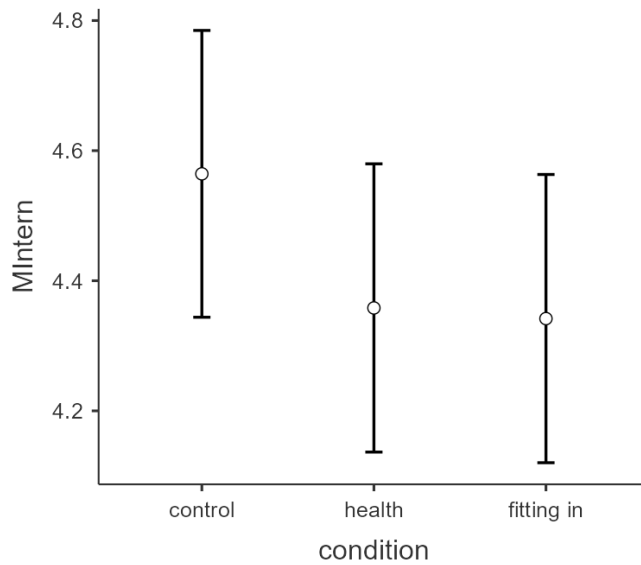
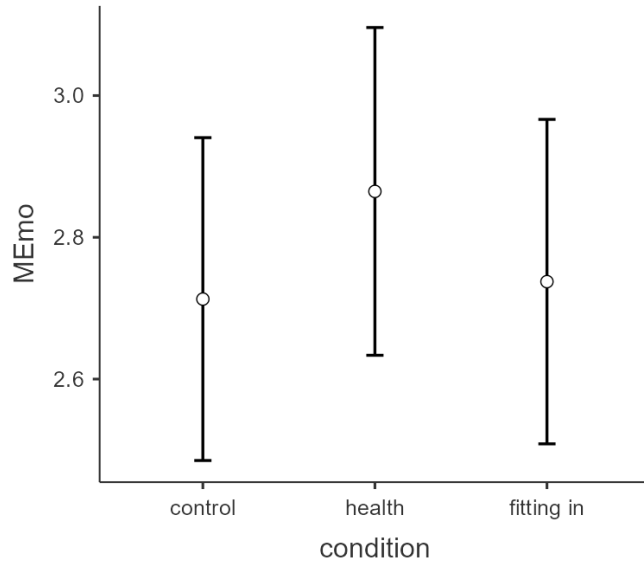
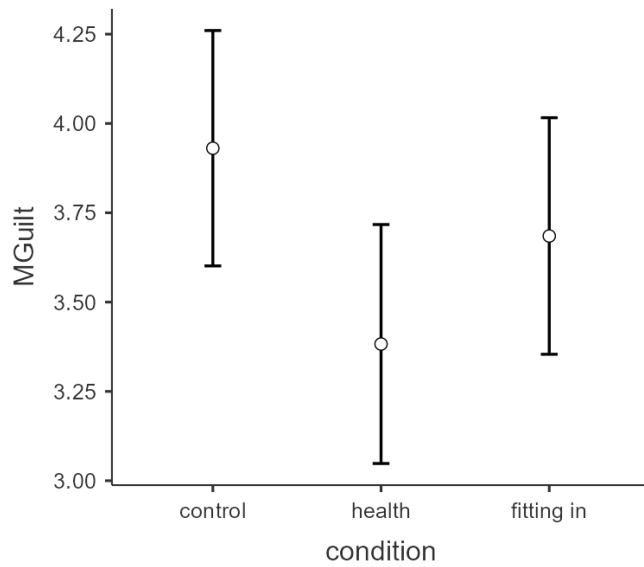


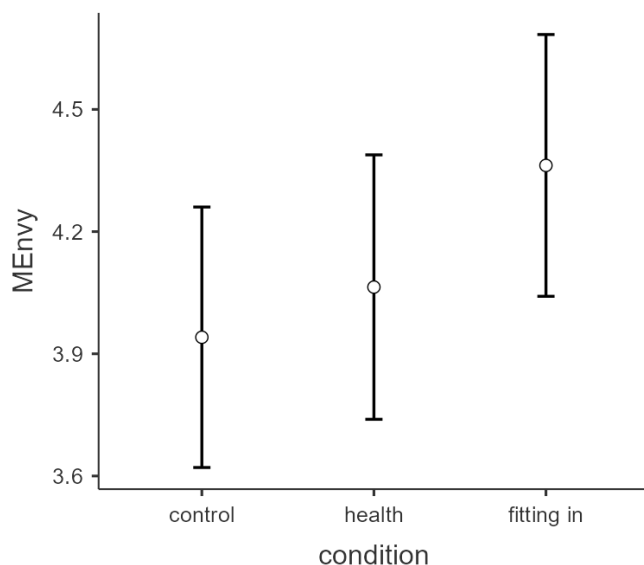
Figure 3*Mean Internalized Stigma*

No evidence was found for a statistically significant difference between the effects of the health, fitting-in or control discourses on body satisfaction, intention to control weight, or internalized stigma.

