For the Overweight, is Proximity to In-Shape, Normal-Weight Exercisers a Deterrent or an Attractor? An Examination of Contextual Preferences

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Published online: 18 November 2012 © International Society of Behavioral Medicine 2012

Abstract

Background For the overweight, is the thought of exercising in close proximity to physically fit, normal-weight individuals a deterrent or an attractor? Efforts to address this question stand to inform future intervention-based research.

Purpose The purpose of the study was to examine whether overweight individuals possess a preference for exercising alongside similarly overweight (relative to in-shape, normal-weight) persons.

Methods Relying upon an experimental paradigm, American participants evaluated one of four exercise contexts and completed a measure of social physique anxiety.

Results Overweight participants high in social physique anxiety exhibited a preference for exercise contexts comprised of other overweight individuals whereas overweight participants low in physique anxiety exhibited a preference for contexts comprised of in-shape, normal-weight individuals. A relative preference for social contexts among normal-weight participants was not observed.

Conclusions These findings suggest that the provision of group-based programs designed exclusively for the overweight may be appropriate for overweight individuals anxious about the evaluation of their physique. These results also suggest that such programs may conflict with the preferences of overweight persons with a low degree of social physique anxiety. Thus, for the overweight (but not the normal-weight), exercising in close proximity to in-shape, normal-weight individuals can be both a deterrent and an attractor.

Keywords Contextual preferences · Weight status · Social physique anxiety · Relational demography · Social identity

Introduction

Regular physical activity is associated with a wide array of physical and psychological benefits. Unfortunately, approximately 50% of those who attempt to increase their physical expenditure to a level sufficient to receive these benefits withdraw their efforts within 6 months [1]. In an attempt to understand the antecedents of sustained exercise engagement, researchers have increasingly come to consider individuals’ preferences for different types of physical activities [2].

When individuals’ preferences for activities are taken into account, they tend to exhibit greater adherence to exercise regimens [3], as well as reduced fatigue [4], exertion [5], and negative affect [6] when engaging in said activities. A complete understanding of exercise preferences, however, requires sensitivity to the context in which these exercises are performed [2]. When physical activities are undertaken in close proximity to others (i.e., in a shared environment, like an exercise class or a running group), involvement is sustained to a degree greater than when exercising alone [7, 8]. It is for this reason that substantive efforts have been made to understand preferences for exercise contexts of varying social constellations [8, 9].

Of the research conducted on contextual preferences, little attention has been given to the preferences of the overweight. This represents a significant oversight as investigations examining exercise context preferences can inform intervention-based research—the very same research that commonly strives to increase the activity levels of overweight individuals [9]. In addition, researchers examining evaluations of contexts that vary in social composition have focused solely on environments that offer structured activities (i.e., those found within formalized group-based

1 In this manuscript, the term “overweight” is used inclusively to refer to both overweight and obese weight statuses and persons.
exercise classes). As a result, it remains unclear whether variability exists in the preferred social demography of contexts offering structured and unstructured activities.

For the overweight, the physique of nearby others is likely to carry important implications for their motivation to engage in physical activity. Two competing perspectives exist regarding the relation between the physique of others in an environment and overweight individuals’ desire to exercise within this environment. The first perspective, endorsed by some exercise programmers though largely unstudied, proposes that in-shape, normal-weight individuals can be a source of motivation and inspiration for the inactive and overweight [10]. This proposal is consistent with the tenets of social comparison theory [11], whereby in-shape individuals might be seen to embody the goal of attaining a healthier level of fitness and, as a result, their presence in an exercise context may contribute to an increased motivation to exercise. The prediction stemming from this theorizing is that people in general, and overweight individuals in particular, will exhibit a preference for engaging in exercise while in close proximity to in-shape, normal-weight individuals relative to overweight individuals. Thus, the presence of in-shape, normal-weight others in an exercise context will be an attractor.

