

**Do Obese Women Have
Poorer Social Relationships Than
Nonobese Women? Reports by Self,
Friends, and Coworkers**

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ABSTRACT Both theory and research suggest that obese women may have relatively poor social relationships even if their self-reports about their relationships do not differ from the reports of nonobese women. Seventy-seven obese and 78 nonobese women completed self-report measures of social anxiety, social self-esteem, social competence, social network size, and perceived social support from friends and family. Friends and coworkers also rated these women on the same measures. The self-reports of obese and nonobese women did not differ significantly on any of these social measures, and ratings from friends and coworkers of obese women were not different from ratings of nonobese women by friends and coworkers. These results suggest that obese women may be able to overcome prejudice against obese people in their relationships with others.

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There are contradictory indications about how the stigma of being obese affects the social relationships and self-esteem of people regarded as too fat. Some research indicates that the obese are perceived as less popular (Harris, Harris, & Bochner, 1982) and as having fewer friends (Harris & Smith, 1983) than nonobese people. Obese female adolescents self-reported fewer dates and less participation in school organizations than their nonobese female peers (Bullen, Monello, Cohen, & Mayer, 1963), and obese college students reported that their weight had interfered with social activities, such as attending a party or having a close friend (Tiggemann & Rothblum, 1988).

Other research indicates that the obese generally do not differ from the nonobese in popularity with peers (see Jarvie, Lahey, Graziano, & Framer, 1983, for a review; Sallade, 1973) or psychological adjustment (Wadden & Stunkard, 1985). Research on self-esteem differences between obese and nonobese people, usually conducted with children, has produced decidedly mixed results. Compared to nonobese children, obese children have been found to have significantly lower self-esteem (Sallade, 1973), marginally lower self-esteem (Wadden, Foster, Brownell, & Finley, 1984), and equal levels of self-esteem (Mendelson & White, 1982). Interactions between obesity, gender, and age on self-esteem also have been reported (Mendelson & White, 1985).

Just as the research results described above suggest contradictory predictions about the social relationships of obese and nonobese people, so too do theories about the role of stigma in social relationships. On the one hand, research on expectancy confirmation suggests that negative stereotypes and prejudice will produce both immediate and cumulative adverse effects on the social relationships of obese people (Deaux & Major, 1987; Miller & Turnbull, 1986). The widespread belief that obese people are to blame for their condition (Crandall & Biernat, 1990; Weiner, Perry, & Magnusson, 1988), coupled with stereotypes about the obese as weak-willed, ugly, and self-indulgent, indicate that obese people are at risk for social rejection (Allon, 1982). Because people often reciprocate the treatment they receive from others, one immediate consequence of discrimination and rejection is that obese people, by reciprocating and even anticipating negative reactions from others, will behaviorally confirm stereotypes about the obese (Snyder, Tanke, & Berscheid, 1977). Moreover, repeated negative social experiences along with constant exposure to society's negative expectations about the obese are likely to have adverse effects on the self-esteem of obese people (Crocker & Major, 1989). Finally, being rejected by

others may reduce obese people's opportunity to develop social skills (Goldman & Lewis, 1977). The impact of these influences may create actual enduring deficits among obese people in social relationships, social self-esteem, and social competence.

On the other hand, Crocker and Major (1989) argued that despite the many theoretical positions which converge to predict that stigmatized people should have relatively low self-esteem, there is little evidence to support this view. The research they reviewed indicated that women, African Americans, children with mental retardation, people with facially disfiguring conditions, physically unattractive people, and obese people do not consistently have low self-esteem relative to other people.

Crocker and Major (1989) explained this paradox by hypothesizing that stigmatized people may protect their self-esteem from the ravages of prejudice in part by attributing negative outcomes they receive in their interactions from others to prejudice rather than to their own shortcomings. In support of this hypothesis, Crocker, Voelkl, Testa, and Major (1991, Study 2) demonstrated that African-American students attributed negative feedback to the evaluators' racism more when the evaluator could see them than when the evaluator could not see them. Similarly, women who were led to believe that their evaluator was prejudiced against women attributed negative feedback to prejudice more than women who thought their evaluator was not prejudiced (Crocker et al., 1991, Study 1). Consistent with Crocker and Major's analysis, it appears that the stigma itself may sometimes protect stigmatized people from some of the adverse consequences of prejudice by providing them with a plausible explanation for poor social relationships that does not involve blaming themselves.

