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VALIDATION OF THE SOCIAL PHYSIQUE ANXIETY SCALE AND THE STUDY OF BODY CONCERNS IN THE GAY AND LESBIAN COMMUNITY

by

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Abstract

VALIDATION OF THE SOCIAL PHYSIQUE ANXIETY SCALE AND THE STUDY OF BODY CONCERNS IN THE GAY AND LESBIAN COMMUNITY

by

Thomas M. Borkowski

Adviser: Professor Jeffrey T. Parsons, Ph.D.

This paper examines whether specific discrepancies between self-beliefs and self-guides regarding body weight are associated with different types of body concerns. Specifically, the degree to which discrepancies between actual weight and ideal weight (actual:ideal) predicts body dissatisfaction and discrepancies between actual weight and ought weight (actual:ought) predicts Social Physique Anxiety (SPA) was examined in a sample of the gay, lesbian, and bisexual community in the New York Metropolitan Area. In addition to weight discrepancies, this study examined the degree to which the predisposition to experience anxiety predicts SPA. A pilot study was first conducted to validate the SPAS in a sample of 197 gay/bisexual men and lesbian/bisexual women from a New York City Gay and Lesbian Pride event in June 2001. Next, a total of 239 gay/bisexual men and lesbian/bisexual women completed a paper-and-pencil survey at the same event in June 2002. Results indicate that although lesbians/bisexual women reported greater weight discrepancies than the gay/bisexual men in the sample, gay/bisexual men reported similar levels of Body Dissatisfaction and SPA as the lesbian/bisexual women. Actual:ideal weight discrepancies were found to predict Body Dissatisfaction scores and actual:ought

weight discrepancies were found to predict SPAS scores. Once trait anxiety was added into the regression equation, actual:ought weight discrepancies did not contribute to the prediction of SPAS; however Body Dissatisfaction and trait anxiety scores accounted for a total of 60% of the variance in SPAS scores. This study used the principles of the self-discrepancy theory (Higgins, 1987) to help understand different types of affect associated with perceptions of body weight. Although the theory was supported, the focus on specific self-beliefs and self-guides regarding body weight resulted in a high correlation between the two weight discrepancy variables that were measured. Future research should continue to use the self-discrepancy framework to study body concerns as it offers a parsimonious solution to a complex issue. Utilizing the Selves Questionnaire (Higgins, Bond, Klein, & Straumann, 1986) to obtain global attributes may reduce the correlations observed between the actual:ideal and actual:ought discrepancies and provide a more complete approach to studying body concerns such as body dissatisfaction and SPA.

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Chapter 1

INTRODUCTION

There seems to be a paradox in America--although many American men and women strive to achieve "the ideal" body, the majority of American adults (64%) are either overweight or obese (Flegal, Carroll, Ogeden, & Johnson, 2002). In Western media, women are often portrayed as thin and men are often portrayed as trim and muscular (Brownell, 1991; Kilbourne, 1994). Research by Smolak and Levine (1996) confirms the theory that men and women derive their ideal standard through socio-cultural influences and those who do not match up to the standard, as portrayed in the media, may face social and psychological consequences. Wolf (1992) argues that the media images of physical perfection oppress and enslave women who do not look like the models in these images. Wolf goes on to state that images of "the supermodel" limit and define what it means to be a woman and pit women against one another, limiting the power that women have in our society. Sanford and Donovan (1985) propose that women get the message early in life that they must "look good...to please men" (p.23). But Pope, Phillips, and Olivardia (2000) argue that there are also social consequences for men who do not possess the ideal body presented by the media. Pope et al. suggest that "supermale" images in modern media influence men's roles in society by linking male appearance to social, financial, and sexual success.

In addition to, or as a result of, these social consequences are psychological consequences. Because the cultural standard for thinness influences the way that many Americans perceive their bodies (Bardo, 1993; Bartky, 1990), many men and women express dissatisfaction with their body and are in constant pursuit of the ideal body

(Garner & Kearney-Cooke, 1997; Rodin, Silberstein, & Striegel-Moore, 1985). Dissatisfaction with the body is associated with negative health behaviors such as poor eating habits and over exercising (Pope et al. 2000; Striegel-Moore, McAvay, & Rodin, 1986), low-self esteem (Hawkins, Turrel, & Jackson, 1983), and depression (Noles, Cash, & Winstead, 1985). Hart, Leary, and Rejeski (1989) postulate that those who believe their body is "objectively unattractive", or those who hold "unrealistic perceptions of their physique" may be chronically concerned with how others view their body and may experience social physique anxiety (SPA). Whereas body dissatisfaction relates to people's perceptions of and feelings about their body, SPA relates to people's concerns with *others'* perception of their body.

The perceptions we have of our bodies are influenced by physical, social and cultural factors such as gaining weight, being rejected by others, being teased during childhood, and comparing oneself to the ideal media images. Social science research has shown that these factors influence the self-concept which plays a major role in vulnerability to body concerns (Cash & Green, 1986; Lerner & Karabenick, 1974; Makus, Hamil, & Sentis, 1987) such as body dissatisfaction and SPA.

The self-concept is comprised of all of the thoughts and beliefs we have about who and what we think we are (James, 1890). Disturbances in the self-concept are thought to underlie body-image distortion (Sugarman, Quinlan, & Devenis, 1982). The self-discrepancy theory (Higgins, 1987) posits that different types of discrepancies within the self are associated with vulnerability to feelings of dissatisfaction, disappointment, fear, and worry. This present study will apply principles of the self-discrepancy theory (Higgins, 1989) to examine specific discrepancies between self-beliefs and self-guides

for body weight and the two different types of body concerns discussed above, namely body dissatisfaction and SPA.

