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SAME–SEX PEERS' INFLUENCE ON YOUNG WOMEN'S BODY IMAGE: AN EXPERIMENTAL MANIPULATION

LAUREN B. SHOMAKER AND WYNDOL FURMAN
University of Denver

This study examined how same–sex peers influence young women's body image and mood. Eighty female undergraduates were randomly assigned to observe one of two different prearranged conversations between confederates. In one conversation condition, one confederate pressured the other to be thin. In the other conversation condition, one confederate provided positive encouragement to the other about her body image. There was no main effect of condition. Instead, social comparison tendency and appearance orientation moderated the effects of pressure to be thin on body image. Females high on these dimensions were particularly vulnerable to peer pressure to be thin. Similar findings were found with respect to positive and negative emotions. The findings contribute to our understanding of how same–sex peers influence young women's body image and mood.

Body image is a multidimensional construct incorporating attitudes and self–perceptions about one's physical appearance (Cash & Pruzinsky, 2004). A core component of body image is body image satisfaction or dissatisfaction, an individual's subjective evaluation of one's specific body parts or one's overall physical attractiveness (Slade, 1994). Body image dissatisfaction is particularly prevalent among young women (Grogan, Williams, & Conner, 1996; Heatherton, Mahamedi, Striepe, Field, & Keel, 1997; Thompson, Heinberg, & Tantleff, 1999). Not only is it distressing in and of itself (Striegel–Moore, Silberstein, & Rodin, 1986), but also body image dissatisfaction prospectively predicts depressive symptomatology and eating disturbance among adolescent females and

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Correspondence concerning this article should be addressed to Wyndol Furman, Ph.D., Department of Psychology, University of Denver, 2155 S. Race St., Denver, CO, 80208. E–mail: wfurman@du.edu

young women (Holsen, Kraft, & Roysamb, 2001; Johnson & Wardle, 2005; Killen et al., 1996; Ohring, Graber, & Brooks–Gunn, 2002; Stice, 2002; Stice & Bearman, 2001; Stice, Hayward, Cameron, Killen, & Taylor, 2000; Striegel–Moore, Silberstein, Frensch, & Rodin, 1989). Moreover, it is likely a causal risk factor for eating disorders (Stice, 2002; Stice & Shaw, 2002). This evidence has propelled the critical investigation of what factors contribute to the formation of young women's body image.

Sociocultural theory offers a promising theoretical framework for understanding variation in females' body image (Thompson, Heinberg, Altabe, & Tantleff–Dunn, 1999). Sociocultural theory identifies societal ideals for female physical beauty as a root of female body image dissatisfaction. In Western society, ultrathinness is "in." Females consider a thin body shape to be the most essential aspect of physical attractiveness (Parker, Nichter, Nichter, & Vuckovic, 1995). Since the 1970s, models have become progressively thinner than the actual, healthy norms for women in the population (Cash & Pruzinksy, 2004; Foreyt & Mikhail, 1997; Thompson et al., 1999). A marked disparity exists between idealized images of female beauty and the vast majority of the population. A wealth of experimental studies have demonstrated that exposure to images of such models vs. other media images produces increases in body image dissatisfaction among young women (Groesz, Levine, & Murnen, 2002).

Yet, according to sociocultural theory, the media is not the only source of influence on female body image. Interpersonal relationships serve as more proximal environmental factors that affect young women's body image (Thompson et al., 1999). In particular, peers and parents may influence females' body image by acting as transmitters of the thin–ideal message. Peers and parents may pressure young women to be become thinner in direct or indirect ways (Thompson, Heinberg et al., 1999). For instance, direct means of pressure to be thin include criticism or teasing about aspects of physical appearance. Indirect means of pressure include modeling of dieting or body image dissatisfaction. We employ the term "pressure to be thin" to encompass these multiple dimensions of influence. Young women's perceptions of pressure to be thin from peers and parents are positively correlated with body image dissatisfaction cross–sectionally (Rieves & Cash, 1996; van den Berg, Thompson, Obremski–Brandon, & Coovert, 2002). In addition, adolescent girls' perceptions of sociocultural pressure to be thin (a composite of parent, peer, and media influence) prospectively predict increases in body image dissatisfaction over time (Stice & Bearman, 2001; Stice & Whitenton, 2002).

Pressure to be thin from peers may have a particularly influential impact on female body image. The peer domain becomes extremely salient

in late adolescence and young adulthood, as same–sex friends equal or surpass parents as sources of support and advice in many significant domains (Brittain, 1963; Furman & Buhrmester, 1992). Recent work suggests that perceived peer pressure to be thin prospectively predicts females' body image dissatisfaction, whereas perceived pressure from media, family, and romantic partners is perhaps less influential (McCabe & Ricciardelli, 2005; Presnell, Bearman, & Stice, 2004). Similarly, peer networks that emphasize weight concerns and engage in dieting or eating-disordered behavior influence females' own body image dissatisfaction and symptoms of disordered eating (Allison & Park, 2004; Carlson Jones, 2004; Crandall, 1988; Levine, Smolak, & Hayden, 1994; Pauls & Daniels, 2000; Paxton, Schutz, Wertheim, & Muir, 1999).

Prior work has provided strong evidence that peer pressure to be thin is associated with young women's body image. Yet the vast majority of these studies are correlational. Such studies cannot rule out whether this link occurs because females with poor body image satisfaction simply perceive their peers as pressuring them to be thin. Similarly, such females may gravitate toward peers who emphasize thinness. Experimental studies are needed to help disentangle these alternatives by directly examining whether peer pressure to be thin affects young women's body image satisfaction.

