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ORIGINAL ARTICLE

Disgust, contempt, and anger and the stereotypes of obese people

Lenny R. Vartanian · Margaret A. Thomas ·
Eric J. Vanman

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Abstract

Purpose Emotions form an important part of stereotyping and prejudice, but little is known about how intergroup emotions are associated with anti-fat prejudice. This study examined the relation between negative intergroup emotions (disgust, contempt, and anger) and the stereotypes of obese people.

Method A community sample ($n = 380$) and an undergraduate sample ($n = 96$) rated obese people on common obesity stereotypes (e.g., lazy, sloppy), and also indicated the extent to which they felt disgust, contempt, and anger toward obese people.

Results In both samples, participants reported feeling more disgust and contempt than anger toward obese people. Furthermore, regression analyses indicated that disgust was a significant positive predictor of obesity stereotypes, but contempt and anger were not.

Conclusion Overall, these findings provide further evidence that disgust plays an important role in prejudice toward obese people.

Keywords Intergroup emotions · Disgust · Contempt · Anger · Obesity · Stereotypes

Introduction

Obese people are frequently the targets of bias and discrimination in a range of settings, including employment, education, and interpersonal relationships [1]. Negative attitudes toward obese individuals are observed both explicitly and implicitly [2], and there are also a range of negative stereotypes commonly attributed to obese individuals, such as being lazy, sloppy, and unattractive [1]. Furthermore, research has found that obese people are seen as having lower social status than non-obese people, and that perceptions of obese people's lower status are associated with attributions of incompetence [3]. Importantly, there is evidence that obese people are currently stigmatized more than other historically marginalized groups (e.g., homosexuals, ethnic minorities) [4, 5], and that attitudes toward obese people are worse today than they were in the 1960s [6]. Given the pervasiveness of prejudice toward obese people, it is important to understand the processes underlying these negative attitudes and stereotypes.

Emotions form an important part of stereotyping, prejudice, and intergroup relations [7, 8]. Examination of intergroup emotions toward obese individuals, however, has lagged behind the study of emotions toward other social groups. Some initial work examining emotional responses to obese people has focused on the emotion of disgust. For example, one study found activation in brain regions associated with disgust (such as the insula) when participants viewed images of obese individuals [9], and other work has found that obesity is associated with disease-related concepts [10]. More recently, Vartanian [5] showed that the more disgusting participants rated obese people, the more negative was their overall attitude toward obese people. Thus, disgust may be an important intergroup emotion to consider in understanding people's negative reactions to

L. R. Vartanian (✉)
School of Psychology, The University of New South Wales,
Sydney, NSW 2052, Australia
e-mail: lvartanian@psy.unsw.edu.au

M. A. Thomas
Department of Psychology, Earlham College, Richmond,
IN, USA

E. J. Vanman
School of Psychology, The University of Queensland,
St. Lucia, QLD, Australia

obese individuals. One aim of the present study was to extend the findings of previous research by determining whether disgust is also related to the stereotypes commonly associated with obese individuals.

In addition to disgust, other intergroup emotions that are related to prejudice toward various social groups include contempt and anger. Contempt, anger, and disgust have all been described as “moral emotions” that are uniquely associated with violation of a particular moral code [11]. For example, Rozin et al. [11] argued that disgust is elicited when individuals cause impurity or degradation to the self or to others; contempt is elicited when individuals violate their duties or responsibilities within the community or social hierarchy; and anger is elicited when individuals harm others or infringe on the freedom of others. More recently, Hutcherson and Gross [12] have shown that disgust is associated with intentional immoral behaviors, contempt seems to be related to judgments of someone being incompetent, and anger is evoked by appraisals of the self-relevance of a transgression. Although these researchers consider disgust, contempt, and anger to be distinct emotions, other researchers cluster contempt and disgust together as “avoidance” emotions and contrast them with anger, which is considered to be an “approach” emotion [13].

Research has also shown that different emotions can be elicited by different social groups, depending on the type of threat evoked by that group. For example, anger is the typical response when valuable resources (such as jobs) are taken and disgust is the typical response when there is the potential for contamination [14]. Related work has further shown that people’s emotional states can influence their judgments of social groups but only when the specific emotion is relevant to the group in question. For example, Dasgupta et al. [15] showed that eliciting anger in participants led to heightened negative implicit evaluations of Arabs, but not of homosexuals, because Arabs are typically associated with threat; in contrast, eliciting disgust led to heightened negative implicit evaluations of homosexuals, but not of Arabs, because homosexuals are seen as violating moral values. Thus, a second aim of this study was to determine whether disgust, contempt, and anger are differentially associated with the stereotypes of obese individuals.