An ANOVA was performed to test the main effect of condition on the emotion variables. The variables “anger towards self”, and “anger towards celebrity” were combined under the label of emotion. We found no significant difference between the effect of the discourses on emotion, as seen in Figure 4 ($F(2, 295) = 2.00, p = .819, \eta_p^2 = 0.001$). We also found no significant difference between the effects of the conditions on guilt, evidenced in Figure 5 ($F(2, 296) = 2.65, p = .073, \eta_p^2 = 0.018$) or on envy (Figure 6) ($F(2, 296) = 1.77, p = .172, \eta_p^2 = 0.012$). Altogether, no evidence was found to indicate a meaningful or statistical difference between the effects of the discourses on anger, guilt or envy.

Figure 4*Mean Emotion*

**Figure 5***Mean Guilt***Figure 6***Mean Envy*



Discussion

The intention of this study was to investigate the effects of different weight loss discourses on body satisfaction, internalized stigma, need to control weight and emotions of fat people. Firstly, it was hypothesized that the health motivation condition would increase feelings of body dissatisfaction, need to control weight, internalized stigma, anger towards self and the celebrity and feelings of guilt including feeling like a burden and shame followed by the fitting-in condition and then the control condition. Secondly, the fitting-in condition was predicted to elicit anger towards the system, hope and sympathy above the health condition, with smallest associations in the control. Overall, we found no significant differences between the health, fitting-in and control conditions. Therefore, we can conclude no meaningful differences on the effects of health or fitting-in discourses over generic weight loss discourse.

The pattern of results was surprising in consideration of the hypotheses. Mean body satisfaction was higher in health and fitting-in conditions, above the control condition. Need to control weight, internalized stigma, and guilt and were lower for both health and fitting-in conditions than in the control conditions. These patterns oppose our hypotheses. However, the

results are not significant, so we should not over interpret them. Moreover, the health condition elicited a higher level of anger (under variable emotion), above control and fitting-in. This does fit in with the hypothesis, however it is such a small, non-significant effect that no conclusions can be drawn to support the hypothesis. Envy was higher in fitting-in than both other conditions. While no explicit hypothesis was discussed for this variable, it is worth noting. However, again the effect is non-significant and should not be overstated.

A number of factors might be responsible for the non-significant results. Firstly, it is possible that health framed discourse of weight loss does not elicit the body-related or emotion variables as theorized. However, given that these factors are established in qualitative literature (Frederick et al., 2020; Gailey, 2022; Gailey & Harjunen, 2019; Pausé, 2017) this conclusion is not likely. More plausible is that the magazine articles did not accurately manipulate the aspects of fat stigma identified in previous literature. In this study, all conditions discussed weight loss. It could be that weight loss discourse elicits body-related or emotional reactions already, and therefore the addition of health and fitting-in discourse made no significant difference compared to the control.

The manipulation used in the first condition referred to health motivations for weight loss in generic terms. This is because we wanted to measure the effect of the health discourse only, with the understanding that it can carry these implications non-explicitly or due to previous connections made in media and public health campaigns. Weight normative health frames which label fat as harmful to the individual imply association between fatness and health, but also state it implicitly. Furthermore, our manipulation did not specifically state any adverse effects of fat. Rather, it was positively framed; the celebrity described “never feeling better” (Appendix A, Figure A2). Public health campaigns on the other hand, often come from a negative frame.