Only a handful of experimental studies on peer pressure to be thin exist. Male friends' criticism of females' physical appearance negatively affects young women, particularly those prone to body image concerns (Tantleff–Dunn & Thompson, 1998). We know less about same–sex peers. Stice, Maxfield, and Wells (2003) randomly assigned female undergraduates to one of two conditions. In the experimental condition, a female confederate with a thin–ideal body type complained to the participant about how overweight she was and voiced intentions to lose weight. In the control condition, the confederate discussed a neutral topic. Those who heard the ultrathin female complain showed a decline in body image satisfaction. These results are consistent with experimental studies demonstrating that exposure to thin–ideal media images has a negative effect on women's body image (see Groesz et al., 2002). Stice et al.'s (2003) findings demonstrate that pressure to be thin from women with thin–ideal body dimensions influences females' attitudes about their own bodies. However, it is possible that the effects in this study may have stemmed from simply priming the issue of body image (vs. priming an unrelated topic) and not the modeling of body image dissatisfaction per se. Accordingly, it would be important to compare different kinds of conversations about body image, such as conversations that involve pressure to be thin vs. those that encourage body image satisfaction. Additionally, the question remains whether average–sized,

same–sex peers' daily interactions regarding physical appearance affect each other's own body image. One possibility is that such concerns may be discounted because the person is of average weight and thus does not exemplify the thin ideal. Alternatively, because average–sized, same–sex peers are more similar to the typical target female, they may be a particularly salient source of influence (Cash, Cash, & Butters, 1983; Heinberg & Thompson, 1992).

To build on our understanding of peer effects on body image, the current study employed an experimental design to assess whether vicarious exposure to same–sex peer pressure to be thin has an effect on young women's body image satisfaction. In the current study, young women were exposed to one of two different prearranged conversations between two confederates posing as fellow participants. One conversation involved pressure to become thinner (pressure to be thin condition); the second conversation involved positive encouragement about body image (positive encouragement condition). It was predicted that participants in the pressure to be thin condition would display greater decline in body image satisfaction compared to participants in the positive encouragement condition. Additionally, we hypothesized that those in the pressure to be thin condition would display increases in negative mood, whereas those in the positive encouragement condition would show increases in positive mood.

Another primary goal of the present study was to examine several potential variables as moderators of the effects of same–sex peer pressure to be thin. Many experts agree that sociocultural effects on body image are unlikely to influence all young women in the same manner, but instead, the effects of peer pressure are more likely to be complex and interact with personal variables that either buffer or exacerbate pressure to be thin (Heinberg, 1996; Polivy & Herman, 2002; 2004). Relying on prior empirical and theoretical work, we examined four variables as moderators of same–sex peer pressure to be thin: social comparison, thin–ideal internalization, appearance orientation, and initial body image satisfaction.

First, we hypothesized that social comparison tendency would moderate the effect of same–sex peer pressure to be thin on body image satisfaction and mood. *Social comparison tendency* is the extent to which an individual relies on observations of others' physical appearance to judge her self–appearance. Dittmar and Howard (2004) found that among women who were high in thin–ideal internalization, social comparison amplified increases in body image anxiety following exposure to thin–ideal media images. Research suggests that females' social comparison tendencies may be even more influential when same–sex peers (vs. media images) are the source of physical appearance comparison

(Cash et al., 1983; Heinberg & Thompson, 1992). Thus, we hypothesized that social comparison would moderate the effects of same–sex peer pressure to be thin. Specifically, we predicted that females who were high in social comparison tendency and exposed to pressure to be thin would show greater decline in body image satisfaction than those who were either low in social comparison tendency or not exposed to pressure to be thin.

Second, we investigated whether thin–ideal internalization moderated the effects of same–sex peer pressure to be thin on body image satisfaction and mood. Thin–ideal internalization is the extent to which an individual endorses the social and psychological benefits of being a thin person. Previous experimental research has produced mixed findings on this question, with some studies finding evidence for an interaction between sociocultural pressure and thin–ideal internalization (Dittmar & Howard, 2004; Heinberg & Thompson, 1995) and others not (Stice et al., 2003; Tiggeman & McGill, 2004). These studies have varied on a number of dimensions, including the source of sociocultural pressure (e.g., TV commercial vs. thin–ideal confederate). In the current study, we examined whether thin–ideal internalization moderated the effects of same–sex peer pressure to be thin on body image satisfaction. On the one hand, it might be expected that women who internalize the thin ideal are more susceptible to same–sex peer pressure to be thin because they endorse society's emphasis on thinness and are presumably more invested in achieving this body type. Alternatively, thin idealization may not make one vulnerable to pressure to be thin from average body–sized peers because the source of pressure itself does not exemplify the thin ideal.

Third, we predicted that individual differences in appearance orientation would moderate the effects of same–sex peer pressure to be thin on body image satisfaction and mood. *Appearance orientation* is the extent to which individuals believe that physical appearance is important and engage in behaviors, such as grooming, aimed at enhancing their appearance. We predicted that females higher in appearance orientation and exposed to same–sex peer pressure to be thin would experience greater decline in body image satisfaction than those lower in appearance orientation or not exposed to peer pressure to be thin.