The current study

This study extends previous research by focusing on a broader range of intergroup emotions (contempt and anger, in addition to disgust), and by examining how they are related to the stereotypes of obese people (rather than simply to overall attitudes). Participants provided their impressions of obese people in terms of common obesity stereotypes (e.g., lazy, sloppy), and also indicated the extent to which they felt disgust, contempt, and anger

toward obese people. Based on previous research indicating that disgust and contempt are associated with violations of social norms or moral standards, and that anger is related to personally relevant transgressions or threat [11, 12, 14, 15], we predicted that disgust and contempt responses would be more relevant than anger responses in relation to obese people. Following from work showing that disgust predicts negative attitudes toward obese people [5], as well as the work pointing to the similarities between disgust and contempt [13], we also predicted that disgust (and perhaps contempt) would be positively associated with common obesity stereotypes, but that anger would not.

Method

To enhance the generalizability of our results, two separate samples were included in this study: The first consisted of an online sample of community members and the second consisted of a sample of undergraduate students. To highlight the similarities in results across samples, both are described together.

Participants

Community sample

Participants from the community sample were 231 women and 149 men who completed an online survey. Participants were recruited through the Amazon Mechanical Turk website. Individuals who are registered with Amazon Mechanical Turk have access to a range of tasks that they can complete for small monetary incentives. They then select, of their own volition, which tasks they wish to complete. Participants were paid \$1 for taking part in the current study. Their mean age was 35.03 years ($SD = 12.23$) and their mean body mass index (BMI: kg/m^2) was 25.87 ($SD = 6.16$). The majority of the sample was White ($n = 284$; 74.7 %), 8.7 % was African American ($n = 33$), 7.1 % was Asian ($n = 27$), 5.8 % was Hispanic ($n = 22$), and 3.7 % reported that they were “other” ($n = 14$). All participants were based in the USA.

Undergraduate sample

Participants from the undergraduate sample were 96 students (57 men, 39 women) at a small private university in the northeastern United States who signed up for a study on the perception of others. Participants received course credit in their introductory psychology class for taking part in this study. Their mean age was 19.16 years ($SD = 2.42$) and their mean BMI was 24.76 ($SD = 5.05$). The majority of the sample was White ($n = 69$; 71.9 %), 11.5 % was African

American ($n = 11$), 10.4 % was Hispanic ($n = 10$), 6.3 % was Asian ($n = 6$), and 1.0 % identified as “other” ($n = 1$).

Materials and procedure

This study consisted of a web-based survey that was completed online (for the community sample) or on computers in the lab (for the undergraduate sample). After providing informed consent, participants were asked to indicate the extent to which they believed that a variety of characteristics applied to obese people (1 = Not at all; 7 = Very much). Included among these were five characteristics that are common stereotypes of obese people (lazy, sloppy, attractive [reverse coded], overindulgent, and poor personal hygiene) [1], which were combined to form a single index of obesity stereotypes. Cronbach’s alpha was 0.83 for the community sample and 0.69 for the student sample. After completing the trait ratings, participants were asked to indicate the extent to which they feel disgust, contempt, and anger when they think about obese people (1 = Not at all; 7 = Very much). Finally, participants provided some demographic information, including their sex, age, height and weight (used to calculate their BMI), and also indicated how many of their friends/family members were obese (1 = None; 5 = All). This study was approved by the relevant ethics committees.

Statistical analyses

First, correlations were computed among all of the measured variables to identify potential covariates (see Table 1). To test the hypothesis that disgust and contempt would be more strongly associated with obesity than would anger, a mixed-model ANOVA was conducted with intergroup emotion (disgust vs. contempt vs. anger) as the within-subjects factor, and participant sex (male vs.

female) as the between-subjects factor. We next conducted multiple regression analyses to determine whether the intergroup emotions predicted common obesity stereotypes. Disgust, contempt, and anger were entered simultaneously as predictor variables, and the obesity stereotypes composite index was entered as the outcome variable. Prior to conducting the regression analyses, data were screened for univariate and multivariate outliers.

Results

Intergroup emotions

Community sample

The mixed-model ANOVA revealed a main effect of intergroup emotion, $F(1.97_{G-G}, 736.75_{G-G}) = 85.40$, $p < 0.001$, $\eta_p^2 = 0.19$. Ratings were highest for disgust ($M = 2.84$, $SD = 1.83$), followed by contempt ($M = 2.31$, $SD = 1.62$), and ratings were lowest for anger ($M = 1.82$, $SD = 1.43$), all $ps < 0.001$. There was also a main effect of participant sex, $F(1, 375) = 3.98$, $p = 0.05$, $\eta_p^2 = 0.01$, with men overall reporting more of the intergroup emotions toward obese people than did women ($M_{men} = 2.50$, $SD_{men} = 1.37$ vs. $M_{women} = 2.21$, $SD_{women} = 1.36$). There was no participant-sex \times intergroup-emotion interaction ($F = 1.65$, $p = 0.19$). Age, BMI, and number of obese friends/family members were each significantly correlated with one or more of the intergroup emotions, and were therefore entered as covariates in a separate analysis. When these demographic variables were entered as covariates, the main effect of intergroup emotion remained significant ($F = 11.71$, $p < 0.001$), but the main effect of participant sex was no longer significant ($F = 2.65$, $p = 0.10$).