Possibly the negative frame induces fear whereas the positive frame does not. For example, the Centers for Disease Control and Prevention (CDC) states “obesity is a common, serious, and costly chronic disease. Having obesity puts people at risk for many other serious chronic diseases and increases the risk of severe illness from COVID-19.” (Centers for Disease Control and Prevention, 2022). Therefore, it may be that while positive frames of health motivated weight loss do not induce the dependent variables as hypothesized, negative or fear inducing frames have a stronger effect on stigma. For example, a meta-analysis concluded that gain frames are associated with arousal of positive emotions, and loss frames are associated with arousal of more negative emotions (Nabi et al., 2020). Both frames showed a positive relationship between increased emotion intensity and level of persuasion for the respective emotion. These findings may be applicable to the influence of fat discourse. It supports the supposition that a negatively framed health message may increase negative emotions such as anger, over gain frames such as the one used in our manipulation. Emotional intensity was also proportional to level of involvement with the issue, for example more negative emotion was elicited by participants more involved in the issue (Nabi et al., 2020). It is possible that participants did not feel the manipulation was relevant to them personally.

Health discourse frames weight loss as a social responsibility for fat people (Frederick et al., 2020; Gailey, 2022; Rodgers, 2016). However, in the current study, the manipulation made no specific inference to collective responsibility: motivation was focused on the individual. Possibly, media such as magazine articles are more direct in their messaging. For example, a celebrity interview in People Magazine includes the statement: “It's almost like I didn't think of my own needs. I thought of a future child's needs that really inspired me to get healthier.” (*Rebel Wilson Gets Real about Putting on Weight as She Shares Swimsuit Pic: It “Doesn’t Define*

You,” n.d.). Similarly, the CDC states “Everyone has a role to play in turning the tide against obesity and its disproportionate impact on racial and ethnic minority groups.” (Centers for Disease Control and Prevention, 2022). These messages explicitly claim a social responsibility for fat people to lose weight, whereas our manipulation did not. More detailed manipulations including variations in level of responsibility placed on the individual, and also frames of weight loss motivation in terms of gains or fear induced might provide more conclusive evidence to determine the effects of fat stigma.

Previous research shows that internalized stigma mediates the relationship between media messages and shame (Dakanalis et al., 2015). Due to different discourses showing no significant impact on internalized stigma in this experiment, it makes sense to see no significantly different outcome of shame. While an explicit analysis of internalized stigma as a mediator was not included, meaning no certain associations can be defined, it is worth mentioning for future research and interpretation of the results. As discussed, fitting-in discourse was theorized to possibly elicit different reactions dependent on participant’s current views of weight bias. However, again since the conditions elicited no significant differences in internalized stigma, it is not unexpected to see no significant differences in outcomes of shame.

Due to a technical error in the formation of the questionnaire, no manipulation check was included. Without the manipulation check, we cannot ascertain internal validity. Therefore, the analysis of the results is limited by the uncertainty as to the success of the manipulation. Similarly, no attention check was included, which might have allowed a more thorough analysis of the results. In order to study the impact of discourse on fat people specifically, BMI was used to collect participants to fit the research question. However, BMI is problematic for a number of reasons and its inclusion is a limitation of the study. BMI is a measure of weight, rather than

body fat relative to height. It has poor specificity, sensitivity and does not reflect age related changes or account for muscle mass (Rothman, 2008). Obesity, which is defined by BMI rather than body fat, is weakly correlated with the latter. The BMI may incorrectly classify some individuals, for example, Black people are overestimated in classifications of obesity (Burkhauser & Cawley, 2008).

The study used a between-measures design. We included no pre-measure of participant states or traits regarding body satisfaction or emotions which might have impacted response to the manipulation. Furthermore, this meant we did not have a comparison between individual differences such as health goals and knowledge, previous experiences with fitting-in, and personal attitudes and susceptibility towards celebrity influence. By studying group outcomes, the study relied on the assumption of ergodicity in the population. However, humans are non-ergodic (Speelman & McGann, 2020) which might reflect the discrepancies found between our study and research which used qualitative measures and open questions such as Gailey (2022). Future research might investigate potential moderating relationships between individual differences as protective factors against media influence.

The manipulation was short and brief. The intensity of the questionnaire may not have aligned with the manipulations. That is, the questionnaire included questions which asked for considerable reactions, such as internalized stigma. Perhaps the manipulation was too brief to induce reactions to this degree. Furthermore, media messaging may be impactful because of repetition making messaging more salient. On the other hand, our manipulation was presented only once to each participant. It is possible that content validity of the manipulation was low, if the questionnaire and manipulation were not aligned. Future research might use a longitudinal, or

repeated-measures design to measure the impact of singular discourse exposure compared to repeated exposure.

Overall, suggestions for future research into fat stigma should consider alternative materials to select participants (Burkhauser & Cawley, 2008). Furthermore, alternative manipulations should be explored. It would be of interest to replicate the study using manipulations mimicking social media platforms such as TikTok and Instagram, and public health messaging such as the CDC and National Health Service (NHS) advice websites. Measures which better reflect intra-individual variation might provide more accurate reflections of the impact of discourse on fat stigma.