Finally, we examined whether preexisting level of body image satisfaction acts as a moderator of the effects of same–sex peer pressure to be thin on body image satisfaction and mood. We hypothesized that young women's attitudes about their bodies to start would also influence how susceptible they were to exposure to same–sex peer pressure to be thin. Specifically, we expected that those who were initially low in body image satisfaction and then exposed to peer pressure to be thin would dis-

play greater subsequent decline in body image satisfaction than those females who were not low in satisfaction to start or were not exposed to pressure to be thin. This prediction is based on prior work suggesting that initial body image may interact with sociocultural pressure to be thin (Heinberg & Thompson, 1995; Posavac, Posavac, & Posavac, 1998; Tantleff–Dunn & Thompson, 1998). In fact, in a meta–analysis of experimental studies examining exposure to media images of thin women, the greatest negative effects occurred for women who already exhibited body image dissatisfaction (Groesz et al., 2002).

METHOD

PARTICIPANTS

Participants were 89 female undergraduate students from a four–year private college in the western United States. Seven participants were dropped because they reported that they were suspicious about the true nature of the study during the debriefing. These participants suspected that the conversation they observed between the confederates was rehearsed. Two participants were dropped because they joined in the conversation with the confederates during the implementation of the experimental protocol, and thus, the standard protocol could not be completed. This left a total sample of 80. The individuals dropped from the study did not differ significantly from the other participants on any of the measures examined. Participants were a mean age of 20.70 years (SD = 2.61). The majority racially/ethnically self–identified as Caucasian (77.5%), 8.8% identified as Asian, 6.3% identified as Hispanic, 2.5% identified as African American, and 5% identified as Other.

PROCEDURE

Participants were recruited from psychology classes. They received extra credit for study participation. Subjects took part in the experimental protocol on an individual basis. The study was described as a project examining how body image, mood, and self–esteem are related. Participants were instructed that they would be filling out measures about body image and related issues before and after watching a video clip. To distract participants from the true nature of the study, they were informed that they had been randomly assigned to watch either a neutral or a negative video clip. In reality, all participants watched a neutral video clip of dynamic geometric objects. Participants were randomly assigned to one of two experimental conditions. In both conditions, two female confederates posed as fellow student participants, such that it

appeared to the participant that there were three students participating in the study. Confederates were from a pool of 12 research assistants. The body mass index of all confederates was within the normal range (M = 21.95, range = 20.0 to 24.9). In addition, confederates wore sweatshirts in an effort to standardize the appearance of their body shapes. Participants perceived confederates as somewhat attractive (M = 3.68 on a scale of 1 = *very unattractive* to 5 = *very attractive*). Eleven of the research assistants were Caucasian, and one racially/ethnically identified as Asian American.

At the outset of the study in the waiting area, the pair of confederates talked with each other about social and academic topics so as to give the appearance of being acquaintances. Following the video clip, the experimenter excused herself to obtain the second set of questionnaires for the participants to complete. The confederates then engaged in one of two 2-min conversations (see appendix). In the Pressure to the be Thin Condition, Confederate 1 complained about her body and physical appearance, and Confederate 2 reinforced her concerns. In the Positive Encouragement Condition, Confederate 1 complained about her physical appearance, and Confederate 2 encouraged and convinced her to feel more satisfied with her body image. Following completion of the post measures, all participants were interviewed about their understanding of the nature of the study and then fully debriefed. Those who reported suspicions about the true nature of the study were dropped from all analyses.

The scripts in this study were piloted and designed to mirror the typical conversational interactions that female friends of this age have about body image, dieting, and weight loss (Jones, Vigfusdottir, & Lee, 2004; Levine & Smolak, 2002; Levine, Smolak, Moodey, Shuman, & Hessen, 1994). In an adjunctive study, we had 16 female undergraduate students view videotapes of the confederates' conversations and rate on a 5–point scale whether the pressure-to-be-thin conversation was actually perceived as communicating a message to lose weight or become thinner. These results confirmed that the pressure-to-be-thin conversation was perceived as somewhat to quite a bit communicating a message to become thinner or lose weight, whereas the positive encouragement conversation was perceived as not at all to slightly communicating this message, $t(16) = 9.91$, $d = 2.57$, $p = .001$.

MEASURES

Body Mass Index (BMI). Participants self–reported on their height and weight, which were used to compute their BMI; BMI = (weight/height^2)*703. Self–reports of these variables have been demon-

strated to be highly correlated with objective measurements (Brooks–Gunn, Warren, Rosso, & Gargiulo, 1987).

Body Image. Participants' body image satisfaction at pre– and post–exposure was assessed using a composite of their reports on three measures. First, participants completed the Satisfaction and Dissatisfaction with Body Parts Scale (Berscheid, Walster, & Bohrnstedt, 1973). On this measure, they rated how satisfied they were with nine body parts on a 5–point Likert-type-type scale. Items were averaged to provide a continuous index of body image satisfaction. Previous work has also demonstrated the measure's predictive validity (Stice & Bearman, 2002; Stice, Spangler, & Agras, 2002). Consistent with previous reports of adequate internal consistency (Berscheid et al., 1973), this measure displayed acceptable internal consistency in the current project (Cronbach's αs = .91 & .93, pre– & postexposure, respectively).

Second, participants reported on how dissatisfied or satisfied they were with their physical appearance on the Physical Appearance scale of the Adolescent Self–Perception Profile (Harter, 1988). This scale contains five items and assesses participants' feelings of dissatisfaction or satisfaction with their physical appearance on a 4–point scale. Harter (1988) reported acceptable internal consistency and good support for the validity of this scale. The scale displayed adequate reliability in the current project (αs = .87 & .91, pre– and postexposure, respectively).