One implication of Crocker and Major's (1989) attributional analysis of the self-protective properties of stigma is that stigmatized people alter their perceptions about why they were rejected without necessarily altering the rejection itself. In other words, the social relationships of stigmatized people continue to be poor due to the prejudice of other people and/or due to the impact of prejudice on their own social competence even though stigmatized individuals' self-esteem does not necessarily suffer as a result. This reasoning suggests that obese people may maintain a level of self-regard equal to that of nonobese people even though they perceive the relationships of obese people relatively negatively.

To date there has been relatively little research on the effects of obesity on social relationships, social skills, and social self-esteem of

obese people. In a previous study (Miller, Rothblum, Barbour, Brand, & Felicio, 1990), we focused on the conversational skills of obese and nonobese women as they spoke on the telephone with a partner who was unaware of their weight. The results indicated that the telephone partners of obese women rated themselves and the women more negatively than the telephone partners of nonobese women. Judges who listened to audiotapes of the women's conversations (and who were unaware of their weight) also rated the obese women lower on likability, social skills, and physical attractiveness. However, the obese women did not rate themselves more negatively than the nonobese women did during the conversation, and the two groups did not differ in social self-esteem. The results of this study indicated that there are actual conversational skill differences between obese and nonobese women, and that obese women may not be aware of their deficits in this area.

One limitation of the previous study is that it focused only on social interactions with strangers. Perhaps obese women feel uncomfortable with strangers but are able to establish relations with those who interact with them regularly. Buhrmester, Furman, Wittenberg, and Reis (1988) compared college students' self-ratings of social competence with ratings by strangers (new acquaintances with whom they had had a 7-minute conversation) and ratings by close friends. As expected, self-ratings correlated more highly with ratings by close friends than with ratings by new acquaintances. Although this study did not focus on weight, it illustrates the importance of examining established relationships as well as initial impressions to understand the role of obesity in women's social interactions. Buhrmester et al. pointed out, for example, that conversations with new acquaintances do not provide the opportunity to observe such social relationship factors as conflict management and emotional support, which require more intensive and long-term interactions.

In the present study we obtained ratings by friends and coworkers of obese and nonobese women in order to assess whether obese women are perceived as having social deficits by people who know them well. Our first hypothesis was that friends and coworkers of obese women would perceive these women as having greater deficits in social relationships than would friends and coworkers of nonobese women. The reason for this is twofold. First, theories about the self-fulfilling nature of prejudice and stereotyping indicate that obese women may actually have developed some of the undesirable attributes stereotypically associated with obesity as a result of the impact of prejudice against

obesity on their social relationships. This could be because rejection and mistreatment from others forecloses opportunities to develop social competence and/or because knowing that others will reject them due to their weight reduces the motivation or the confidence of obese women to use their social skills optimally.

Second, the results of our previous study (Miller et al., 1990) indicated that obese women create relatively negative impressions on others who never learned about their weight. We wanted to see, therefore, if the friends and coworkers of obese women would confirm that obese women have relatively poor social relationships with others.

Our second hypothesis was that the self-reports of obese and non-obese women would not differ, even if their friends and coworkers perceived obese women as having more negative social relationships than nonobese women. One reason for this prediction was that our prior study indicated that obese women perceive themselves as positively as do nonobese women, despite the fact that obese women were perceived relatively negatively by others during a social interaction (Miller et al., 1990). In addition, Crocker and Major's (1989) attributional analysis of the self-protective properties of stigma suggests that obese women may maintain high social self-esteem even in the face of less positive relationships with others because they attribute negative outcomes to prejudice against obesity rather than to their own social skill deficits.

We also wanted to focus on a broader range of social relationships than just conversational skills. As Buhrmester et al. (1988) have indicated, social competence is not just a global concept, but consists of a number of specific domains. Further, their results indicated that friends and acquaintances rated college students higher on some domains (e.g., competence at initiating relationships) than college students rated themselves, whereas acquaintance ratings of college students' emotional support were lower than those made by friends and in self-reports. For these reasons, we included six measures of social relationships that incorporated three domains: (a) affective components of social relationships (e.g., social avoidance and distress, social self-esteem); (b) social competence; and (c) social involvement, including the extent to which the individual is involved in social networks and receives social support.