Although many theories exist that can be applied to study discrepancies within the self, the self-discrepancy theory was chosen as the theoretical framework for this study over other competing models because the self-discrepancy theory clearly defines the affective responses associated with different types of self-discrepancies. Whereas the self-discrepancy theory clearly addresses these affectively based attitudes, competing theories such as cognitive dissonance theory (Festinger, 1957) and self-perception theory (Bem, 1972) are less clear about affect as they are rooted in cognitively and behaviorally based attitudes.

For example, cognitive dissonance theory (Festinger, 1957) holds that when attitudes and behaviors are inconsistent (or "dissonant"), people feel uneasy and are motivated to make them consistent. According to the theory, there are three ways to reduce or eliminate dissonance within the self. First, one can reduce the importance of the dissonant beliefs. Next, one can add more beliefs so to outweigh the dissonant beliefs. Finally, one can change the dissonant beliefs or the behavior so that they are consistent. Self-perception theory (Bem, 1972) suggests that when situations occur in which people are unsure about their attitudes, individuals will generally observe their own behavior to infer their attitude. Although these theories are well established in the psychological literature, the theories lack clarity regarding the precise affective responses associated with dissonance between attitudes and behavior.

Higgins (1987) developed the self-discrepancy theory to identify the affective responses associated with discrepancies within the self. The self-discrepancy theory was

therefore chosen over cognitive dissonance theory (Festinger, 1957) and self-perception theory (Bem, 1972) as it provides a useful model for this study that seeks to determine the relationship between body concerns (feelings of *dissatisfaction* and *anxiety* about the body) with weight-related self-discrepancies.

Self-Discrepancy Theory

In order to define the specific affective responses associated with self-discrepancies, Higgins (1987) argued that there are three domains of the self. These domains are the actual self, ideal self. and ought self. The actual self consist of the beliefs one has about the attributes that he/she possesses. The ideal self is comprised of attributes that the individual would like to ideally possess. The ought self is comprised of attributes that the individual believes he/she is obligated to possess. Whereas beliefs about the actual self are referred to as self-beliefs, beliefs about the ideal self and ought self are referred to as self-guides.

In addition to these self-beliefs and self-guides, Higgins (1987) argues that each individual possesses a set of "own" and "other" standpoints. For instance, individuals possess a self-guide about his/her ideal body weight (own ideal) and a self-guide about what others think the appropriate body weight is for that individual (others ideal). A system of six different self states are therefore formed setting the foundation for the self-discrepancy theory (see Figure 1).

Unlike the competing theories discussed earlier, the self-discrepancy theory identifies the different types of emotional discomfort that are produced by discrepancies between self-belief and self-guides. Examples of the different combinations of

discrepancies and their affective responses are presented in Figure 2. The next two sections will explore how cultural expectations regarding body weight may contribute to beliefs about actual (own) and ideal (own) weight and actual (own) and ought (other) weight and how the discrepancies between these beliefs could result in body dissatisfaction and SPA. For ease of discussion, the discrepancies will be referred to as actual:ideal and actual:ought weight discrepancies, respectively.

Actual:Ideal Weight Discrepancy

While many American men and women may feel pressure to conform to the ideal body size (Nemeroff, Stein, Diehl, & Smilack, 1994; Pruzinsky & Cash, 1990) attaining this ideal is difficult, if not impossible, as the media images of women and men have become thinner and more muscular while the percentage of overweight or obese American adults continues to increase. For instance between 1959 and 1978, the body size and weight of Playboy centerfolds and Miss America Pageant contestants have decreased dramatically (Garner, Garfinel, Schwart, & Thompson, 1980). Decreases in female models' body size and weight were found to continue throughout the late 1980's as measured by the body size of models in popular women's magazines (Wiseman, Gray, Mosimann, & Ahrens, 1992). In fact, it was found that from 1978 through 1998, seven out of every ten women who appeared as a Playboy centerfold could be classified as clinically underweight (Katzmarzyk & Davis, 2001).

While female models have grown more slender, the male physique has grown more lean and muscular in much of popular culture. For example, Pope, Olivardia, Gruber, and Borowiecki (1999) examined the evolution of male action figures and super

heroes from 1964 through the late 1990's. It was found that when the size of the 1991 version of the G.I. Joe action figure was converted to life size measurements, its waist shrunk by 3 inches, the biceps grew by 4 ½ inches and the abdominal muscles became well defined compared to the 1964 version of the action figure. Changes in the portrayal of the male physique in the media were also apparent in the centerfold models of Playgirl magazine. Over the course of the past 25 years, it was estimated that the average centerfold shed approximately 12 pounds of body fat and packed on approximately 27 pounds of muscle mass (Leit, Pope, & Gray, 2001).

Although the Western standard for women and men may be a thin or muscular physique, the reality is that the majority of American adults are overweight and this majority seems to be growing. The 1999-2000 National Health and Nutrition Examination Survey (NHANES), prepared by the Centers for Disease Control and Prevention (CDC, 2000), found that 31% of American adults (aged 20 or over) meet the CDC's definition of obesity while 64% meet the criteria for being considered overweight. These percentages represent a marked increase in those overweight or obese compared to just a decade ago. The percentage of Americans who were classified as obese and overweight in 1994 was 23% and 56%, respectively.

