

**RESEARCH ARTICLE**

# Predictors of Social Distance Toward People with Obesity: The Role of Allophilia

Alejandro Magallares

Antifat attitudes refer to the prejudicial assumption of personality characteristics based on a visual assessment of a person with obesity. Allophilia may be defined as the positive attitudes toward different out-groups, including people with obesity. In this study, conducted with 448 participants, it is analyzed whether allophilia, germ aversion, physical disgust, social dominance orientation, perceived controllability of weight, and fear of gaining weight play a central role in explaining the individual differences that exist in social distance toward individuals with obesity. Results showed a negative correlation between the different subscales of allophilia (affection, comfort, kinship, engagement, and enthusiasm) and social distance. Furthermore, a positive relationship between social distance and germ aversion, social dominance orientation, perceived controllability of weight, and fear of gaining weight was found. Moreover, the regression analyses conducted showed that comfort was the best negative predictor of social distance toward individuals with obesity. Finally, the results are discussed in the frame of antifat attitudes literature, suggesting new ways to reduce this pervasive stigma.

**Keywords:** Fear of gaining weight; Germ aversion; Perceived controllability of weight; Physical disgust; Social distance; Social dominance orientation

## Introduction

An increasing number of people are facing the burden of obesity, which is defined as a body mass index (BMI) of  $\geq 30$  kg/m<sup>2</sup> (Haslam & James, 2005). In Spain, the country where this study was carried out, obesity has increased significantly in the last few years, currently reaching a prevalence rate of 21.6 percent (Aracenta-Bartrina, Perez-Rodrigo, Alberdi-Aresti, Ramos-Carrera, & Lazaro-Masedo, 2016).

Obesity may be considered a social stigma (Puhl, Heuer, & Brownell, 2010). Individuals with obesity have to face discrimination in many social areas, such as in employment, health care settings, educational contexts, and at everyday activities (see for a review, Puhl & Heuer, 2009). Antifat attitudes refer to the prejudicial assumption of personality characteristics based on a visual assessment of a person with obesity (Crandall, 1994). It has been found that individuals with prejudicial antifat attitudes express a greater desire for social distance toward people with obesity (Sikorski et al., 2015). Efforts to explain these negative attitudes toward individuals with obesity have centered on different variables (see for example, Latner, O'Brien, Luedicke, & Danielsdottir, 2015), such as germ aversion, physical disgust, social dominance orientation, perceived

controllability of weight, and fear of gaining weight. However, too little attention has been paid to variables that may be related to positive attitudes toward individuals with obesity.

## Allophilia

Allophilia may be defined as having a positive attitude for a group that is not one's own (Pittinsky, Rosenthal, & Montoya, 2011). Allophilia is proposed as a way to overcome the negative bias of the study of intergroup relations. Theoretically, this negative bias is an undesirable side effect of the assumption of a one-dimensional model, a model that focuses exclusively on hate, dislike, mistrust, or prejudice of out-groups. However, the long-standing tradition of measuring negative as opposed to positive attitudes toward different out-groups has changed in the last few years (Pittinsky et al., 2011). According to these authors, a two-dimensional model would be more realistic, given that people can also have positive attitudes toward different out-groups. For instance, stereotypes, much in contradiction with the popular point of view, may be positive (Pittinsky, Shih, & Ambady, 2000). In the case of obesity, it has been suggested that a positive bias toward thinness exists, rather than a negative bias toward fatness (Ritzert et al., 2016).

To summarize, allophilia turns out to be a complementary approach stemming from the recognition that affinity between groups can be distinct from the absence of dislike (Pittinsky, Montoya, Tropp, & Chen, 2007). Indeed,

it has been found that positive and negative attitudes do not necessarily correlate negatively (Pittinsky & Simon, 2007). Furthermore, several studies have shown the usefulness of allophilia to predict positive intergroup attitudes (Livert, 2016) and behaviors (Pittinsky & Montoya, 2016) toward different out-groups. In the case of obesity, it has been found that antifat attitudes were not adequate predictors of discrimination toward individuals with obesity (O'Brien et al., 2008), and for this reason, in this study, it will be analyzed whether allophilia is a good predictor of approach behaviors toward individuals with obesity.