Finally, much of the research on social relationships has focused on elementary and secondary school and college samples. Adolescence is a period during which concerns about appearance and attractiveness are likely to be at their apex. Consequently, the present study used women

from the community at large to better understand the associations between obesity and social relationships in the lives of people who have passed the relatively transitory and turbulent years of youth.

METHOD

Participants

Obese and nonobese women. Seventy-seven obese and 78 nonobese women were recruited for a study of "women's experiences across the life span" through advertisements in local newspapers. The advertisements stated that researchers needed women with different experiences including "married, single, divorced, overweight, etc." The women who answered the advertisement were screened by telephone to determine if they fit our definition of obesity and nonobesity. Women who were at least 20% over the midpoint of the weight range for medium build for their height (according to Metropolitan Life Insurance Company tables) were classified as obese. Those who weighed within 10% of average weight for their height were classified as nonobese. The telephone interviews followed a standard script, and the questions about the women's weight were embedded in other questions about their age, place of birth, etc. Each woman received \$20 for her participation.

This study included only women as the obese and nonobese participants because women are more likely to perceive themselves to be and actually be overweight than men (Tiggemann & Rothblum, 1988; Wooley, Wooley, & Dyrenforth, 1979).

Friends and coworkers. Each of the obese and nonobese women was asked to supply us with names of friends and coworkers who might be willing to complete questionnaires about the women's social relationships. We contacted two of these people with a mailed request which the women had signed during the experimental session. Most of the women agreed to supply us with names, and we received completed questionnaires from 58 friends and 40 coworkers of obese women and from 54 friends and 38 coworkers of nonobese women. Friends and coworkers were compensated \$5 for their time.

Measures

The measures we used focused on three important domains of social relationships. The first was an affective/evaluative domain, which was assessed by measures of social avoidance and social self-esteem. Social avoidance was measured with the Social Avoidance and Distress Scale (Watson & Friend, 1969). This scale assesses the extent to which people are distressed by and avoid social interactions. It is widely used in research on social relationships

(see Kelley, 1982, for a review). Test-retest reliability in two different college student samples was .68 and .79 (Watson & Friend, 1969). The scale asks respondents to indicate whether each of 28 statements (e.g., "I feel relaxed even in unfamiliar social situations") is true or false. A high score indicates high social avoidance and distress.

Social self-esteem was assessed with Lawson, Marshall, and McGrath's (1979) Social Self-Esteem Inventory. The inventory was developed specifically to measure self-worth with respect to social situations. The 30-item inventory asks respondents to indicate on 6-point Likert scales (1 = "completely unlike me," 6 = "completely like me") whether statements are characteristic of them. An example of an item from this scale is "I am easy to like." Test-retest reliability over a 4-week interval was .88 (Lawson et al., 1979). High scores indicate high social self-esteem.

The second domain was social competence, which was measured with the positive behavior subscale of the Social Performance Survey Schedule (Lowe, 1985; Lowe & Cautela, 1978). The positive behavior subscale assesses self-reported social competence. Respondents are asked how often they perform 50 social behaviors (e.g., "initiates contact and conversation with others") on a scale from 0 ("not at all") to 4 ("very much"). The higher the score, the higher the respondents' social competence. Test-retest reliability for the positive behavior subscale has been shown to be adequate ($r = .81$, Lowe, 1985; $r = .87$, Lowe & Cautela, 1978). This social competence measure correlates with popularity, peer ratings of social contacts and likability, and social skill ratings by observers of an in vivo interaction (Lowe, 1985).