In-shape exercisers may very well be motivating to overweight individuals. Overweight individuals, however, often feel an acute sense of being negatively stereotyped as weak-willed, inactive, and lazy [12] as a result of being overweight, and this feeling may come to influence their contextual preferences. According to social identity threat theory [13], when the stigmatized are numerically underrepresented in a stereotype-relevant context, the context itself brings a sense of stigmatization to mind, thereby cuing the belief that one does not belong and the motivation to avoid rather than approach. Thus, even in the absence of actual prejudice or discrimination, exercises contexts comprised primarily of in-shape, normal-weight persons could serve as situational reminders of the cultural stigma associated with being overweight. These ideas have been extensively supported among women and minorities in academic contexts (where such identities have traditionally been stigmatized [14]) but have only recently been applied to the overweight in health and fitness contexts [15]. Just as women exhibit increased motivation and better performance in math while in the presence of other women rather than men [16], the second perspective proposes that overweight individuals will feel stigmatized by their weight in the presence of in-shape, normal-weight others and, as a result, prefer exercising in proximity to others of a comparable weight status. Thus, for overweight individuals, the presence of in-shape, normal-weight others in an exercise context will be a deterrent.

We contend that the validity of these two perspectives turns on an individual’s level of social physique anxiety (i.e., the degree of anxiety experienced concerning the evaluation of his or her own physique; [17]), as this variable may index one’s potential sensitivity to feeling stigmatized by being overweight. Among overweight persons high in social physique anxiety, exercising in close proximity to in-shape, normal-weight individuals may bring to mind the ways in which society, other people, and even they themselves harshly evaluate their own physique. Indeed, state social physique anxiety has been found to correspond positively with perceived discrepancies between one’s physique and the physique of others within an exercise environment [18]. In an effort to avoid this sense of stigmatization, overweight individuals high in social physique anxiety might circumvent contexts in which the in-shape and normal-weight predominate, instead exhibiting a preference to exercise with similarly overweight others.

In contrast, among overweight individuals who care little about others’ evaluations of their physique, in-shape, normal-weight exercisers may be perceived as role models, and constitute a source of motivation. As such, overweight individuals low in social physique anxiety might be attracted to exercise contexts predominated by in-shape, normal-weight individuals relative to those contexts containing mostly overweight individuals. Furthermore, given that structured activities entail synchronized actions where comparison of the self to others might be accentuated, the distinct preferences of overweight individuals high and low in social physique anxiety may be greater when considering structured group activities relative to unstructured individual activities.

To test these possibilities, we assessed overweight individuals’ preferences for exercise contexts of varying weight compositions. One context was described as being comprised of other overweight individuals and thus embodied interpersonal similarity whereas the other was described as being comprised of physically fit individuals and thus represented a more stereotypical exercise setting. Orthogonal to this manipulation, the activities performed in each context were described as either structured or unstructured. Social physique anxiety was examined as a moderator of personal preference.

**Method**

Prior to data collection, ethical approval for this study was attained from the authors’ institutional review board. The participation of 166 American adults ($M_{age}=34.05$, $SD=12.79$; 61 % female, 66 % college/university educated, 81 % Caucasian) was solicited from an online survey-based website [19]. On this website, specific “tasks” (i.e., studies) are listed, from which interested parties can choose to participate. The current study took approximately 10 min to complete. Participants received a $0.25 USD honorarium.
Participants first reported their height, weight, types of physical activities engaged in during the last 2 weeks, degree of activity intensity (on a four-point scale ranging from no changes in heart and breathing rates to large increases in these rates), and activity duration (in hours). They next were assigned at random to one of four experimental conditions in which a hypothetical vignette of an exercise context was presented. These vignettes varied along two dimensions: member composition (overweight/in-shape) and activity format (structured/unstructured; see Appendix)\(^2\).

Participants rated the degree to which they found the presented context appealing, as well as their predicted level of motivation and comfort in this context. Responses were made on a seven-point Likert-type scale and averaged to arrive at a measure of preference (α=0.73).

As a final task, they completed a measure of trait social physique anxiety [17]. Exemplary items from this 12-item measure include “Unattractive features of my physique or figure make me nervous in certain social settings” and “In the presence of others, I feel apprehensive about my physique or figure.” These items were rated on a five-point Likert-type scale (α=0.93). Scores on this measure (Md=3.17, range=1–5) did not vary as a function of condition, F(3,158)=0.47, p=0.69.