### ***Germ Aversion***

Germ aversion may be defined as individuals' discomfort in situations that connote an increased likelihood for the transmission of pathogens (Duncan, Schaller, & Park, 2009). Recent findings suggest a link between germ aversion and biases in intergroup cognition (Makhanova, Miller, & Maner, 2015). In the case of obesity, some authors claim that being overweight may be spread through social ties (Christakis & Fowler, 2007), and it has been suggested that there is a connection between obesity and abstract notions related to contagious diseases (Klaczynski, 2008). Indeed, it has been found that germ aversion is a good predictor of negative attitudes toward individuals with obesity (Park, Schaller, & Crandall, 2007). Moreover, germ aversion is related to discomfort toward people with obesity and to a higher rejection to having physical contact with individuals with obesity (Park, Van Leeuwen, & Chochorelou, 2013). Recent research conducted with samples of teenagers (Magallares et al., 2015) and adults (Magallares, Fuster-Ruiz de Apodaca, & Morales, 2016) confirm that individuals who score high in a scale that measures germ aversion express more antifat attitudes.

### ***Disgust***

Disgust may be defined as a basic emotion that is elicited when people encounter a physical, sexual, or moral contaminant which motivates distancing from the object (Oaten, Stevenson, & Case, 2009). Disgust is also positively related to germ aversion, and it has been suggested that disgust may have evolved to perform the function of disease avoidance (Tybur, Lieberman, & Griskevicius, 2009). In the case of obesity, it has been shown that physical disgust is a good predictor of negative attitudes toward individuals with obesity (O'Brien, et al., 2013). Furthermore, disgust is related to more social distance toward individuals with obesity (Vartanian, Trewartha, & Vanman, 2016). Recent research shows similar findings, confirming the positive relationship between physical disgust and antifat attitudes in correlational (Magallares & Morales, 2017) and experimental studies (Wirtz, van der Pligt, & Doosje, 2016).

### ***Social Dominance Orientation (SDO)***

Pratto, Sidanius, Stallworth, & Malle (1994) describe social dominance orientation as a "general attitudinal orientation toward intergroup relations, reflecting whether one generally prefers such relations to be equal, versus hierarchical" and the "extent to which one desires that

one's in-group dominate and be superior to out-groups" (p. 742). In the case of obesity, it has been found that social dominance orientation and negative attitudes toward people with obesity are positively correlated (Magallares, 2014). Moreover, individuals high in social dominance orientation express greater social distance toward people with obesity (O'Brien, Latner, Ebner, & Hunter, 2013). Recently, it has been confirmed that the relationship that exists between social dominance orientation and antifat attitudes (Elison & Çiftçi, 2015).

### ***Perceived Controllability of Weight***

The causes of obesity are as varied as the people it affects (see for a review, Ross, Flynn, & Pate, 2016). Research suggests that beliefs about the controllability and stability of obesity are important factors contributing to antifat attitudes (Crandall, 1994). One of the first studies conducted to show that the attributions of controllability are related to antifat attitudes was made by DeJong (1980). This author found that when people with obesity could offer an excuse for their weight, they had a more positive evaluation from the participants in this study. In another experiment, DeJong (1993) found that their participants rated people with obesity as more self-indulgent and less self-disciplined than normal-weight individuals, except when obesity was caused by a glandular disorder. Furthermore, it has been found that there is a relationship between beliefs that weight is under personal control and social distance toward individuals with obesity (Popan, Kenworthy, Barden, & Griffiths, 2010). Recently, similar results have been found that corroborate the positive correlation that exists between perceived controllability of weight and antifat attitudes (Thorsteinsson, Loi, & Breadsell, 2016).

### ***Fear of Gaining Weight***

Patients with eating disorders usually refuse to gain weight, and they have an intense fear of becoming obese (American Psychiatric Association, 2013). Indeed, some patients with anorexia nervosa are very worried about their body weight, and they usually overestimate the size of their bodies (American Psychiatric Association, 2013). Crandall (1994), in his seminal work, found that "fear of fat" was one of the strongest predictors of negative attitudes toward individuals with obesity (see for a recent study, Scott & Rosen, 2015). Moreover, it has been found that patients with eating disorders (Magallares, Jauregui-Lobera, Ruiz-Prieto, & Santed, 2013) and people at risk to develop eating disorders (Magallares, 2012) reported more antifat attitudes than individuals without this pathology. Finally, there has also recently been found a positive relationship between body shame and antifat attitudes and a negative relationship between perceived size and negative attitudes toward individuals with obesity (Himmelstein & Tomiyama, 2016).