The third domain was social involvement, which included measures of the extent to which the individual is a member of social networks and receives social support from others. Social networks were assessed with Berkman and Syme's (1979) Social Network Index. It includes 11 items about the number of close friends, relatives, and recreational groups the individual has. The Social Network Index is scored by creating a number of clusters, resulting in a score of 1 to 11. A high score indicates more extensive social networks (Berkman & Syme, 1979). We assessed social support with Procidano and Heller's (1983) measures of perceived social support from friends and perceived social support from family. These scales measure the extent to which respondents believe that friends and family, respectively, fulfill their needs for support, feedback, and information (e.g., "My friends give me the moral support I need"). Respondents are asked to circle "yes," "no," or "don't know" to 20 statements about friends and family, respectively. Items are scored as +1 if they are circled in the direction of perceived social support ("don't know" answers are not scored); a high score indicates high perceived social support. The perceived social support measures are internally consistent (Cronbach's alpha = .88 for support from friends and .90 for support from family; Procidano & Heller, 1983).

In a study of the convergent validity of social support measures, Sarason,

Shearin, Pierce, and Sarason (1987) found that both the perceived support from family and the perceived support from friends measures were correlated with other social support measures, including the Social Support Questionnaire (Sarason, Levine, Basham, & Sarason, 1983), and the Interpersonal Support Evaluation List (Cohen, Mermelstein, Karmarck, & Hoberman, 1985). Both measures were negatively correlated with psychological distress, and perceived social support from friends was positively correlated with social competence. Perceived social support from family was negatively correlated with verbal inhibition with siblings (Procidano & Heller, 1983).

Procedure

Women were scheduled for individual sessions, during which they were asked to complete the six social relationships measures as well as a demographic form that included questions about their age, height, weight, self-perceived level of overweight/underweight, level of education, and income.¹ They were then asked to give the names and addresses of people they would be willing to have the research team contact for additional information about them. Each woman was informed at this time that if she and these people agreed, the researchers would ask these outside contacts to use the same social relationship questionnaires to describe the woman participating in the study. At the conclusion of the session, women were debriefed and told that the purpose of the study was to examine social relationships among obese and nonobese women. They were also weighed and their height was measured.

RESULTS

Participant Characteristics

On average, the obese women were 43.7 yrs. old, had some college education, and reported having annual individual incomes in the \$10,000 to \$20,000 range and annual household incomes in the \$20,000 to \$30,000 range. Obese women reported being an average of 45.8 lb overweight. The scale weight measures obtained during the experiment indicated that they were on average 45.5% above the "ideal" weight for their height according to Metropolitan Life height and weight tables.

The nonobese women were on average 39.9 yrs. old, had completed 4-year college degrees, and also had annual individual incomes

1. After completing the social relationship measures, the women participated in another study for half an hour. The results of that study are separate from the present study.

in the \$10,000 to \$20,000 per year range and annual household incomes in the \$20,000 to \$30,000 per year range. Scale weight measures obtained at the time the women participated in the study indicated that they were on average 2% *underweight* for their height, according to Metropolitan Life tables. The nonobese women were significantly younger, $F(1, 155) = 6.62, p < .02$, and significantly more educated, $F(1, 155) = 14.47, p < .0002$, than the obese women.

Social Relationship Measures

We used analyses of covariance (ANCOVAs) to compare ratings of obese and nonobese women. The women's weight was treated as a between-groups factor and the covariates were the women's age and education. In order to maximize sample size, we did separate ANCOVAs for ratings made by the women, by their friends, and by their coworkers rather than treating the source of the rating as a within-groups factor. The question of whether women, friends, and coworkers differed in their perceptions was addressed by a different set of analyses, which are described below.

Self-ratings. Table 1 shows the means and standard deviations for obese and nonobese women's self-ratings on each of the social relationship measures. Obese and nonobese women did not differ significantly on social avoidance and distress, $F(1, 149) = .68, p = .41$, social self-esteem, $F(1, 149) = .25, p = .61$, social skills, $F(1, 149) = 2.22, p = .14$, their social networks, $F(1, 149) = .16, p = .69$, or in the social support they received from friends, $F(1, 149) = .14, p = .71$, or from family, $F(1, 149) = .17, p = .68$.

We computed the power of our study to detect differences between obese and nonobese women according to procedures outlined by Cohen (1988). Following Cohen, we assumed that small, moderate, and large effects were equivalent to effect sizes of .2, .5, and .8, respectively, and set alpha equal to .05. Our sample size provided adequate power to detect moderate and large effects (power = .86 and .995, respectively). However, our sample size does not provide power sufficient to detect small effects (power = .23). Thus, the absence of differences between obese and nonobese women should be interpreted with some caution because important differences could exist that were too small to detect with the sample size we were able to obtain.