This research contributes to literature on fat stigma, and the impacts of discourses. We introduce novel questions regarding discourse about physical restrictions. It is important to note, that while the hypotheses in this study were not supported by the results, participants indicated internalized stigma in all conditions. Importantly, the analysis of previous literature shows that the impact of health discourse and physical restrictions on fat stigma should not be overlooked. Therefore, while we cannot claim to have determined any effects of discourse on fat stigma, fat stigma remains a social issue requiring further attention.

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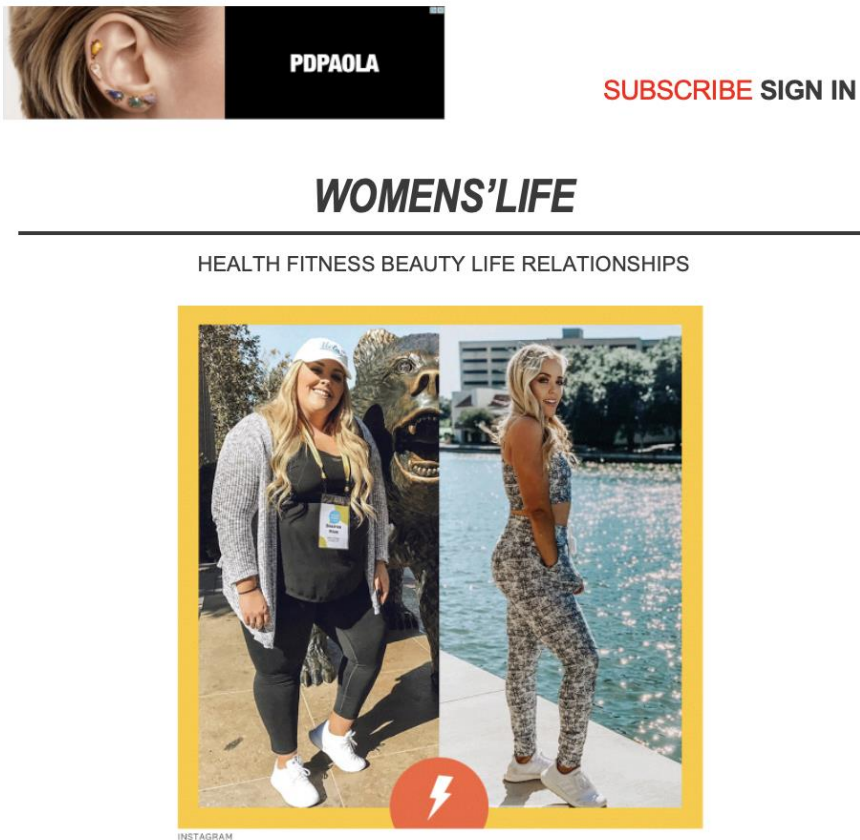
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Appendix A

Figure A1

Control Group

The image is a screenshot of a social media post. At the top left, there is a profile picture of a woman's ear with multiple piercings, next to the name 'PDPAOLA' in white text on a black background. To the right of the name are the words 'SUBSCRIBE' in red and 'SIGN IN' in black. Below this is the title 'WOMENS'LIFE' in a bold, italicized, black font. Underneath the title is a horizontal line, followed by the text 'HEALTH FITNESS BEAUTY LIFE RELATIONSHIPS' in a smaller, black font. The main content of the post is a side-by-side comparison of a woman, Olivia Turner. On the left, she is shown in a 'before' state, wearing a grey cardigan, black leggings, and a white cap, standing next to a large bronze statue of a bear. On the right, she is shown in an 'after' state, wearing a patterned two-piece outfit and standing by a body of water. A red lightning bolt icon is overlaid on the bottom center of the photo. Below the photo, the word 'INSTAGRAM' is written in small letters.

Olivia Turner lost over 30kgs! Here's how she did it.

Olivia Turner now reveals her weight loss journey in an exclusive interview with us. At first, she was able to lose 20kgs in 6 months. It slowed down, but she continued her journey and eventually lost another 10kgs in the second half of the year. Currently, she is able to successfully maintain her weight loss.

Figure A2

Health Discourse



PDPAOLA

SUBSCRIBE SIGN IN

WOMEN'S LIFE

HEALTH FITNESS BEAUTY LIFE RELATIONSHIPS



INSTAGRAM

“I took myself on a health journey and lost over 30kgs!”, said Olivia Turner. Here’s how she did it.