### ***Current Study***

Based on the preceding sections, it may be said that the main goal of the current study is to analyze which are the best predictors of social distance toward individuals with

obesity. Instead of only focusing on variables that may explain antifat attitudes, the novelty of this research is to include allophilia as a factor that may be promoting contact with individuals with obesity. According to the reviewed literature, it is expected that the different factors of the allophilia scale will have a negative relationship with social distance (Pittinsky et al., 2010). Furthermore, it is hypothesized that a positive relationship between social distance and germ aversion (Park et al., 2013); physical disgust (Vartanian et al., 2016); social dominance orientation (O'Brien et al., 2013); perceived controllability of weight (Popan et al., 2010); and fear of gaining weight (Crandall, 1994) will be found. Finally, a regression will be conducted to analyze which are the best predictors of social distance toward individuals with obesity.

## Method

### Participants

The participants consisted of 448 individuals (342 women and 106 men) aged between 18 and 65 years ( $M = 34.10$ ,  $SD = 10.91$ ). All the participants were students at Spain's Universidad Nacional de Educación a Distancia (Spanish Open University, UNED). All of them voluntarily agreed to participate in the study.

### Procedure

Information on the study was posted on the virtual courses to request participation by students from the UNED that may be interested. The students in the final sample had to complete questionnaires through *Qualtrics*, an online survey environment. Because of the circumstances of the university where the study was performed, data was obtained from all the provinces in Spain. Mainly, participants came from Madrid and Barcelona, although no differences were found in the variables that were measured regarding the origin of the students. All participants were Spanish, and students from other nationalities were excluded of the final analyses (15 students). Finally, only participants with a BMI between 18 and 25 (normal weight) were included in the final sample. Participants with a higher (overweight) or lower BMI (underweight) were excluded from the final sample (13 students).

### Ethical Issues

Students in the final sample consented to participate in the study, and they were allowed to withdraw from the study whenever they wanted. The data were collected anonymously and analyzed in an aggregated way. Upon completion of the survey, participants were debriefed online about the purposes of the study.

### Instruments

To measure social distance, the universal measure of bias for individuals with obesity (UMB\_FAT) (Latner, O'Brien, Durso, Brinkman, & McDonald, 2008; Spanish version: Magallares, 2016) was used. The social distance subscale ( $\alpha = 0.66$ ) contains 5 items in a Likert scale from 1 (completely disagree) to 7 (completely agree). An example of social distance is "I would not want to have a fat person as a roommate". A score was computed by averaging

the 5 items. Higher scores on this subscale reflect greater social distance toward individuals with obesity.

To measure positive attitudes toward individuals with obesity, the Allophilia Scale (AS) (Pittinsky et al., 2011; Spanish version: Morales & Magallares, 2017) was used. This scale consists of 17 items scored on a 7-point Likert scale (from 1, "strongly disagree", to 7 "strongly agree"). According to Pittinsky et al. (2011), this scale has 5 factors: (1) Affection ( $\alpha = 0.83$ ), may be defined as a positive feeling experienced toward an out-group. An example is, "In general, I have positive attitudes about people with obesity". A score was computed by averaging the 4 items. Higher scores on this subscale reflect greater affection toward individuals with obesity. (2) Comfort ( $\alpha = 0.82$ ) is defined as feeling at ease with an out-group's members. An example would be, "I am comfortable when I hang out with people with obesity". A score was computed by averaging the 3 items. Higher scores on this subscale reflect greater comfort toward individuals with obesity. (3) Kinship ( $\alpha = 0.76$ ) may be defined as sharing something or experiencing a sense of belonging with the out-group. An example is, "I feel a sense of belonging with people with obesity". A score was computed by averaging the 3 items. Higher scores on this subscale reflect greater kinship toward individuals with obesity. (4) Engagement ( $\alpha = 0.87$ ) is conceived as seeking contact with the out-group. An example would be, "I am motivated to get to know people with obesity better". A score was computed by averaging the 4 items. Higher scores on this subscale reflect greater engagement toward individuals with obesity. Finally, (5) enthusiasm ( $\alpha = 0.77$ ) may be defined as having a favorable impression of out-group members. An example is, "I am impressed by people with obesity". A score was computed by averaging the 3 items. Higher scores on this subscale reflect greater enthusiasm toward individuals with obesity.