Table 1
Mean Ratings by Women, Friends, and
Coworkers on Relationship Measures

Relationship measures	Obese women			Nonobese women		
	Self (<i>n</i> = 75)	Friends (<i>n</i> = 59)	Coworkers (<i>n</i> = 40)	Self (<i>n</i> = 78)	Friends (<i>n</i> = 54)	Coworkers (<i>n</i> = 38)
<i>Affect</i>						
Avoidance	35.5 (6.6)	33.3 (8.3)	30.9 (5.4)	35.1 (6.8)	32.7 (6.5)	31.4 (5.3)
Self-esteem	132.0 (27.0)	149.7 (28.2)	146.5 (26.0)	134.6 (23.5)	148.5 (25.5)	147.3 (25.2)
<i>Competence</i>						
	154.2 (19.7)	157.3 (25.7)	153.5 (32.0)	147.3 (22.3)	153.8 (33.5)	156.8 (30.3)
<i>Involvement</i>						
Network size	3.5 (2.0)	2.7 (2.1)	2.5 (1.7)	3.5 (1.8)	3.1 (1.7)	2.9 (1.7)
<i>Social support</i>						
From friends	15.9 (4.6)	13.8 (4.7)	12.9 (5.6)	15.9 (4.5)	13.9 (4.8)	13.1 (5.0)
From family	13.7 (6.1)	11.0 (6.2)	9.9 (6.2)	12.6 (6.5)	8.8 (6.1)	8.3 (6.0)

Note. Numbers in parentheses are standard deviations.

Ratings by friends and coworkers. Table 1 also shows the means and standard deviations for ratings made by friends and coworkers of obese and nonobese women. Because we were unable to obtain data from friends and coworkers for all of the women (see Table 1 for *ns*), the power of our study to detect differences between obese and nonobese women's social relationships as perceived by friends and coworkers is less than it was for the women's self-reports. With alpha set at .05 and large, moderate, and small effect sizes defined as above, the power of this study to detect large, moderate, and small effects of obesity on friends' ratings was .99, .74, and .18, respectively. The power to detect large, moderate, and small effects in ratings made by coworkers was .99, .58, and .14, respectively. With alpha set at .10, power improves to .99, .84, and .28 to detect large, moderate, and small effects in ratings of friends, and power improves to .87, .71, and .23 to detect large, moderate, and small effects in ratings of coworkers.

We used ANCOVAs on each social relations measure to compare

ratings made by the friends of obese and nonobese women, and we did the same set of analyses on ratings made by the coworkers of obese and nonobese women. The covariates in these analyses were the women's age and education, and the only factor in the design was the women's obesity classification, which was treated as a between-groups factor.

These analyses showed that friends of obese women did not differ significantly from those of nonobese women in their ratings of the women on social avoidance and distress, $F(1, 108) = .63, p = .42$, social self-esteem, $F(1, 108) = .03, p = .86$, social skills, $F(1, 108) = .37, p = .54$, social networks, $F(1, 108) = 1.81, p = .18$, or in the social support they received from friends, $F(1, 108) = .05, p = .83$, or from family, $F(1, 108) = 2.31, p = .13$.

Similarly, the ratings made by coworkers of obese women did not differ significantly from those of nonobese women on social avoidance and distress, $F(1, 74) = .30, p = .59$, social self-esteem, $F(1, 74) = .24, p = .62$, social skills, $F(1, 74) = .53, p = .57$, social networks, $F(1, 74) = 1.37, p = .25$, or in the social support they received from friends, $F(1, 74) = .15, p = .70$, or from family, $F(1, 74) = .41, p = .52$.

Differences between Women's, Friends', and Coworkers' Ratings

We conducted another set of ANCOVAs to determine if the self-ratings of obese and nonobese women differed from the ratings made by their friends and/or those made by their coworkers. In these analyses, we were addressing whether obese women or nonobese women rate themselves more or less positively on their social relationships than the people who know them. The means displayed in Table 1 are not appropriate for testing the hypothesis that the women's self-ratings differed from ratings made by people who know them because the means include data from all women, including those who have missing data for friends and/or coworkers.

