



The association of BMI and social distance towards obese individuals is mediated by sympathy and understanding



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ABSTRACT

The desire for social distance towards individuals with obesity as part of the stigmatization process has not been investigated. The aims of this study include: (a) determining the prevalence of social distance and its domains in a population-based sample; (b) reporting levels of emotional response; and (c) investigating the association of BMI, emotional response and social distance. The data were derived from a large population based telephone survey in Germany (total $n = 3,003$, this sub-sample $n = 1008$). Emotional response to individuals with obesity was assessed for the emotions discomfort, pity, insecurity, amusement, sympathy, help and incomprehension (5-point Likert scale). Social distance was measured on a 5-point Likert scale covering different areas of social interaction. This served as the dependent variable for a linear regression model and mediation models that included BMI and emotional response. Social distance was highest for job recommendation, introduction to a friend, someone with obesity marrying into the family and renting out a room. Means of emotional responses were highest for pity (Mean = 2.58), sympathy (Mean = 2.87) and wanting to help (M = 2.76). In regression analyses, incomprehension ($b = 1.095$, $p < 0.001$) and sympathy ($b = -0.833$, $p < 0.001$) and the respondents' own BMI ($b = -0.145$, $p < 0.001$) were significantly associated to the overall amount of social distance. Mediation models revealed a significant mediation effect of BMI through sympathy ($b = -0.229$, % of total effect through mediation = 10.3%) and through incomprehension ($b = -0.057$, % of total effect through mediation = 27.5%) on social distance.

Social distance towards individuals with obesity is prevalent in the general public in Germany and it is associated with emotional responses. Altering the emotional responses may, therefore, be a starting point in anti-stigma interventions. Evoking sympathy and lowering incomprehension may result in lower overall social distance.

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1. Introduction

Obesity is a highly prevalent condition (World Health Organization (WHO), 2000). Its consequences include co-morbid cardio-vascular diseases, an elevated risk for certain cancers and

an overall elevated mortality (Pi-Sunyer, 2009). Obesity also has psychosocial consequences, as individuals with obesity are often stereotyped resulting in social exclusion (Puhl and Heuer, 2009). Individuals with obesity carry a physical mark (e.g. excess body weight) that sets them apart. Link and Phelan (2001) have identified a theoretical framework in which the components of stigma have been identified. Specifically, stigmatization and discrimination refer to processes that describe the ascription of negative attributes to individuals (stigmatization) and subsequent systematic social exclusion (discrimination) (Link and Phelan, 2001). A desire

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Table 1
Characteristics of the samples.

	Total sample (n = 3003)	Sub-sample (n = 1001)	p-value ^a	German population 12/2009 ^b
Women	52.8	51.7	0.394	51.0
Age group			0.121	
<20	4.9	5.0		18.8
21–40	22.4	20.1		24.3
41–60	37.2	40.1		31.0
60–80	31.5	30.8		20.8
>81	4.0	4.1		5.1
Education			0.097	
Student	1.2	1.2		3.5
8/9 yrs of schooling	23.7	24.4		37.0
10 yrs of schooling	32.2	34.7		28.8
12/13 yrs of schooling	42.4	39.5		25.8
No education	0.3	0.2		4.1
Weight ^c			w: 0.717 m: 0.017	
BMI < 24.9 kg/m ²				
Women	57.8	56.5		47.0
Men	42.8	37.7		32.9
BMI 25–29.9 kg/m ²				
Women	26.5	27.8		29.0
Men	42.4	47.0		43.8
BMI > 30 kg/m ²				
Women	15.7	15.7		23.9
Men	14.8	15.3		23.3

w – women; m – men.

^a Chi sq comparison subsample vs. not included sample.

^b Federal Statistics Office (December 2009).

^c Overweight and obesity prevalence numbers for the German public were published in Mensink et al. (2013).

for social distance, in terms of seeking separation from a stigmatized group, is considered a central component of stigma (Link and Phelan, 2001). Social distance is defined as the extent to which individuals are willing to interact or associate with others that differ from their own group (Bogardus, 1925). Thus, measuring social distance is one way to measure the degree to which people in a minority group are stigmatized.