To measure germ aversion, the perceived vulnerability to disease (PVD) was used (Duncan et al., 2009; Spanish version: Diaz, Soriano, & Beleña, 2016). The germ aversion subscale ( $\alpha = 0.71$ ) contains 8 items in a Likert scale from 1 (completely disagree) to 7 (completely agree). An example of germ aversion is, "I prefer to clean my hands just after giving my hand to someone else's hand". A score was computed by averaging the 8 items. Higher scores on germ aversion reflect individuals' greater discomfort in situations that connote an increased likelihood for the transmission of pathogens.

To measure physical disgust, the Three Domains of Disgust Scale (TDDS) was used (Tybur et al., 2009; Spanish version: Sandín, Santed, Chorot, Valiente, & Pineda, 2015). The pathogen disgust subscale consists of 7 items ( $\alpha = 0.68$ ) rated on a 7-point Likert-like scale ranging from "not disgusting at all" to "extremely disgusting". An example is, "Standing close to a person who has body odor". A score was computed by averaging the 7 items of the pathogen disgust subscale. Higher scores on this measure reflect greater physical disgust.

To measure social dominance orientation, the social dominance orientation scale (SDO) (English version: Pratto et al., 1994; Spanish version: Silván-Ferrero & Bustillos,

2007) was used. A 7-point Likert scale was used for each of the 16 items. Participants rated their agreement or disagreement with statements from 1 (strongly disagree) to 7 (strongly agree). Coefficient alpha was 0.73. An example is, "Some groups of people are simply inferior to other groups". A score was computed by averaging the 16 items of the scale. Higher scores on this measure reflect greater preference for hierarchical relations.

To measure perceived controllability of weight and fear of gaining weight, the Antifat Attitudes Scale (AFA) was used (Crandall, 1994; Spanish version: Magallares & Morales, 2014). The participants answered with a Likert scale from 1 (completely disagree) to 7 (completely agree). The subscale of willpower ( $\alpha = 0.85$ ) contains 3 items. An example is, "Fat people tend to be fat pretty much through their own fault". Higher scores on this measure reflect greater beliefs that obesity is under personal control. The subscale of fear of fat ( $\alpha = 0.79$ ) contains 3 items. An example is, "I feel disgusted with myself when I gain weight". A score was computed by averaging the 3 items of the fear of fat subscale. Higher scores on this measure reflect greater worries about gaining weight.

Finally, characteristics of the participants (age, sex, weight, height) were collected. BMI was calculated as the relationship between weight (Kg) and height squared ( $m^2$ ).

#### Data Analysis

In the data analysis, first, descriptives of the variables were calculated. Second, Pearson's correlations between social distance and the different factors of the Allophilia Scale, germ aversion, physical disgust, social dominance orientation, perceived controllability of weight, and fear of gaining weight were calculated. And, finally, a stepwise regression with social distance as the dependent variable and the different factors of the Allophilia Scale, germ aversion, physical disgust, social dominance orientation, perceived controllability of weight, and fear of gaining weight as independent variables was conducted.

The SPSS 22.0 program (SPSS 22.0, SPSS Inc, Chicago, IL) was used to conduct all the analyses.

## Results

### Descriptive Analyses

**Table 1** shows the means, standard deviations, minimums, and maximums of all the variables used in the study.

### Correlational Analyses

**Table 2** shows the correlations between all the variables of the study. As can be seen, a negative correlation was found between the different subscales of allophilia (affection, comfort, kinship, engagement, and enthusiasm) and social distance. Furthermore, a positive relationship between social distance and germ aversion, social dominance orientation, perceived controllability of weight, and fear of gaining weight was also found. In addition, disgust was positively related to germ aversion. All the correlations were significant. Finally, the correlation between physical disgust and social distance was not statistically significant.