Olivia Turner now reveals her weight loss journey in an exclusive interview with us. At first, she was able to lose 20kgs in 6 months. It slowed down, but she continued her journey and eventually lost another 10kgs in the second half of the year. Currently, she is able to successfully maintain her weight loss.

“This year I wanted to take myself on a health journey.” Olivia Turner describes that she started taking her body more seriously. She explains how her brand-new body positively impacted her health. “My body never felt more energized and amazing. I feel so great!” She explains how her goal wasn’t to reach a certain weight but that it is about being the healthiest you can be.

Figure A3

Fitting-in Discourse

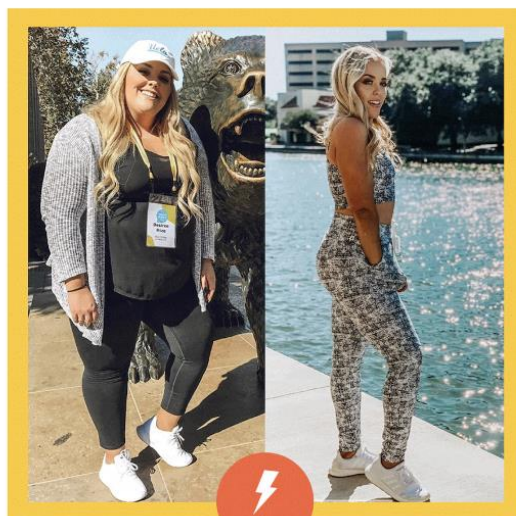


PDPAOLA

SUBSCRIBE SIGN IN

WOMEN'S LIFE

HEALTH FITNESS BEAUTY LIFE RELATIONSHIPS



INSTAGRAM

“I didn’t fit into the world around me!”, said Olivia Turner who lost over 30kgs! Here’s how she did it.

Olivia Turner now reveals her weight loss journey in an exclusive interview with us. At first, she was able to lose 20kgs in 6 months. It slowed down, but she continued her journey and eventually lost another 10kgs in the second half of the year. Currently, she is able to successfully maintain her weight loss.

“I have had enough of not fitting into the world around me!” Olivia Turner describes not being able to fit into chairs with arms, restaurant booths having too little space between the table and the seat, and being restricted while traveling, because the seats tend to be too small for her. She recently went to the hospital and the doctor explained that she needs an MRI scan, they would need to transfer her to a different hospital with the appropriate facilities. “I didn’t even know a wide MRI scanner was a thing. I was shocked to realize I didn’t fit into the most basic needs such as a hospital. And then I said to myself it’s time to change!”

Table A1*Questionnaire: Need to Control Weight*

Need to Control Weight
I feel like I need to lose weight
I am happy with my weight
I feel like I need to control my weight
I feel like I need to change my diet
I feel happy with my diet
I feel the need to go on a diet

Note: The table displays the statements included in the Likert questionnaire used to measure the dependent variable: need to control weight.

Table A2*Questionnaires: Emotions*

Anger	Hope	Guilt	Envy
I feel anger towards myself	I feel hopeful for myself	I feel like a burden to society	I feel envious of other people's weight
I feel anger towards the celebrity		I feel my weight has no impact on society	loss
I feel anger towards the system		I feel guilty about my current weight	I feel envious of the celebrity's weight loss
I feel anger towards thin people		I feel proud of my weight	I feel envious of plus size celebrities
I feel positive about myself			I feel envious of thin people

Note: The table displays the statements included in the four Likert questionnaires used to measure the emotion cluster of the dependent variables including: anger, hope, guilt and envy.

Appendix B

Table B1

Descriptives (Mean and Standard Deviation)

	Condition	<i>M</i>	<i>SD</i>
1. Body satisfaction	Control	2.35	1.43
	Health	2.73	1.57
	Fitting-in	2.87	1.55
2. Need to control weight	Control	5.71	1.19
	Health	5.49	1.32
	Fitting-in	5.47	1.34
3. Internalized stigma	Control	4.56	1.08
	Health	2.36	1.12
	Fitting-in	4.34	1.17
4. Emotion	Control	2.71	1.07
	Health	2.86	1.27
	Fitting-in	2.74	1.15
5. Guilt	Control	3.93	1.70
	Health	3.38	1.67
	Fitting-in	3.69	1.67
6. Envy	Control	3.94	1.62
	Health	4.06	1.70
	Fitting-in	4.36	1.58