For this reason, in the ANCOVAs used to determine if self-ratings differed from ratings made by others, we treated the source of the rating as a within-subjects factor. Thus women whose friends and/or coworkers did not participate were excluded from the analysis. Because fewer coworkers than friends completed questionnaires about the women, we maximized sample size by conducting one set of analyses to compare women with friends and another set to compare women

Table 2
Effects of Women's Weight and Source of Rating for
Woman vs. Friend and Woman vs. Coworker Comparisons

	Effect					
	Women's weight		Source of rating		Weight × Source	
	<i>F</i> (1, 110)	<i>p</i>	<i>F</i> (1, 110)	<i>p</i>	<i>F</i> (1, 110)	<i>p</i>
Woman vs. friend						
Avoidance	.07	.79	.00	.98	.16	.98
Self-esteem	.04	.88	.12	.73	.24	.62
Competence	.83	.36	.16	.69	.20	.66
Friends' support	.00	.96	2.72	.10	.09	.76
Family support	2.11	.15	.00	1.00	1.42	.24
Social network	.13	.72	1.92	.17	.70	.40
Woman vs. coworker	<i>F</i> (1, 75)	<i>p</i>	<i>F</i> (1, 75)	<i>p</i>	<i>F</i> (1, 75)	<i>p</i>
Avoidance	.02	.88	.50	.48	.39	.53
Self-esteem	.14	.71	.38	.54	.14	.71
Competence	.09	.77	.05	.82	1.12	.29
Friends' support	.05	.82	.71	.40	.05	.83
Family support	1.01	.32	.24	.63	.47	.49
Social network	.87	.35	.77	.38	.02	.88

Note. *F* and *p* values derived from a 2 × 2 (Women's Weight × Source of Rating) ANCOVA with the women's age and education used as covariates and the source of rating treated as a within-groups factor.

with coworkers. In sum, each set of analyses had one between-subjects factor (obese vs. nonobese women), one within-subjects factor (source of rating: woman vs. other), and two covariates (the women's age and education).

As shown in Table 2, there were no significant effects for the women's weight nor any significant differences between self-ratings and ratings made by friends or coworkers. There also were no significant interactions between the women's weight and rating source. Thus, on average, both obese and nonobese women perceived themselves as their friends and coworkers perceived them with respect to their social relationships.

We further examined the relationship between the women's, friends', and coworkers' ratings of the women's social relationships by computing correlations between ratings made by the three groups. These were partial correlations that controlled for women's age and education. We computed these correlations for the total sample and separately

for obese and nonobese women. Table 3 presents the results of these analyses.

The available sample sizes do not provide sufficient power to make inferences about the existence of differences between correlations for obese and nonobese women. Consequently, the correlations that most appropriately answer the question of whether the women and their friends and coworkers agreed about the women's social relationships are the correlations for the total sample.

These correlations indicate that the women's self-ratings correlated significantly with ratings made by their friends on all six measures. The largest correlation was for social networks ($r = .44$) and the smallest was for social competence ($r = .20$). Furthermore, self-ratings by the women correlated significantly with ratings made by coworkers on social avoidance, social self-esteem, social networks, and perceived social support from friends. Ratings made by friends and coworkers were significantly correlated for social networks, perceived social support from friends, and perceived social support from family.

Correlations between Measures

In a final set of analyses we examined the intercorrelations between the social relationship measures and the correlations between the women's age and education with each measure. As Table 4 shows, the women's age and education were not significantly correlated with any of the social relationship measures. The one exception to this was that the women's self-reports about their social networks and the amount of social support they received from their family were negatively correlated with their age.

In general, the women's self-reports on the social relationship measures were all significantly related to each other, with the exception of social networks, which did not correlate significantly with any of the other self-report measures. The largest correlation ($r = -.72$) was between social avoidance and social self-esteem, and the next largest ($r = .48$) was between self-esteem and social competence. Intercorrelations were consistent with those obtained in previous research, in that social avoidance and distress were negatively correlated with social competence (Lowe & Cautela, 1978) and perceived social support was unrelated to social networks (Procidano & Heller, 1983).