### Regression Analyses

As can be seen in **Table 3**, the regression analyses on social distance gave 6 models. The final model explains the 43 percent of the variance of the social distance toward individuals with obesity's variable. Attending to the obtained F's, all the models were significant. Furthermore, student's *t* revealed that the different  $\beta$ 's were also significant. It was found that some factors of the Allophilia Scale (comfort, engagement, and affection) were negative predictors of social distance and that social dominance orientation, perceived controllability of weight, and fear of gaining weight were positively related to social distance. The rest of the variables were not included in the models because they were not significant.

## Discussion

According to the obtained results, all the hypotheses of the study may be maintained. First, as expected, the different factors of the Allophilia Scale (affection, comfort, kinship, engagement, and enthusiasm) were negatively related to social distance toward individuals with obesity (Pittinsky et al., 2010). This result suggests that allophilia

Variables	M	SD	Minimum	Maximum
Social distance	2.59	0.80	1	7
Affection	5.42	1.03	1	7
Comfort	5.20	1.26	1	7
Kinship	3.44	1.22	1	7
Engagement	4.52	1.16	1	7
Enthusiasm	3.42	1.07	1	7
Germ aversion	3.88	1.16	1	7
Disgust	5.25	0.62	1.29	6.71
SDO	2.23	0.80	1	6.10
Fear of fat	3.79	1.71	1	7
Controllability	4.25	1.44	1	7

**Table 1:** Descriptives of the Variables of the Study.

1	2	3	4	5	6	7	8	9	10	11
1										
2	-0.53**									
3	-0.57**	0.74**								
4	-0.36**	0.39**	0.43**							
5	-0.43**	0.47**	0.46**	0.44**						
6	-0.26**	0.25**	0.22**	0.46**	0.50**					
7	0.18**	-0.06	-0.09	-0.06	-0.06	-0.08				
8	0.09	-0.08	-0.07	-0.10*	-0.06	-0.12*	0.31**			
9	0.30**	-0.17**	-0.17**	-0.11*	-0.19**	-0.05	0.24**	0.09		
10	0.22**	-0.11*	-0.14**	-0.07	-0.13**	-0.09	0.23**	0.19**	0.18**	
11	0.30**	-0.25**	-0.21**	-0.19**	-0.18**	-0.19**	0.17**	0.08	0.22**	0.13**

**Table 2:** Correlations between the Variables of the Study.

1 = Social Distance; 2 = Affection; 3 = Comfort; 4 = Kinship; 5 = Engagement; 6 = Enthusiasm; 7 = Germ aversion; 8 = Disgust; 9 = SDO; 10 = Fear of Fat; 11 = Controllability.

\* $p < 0.05$ ; \*\* $p < 0.01$ .

Models	Variables	$R^2$	$\Delta R^2$	F	$\beta$	t
1	Comfort	0.33	–	204.33**	-0.57	-14.29**
2	Comfort	0.37	0.04	122.98**	-0.53	-13.61**
	SDO				0.21	5.31**
3	Comfort	0.39	0.02	91.23**	-0.46	-10.68**
	SDO				0.19	4.85**
	Engagement				-0.18	-4.21**
4	Comfort	0.41	0.02	74.46**	-0.44	-10.38**
	SDO				0.16	4.09**
	Engagement				-0.16	-3.98**
	Controllability				0.15	3.86**
5	Comfort	0.42	0.01	61.73**	-0.43	16.88**
	SDO				0.14	-10.20**
	Engagement				-0.16	3.73**
	Controllability				0.14	-3.91**
	Fear of fat				0.09	3.65**
6	Comfort	0.43	0.01	52.83**	-0.34	-6.23**
	SDO				0.14	3.68**
	Engagement				-0.14	-3.39**
	Controllability				0.13	3.41**
	Fear of fat				0.09	2.57**
	Affection				-0.12	-2.27*

**Table 3:** Stepwise Regression.

\* $p < 0.05$ ; \*\* $p < 0.01$ .

may be a good predictor of approach behaviours toward individuals with obesity. Furthermore, this finding contributes to a growing body of research that analyzes the use of the Allophilia Scale to assess positive attitudes toward members of diverse out-groups, including African Americans (Pittinsky et al., 2011); Latinos (Pittinsky et al., 2011); the LGBT community (Fingerhut, 2011); Romanians (Alfieri & Marta, 2011); and individuals with dementia (Kinney, Yamashita, & Brown, 2016).