Third, the reliable and well–validated Appearance Evaluation scale from the *Multidimensional Body–Self Relations Questionnaire (MBSRQ;* Cash, 2000) assessed participants' general feelings of physical attractiveness or unattractiveness. This scale contains seven items rated on 5–point Likert-type scales. The items are averaged to obtain a continuous score of body image. Cronbach's αs were .87 and .92 for pre– and postexposure, respectively.

Participants' scores on all three measures of body image were standardized and then averaged to compute an overall composite of body image satisfaction. Higher scores indicated greater body image satisfaction. This composite had the advantage of tapping various dimensions of body image satisfaction and was highly reliable (correlations among the three scales ranged from .81 to .88).

Positive and Negative Emotion. Participants completed the *Positive and Negative Affect Schedule* (PANAS) scales (Watson, Clark, & Tellegen, 1988) at both times to assess their self–perceptions of positive and negative feelings in the past 2 weeks. On these scales, participants rated the extent to which they have felt 10 positive emotions and 10 negative emotions on a 5–point Likert-type scale. Items were averaged for the positive and negative items separately to obtain a total score for positive emotion (αs = .86 & .90, pre– and postexposure, respectively) and a total score for

TABLE 1. Means and Standard Deviations of Demographics and Pre–exposure Body Image, Mood, and Moderator Variables for Each Group

	Pressure to be Thin *n* = 40		Positive Encouragement *n* = 40	
	M	***SD***	***M***	***SD***
Age	20.38	1.21	21.02	3.50
Body Mass Index	21.74	2.68	22.38	2.86
Body Image Composite				
Harter Appearance	2.69	.78	2.64	.57
Berscheid Satisfaction	3.37	.71	3.24	.74
MSBSRQ Evaluation	3.34	.67	3.46	.64
Positive Emotion	3.54	.64	3.47	.79
Negative Emotion	3.46	.16	3.43	.16
Thin–Ideal Internalization	3.03	.58	3.14	.52
Social Comparison	3.80	.82	3.85	.69
Appearance Orientation	3.40	.70	3.31	.68

Note. MSBSRQ = Multidimensional Body–Self Relations Questionnaire.

negative emotion (αs = .85 & .89, pre– and post–exposure, respectively). The PANAS has been shown to have acceptable internal consistency, test–retest reliability, and discriminant and convergent validity (Watson et al., 1988).

Social Comparison. The Physical Appearance Comparison Scale (PACS; Thompson et al., 1991) was used as a measure of participants' tendency to make global social comparisons. Participants completed this as a premeasure to assess their tendency to compare their overall physical appearance with that of others. The PACS has acceptable reliability, stability, and validity (Thompson et al., 1999; Thompson et al., 1991). Internal reliability for the current study was .76.

Thin–Ideal Internalization. The Ideal–Body Stereotype Internalization Scale–Revised (IBSS–R; Stice, Ziemba, Margolis, & Flick, 1996) assessed participants' internalization of the thin ideal. The IBSS–R asks participants to rate how much they agree with six statements related to the social and psychological benefits of being a thin female. Ratings on each item were averaged to compute a continuous index of thin–ideal internalization. Acceptable internal consistency, convergent, discriminant, and concurrent validity have been documented for this measure (Stice et al., 1996). This scale had an α of .73 in the current sample.

Appearance Orientation. Participants' report on the Appearance Orientation scale of the MBSRQ (Cash, 2000) assessed the extent of their in-

TABLE 2. Correlations Among Study Variables

	2.	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**	**9.**	**10.**	**11.**	**12.**
Age	.18	.02	.09	–.08	–.18	–.29**	.00	–.20+	–.31**	–.06	–.22*
Body Mass Index		.18	.06	–.09	.02	–.30**	–.08	.05	–.26*	.00	.05
Minority Status[1]			.10	–.03	.13	.00	.00	–.04	.01	–.08	–.04
T1 Social Comparison				.09	.31**	–.49***	.07	–.30**	–.49***	.24*	–.38***
T1 Thin–Ideal Internalization					.13	.19+	–.25*	.00	.21+	–.27*	–.02
T1 Appearance Orientation						.02	–.02	.10	–.02	.05	.05
T1 Body Image							–.20+	.52***	.97***	–.35***	.56***
T1 Negative Emotion								–.02	–.19+	.50***	.04
T1 Positive Emotion									.50***	–.17	.93***
T2 Body Image										–.31**	.53***
T2 Negative Emotion											–.10
T2 Positive Emotion											

Note. [1]Dummy coded: 1 = Caucasian, 2 = Ethnic Minority. $N = 80$. ***$p < .001$; **$p \leq .01$; *$p < .05$; +$p < .10$

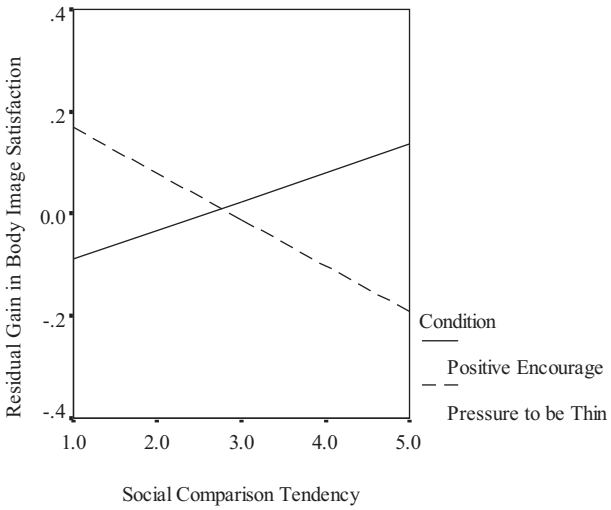

FIGURE 1. Social Comparison as a moderator of Condition and residual gain in Body Image Satisfaction.

vestment in their appearance. This 12–item scale taps how much an individual values appearance and the degree of her attention to physical appearance. Reliability and validity have previously been documented (Cash, 2000). Internal consistency in this sample was acceptable ($\alpha = .83$).