It has been stated that as the number of overweight and obese American adults grows, dissatisfaction with the body is "increasing at a faster rate than ever before" (Garner & Kearney-Cooke, 1997; p. 34). One explanation for this could be that as the discrepancy between actual weight and ideal weight grows, one is more likely to become dissatisfied with the body. Research on self-guides and body concerns shows that body dissatisfaction is associated with the belief that physical attributes do not meet a

personally relevant ideal standard (Cash & Green, 1986; Lerner & Karabenick, 1974; Lerner, Karabenick, & Stuart, 1973). More recently it was found that discrepancies between self-beliefs and self-guides were associated with vulnerability to body dissatisfaction and disordered eating (Straumman, Vookles, Berenstein, Chaiken, & Higgins, 1991). Specifically, actual:ideal self-discrepancies were associated with body dissatisfaction. Based on these observations, it is hypothesized that actual:ideal *weight* discrepancies will also predict body dissatisfaction. In order for affective responses to be observed when discrepant beliefs exist, the self-beliefs must be relevant to the individual (Higgins, 1989). Therefore, the importance that the individual places on the relevance of having a fit body is likely to play a role in the relationship between actual:ideal weight discrepancies and body dissatisfaction.

Actual:Ought Weight Discrepancy

Surely not all individuals desire to achieve the "ideal" body; however, some individuals may feel pressure or feel that they *ought* to present themselves in a certain way to gain social approval and avoid negative reactions from others (Goffman, 1959; Leary, 1992; Schlenker, 1980). Impression management refers to the processes associated with monitoring and controlling how one is perceived by others (Goffman, 1959). Higgins (1989) posits that a discrepancy between who we think we are and who we think others think we ought to be is associated with feeling threatened and feelings of fear. So how does this apply to our perceptions about the body?

Cultural preferences for thinness and believing that weight is volitional (e.g. under the individual's control) lead many people to believe that being "fat" is bad

(Monteath & McCabe, 1997). Those who believe that "fatness" is the individual's fault are likely to stigmatize "fat" people (DeJong 1980; Weiner 1986). One explanation for this could be the "ultimate attribution error", a social psychological principle that states that individuals believe disadvantage groups are responsible for negative aspects of their situation (Pettigrew, 1979). These beliefs are thought to contribute to prejudice and discrimination against "fat" people on the societal level and feelings of fear, guilt, and shame on the individual level (Crandall, 1994). One example of this prejudice in society takes the form of discrimination in the workplace (Rothblum, Brand, Miller, & Oetjen, 1990). Those who are obese tend to earn less, have a lower socio-economic status (Sobel & Stunkard, 1989), and are less likely to be promoted to a higher-level position (Larkin & Pines, 1979).

Being overweight or obese is associated with being perceived as unattractive (Harris, Harris, & Bochner, 1982; Wooley & Wooley, 1979) and morally and emotionally impaired (Keys, 1955). Just as those who are overweight or obese are unlikely to be perceived as physically attractive, they are also unlikely to be associated with positive characteristics and personal qualities that are assigned to those who are perceived as physically attractive. These include being perceived as more popular, healthy, and sexually desirable (Berscheid, Dion, Walster & Walster, 1971; Dion, Berschied, & Walster, 1972; Singh, 1995a, 1995b; Walster Aronson, Abrahams, & Rotterman, 1966).

On the personal level, Hart et al. (1989) believes that the stigma attached with being overweight or obese and the importance that people place on what others think of their body, results in the fear of having the body negatively evaluated by others:

> "Many people--those who think others view their bodies favorably or who are disinterested in others' reactions to their physiques--may rarely experience social physique anxiety. Other individuals, however, may be chronically concerned with how others view their physiques, either because their bodies are objectively unattractive or because they hold an unrealistically negative perception of their physiques." (p. 96).

Straumann et al. (1991) demonstrated that discrepancies between actual:ideal beliefs were strongly related to body dissatisfaction whereas discrepancies between actual:ought beliefs were strongly related to eating disordered behaviors which in turn are linked to such emotions as guilt, shame, and fear. It is hypothesized that actual:ought weight discrepancies will predict SPA, as SPA is the fear of having the body negatively evaluated by others. In order for affective responses to be observed when discrepant beliefs exist, the self-beliefs must be relevant to the individual (Higgins, 1989). Therefore, the importance that the individual places on what others think of his/her body is likely to play a role in the relationship between actual:ought weight discrepancies and SPA.

Statement of the Problem

The published research that examines SPA covers a wide range of areas such as self-presentation concerns (Crawford & Eklund, 1994; Eklund & Crawford, 1994; Leary, 1992; McAuley & Burman, 1993; Spink, 1992), eating disorder traits and behaviors (Frederick & Morrison, 1996; Thompson & Chad, 2002), and body concerns (Russell,

2002; Williams & Cash, 2001). While this research involves a wide array of body-related constructs, it is limited to a narrow segment of those living in the United States, namely physically active college-age women.

Regardless, the published SPA research that involves both men and women finds that college-age women report greater SPA than men (Frederick & Morrison, 1996; Hart, et al., 1989; Martin & Mack, 1996; McAuley, Bane, Rudolph, & Lox, 1995; McAuley, Marquez, Jerome, Blissmer, & Katula, 2002). However, it can be argued that SPA is not only present in women, but in any group that is pressured to present themselves in a certain way. Striegel-Moore, Silberstein, & Rodin (1986) believe that the subculture in which an individual lives and socializes may increase or reduce the internalization of social norms regarding the body.

It then follows that if college-aged women experience greater SPA than their male counterparts because many women internalize social norms that suggest that they must have a thin physique in order to get others' approval, then men's SPA scores should increase in a subculture in which a fit or muscular body is presented as the norm for men. One such subculture in which the pressure for men to appear fit or muscular may influence SPA is in the gay community. Signorile (1998) uses the term "body fascism" to describe the obsession that some members of the gay community have with physical perfection:

> "Body fascism can perhaps be defined as the setting of a rigid set of standards of physical beauty that pressures everyone within a particular group to conform to them. Any person who doesn't meet those very specific standards is deemed

> physically unattractive and sexually undesirable. In a culture in which the physical body is held in such high esteem and given such power, body fascism then not only deems those who don't or can't conform to be sexually less desirable, but also deems an individual completely worthless as a person..(p. 28)."