Considering the fact that discrimination is reported by a rising number of individuals with obesity (Andreyeva et al., 2008), an analysis of determinants of stigma towards individuals with obesity is now needed. The mechanisms of stigmatization have been investigated and it has been found that causal beliefs seem to have a substantial influence on stigmatizing attitudes. In particular, beliefs that obesity is a self-inflicted condition are associated with more negative attitudes (e.g. Sikorski et al., 2012). However, such an analysis is lacking for social distance towards individuals with

obesity. While social distance towards other stigmatized groups, such as mentally-ill patients, has been described intensively (Jorm and Oh, 2009; Schomerus et al., 2012; Baumann, 2007), representative research regarding individuals with obesity has not been conducted. Only one study reports social distance as an experimental outcome, but does not differentiate domains or influencing mechanisms (Pearl et al., 2012).

Research from other areas of stigma, however, provides a basis for hypothesis of social distance towards individuals with obesity. One finding that has been reported from psychiatric research indicates that a higher familiarity with a condition leads to lower social distance (Corrigan et al., 2001; Angermeyer et al., 2004). Stigma research in obesity finds a similar association between personal body mass index (BMI) and negative attitudes towards individuals with obesity (Sikorski et al., 2012), indicating that personal BMI may also be a variable of interest for social distance towards people with obesity. Another potential mechanism at work is the construct of emotional response. According to Borgardus' later works, emotional response is the immediate reaction one has to someone from another group and it is found to be closely associated with social distance (Bogardus, 1947). In mental illness research, the emotional reaction to people with mental illness was shown to have a substantial impact on the desire for social distance (Angermeyer et al., 2010). Again, we find no current research on the general public's emotional response to obesity and individuals with obesity. Incorporating what is known from social distance research in mental disorders, we hypothesize that personal experience with the condition (personal BMI), as well as certain aspects of emotional response are associated with a lower desire for social distance. The aims of this study include: (a) determining the prevalence of social distance and its domains in a population-based sample; (b) reporting levels of emotional response; and (c) investigating the association of BMI, emotional response and social distance. As outlined, this study fills a major gap in stigma research in obesity and provides valuable information that may be used to develop stigma interventions on a population-based level.

2. Methods

The data were derived from a large population based telephone survey (n = 3,003) on the attitudes of the general public in Germany towards obesity. The study has been described in detail elsewhere (Sikorski et al., 2012). Due to budget constraints, some questions were only assessed in randomly determined sub-samples. This analysis is based on a sub-sample of n = 1008 participants (Table 1).

Table 2
Social distance in % (response category: would reject) and means across different weight categories.

	n		Total	NW	OW	OB	Significant differences ^a
Have as a neighbor	997	%	5.6	5.3	6.3	5.1	0.586
		M	1.70	1.68	1.71	1.52	Not significant
Work together	990	%	6.5	5.8	7.9	5.2	0.136
		M	1.92	1.92	1.98	1.77	Not significant
Introduce to a friend	998	%	14.4	15.3	15.9	8.3	0.035
		M	2.13	2.20	2.16	1.83	NW-OB (p = 0.006), OW-OB (p = 0.020)
Recommend for a job	995	%	16.1	15.9	18.5	10.9	0.086
		M	2.47	2.48	2.56	2.22	NW-OW (p = 0.054), OW-OB (p = 0.009)
Rent a room	995	%	13.0	15.4	12.2	7.7	0.034
		M	2.21	2.28	2.24	1.96	NW-OB (p = 0.015)
Have marry into the family	996	%	12.9	13.8	14.9	5.8	0.055
		M	2.21	2.22	2.29	1.95	NW-OB (p = 0.049), OW-OB (p = 0.012)
Take care of children	991	%	7.7	8.8	6.3	7.7	0.130
		M	2.01	2.05	2.05	1.81	NW-OB (p = 0.031), OW-OB (p = 0.038)

Reject category: "oppose" and "strongly oppose" answer categories combined. M = Mean; NW – normal-weight; OW – overweight; OB – obese.

^a Chi square test for proportion of frequencies, one-way ANOVA with post-hoc Scheffé comparison test for means.

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