Table 1 Bivariate correlations among all measured variables

	1	2	3	4	5	6	7	8
1. Disgust	–	0.57***	0.64***	0.60***	–0.13*	–0.19***	–0.15**	–0.12*
2. Contempt	0.21*	–	0.50***	0.32***	–0.07	–0.14**	–0.06	–0.18**
3. Anger	0.69***	0.20	–	0.32***	–0.07	–0.18***	–0.09	–0.10
4. Obesity stereotypes	0.53***	0.09	0.44***	–	–0.19***	–0.19***	–0.14**	–0.17**
5. Sex	–0.19	–0.03	–0.05	–0.19	–	0.04	–0.03	0.10
6. Age	–0.08	0.04	–0.08	0.12	0.08	–	0.13*	0.06
7. BMI	0.11	0.18	0.03	0.08	–0.14	–0.07	–	0.26***
8. Obese family/friends	–0.17	0.09	–0.07	–0.09	0.07	0.09	0.05	–

Correlations for the community sample appear above the diagonal, and correlations for the undergraduate sample appear below the diagonal. For Sex, men are coded as 0 and women are coded as 1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Undergraduate sample

There was a main effect of intergroup emotion, $F(1.59_{G-G}, 149.17_{G-G}) = 18.03$, $p < 0.001$, $\eta_p^2 = 0.16$. Ratings for disgust ($M = 2.98$, $SD = 1.70$) and contempt ($M = 3.07$, $SD = 1.54$) did not differ from one another ($p = 0.49$), but both were significantly higher than ratings for anger ($M = 2.06$, $SD = 1.45$), $ps < 0.001$. There was no main effect of participant sex ($F = 1.42$, $p = 0.24$) and no participant-sex \times intergroup-emotion interaction ($F = 1.48$, $p = 0.23$). None of the demographic variables (age, BMI, and number of obese friends/family members) were significantly correlated with the intergroup emotions in the undergraduate sample, and they were therefore not included as covariates.

Regression analyses

Community sample

The overall model predicting scores on the obesity stereotypes index was significant, $F(3, 368) = 64.43$, $p < 0.001$, accounting for 34 % of the variance. Disgust was a significant positive predictor of obesity stereotypes, but contempt and anger were not significant predictors (see Table 2). Conceptually, the term “poor personal hygiene” may be more closely related to disgust than the other common stereotypes of obese people. Excluding this item, however, had no impact on the results. Sex, age, BMI, and number of obese friends/family members were all significantly correlated with obesity stereotypes, and were therefore entered as covariates in a separate analysis. Including those demographic factors in model did not change the pattern of results (disgust: $\beta = 0.61$, $p < 0.001$; contempt: $\beta = -0.01$, $p = 0.83$; anger: $\beta = -0.10$, $p = 0.08$).

Undergraduate sample

The overall model predicting common obesity stereotypes was significant, $F(3, 93) = 11.91$, $p < 0.001$, accounting for 26 % of the variance. Disgust was a significant positive predictor of obesity stereotypes, but contempt and anger

were not significant predictors (see Table 2). As with the community sample, removing the item “poor personal hygiene” had no impact on the results. None of the demographic factors (sex, age, BMI, and number of obese friends/family members) were significantly correlated with obesity stereotypes, and they were therefore not tested as possible covariates.

Discussion

The purpose of the present study was to further examine intergroup emotions and the stereotypes of obese people. We predicted that obese people would elicit more disgust and more contempt than anger, and our results support this prediction. In the community sample, participants indicated that they felt more disgust than contempt, and more contempt than anger toward obese people. In the undergraduate student sample, disgust and contempt did not differ, but were both rated higher than anger. These findings support the view that disgust is an intergroup emotion relevant to judgments of obese people [5, 9, 10], and further suggest that disgust (and to some extent contempt) may play a more important role than other intergroup emotions such as anger.

It should be noted that the results for contempt did vary between the samples. Specifically, whereas the community sample expressed more disgust than contempt, the undergraduate sample reported similar levels of disgust and contempt. Although it is often a focus in prejudice research, the emotions literature does suggest that contempt can be a contentious emotion. For example, a meta-analysis by Elfenbein and Ambady [16] showed that contempt was the most poorly recognized of the basic emotions cross-culturally, and Tracy and Robins [17] found that participants had the most difficulty recognizing contempt (performing below chance). Furthermore, Haidt [18] suggested that English speakers generally do not know the meaning of the word contempt. Thus, the discrepancy observed between our two samples may have to do with differences in their understanding and/or use of the term contempt.