RESULTS

PRELIMINARY ANALYSES

The data were checked and cleaned for outliers and univariate normality. Outliers were recoded to approximately three *SD*s above or below the mean. Participants' average BMI ($M = 22.06$, $SD = 2.77$) was in the normal range (Kuczmarski, Ogden, Guo, et al., 2002). Independent samples *t* tests revealed no preexposure differences in BMI, body image, mood, social comparison, thin–ideal internalization, or appearance orientation between participants in the pressure to be thin condition and those in the positive encouragement condition (see Table 1). Table 2 presents the correlations among all study variables.

PRIMARY ANALYSES

A series of hierarchical regressions were used to examine main and

TABLE 3. Series of Regressions Examining Predictors of Residual Gain in Body Image Satisfaction

	Body Image Satisfaction Postexposure		
Prexposure Variables			
Steps	***SE b***	***b***	β
I. Body Image Satisfaction	.03	.99***	.97***
Social Comparison			
II. Condition	.05	.05	.03
Social Comparison	.04	–.02	–.02
III. Condition × Social Comparison	.07	.14*	.09*
		Total R^2 = .95***	
Thin–Ideal Internalization			
II. Condition	.05	.05	.03
Thin–Ideal Internalization	.05	.05	.03
III. Condition × Thin–Ideal Internalization	.09	.04	.02
		Total R^2 = .94***	
Appearance Orientation			
II. Condition	.05	.05	.03
Appearance Orientation	.04	–.05	–.04
III. Condition × Appearance Orientation	.07	.16*	.09*
		Total R^2 = .95***	
Body Image Satisfaction			
II. Condition	.05	.02	.01
III. Condition × Body Image Satisfaction	.08	–.03	–.02
		Total R^2 = .94***	

Note. $N = 80$. ***$p < .001$; **$p \leq .01$; *$p < .05$; +$p < .10$.

interactional effects on body image satisfaction, negative emotion, and positive emotion. In the first step, the corresponding preexposure score of the dependent variable was entered as a covariate (Aiken & West, 1991; Cohen, Cohen, West, & Aiken, 2003). Next, condition and the moderator variable were entered. Finally, to test for moderation, the appropriate interactional term was entered. To avoid problems of multicollinearity, continuous variables were centered prior to computing the interaction terms (Aiken & West, 1991).

Because preliminary analyses indicated that age and BMI were correlated with some postexposure measures, these variables were included as covariates in an initial set of regressions. Neither measure was significantly predictive of changes in the outcomes, nor did their inclusion alter the results. Thus, these variables were dropped in the primary regressions presented here.

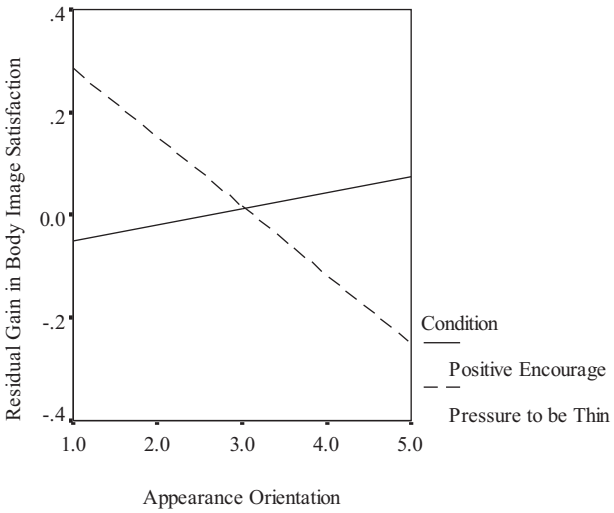

FIGURE 2. Appearance Orientation as a moderator of Condition and residual gain in Body Image Satisfaction.

The first set of regressions examined predictors of residual gain in body image satisfaction from pre– to post–exposure to one of the two conversation conditions. Condition did not emerge as a significant main effect in any of these analyses (see Table 3). Instead, there were significant interaction effects of Condition × Social Comparison and Condition × Appearance Orientation. As depicted in Figure 1, social comparison moderated the effect of condition on body image satisfaction. The Pressure to be Thin Condition produced a decline in body image satisfaction, but only for those women with greater levels of social comparison tendency. In contrast, those women who were higher in social comparison and exposed to the positive encouragement condition displayed an increase in body image satisfaction.

The same pattern was found for appearance orientation. As displayed in Figure 2, the Pressure to be Thin Condition produced a decline in body image satisfaction only among those females with greater levels of appearance orientation. Conversely, those who were higher in appearance orientation and exposed to the Positive Encouragement Condition displayed an increase in body image satisfaction. The interactions of initial body image and thin–ideal internalization with condition were not significant.