The friends' ratings of the women showed a similar pattern of correlations. Friends' perceptions of the women's social avoidance and

Table 3
Correlations between Women's, Friends', and Coworkers' Ratings of Women

Social relation measure	Woman with friend			Woman with coworker			Friend with coworker		
	Obese	Nonobese	All	Obese	Nonobese	All	Obese	Nonobese	All
	(df = 54)	(df = 50)	(df = 108)	(df = 36)	(df = 34)	(df = 74)	(df = 32)	(df = 25)	(df = 61)
Avoidance	20	43**	30**	15	35*	22*	09	13	05
Self-esteem	28**	48**	36**	32	27*	31**	09	31	16
Competence	32**	11	20**	13	06	08	11	17	13
Friends' support	22*	46**	32**	33*	49**	40**	31*	27	32**
Family support	20	44**	31**	01	28*	15	35*	33*	33**
Social network	48**	37**	44**	30*	07	22*	33*	08	22*

Note. Numbers are correlation coefficients with decimal points deleted.

* $p < .05$

** $p < .01$.

Table 4
Within-Group Correlations between Women's Age and Education and Social Relationship Measures

	Social avoidance	Self-esteem	Social competence	Support from friends	Support from family	Social network
Women						
Avoidance	—	—	—	—	—	—
Self-esteem	-.72**	—	—	—	—	—
Competence	-.33**	.48**	—	—	—	—
Friends' support	-.22**	.31**	.28**	—	—	—
Family support	-.19**	.22**	.28**	.09	—	—
Social network	.05	-.04	.05	-.04	.05	—
Women's age	-.08	-.02	.11	-.09	-.27**	-.18*
Women's education	.05	.03	-.10	.03	-.05	-.13
Friends						
Avoidance	—	—	—	—	—	—
Self-esteem	-.62**	—	—	—	—	—
Competence	-.36**	.67**	—	—	—	—
Friends' support	-.22**	.38**	.43**	—	—	—
Family support	-.18	.16	.18	.09	—	—
Social network	.15	-.26**	-.28**	-.13	-.23*	—
Women's age	-.03	.09	.16	-.03	.09	-.21*
Women's education	.06	.03	.06	.05	-.10	-.15
Coworkers						
Avoidance	—	—	—	—	—	—
Self-esteem	-.35**	—	—	—	—	—
Competence	-.18	.63**	—	—	—	—
Friends' support	-.11	.61**	.53**	—	—	—
Family support	.18	.42**	.40**	.42**	—	—
Social network	-.43**	.42**	-.26*	-.20	-.23*	—
Women's age	-.10	.05	-.01	-.12	.09	-.15
Women's education	-.08	-.13	-.08	-.14	-.15	.08

Note. Numbers are correlations with decimal points deleted.

* $p < .05$

** $p < .01$.

self-esteem were negatively correlated ($r = -.62$), and perceived self-esteem was positively correlated ($r = .67$) with perceived social competence. In the women's ratings, both support from friends and from family was correlated with avoidance, self-esteem, and competence. In the friends' ratings, only perceived support from friends was significantly correlated with these measures.

Finally, significant relationships between avoidance and self-esteem and between self-esteem and competence also occurred in coworkers' ratings of the women. Unlike ratings made by the women and their friends, coworkers' perceptions of the women's social networks were correlated negatively with perceived social avoidance, social competence, and perceived support from family, and were positively correlated with perceived self-esteem.

DISCUSSION

Despite the barriers that obesity is likely to create in social relationships, the obese and nonobese women who participated in this study did not differ in their reports about any aspect of their social relationships, including social avoidance and distress, social self-esteem, social competence, social support, and involvement in social networks. We had predicted that the self-reports of obese women would be similar to those of nonobese women based on Crocker and Major's (1989) hypothesis that stigmas have self-protective properties that enable stigmatized people to avoid personal responsibility for negative reactions from others because these reactions may in reality stem from prejudice. This prediction was also supported by our prior study, which indicated that obese and nonobese women did not differ in self-reports about their performance in a social interaction or in social self-esteem, despite the fact that there was clear evidence that obese women actually were less socially skillful during the interaction than nonobese women (Miller et al., 1990).

Although our hypothesis about the self-reports of obese and nonobese women was supported, the finding that close associates of obese women (friends and coworkers) rated these women similar to nonobese women regarding social relationships suggests that the self-protective properties of stigma may not be the best explanation for the absence of differences in the self-reports of obese and nonobese women.