As expected, anger was not as strongly associated with obesity as were disgust and contempt. Most

Table 2 Multiple regression analyses predicting obesity stereotype from intergroup emotions

Predictor	Community sample				Undergraduate sample			
	<i>B</i>	SE	β	<i>p</i>	<i>B</i>	SE	β	<i>p</i>
Disgust	0.41	0.04	0.64	<0.001	0.24	0.07	0.42	0.002
Contempt	0.001	0.04	0.001	0.98	0.01	0.06	0.01	0.90
Anger	-0.08	0.05	-0.10	0.10	0.11	0.09	0.15	0.26

conceptualizations of anger refer to people's reaction to infringements on their own rights and freedom [11], and anger expressions intensify as the self-relevance of the infringement increases [12]. Because obese people are not generally seen as threatening to others or infringing on the freedom of others, anger is not likely to be strongly associated with obese people in most cases. There may be some scenarios, however, in which anger can be evoked by obese people. For example, obesity might be seen as infringing on one's own personal freedom when considering the healthcare costs associated with obesity that are incurred by taxpayers, when confronted with possible legislation to tax or restrict access to certain foods, or when sitting next to an obese person on an airplane. Similarly, the self-relevance of the problems associated with obesity might well increase when the obese individual is a close friend, family member, or spouse, and this self-relevance could potentially lead to anger directed toward that person. These hypotheses could be tested in future research.

In addition to examining overall differences in the extent to which people reported feeling various intergroup emotions toward obese people, we were also interested in the extent to which those emotions were associated with the stereotypes of obese people. Vartanian [5] found that disgust was a strong predictor of negative attitudes toward obese people, and the present findings build on that work by showing that disgust was also related to common stereotypes of obese people. Indeed, when all three intergroup emotions were included in the regression analyses, disgust was the only significant predictor of common obesity stereotypes. Thus, disgust appears to play a prominent role in both attitudes toward and stereotypes of obese people.

The prominence of disgust in prejudice toward obese people has important implications for our understanding of weight bias. Efforts to reduce weight bias have generally produced disappointing results, both in terms of changing attitudes [19] and changing stereotypes [20]. It may be that the persistence of prejudice toward obese people is due to the nature of disgust as the emotional reaction underlying this prejudice. Specifically, it has been suggested that disgust may be a less flexible emotion than other emotions, such as anger. For example, recent research indicates that anger, but not disgust, is responsive to the circumstances surrounding a transgression [21] and to intentionality [22], and that disgust is less likely than anger to be justified by cognitively elaborated reasoning [23]. The inflexibility of disgust makes sense from an evolutionary perspective because it is better to make false alarms than to risk coming into contact with a disease agent [24]. Thus, if disgust does indeed play a central role in prejudice toward obese people (as we have suggested), then this might in part explain why negative attitudes toward and stereotypes of obese people are so resistant to change.

Limitations and future directions

There are some limitations of the present study that should be noted. We assessed verbal reports of emotions toward obese people, but it is possible that these verbal reports reflect attitudinal or cognitive aspects of judgments of obese people rather than actual emotional reactions. Furthermore, as noted above, there were differences in how our samples responded to the term contempt, suggesting some people might have difficulty with the verbal label for that emotion. Future research including behavioral or physiological measures of emotional responses would be useful to gain a richer understanding of people's true emotional reactions to obesity. The current study also focused on some of the most common obesity stereotypes [1], but it is possible that different stereotypes would be associated with different intergroup emotions. Examining these associations in future research would provide a more complete picture of people's negative reactions to obese individuals. Another limitation of this study is that the data are correlational in nature, and we therefore cannot comment on the direction of the association between stereotypes and emotions. Experimental research manipulating participants' emotional states and manipulating the perceived stereotypes associated with obese people would be needed to establish the causal relationship between stereotypes and emotions. It is possible, for example, that emotional responses exacerbate existing stereotypes, that stereotypes arise as a form of justification for one's emotional responses, or that the stereotypes themselves evoke the emotional responses. Uncovering the precise nature of the emotion-stereotype association can have important implications for a theoretical understanding of weight bias, and also for bias-reduction efforts.

Conclusion

The findings of the present study are consistent with other research indicating that disgust may play an important role in prejudice toward obese people. Disgust was more strongly associated with obese people than were either contempt or anger. Furthermore, disgust was the strongest predictor of common obesity stereotypes. The relevance of disgust to prejudice toward obese people may in part explain why such prejudice is so pervasive and resistant to change.

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Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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