The second set of regressions examined predictors of residual gain in negative emotion (see Table 4). In contrast to our hypotheses, there was

TABLE 4. Series of Regressions Examining Predictors of Residual Gain in Negative Emotion

	Negative Emotion Postexposure		
Prexposure Variables			
Steps	***SE b***	***b***	β
I. Negative Emotion	.49	2.52***	.50***
Social Comparison			
II. Condition	.15	.01	.00
Social Comparison	.10	.22*	.21*
III. Condition × Social Comparison	.21	.15	.11
		Total R^2 = .30***	
Thin–Ideal Internalization			
II. Condition	.16	–.03	–.02
Thin–Ideal Internalization	.15	–.22	–.15
III. Condition × Thin–Ideal Internalization	.29	.28	.14
		Total R^2 = .28***	
Appearance Orientation			
II. Condition	.16	–.03	–.02
Appearance Orientation	.12	.07	.06
III. Condition × Appearance Orientation	.23	.66**	.41**
		Total R^2 = .33***	
Body Image Satisfaction			
II. Condition	.15	–.01	.00
Body Image Satisfaction	.12	–.32**	–.26**
III. Condition × Body Image Satisfaction	.24	–.07	–.04
		Total R^2 = .31***	

Note. $N = 80$. ***$p < .001$; **$p \leq .01$; *$p < .05$; +$p < .10$.

no main effect of condition. However, there was a significant interaction of Condition × Appearance Orientation (see Figure 3). In this case, the Positive Encouragement Condition produced greater decline in negative emotion than the Pressure to Be Thin Condition, only among women with lower levels of appearance orientation. No other interactions were significant.

The third set of regressions examined predictors of residual gain in positive emotion. There was no main effect of condition on positive emotion. Instead, there was a significant interaction of Condition × Social Comparison. A graphical examination of this interaction indicated that females exposed to the positive encouragement condition and lower in social comparison displayed increases in positive emotion (see Figure

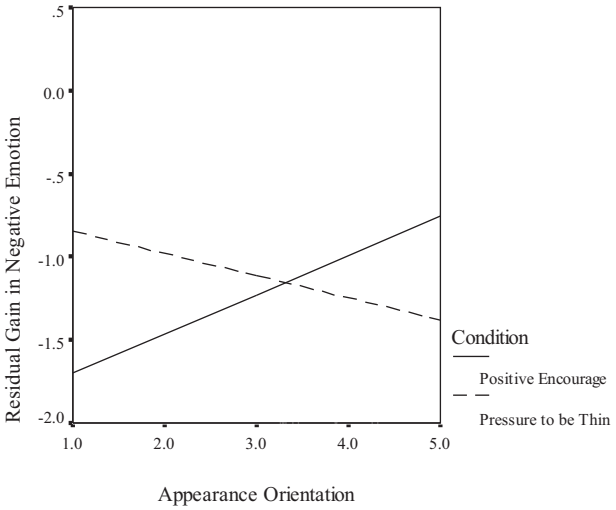

FIGURE 3. Appearance Orientation as a moderator of the effects of Condition on residual gain in Negative Emotion.

4). Comparatively, those females higher in social comparison who were exposed to either of the two conditions displayed decline in positive emotion. The remaining interactions did not reach significance.

DISCUSSION

The current study aimed to enhance our understanding of peer pressure to be thin by experimentally investigating same–sex peer influences on young women's body image satisfaction and mood. Findings revealed that same–sex peer pressure to be thin negatively affected young women's body image satisfaction, but only for those women characterized by high levels of social comparison tendency and appearance orientation. Similarly, there was no main effect of same–sex peer pressure to be thin on mood. Instead, appearance orientation moderated the effects of peer influence on young women's negative emotions. Social comparison moderated the effects of peer influence on positive emotions.

Consistent with our predictions, social comparison tendency exacerbated the negative effects of same–sex peer pressure to be thin on young women's body image satisfaction and positive emotions. Specifically, same–sex peer pressure to be thin only affected young women who were prone to rely on observations of others' physical appearance to judge their self–appearance. Exposure to conversational interactions that em-

TABLE 5. Series of Regressions Examining Predictors of Residual Gain in Positive Emotion

	Positive Emotion Postexposure		
Prexposure Variables			
Steps	***SE b***	***b***	β
I. Positive Emotion	.05	1.04***	.93***
Social Comparison			
II. Condition	.07	.01	.01
Social Comparison	.05	–.11*	–.11*
III. Condition × Social Comparison	.09	–.17*	–.12*
		Total R^2 = .87***	
Thin–Ideal Internalization			
II. Condition	.07	.02	.01
Thin–Ideal Internalization	.06	–.03	–.02
III. Condition × Thin–Ideal Internalization	.12	–.23+	–.12+
		Total R^2 = .87***	
Appearance Orientation			
II. Condition	.07	.02	.01
Appearance Orientation	.05	–.06	–.05
III. Condition × Appearance Orientation	.10	–.17+	–.10+
		Total R^2 = .87***	
Body Image Satisfaction			
II. Condition	.07	.02	.01
Body Image Satisfaction	.06	.13*	.10*
III. Condition × Body Image Satisfaction	.10	–.05	–.03
		Total R^2 = .87***	

Note. $N = 80$. ***$p < .001$; **$p \leq .01$; *$p < .05$; +$p < .10$.

phasize the importance of weight loss and dieting among average–sized peers decreased body image satisfaction and positive emotions among those females prone to social comparison. In contrast, previous work found minimal or no effects for social comparison as a moderator of exposure to media images of the thin–ideal (Dittmar & Howard, 2004; Tiggeman & McGill, 2004). Social comparison also did not emerge as a significant moderator of pressure to be thin from a thin ideal model (Stice et al., 2003). In the present study, however, the targets of social comparison were same–sex agemates of average size. Social comparison processes may play a stronger role in influencing the effect of same–sex peer pressure to be thin from average–sized peers than from thin–ideal media images or people. This explanation is consistent with research suggesting that females' social comparison tendencies are particularly