These statements were presented in book published from qualitative interviews with men from "gay ghettos" in New York City, Miami, and Los Angeles. The pressure to present an attractive or physically fit physique in some sectors of the gay community has been supported in empirical studies. For example, compared to heterosexual men, gay men have been found to be more vulnerable to sociocultural pressure for thinness, body and appearance-related concerns, and negative perceptions of appearance (Strong, Williamson, Netemeyer & Geer, 2000). Gay men also report greater body dissatisfaction than heterosexual men (Gettleman & Thompson, 1993; Siever, 1994). Beren, Hayden, Wilgley, and Grilo (1996) found that compared to heterosexual men, gay men report greater body dissatisfaction whereas lesbians reported similar levels of dissatisfaction as heterosexual women. This suggests that the values of the gay and lesbian community may not protect lesbians against body dissatisfaction and may in fact facilitate body dissatisfaction in gay men.

It has also been suggested that gay men, like heterosexual women, are more prone to body-image disturbances and maladaptive eating behaviors (Beren et. al, 1996; Herzog, Newman, & Warsaw, 1991; Siever, 1994; Silberstein, Mishkind, Streigel-Moore, Timko, & Rodin, 1989). One explanation for this could be that like heterosexual women, some gay men internalize norms that they are exposed to in their community. McKinley

and Hyde (1996) suggest that sociocultural influences lead some individuals to: "internalize cultural body standards" (p. 183). Signorile (1998) implies that as physical appearance norms become internalized, expectations are placed on the self and others:

> "...it is not difficult to see that many, if not most, of us become both the rigidly objectified as well as the rigid objectifier, holding ourselves and each other to rigid standards of physical beauty (p. 16)."

Although researchers have investigated body dissatisfaction in the gay community, to date there remains no research on SPA in this population. In addition, researchers have examined the relationship between actual:ideal discrepancies and body dissatisfaction but the relationship between actual:ought discrepancies and feelings of anxiety associated with the body has remained, for the most part, unexplored in the psychological literature. The research studies that have been published in this area have found that weight loss was more strongly related to actual:ought than to actual:ideal discrepancies (Higgins, 1989).

Purpose of the Study

The primary purpose of this study is to validate the SPAS in a sample of gay/bisexual men and lesbian/bisexual women then determine whether specific discrepancies between self-beliefs and self-guides for body weight will predict body dissatisfaction and SPA in a convenience sample of the gay, lesbian, and bisexual community in New York City.

Chapter 2

LITERATURE REVIEW

In the last chapter, it was demonstrated how discrepancies between self-beliefs and self-guides regarding body weight could be used to study body concerns such as body dissatisfaction and with SPA. Because the relationship between the self concept and body dissatisfaction has already been documented in the psychological literature (Lerner, et. al, 1973; Padin, Lerner, & Spiro, 1981; Rosen & Ross, 1968), this section will be focused on the research associated with anxiety as it relates to body-image. This chapter will begin with a brief history of the development of anxiety concepts throughout the 1900's then proceed with a summary of the relevant SPA literature.

Anxiety

Freud (1924) defined anxiety as an unpleasant affective state or condition that includes physical outcomes such as rapid heart palpitations and sweating. Freud viewed this type of anxiety as a fundamental phenomenon that is the central problem of neurosis (Freud, 1936). Freud (1936) also acknowledged that anxiety could occur from a situation perceived as threatening. These two notions of anxiety formed the basis for two traditions of psychological research on anxiety: anxiety as a personality construct or acute emotion and anxiety as a mental disorder or illness.

Freud's (1936) notion of anxiety, as it pertains to a perceived threat, remained relatively unexplored until the late 1950's and early 1960's. With advances made in psychometrics, Cattell and Scheier (1961) identified and described situational and characterological anxiety, which later became known as state and trait anxiety. The

difference between these constructs lacked clarity until Spielberger defined state anxiety as "a temporal cross-section in the emotional stream of life of a person" consisting of "subjective feelings of tension, apprehension, nervousness, and worry with activation of the autonomic nervous system" (p. 4; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). Acknowledging that state anxiety is often transitory, Spielberger noted that anxiety may endure over time so long as threatening conditions are perceived to be present. Lazarus (1991) also argued that a cognitive appraisal of threat is a prerequisite for the experience of state anxiety.

To better define trait anxiety, Spielberger applied Atkinson's (1964) and Campbell's (1963) view of personality traits; defining trait anxiety as "an enduring or stable characteristic of a person." Individuals who exhibit trait anxiety are thought to be chronically anxious and constantly experience tension regardless of the situation. Individual differences in levels of trait anxiety and past experiences of it account for the frequency, intensity, and probability of future anxious reactions. Spielberger, Gorsuch, and Lushene (1970) posit that those with greater levels of trait anxiety are more likely to experience elevations in state anxiety when in situations that are perceived as threatening.

A recently coined term that is used to describe the interaction between trait and state anxieties is context-specific anxiety. Context-specific anxiety is a conscious uneasiness that is specific to a situation perceived as a threat by an individual who may be highly anxious. Examples of context-specific anxiety include dating anxiety, audience anxiety, and social anxiety. Although SPA is defined by Hart et al. (1989) as a subtype of social anxiety, SPA can also be classified as a context-specific anxiety as SPA involves both contextual (social settings in which the body is on display) and personal

(chronic concern about the body) elements. Although researchers have been discussing anxiety since the 1900's, SPA has only been studied for a little more than two decades.

Social Physique Anxiety

Hart et al. (1989) first posited that people with "objectively unattractive" bodies or those who hold "unrealistic perceptions" of their physique might be chronically concerned with how others view their body. SPA is based on self-presentation theory (Goffman, 1959), or that individuals strive to create desirable impressions in social encounters while at the same time trying to avoid undesirable impressions (Leary, 1992). Hart et al. suggest that SPA may deter some individuals from exercising but drive others to exercise to prevent negative outcomes in the future.