Second, a positive relationship between social distance and germ aversion (Park et al., 2013); social dominance orientation (O'Brien et al., 2013); perceived controllability of weight (Popan et al., 2010); and fear of gaining weight (Crandall, 1994) was found. Disgust was not related to more social distance toward individuals with obesity, as the reviewed literature suggested (Vartanian et al., 2016). Moreover, disgust was positively related to germ aversion, as it was previously found (Tybur et al., 2009).

Third, the stepwise regression conducted showed that the best predictor of social distance was related to allophilia (comfort). It was also found that the factors studied in this study explained 43 percent of the variance of the social distance toward individuals with obesity's variable.

And, finally, it was found that engagement and affection (factors of the Allophilia Scale) were also negative predictors of social distance and that social dominance orientation, perceived controllability of weight, and fear of gaining weight were positively related to social distance toward individuals with obesity.

### **Practical Implications**

Efforts to combat weight stigma typically focus on negative attitudes toward individuals with obesity (see for a review, Puhl, Moss-Racusin, Schwartz, & Brownell, 2008), but changing attitudes also require assessment and enhancement of positive attitudes (Pittinsky et al., 2011). Furthermore, the multidimensionality of complex attitudes toward individuals with obesity will not be captured without assessing attitudes of positive and negative valences. In other words, reducing negative attitudes toward individuals with obesity is necessary, but not sufficient to promote positive relations with members of this group (Pittinsky et al., 2011). Therefore, measuring positive attitudes toward individuals with obesity may be particularly important when attempting to evaluate interventions to improve the image of individuals with obesity.

The results of the current research suggest that the use of allophilia measures in the antifat studies field can contribute to a better understanding of attitudes toward individuals with obesity and may have implications for the design of interventions that may facilitate positive attitudes toward members of this out-group. A qualitative review of antifat attitudes interventions has questioned the effectiveness of traditional approaches (Danielsdottir, O'Brien, & Ciao, 2010), and it has been suggested that it may be appropriate to develop new weight bias reduction approaches since interventions based on the dominant paradigms in antifat attitudes reduction research have failed (see for a meta-analysis, Lee, Ata, & Brannick, 2014).

For instance, among health professionals, it has been shown that presenting facts about uncontrollable and non-modifiable causes of obesity is not sufficient to reduce antifat attitudes (see for a systematic review, Alberga et al., 2016), and it has been suggested that a better approach would be increasing positive experiences with obese patients to try to reduce antifat attitudes (Tomiyama et al., 2015). For these reasons, instead of just focusing on reducing prejudice toward individuals with obesity, it may be better to promote allophilia to create positive portrayals of individuals with obesity (see for example, Pearl, Puhl, & Brownell, 2012), as it has been suggested by fat acceptance movements (Murray, 2005).

### **Limitations**

The current study is subject to some limitations that deserve mention. First, it is a cross-sectional and correlational study. Longitudinal and experimental studies would help to give a more accurate picture of the relationships analyzed in the current study. Second, a noteworthy limitation is that antifat attitudes were not assessed. Therefore, the two-dimensional model could not be tested. Third, the sample was only composed of psychology students. Future research should include different groups to see if the effects found in the study may be replicated with other collectives. Fourth, the ratio of women to men in the sample (342 women and 106 men) should be more similar to the general population. Fifth, it is an online study. Some researchers have expressed concern about Web-based studies, but following experts' recommendations, these problems may be solved (Reips, 2007). And, finally, besides assessing antifat attitudes with explicit measures, it would be important to measure implicit or unconscious prejudices toward individuals with obesity. Indeed, there is a great development of implicit association techniques to measure antifat attitudes (see for example, Brewis & Wutich, 2012). Future studies should address these issues.

### **Conclusions**

In summary, these results suggest the importance of measuring positive domains of attitudes (affection, comfort, kinship, engagement, and enthusiasm) that typically are overlooked, despite their potential importance in promoting proactive and prosocial behavior toward different out-groups (Pittinsky et al., 2011). Finally, it may be said that this article enriches and extends the field of antifat attitudes, as it provides a series of approaches that have not been taken into account before.

### **Competing Interests**

The author has no competing interests to declare.

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