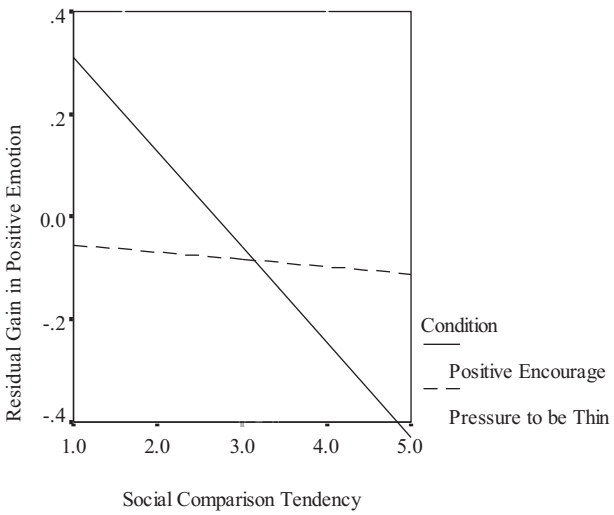

FIGURE 4. Social Comparison as a moderator of the effects of Condition on residual gain in Positive Emotion.

influential when peers are the source of physical appearance comparison (Cash et al., 1983; Heinberg & Thompson, 1992). Interestingly, same–sex peer pressure to be thin in the current study was modeled by agemates who were unacquainted with the study participants. Experts in peer relations have called attention to the import of differentiating among the various natures of "peers." For instance, brief interchanges between unacquainted peers are clearly of a different quality than interactions in peer groups (e.g., cliques) or friendships (see Rubin, Bukowski, & Parker, 1998). We might expect that pressure to be thin from close friends or even acquaintances would have a greater influence on young women's body image and mood than pressure from unacquainted peers. In fact, it is particularly striking that we found effects for pressure from unfamiliar peers. Future studies should directly compare whether social comparison operates differently as a function of the source of the pressure to be thin.

Interestingly, exposure to conversational interactions that provide positive encouragement about body image increased body image satisfaction and positive emotions among those females prone to social comparison. For young women prone to judge self–attractiveness on the basis of social comparison, it may be positive to expose them to agemates who downplay society's emphasis on thinness. These results fit with prevention efforts aimed at lessening young women's body image dis-

satisfaction and potential for developing an eating disorder by fostering constructive and positive peer dialogues about body image (Piran, 1996).

Appearance orientation acted as a moderator of the effects of same–sex peer pressure to be thin on body image satisfaction and negative emotions. Exposure to conversational interactions that stressed weight loss and dieting produced decreases in body image satisfaction for young women high in appearance orientation. Females who are more invested in the importance of physical appearance appear to have a greater vulnerability to same–sex peer pressure to be thin. Also, young women who were exposed to the positive encouragement conversation and lower in appearance orientation experienced greater decline in negative emotion from pre– to postexposure. These findings suggest that same–sex peer conversations that deemphasize body image concerns promote a less negative mood among young women if they are not already highly invested in appearance.

In contrast to our hypotheses, initial body image satisfaction did not emerge as a significant moderator of the effects of same–sex peer pressure to be thin on body image satisfaction or mood. One possibility is that a young woman's appearance orientation—her investment in her appearance—has a greater impact on her vulnerability to peer pressure to be thin than her general satisfaction or dissatisfaction with her body. Harter and Whitesell (2001) suggested that the consequences of self–perceptions of self–worth in a given domain, such as physical appearance, depend on the importance of that domain. Accordingly, body image dissatisfaction may only be of consequence for self–esteem or well–being when a woman places great emphasis on her physical attractiveness. Our findings call attention to the importance of assessing not only young women's self–perceptions of physical appearance but also how much appearance matters to them.

Thin–ideal internalization did not emerge as a significant moderator of same–sex peer influence. On the one hand, this null finding is consistent with prior work that also did not find an effect for thin–ideal internalization as a moderator of sociocultural pressure to be thin (Stice et al., 2002). On the other hand, some studies have found evidence for a moderating role of thin–ideal internalization during exposure to media images of thin–ideal women (Dittmar & Howard, 2004; Heinberg & Thompson, 1995). Perhaps thin–ideal internalization does not make one vulnerable to pressure to be thin from average–sized, same–sex peers, as such peers do not exemplify the thin–ideal. Future work should directly examine whether thin–ideal internalization processes differ as a function of the source of pressure to be thin.

As these findings illustrate, there was no simple main effect of the peer

conversations on body image satisfaction or mood. Instead, the impact of peers' conversations depended on the participants' pre–existing vulnerabilities or protective characteristics. In fact, experts have proposed that sociocultural effects on body image are likely to be complex and probably do not affect all young women in the same manner (Heinberg, 1996; Polivy & Herman, 2002, 2004). Individual characteristics can either buffer or exacerbate peer pressure to be thin.

An alternative interpretation is that same–sex peer pressure to be thin does have a uniform effect on young women's body image and mood; however, our experimental laboratory design was not powerful enough to detect such a main effect. The experimental manipulation employed in the current study differed in a number of ways from the daily interactions females may have with their same–sex peers. First, because ethical considerations prevented us from directly pressuring participants themselves, females were only vicariously exposed to same–sex peer pressure to be thin. It seems quite possible that direct pressure to be thin would have a stronger and perhaps more uniform effect on young women's body image satisfaction and mood. Second, as mentioned earlier, the confederates were necessarily agemates unknown to study participants. Accordingly, it is possible that pressure to be thin from friends or peer cliques exerts a direct or greater impact on females' body image satisfaction or mood. Third, the prearranged conversations employed in this study were very brief, only lasting about two minutes. A longer exposure to peer pressure to be thin or repeated exposures to peer pressure may have a larger effect on young women's body image satisfaction and mood.