Hart et al. (1989) developed and validated a 12-item Social Physique Anxiety Scale (SPAS) to measure SPA. Convergent validity was demonstrated using data from a sample of 195 university students (97 women and 98 men). As hypothesized by Hart et al., SPA was moderately correlated with other context-specific types of anxiety and body-image constructs such as social anxiousness (Leary, 1983b), fear of negative evaluation (Leary, 1983a), and body esteem (Franzoi & Shield, 1984). Discriminant validity was demonstrated by showing that the SPAS was not associated with social desirability.

Predictive (criterion) validity was demonstrated by showing that during a fitness evaluation, woman scoring high on the SPAS reported: 1) more stress; 2) less comfort; and 3) more negative thoughts about the body than women who scored low on the SPAS. Since Hart et al.'s (1989) development and validation study, SPA has been associated with body and fitness-related constructs such as: body-image (Hart et al., 1989; Petrie,

Diehl, Rogers & Johnson, 1996), characteristics of the physique (Treasure, Lox, & Lawton, 1998), and attitudes towards exercise behavior and exercise settings (Eklund & Crawford, 1994; Frederick & Morrison, 1998).

Although the SPA literature has grown over the past two decades, it is lacking in some important areas. First, Hart et al. (1989) demonstrated predictive validity of the SPAS in a subset of women by giving these women a fitness evaluation and measuring psychological states such as stress, comfort, and negative thoughts about the body. Although the psychological states measured by Hart et al. during the fitness evaluation were appropriate for the purpose of validating their scale in women, to date predictive validity of the SPAS has not been determined in a male sample. Therefore, demonstrating construct validity of the SPAS in a sample that includes both men and women would help to advance the SPA literature. Using a measure of trait anxiety, rather than a fitness evaluation, to demonstrate convergent validity would also inform us about the degree to which SPA is related to a predisposition to experience anxiety. Based on Hart et al.'s conceptualization of SPA, trait anxiety scores are expected to predict SPAS scores.

Second, although much of the SPA literature examines the relationship between SPA and body-related constructs (such as body dissatisfaction, exercise behavior, and body size and weight), theoretically-based research is lacking. Applying Higgins' (1987) self-discrepancy theory provides a theoretical framework that can be used to help understand the complex relationship between SPA and other body concerns. Again, it is expected that specific weight discrepancies will differentiate feelings of body

dissatisfaction from feelings of SPA (the fear of having the body negatively evaluated by others).

The remainder of this chapter will be focused on summarizing the SPA literature that is relevant to this study of body concerns. This review of the SPA will be used to illustrate some patterns found in the empirical literature. The summary of the SPA literature will be grouped into four broad categories, these categories are: 1) physical characteristics; 2) body concerns; 3) traits; and 4) psychometric properties of the SPAS.

Physical Characteristics

Gender Comparisons

The published SPA research finds that college-aged and middle-aged heterosexual women consistently score higher on the SPA than their male counterparts (Frederick & Morrison, 1996; Hart et al., 1989; Martin & Mack, 1996; McAuley et al., 1995; McAuley et al., 2002). This provides evidence that, in general, heterosexual women report greater SPA than heterosexual men; whether these differences exist between gay/bisexual men and lesbian/bisexual women is unknown.

Age

When it comes to SPA across different age groups, SPA seems to increase throughout female adolescence. Positive correlations have been found between SPA and age in adolescent and pre-adolescent girls (Thompson & Chad, 2002) and adolescent female gymnasts (McAuley & Burman, 1993). From late adolescence to middle-age, the relationship between SPA and age is not so clear as McAuley, Bane, and Mihalko (1995)

found that SPA in middle-aged men and women was comparable to that of college-aged men and women; however, Treasure et al. (1998) found that middle-aged women (>45 years of age) reported lower levels of SPA compared to younger participants. The conflicting results from these two studies could be due to sample characteristics as Treasure et al. measured SPA in sedentary obese individuals whereas McAuley et al. (1995) studied active adults.

Race/Ethnicity

Few studies have examined the relationship between SPA and race/ethnicity. In Russell's (2002) study of physically active men, Caucasian men had significantly greater SPA than African-American men after controlling for body size as measured by the Body Mass Index (BMI). In a study examining mean differences in SPAS scores between Caucasian and African-American women (Reel, 2000), no differences were found. The scarcity of research in this area indicates the need for more research in ethnic minority populations.

Body Size and Shape

With regard to body size and shape among women, women who report greater SPA have been found to weigh significantly more (Fredrick & Morrison, 1996; Hart et al., 1989; Spink, 1992), rate themselves as larger, are perceived by others as larger, have significantly higher levels of body fat (Eklund & Crawford, 1994; Hart et al., 1989; Hausenblas & Fallon, 2001; Thompson & Chad, 2002; Treasure et al., 1998; Yin, 2001), and are significantly taller than women who score low on SPA (Hart et al., 1989).

College-aged men who were either overweight or underweight reported greater SPA compared to men with normal body weight (Frederick & Morrison, 1996). These differences were also found in Caucasian men but not African-American men (Russell, 2002).

Body Concerns

Body-image begins with our awareness and exploration of the body as an infant and continues throughout adolescence and the lifespan. Petrie et al. (1996) report that compared to those with low SPA, male and female individuals with high SPA are more likely to demonstrate body dissatisfaction and low body esteem. Hart et al. (1989) showed that SPA and body-esteem are correlated in the negative direction—negative feelings about the body are associated with greater SPA.