Consistent with the World Health Organization criteria [20], participants were deemed normal-weight if their BMI ranged between 18.5 and 25 (n=65) and overweight if their BMI exceeded 25 (n=86)\(^3\). Evaluations regarding the intensity of physical activity pursued in the previous 2 weeks were dichotomized on the basis of whether moderate to large increases in participants’ heart and breathing rate were reported. Consistent with previous research [21], individuals were classified as “active” if they engaged in moderate to vigorous physical activity in excess of two hours during the previous 2 weeks. A median split was used to categorize participants as high or low on social physique anxiety. Participants’ level of education (attainment of a college/university degree) and ethnicity (Caucasian/non-Caucasian) were also dichotomized.

Data Analysis

To examine the primary research question, a 2 (overweight member composition, in-shape member composition)×2 (structured activity, unstructured activity)×2 (normal-weight BMI, overweight BMI)×2(high social physique anxiety, low social physique anxiety) analysis of covariance was run predicting preference while controlling for activity status, age, BMI, gender, education, and ethnicity. Significant interactions were decomposed with tests of simple interaction effects and pairwise comparisons\(^4\).

Results

The overall analysis yielded a main effect for social physique anxiety, F(1,117)=8.34, p=0.005, partial η\(^2\)=0.07, an activity × member composition interaction, F(1,117)=4.48, p=0.037, partial η\(^2\)=0.04, a member composition × participant weight interaction, F(1,117)=5.38, p=0.022, partial η\(^2\)=0.04, and member composition × social physique anxiety interaction, F(1,117)=13.44, p<0.001, partial η\(^2\)=0.10. These effects were, however, qualified by a member composition × participant weight × social physique anxiety interaction, F(1,117)=6.47, p=0.012, partial η\(^2\)=0.05. Unpacking this three-way interaction, among normal-weight participants, main effects and two-way interactions were not observed, p≥0.14, whereas among overweight participants, main effects for member composition, F(1,117)=5.81, p=0.017, partial η\(^2\)=0.04, and social physique anxiety, F(1,117)=5.90, p=0.012, partial η\(^2\)=0.016, were qualified by a member composition × social physique anxiety interaction, F(1,117)=29.24, p<0.001, partial η\(^2\)=0.29. Overweight participants high in social physique anxiety (n=51) exhibited a preference for exercise contexts comprised of overweight, M=5.41, SD=1.09, relative to in-shape, normal-weight individuals, M=3.26, SD=1.40, F(1,117)=46.82, p<0.001, partial η\(^2\)=0.49, whereas overweight participants low in social physique anxiety (n=27) exhibited a preference for exercise contexts comprised of in-shape, normal-weight, M=5.65,

\(^2\)To ensure that participants interpreted our vignettes in the manner intended, we conducted a pilot study in which 43 additional participants recruited using the same method (Mage=26.21 years, SD=8.66; 40 % female, 51 % college/university educated, 77 % Caucasian) were randomly assigned to read about a structured context predominately populated by “overweight” or “in-shape” persons and then asked to select the body silhouette that they believed best represented the individuals referred to in this context. Nine silhouettes, gender-matched to participants and ranging in status from underweight to obese, were presented. After controlling for the demographic variables that served as covariates during our main analyses, those in the overweight member composition condition (n=26), M=7.08, SD=0.63, identified a silhouette that was significantly heavier than did those in the in-shape member composition condition (n=16), M=3.50, SD=0.82, F(1,34)=250.00, p=0.001, partial η\(^2\)=0.88. Thus, even though we did not explicitly specify that “in-shape” implied that others would be of normal weight, participants themselves drew this conclusion and perceived a clear distinction between descriptions of overweight and in-shape people.

\(^3\)The BMI of 17 participants was below 18.5. As such, they were classified as “underweight” and excluded from our main analyses.

\(^4\)In addition to our main analyses, we considered participants’ weight and activity status in relation to activity status and social physique anxiety. Comparing the responses of overweight and normal-weight participants by way of independent samples t tests, we noted that activity status did not vary as a function of weight status, p=0.43. Overweight individuals, however, reported a higher degree of social physique anxiety, M=3.36, SD=1.00, than did normal-weight participants, M=2.67, SD=0.84, t(142)=4.38, p<0.001, d=0.75.
Discussion

Little research has examined the contextual exercise preferences of overweight individuals. In addition, researchers have yet to consider whether these preferences vary across structured and unstructured exercise activities. Given the relation observed between preference and adherence to physical activity [3], an examination of overweight individuals’ predilection for structured and unstructured exercise activities of varying social constellations stands to inform future intervention-based initiatives. In this study, it was noted that overweight participants high in social physique anxiety were less attracted to the prospect of exercising alongside in-shape and normal weight, relative to similarly overweight, individuals whereas overweight participants low in social physique anxiety viewed exercising alongside in-shape, normal-weight others as relatively appealing. These patterns did not vary as a function of exercise activity, and were, by conventional standards [22], quite large. In addition, these patterns were specific to overweight individuals; the preferences of normal-weight participants did not differ as a function of hypothetical member composition, type of activity, or level of social physique anxiety.