Fourth, we may not have found main effects of the conditions because the conversations were not sufficiently distinct. To employ a strict test of the effects of same–sex peer pressure to be thin, the issue of body image was primed in each condition. In both conversation conditions, one confederate initiates the conversation by expressing concerns about her body image. The second confederate responds with either pressure to be thin or positive encouragement to be satisfied with body image and appearance. It is possible that the differences in the second confederate's comments may have been attenuated by the first confederate's initial concerns. Using positive encouragement about body image as the comparison condition allowed us to address the possibility that prior effects may have stemmed from the simple priming of the topic of body image—and not peer pressure to be thin per se. It is notable that we found effects in spite of the similarity of the conversations in the current study.

Finally, the standard PANAS measure asks participants to rate their positive and negative emotions over the past 2 weeks. In spite of this drawback, there were several significant predictors of mood at

postexposure, even after controlling for initial level of mood. Nonetheless, future work should consider including a measure of emotion that taps state-like mood. Visual analogue scales are one viable example of such a measure (e.g., Heinberg & Thompson, 1995).

In the present study we conducted a number of statistical tests, and some chance effects may have occurred. Although all analyses in the current investigation were planned *a priori* according to specific, conceptual hypotheses, replication is needed to further explore same–sex peer influences on body image satisfaction and mood.

Taken together, the results from the present project contribute to our understanding of how same–sex peers influence young women's body image satisfaction and mood. The current study provides the first experimental evidence that pressure to be thin from same–sex, average body–sized peers affects body image concerns and mood among young women with certain personal characteristics. Our pattern of findings complements correlational studies finding cross–sectional and prospective associations between peer pressure to be thin and body image dissatisfaction and disordered eating behaviors and attitudes among college females (Allison & Park, 2004; Crandall, 1988; Pauls & Daniels, 2000). The current findings converge with sociocultural theory's expectations that interactions with peers regarding body and physical attractiveness affect females' body image (Thompson et al., 1999). Moreover, the findings also call attention to the import of examining individual characteristics as moderators of these effects.

Our results have important implications for clinical preventions and interventions aimed at body image dissatisfaction. In particular, our results suggest that social comparison and appearance orientation are notable vulnerabilities for developing body image dissatisfaction and mood disturbance in reaction to peer pressure to be thin. Identifying risk factors for females' body image dissatisfaction is essential because attitudes about body image are robustly predictive of disordered eating and depression (Holsen et al., 2001; Johnson & Wardle, 2005; Killen et al., 1996; Ohring et al., 2002; Stice, 2002; Stice & Bearman, 2001; Stice, Hayward, Cameron, Killen, & Taylor, 2000). Indeed, body image dissatisfaction is a primary target of change in eating disorder prevention programs (e.g., Levine & Piran, 2003; Yager & O'Dea, 2005). If replicated, the current findings suggest that those young women high on social comparison and appearance orientation could be identified as at risk for exposure to peer pressure to be thin and would be good targets for such prevention efforts. Also, for females high in social comparison and appearance orientation, choice of peer affiliation may have a significant impact on how they feel about their bodies and physical appearance (Littleton & Ollendick, 2003). Young women high on these dimensions

displayed declines in body image satisfaction following only a very brief exposure to peer pressure to be thin. Interventions aimed at peer groups that emphasize thinness, weight loss, and dieting would particularly benefit those females at risk for peer pressure to be thin. Further research is now needed to understand precursors of social comparison and appearance orientation, so as to inform prevention efforts aimed at the development of these vulnerabilities to negative peer influence.

APPENDIX

Script: Pressure to be Thin Condition

Confederate 1: Name (of Confederate 2), oh my gosh, I have been so stressed lately, and this survey didn't help.

Confederate 2: Yeah, I know what you mean.

Confederate 1: I have so much work and I have so much going on, I haven't had like any time to even get to the gym. And I've been eating like crap. That's the worst part. Usually I am so good about sticking to a diet but lately I've been picking up fast food all the time.

Confederate 2: Really? That's not good.

Confederate 1: Yeah, ugh. I feel so disgusting.

Confederate 2: You should really try to stop eating so much crap.

Confederate 1: Ugh. I know, tell me about it.

Confederate 2: Or, at least try to get the gym.

Confederate 1: I am so gross! Usually I get to the gym every day for 2 hours, and I haven't even been once this week.

Confederate 2: Yeah, well, exercise really helps.

Script: Positive Encouragement Condition

Confederate 1: Name (of Confederate 2), oh my gosh, I have been so stressed lately, and this survey didn't help.

Confederate 2: Yeah, I know what you mean.

Confederate 1: I have so much work and I have so much going on, I haven't had like any time to even get to the gym. And I've been eating like crap. That's the worst part. Usually I am so good about sticking to a diet, but lately I've been picking up fast food all the time.

Confederate 2: Really?

Confederate 1: Yeah, ugh. I feel so disgusting.

Confederate 2: You really shouldn't worry about it. It's so hard to stick to a diet and fit in exercising when you're so busy and stressed out. Plus, you look good. You are not disgusting!

Confederate 1: Yeah, you know, you're really right.

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