SPA has been found to correlate with body dissatisfaction among young girls (Thompson & Chad, 2002), college-aged men and women (Hart et al., 1989), and college-age athletes and exercisers (Krane, Waldron, Stiles-Shipley, & Michalenok, 2001). The correlation between SPA and body dissatisfaction is also found for physically active African-American and Caucasian men (Russell, 2002).

Martin et al. (1997) argued that there is a potential confound between the SPAS and measures of body dissatisfaction as Items 1 and 5 of the SPAS tap *personal* feelings about the body and lack a *social evaluative* component. Martin et al. then proposed a 9-item SPAS but it has rarely been found in the SPA literature.

Traits

SPA is associated with a number of context-specific traits such as perceived physical ability, self-presentation confidence, sport competition trait anxiety, public body consciousness and self-perception of body attractiveness (Kowalski, Crocker, & Kowalski, 2001; Martin & Mack, 1996; McAuley & Burman, 1993). Petrie et al. (1996) also found that SPA was related to specific traits. Women who were exposed to images of thin attractive women reported greater SPA compared to women who were not exposed to these images. Of the women who viewed the attractive images, those reporting greater adherence to "an attractive ideal" reported greater level of SPA than those with less adherence to this "an attractive ideal." Although researchers have examined the relationship between SPA and context-specific traits, the area of global traits (e.g. trait anxiety) remains unexplored in the published SPA literature.

While the empirical literature on SPA was growing, researchers were questioning the factor structure of the SPAS. Following is a review of the research studies that investigated the psychometric properties of the SPAS.

Psychometric properties of the SPAS

The controversy over the psychometric properties of the SPAS began when McAuley and Burman (1993) failed to support Hart et al.'s (1989) unidimensional SPAS model with a confirmatory factor analysis in a sample of female gymnasts. It was suggested that the inclusion of "more pertinent items" or "the exclusion of some items" might help support Hart et al.'s unidimensional model. Item 2 of the SPAS was problematic in some samples as it had the weak factor loading (Eklund & Crawford,

1994; McAuley & Burman, 1993). Eklund, Mack, and Hart (1996) concluded, based on their empirical evidence, that the best fitting model was a two-factor model consisting of two correlated factors. These two factors were labeled Expectation of Negative Evaluation and Physique Presentation Comfort.

Conceptually, Eklund et al. (1996) suggested that when compared to the items on the Expectation of Negative Evaluation factor, the items of the Physique Presentation Comfort factor were more closely representative of the SPA construct as defined by Hart et al. (1989). The two-factor structure was supported in a sample of men and women after the problematic item (Item 2) was moved from the Physique Presentation Comfort factor (Petrie et al., 1996) to the Expectation of Negative Evaluation factor (Eklund, Kelley, & Wilson, 1997). This proposed model did not end the debate as Motl & Conroy (2000) found the two-factor model was a methodological artifact with no conceptually meaning. Rather, the two factors distinguished positively worded items from the negatively worded items. Clearly the psychometric properties of the SPAS warrant further exploration.

Summary

As discrepancies between who we think we are and who we would like to be grow farther apart, disturbances to our self-concept are likely to occur (Higgins, 1987). The psychological constructs which have been developed to measure body concerns mostly consist of affective components associated with self-beliefs (e.g. body-esteem and dissatisfaction with the body); SPA introduces a social component to the measurement of body concerns (fearing that others will negatively evaluate one's body).

The empirical research on SPA is limited as it mostly examines college-aged heterosexual men and women. Although men were represented in some samples, most of the SPA literature is based on studies that enroll female undergraduates. The SPA literature examines physical and personal characteristics--to date there remains no published research that examines whether SPA can be predicted by a person's disposition to experience anxiety. Based on Hart et al.'s (1989) conceptualization of SPA, it is expected that those with greater trait anxiety will report greater SPA than those with lower trait anxiety.

The SPA literature also lacks theoretically-based models. The self-discrepancy theory, as presented in Chapter 2, links different body concerns to specific discrepancies between self-beliefs and self-guides. The present research will determine if this model offers an economical solution to a complex area of research. As a first step in the application of the self-discrepancy theory to the study of body concerns, the following hypotheses will be tested.

Statement of Hypotheses

H1: Actual:Ideal weight discrepancies will predict body dissatisfaction.

H2: Actual:Ought weight discrepancies will predict SPA.

H3: Trait anxiety will predict SPA.

Significance of the Study

Examining body concerns and SPA with a well established theoretical framework would add to the psychological literature by providing a model that can be used to study body concerns. In addition, determining whether and to what degree SPA is predicted by

trait anxiety will provide information that can be used in the development of interventions aimed at increasing exercise behavior through the reduction of SPA.

Studying this area of research in the gay/bisexual men and lesbian/bisexual women is important because members of the gay, lesbian, and bisexual community remain an underrepresented population in the published psychological literature. This is important because body concerns in general are not well understood in these communities and the existing research shows that the community does not protect gay/bisexual men and lesbian/bisexual women from body-image related concerns. Further, individuals living with HIV/AIDS may be sensitive to changes in body weight, shape, and size and therefore may have increased concerns with the appearance of the body. The study of SPA in communities hit hard with the HIV/AIDS epidemic becomes especially important as there remains no published research in this area. In addition to the values of this research in the gay, lesbian, and bisexual community this study will broaden the application of the SPAS by answering questions about the factor structure of the SPAS and challenge whether women are more likely to report greater SPA than men.

Chapter 3

RESEARCH METHODS AND RESULTS

As the psychometric properties of the SPAS are still in question, two independent samples were recruited. The first sample (Phase I) was recruited in June 2001 to provide data to validate the SPAS in a sample of the gay, lesbian, and bisexual community in the New York Metropolitan Area. The second sample (Phase II) was recruited in June 2002 and provided data to test the hypotheses stated in the previous chapter.