According to social identity threat theory [13], overweight individuals with a high degree of social physique anxiety might be reminded of the ways in which their physical appearance is evaluated harshly when exercising in close proximity to in-shape, normal-weight persons. Consistent with an emerging body of social psychological evidence suggesting that individuals avoid contexts that signal the ways in which their identities are stigmatized [13, 15], this discomfort may reduce the likelihood of engagement within certain exercise environments. For this reason, the provision of contexts designed exclusively for overweight persons are likely to contribute to the continued exercise engagement of individuals from this group.

In contrast to overweight participants anxious about the evaluation of their physique, overweight persons who reported low levels of social physique anxiety exhibited a relative preference for contexts containing in-shape, as opposed to overweight, individuals. These results align with the proposal that, in certain cases, the possibility of exercising while in close proximity to in-shape, normal-weight others is attractive to overweight persons. To our knowledge, the current study is the first to provide support for the controversial criteria endorsed by some organizations that exercise instructors possess a “fit” appearance [10]. Given, however, that social physique anxiety and weight are positively related with one another [18], it is worth noting that, within the general population, overweight individuals are more likely to be high on social physique anxiety than low. Thus, encouraging a fit appearance of instructors might disproportionately discourage the overweight from joining classes and training programs. As the present research did not explicitly examine effects of instructor appearance, however, future research is needed to directly address this question.

We predicted that the preferences of the overweight would be accentuated when engaging in structured, rather than unstructured, activities. This prediction was not borne out in our data. The comparability in participants’ evaluations of structured and unstructured activities implies that demographic preferences are largely constant across activities. For this reason, efforts to assess exercise preferences may be most aptly focused on the social composition of potential contexts rather than the nature of the activities performed therein.

Despite the contributions made by the current study, several limitations should be noted. First, the values used to derive BMI were self-reported. It remains possible that these values were subject to biased responding (i.e., underreporting of weight, overreporting of height, ultimately resulting in an underreporting of BMI). It is important to note, however, that the systematic underreporting of participants’ BMIs would only serve to reduce the likelihood of observing the results reported here [9]. Nevertheless, in future, more objective measures of BMI should be used. Second, in the current study, we were concerned with stereotypes regarding “overweight” and “in-shape” others. Contrary to the stereotypes revealed in our pilot data, being overweight and in-shape are not antithetical to one another [23]. In the future, researchers should test the effectiveness of interventions designed to reduce the impact of preexisting stereotypes regarding the relation between weight status and physical fitness. Finally, the preferences we considered were not assessed in relation to actual exercise behavior. As a result, subsequent research should examine the causal link
between the social context and exercise. These examinations, when combined with the current endeavor, stand to provide important insights regarding potential antecedents to overweight persons’ engagement within exercise contexts.

Acknowledgments This research was facilitated by a fellowship awarded to William L. Dunlop and a research grant awarded to Toni Schmader, both from the Social Sciences and Humanities Research Council of Canada.

Appendix

Structured Context Vignette

You have just signed-up for an exercise class at your local fitness facility. Upon arriving at this class, you place your water bottle at the side of the room and take your place alongside your new classmates. The class would not begin for a couple of minutes and you start to look around the room to pass the time. As you do this, you notice that most people in the class are about your age, and the majority of these individuals are [overweight/in really good shape]. In fact, after looking around the room, you are only able to identify one person in the class who appears to be [in-shape/overweight]. As you come to this realization, the instructor emerges and the class begins.

Unstructured Context Vignette

You have just arrived at your local fitness facility. You come across a treadmill that is free and you begin to use it. After jogging for a couple of minutes, you start to look around and observe the other people exercising around you. As you do this, you notice that most of people in this facility are about your age, and the majority of these individuals are [overweight/in really good shape]. In fact, after looking around the facility, you are only able to identify one person who appears to be [in-shape/overweight].

References