One implication of Crocker and Major's (1989) notion that stigmatized people protect self-esteem by attributing negative outcomes to

prejudice is that stigmatized people change their perceptions of their relationships without actually overcoming the prejudice of others. In contrast, the reports of the friends and coworkers of the obese and nonobese women we studied indicate that if prejudice was a barrier to the social relationships of obese women, they have somehow managed to overcome this obstacle and establish relationships that appear to others to be indistinguishable from those of nonobese women. In other words, our findings indicate that obese women may have as many friends, receive as much support from these friends, behave as competently in social situations, and feel as good about themselves as do nonobese women.

This optimistic conclusion must be tempered by several limitations of the present study. First, given the power of our study, it is possible that there exist small, but perhaps important, differences between the social relationships of obese and nonobese women that we were unable to detect. Second, our samples were not randomly selected. It is possible that the manner in which we recruited study participants resulted in self-selection biases that affected our results. In addition, the obese women were both older and less well-educated than the nonobese women. Although these differences reflect the actual relationships between obesity and age and between obesity and socioeconomic status (Rodin, Silberstein, & Striegel-Moore, 1985; Sobal & Stunkard, 1989), and although we controlled statistically for the effects of age and education, it is possible that our results could have been partially attributable to variables that were related to the women's weight.

In addition, we did not ask friends or coworkers about their own weight in order to avoid sensitizing them to the fact that the study focused on obesity. Thus, it is not possible to determine whether obese women were more likely to have heavier friends or heavier coworkers than nonobese women. This raises the possibility that obese women were more likely to have obese associates, who might perceive the relationships of a fellow obese person differently from how a nonobese person might perceive them.

Another limitation of this study is the women's ability to select whom we queried. It could be argued that no matter how poor obese women's general social relationships, perhaps they can summon one friend and one coworker with whom they can relate. In other words, obese women may have selected a friend and coworker from among the relatively small number of people who evaluate them positively. However, both obese women and their friends and coworkers rated the

social networks of obese women to be as extensive as those of nonobese women. Although these reports could be biased, the possibility that obese women do not have a restricted network of social relationships is supported by findings of previous research (Sallade, 1973), which showed that in sociometric ratings among elementary schoolchildren, obese children were as socially accepted as nonobese children were.

A final limitation of this study is that it is possible that the friends and coworkers of obese women perceived their social relationships as being relatively poor, but were reluctant to admit this because they did not want to appear to themselves or to others as being prejudiced against their obese friend or coworker. Thus, reports made by others about the obese women's social relationships could have exaggerated the degree to which obese women have positive social relationships.

This study indicated moderate levels of agreement between the women and their friends on all of the social relationship measures and between the women and their coworkers on all of the measures except social competence and social support from their family. It is not surprising that the coworkers' perceptions of the women's level of family support were uncorrelated with the women's perceptions. Coworkers may have had little opportunity to observe the women with their families. It is less clear why coworkers' ratings of the women's social competence were not correlated with the women's self-ratings. Social competence should be relatively easy to observe, and therefore there should be some agreement between self-other ratings (Kenrick & Stringfield, 1980).

The ratings made by friends and by coworkers were correlated with each other for social network size and perceived support from family and friends. Given that friends and coworkers may interact with the women in very different situations, their level of agreement about the women's social relationships should not be expected to be high.

It is not possible to use these data to determine who is more accurate about the women's social relationships or whether the ratings are, in fact, accurate representations of the women's social relationships. The assessment of accuracy raises complex theoretical and methodological issues (Cronbach, 1955; Kenny & Albright, 1987) that are beyond the purpose of the study.

Our results do show that according to reports made by obese and nonobese women and by the people who know them, prejudice against obesity does not sentence obese women to a life of poor social relationships. There are several possible answers to why such prejudice does not always affect obese women's social relationships. Perhaps

other people abandon their prejudice once they become acquainted with obese people; perhaps the results of laboratory studies that document the existence of prejudice do not generalize well to interactions in the real world. And, most important, it may be that obese women have developed behavioral skills and other strategies that enable them to compensate for the prejudice of others.

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