METHODS

Participants

Attendees of the New York City Pridefest 2001 and 2002 were recruited to complete a street survey about body concerns in the gay, lesbian, and bisexual community. The Pridefest is a gay, lesbian, bisexual, and transgender Pride event held in New York City each year during the last week of June. Pridefest is a street fair at the end of the parade route that consists of booths offering food, drinks, music, performances, and information on various organizations that provide services for the community. Other Pride events include the Pride parade and rally. It is estimated that each year the Pride parade draws approximately 350,000 spectators and an additional 250,000 parade participants.

The surveys and consent forms explaining these research studies were made available at a booth at Pridefest rented by the Center for HIV/AIDS Educational Studies and Training (CHEST) on the days of the Pride parade and Pridefest. CHEST, a research center focusing on the health issues of gay and bisexual men and women, is well known

for its research within the gay community. A rotating shift of CHEST personnel and the lead investigator of this study staffed the CHEST booth throughout the day. Some CHEST personnel approached the Pridefest attendees as they passed the booth while other CHEST personnel remained at the booth to: 1) collect completed surveys; 2) explain the ongoing health research studies at CHEST; and 3) answer questions that the attendees may have had about the survey and research center. A copy of the consent form was made available to all respondents. The only criteria for participation in the study were that the respondents were 18 years of age or older and willing to complete the ten-minute anonymous survey.

Although data were not collected on the exact number of attendees who refused to complete the survey, the survey was well received by and large. It is estimated that for each phase of data collection, less than 5% of those who were approached refused to complete the survey. CHEST personnel reported that the reasons given by attendees for not agreeing to complete the questionnaire included: 1) the survey was too lengthy; 2) the topic was not of interest; and 3) the attendee didn't have the time to complete the survey. A complimentary 12-ounce bottle of cold spring water was offered to those who completed the survey. Approximately 5% of those completing the survey refused the incentive. Attendees who directly asked for spring water were given a complimentary bottle of water whether they completed the survey or not, this consisted of approximately 10 attendees each year.

Phase I: Validation of the SPAS

A total of 239 respondents completed the paper-and-pencil survey at Pridefest 2001. The goal of this phase was to determine which SPAS model is valid in a sample of the gay community. Therefore, only those who self-identified as gay, lesbian, or bisexual and fully completed the SPAS were included in the pilot analyses (n=197). Three transsexual respondents completed the survey but were not included in these analyses. A confirmatory factor analysis (CFA) was performed to determine if the two-factor SPAS model (Eklund et al., 1997) fit the data better than the original 12-item unidimensional model (Hart et al., 1989). The models were first compared to an independence model and saturated model to determine the goodness of fit for each model. The two models were then compared to each other using a chi-square degree of freedom difference test to see if the models were significantly different from each other.

Phase I-Measures

The instruments used in this phase were similar to those administered by Hart et al. (1989) during the development and validation of the SPAS. The only difference is that Hart et al. used the Body Cathexis Scale (Secord & Jourard, 1953) and Langston's Body Size/Weight and Body Cathexis subscale (1979) as measures of body leanness and body esteem whereas this study used BMI as a measure of leanness and a more recently developed measure of body-esteem, the Body Esteem Scale (BES; Franzio & Shield; 1984). These measures were chosen over those administered by Hart et al. as the BES improved upon the Body Cathexis Scale by deleting some redundant items and adding more pertinent items. Langston's Body Size/Weight and Body Cathexis subscale (1979)

was only validated for women and could not be found in the published literature; therefore the more widely used measure of body leanness (BMI), was calculated using self-reported height and weight.

Sociodemographic

Sociodemographic variables were measured using self-reported age (18 years of age and older), gender (1=male, 2=female, and 3=transgender), race/ethnicity (1=African-American, 2=Latino/a, 3=Caucasian, 4=Mixed, and 5=Other), sexual orientation (1=Gay, 2=Lesbian, 3=Bisexual, and 4=Heterosexual), and HIV serostatus (1=HIV-positive, 2=HIV-negative, 3= Don't know HIV status).

Height, Weight and Body Mass Index (BMI)

As noted earlier in this chapter, respondents were asked to self-report height and weight. With this information, a measure of BMI was calculated. BMI expresses the relationship of weight-to-height using a mathematical formula in which a person's body weight in kilograms is divided by one's height in meters squared (i.e., weight/height^2). BMI is an acceptable measure of body size and leanness (Keys, Fidanza, Karvonen, Kimura, & Taylor, 1972). Self-reported height and weight have been found to be adequate for the purposes of research (Brooks-Gunn, Burrow, & Warren, 1988; Palta, Prineas, Bernman, & Hannan, 1982). Using the above calculation, individuals were classified into one of the following four groups: underweight (BMI of less than 18.5), normal weight (BMI = 18.5 - 24.9), overweight (BMI = 25.0 - 29.9), or obese (BMI=30 or greater). This system of classification is reliable but not foolproof as the BMI may

incorrectly classify heavily muscled individuals as obese. For example, professional athletes may be muscular with very little body fat, yet may have a BMI over 25. These individuals may weigh more than others at the same height but who have more body fat simply because muscle weighs more than body fat. To determine the extent to which this would effect the accuracy of the BMI measure, respondents were asked to self-report their current muscle build (1=Below average to 5=Above average). Only 4% of the sample (n=8) reported an above average muscular build, indicating that overly muscled individuals were not likely to confound the measurement of BMI in this study.

Exercise Behavior

Exercise behavior was measured using self-reported physical activity for the three months prior to the date of the paper-and-pencil survey. Exercise behavior was recorded using a yes/no response format. If exercise behavior was reported, the type of setting in which the physical activity occurred was measured using a yes/no format for the following categories: home, outdoors, gym/fitness setting, and aerobic/dance studio. For each of the exercise settings endorsed by the respondents, the average number of days per week and average number of hours per session of exercise were reported.

Social Physique Anxiety

The original 12-item SPAS was administered as developed by Hart et al. (1989) with Item 2 modified as recommended by Eklund et al. (1997). The 12-items were rated on a 5-point scale (1= Not at all true to 5=Extremely true) with possible total scores ranging from 12 to 60. The scale includes such statements such as: "I wish I wasn't so uptight about my physique/figure." Items 1, 5, 8, and 11 are reverse scored items.

Higher scores indicate a greater degree of SPA. The internal consistency of the 12-items ranges from .88 to .90 (Hart et al., 1989; McAuley & Burman, 1993).

Body Esteem

The Body Esteem Scale (BES; Franzoi & Shields, 1984) was used to measure feelings about the body. The BES consists of 35 items that list body parts and functions (e.g. chest, arms, stomach, body scent, etc...). The 35-items are rated on a 5-point scale (1=Strong negative feelings to 5=Strong positive feelings).

For female respondents, scores were calculated for the following three factors: Sexual Attractiveness (SA), Physical Condition (PC), and Weight Concern (WC). For male respondents, scores were calculated for the following three factors: Physical Condition (PC), Physical Attractiveness (PA), and Upper Body Strength (UBS). The three factors for each gender, as developed by Franzoi and Shield (1984), have internal consistency with Cronbach's alpha ranging from .83 to .94 (Cecil & Stanley, 1997; Franzoi & Shield, 1984). For each of these factors, a higher score represents greater esteem. Hart et al. (1989) found correlation coefficients for the SPAS and factors of the BES ranging from -.26 to -.82 indicating that as feelings about the body become more negative SPA increases.

Fear of Negative Evaluation

The Brief Fear of Negative Evaluation Scale (B-FNES; Leary, 1983a) is a 12-item version of the original 30-item true and false questionnaire that measures fear of being evaluated negatively by others (Watson & Friend, 1969). The scale includes such

statements such as: "I am afraid that others will not approve of me." The B-FNES uses a 5-point response format (1=Not at all characteristic of me to 5=Extremely characteristic of me) with scores ranging from 12 to 60. Items 2, 4, 7, and 10 are reverse scored items. Higher scores represent a greater fear of negative evaluation. The inter-item reliability of the B-FNES was found to be .90 with a test-retest reliability of .75 in a sample of undergraduates (Leary, 1983a). Hart et al. (1989) demonstrated that there is a moderate but non-significant correlation between the SPAS and B-FNES ($r = .35$; $p > .05$) and concluded that the SPA is related to, but conceptually distinct from, fear of negative evaluation. In other words, one component of the SPA construct may be fear of negative evaluation by others but SPA is likely to consist of other components such as having a poor perception of the body and placing importance on what others think of the body.

Social Anxiousness

The Interaction Anxiousness Scale (IAS; Leary, 1983b) is a 15-item instrument that measures social anxiousness that arises in contingent interpersonal interactions such as dating and other social situations. The items are rated on a 5-point scale (1=Not at all like me to 5= Extremely like me) with total scores ranging from 15 to 75. The scale includes such statements such as: "I usually feel uncomfortable when I am in a group of people I don't know." Higher IAS scores indicate greater social anxiousness. Items 3, 6, 10, and 15 are reverse scored items. The internal consistency of the IAS was found to be .88 with a test-retest reliability of .80 in a sample of undergraduate students. Hart et al. (1989) found that that social anxiousness was moderately correlated with scores on the SPAS ($r = .33$; $p < .05$).

Social Desirability

The Marlowe-Crowne Social Desirability Scale-Form C is one of the short forms developed by Reynolds (1982). The original 33-item scale was used extensively in personality psychology research from 1960 through the 1980's. The 13-item Marlowe-Crowne Form C uses a true/false response format and is highly correlated (r= .93) with the original Marlowe-Crowne Social Desirability Scale (Reynolds, 1982). The scale includes such statements as: "I sometimes feel resentful if I don't get my way." Items 1, 2, 3, 4, 6, 8, 11, and 12 are reverse scored items. The 13-item Form C Social Desirability Scale was found to have internal consistency with α =.80 (Reynolds, 1982). SPAS scores did not share a significant relationship with social desirability in Hart et al.'s (1989) study but a moderately small correlation between these measures were found in Petrie et al.'s (1996) sample.

ANALYSIS PLAN

Although Hart et al. (1989) conceptualized the SPAS as a unidimensional scale, a great deal of empirical research exists to support a two-factor model (Eklund et al., 1997). Therefore, a confirmatory factor analysis was performed on the 12-item SPAS using AMOS version 4.0 to determine if the data support a two-factor model. The two-factor model that was tested consisted of the Expectation of Negative Evaluation (ENE) factor (Items 2, 3, 4, 6, 7, 9, 10, and 12) and the Physique Presentation Comfort factor (Items 1, 5, 8, and 11). To confirm the factor structure, the two-factor model was tested against the fit of the original 12-item unidimensional model and the computer generated saturated and independence models. Once the best fitting model was determined, a

reliability analysis was performed in the Statistical Package for the Social Sciences (SPSS-Version 11.0) to determine the internal consistency of the SPAS for the entire sample of gay, lesbian, and bisexual respondents and the sample split by gender.

Convergent and Discriminant Validity

Correlations were used to demonstrate convergent and discriminant validity. Convergent validity was assessed using two measures that were originally used by Hart et al. (1989) in the validation study (IAS; Leary, 1983b and B-FNES; Leary, 1983a), a measures of body esteem (BES; Franzoi & Shields, 1984), and body size (BMI).

BMI was measured and used as a variable in the analyses of convergent validity as Hart et al. (1989) theorized that individuals might be "chronically concerned with how others view their physiques...because their bodies are objectively unattractive" (p. 96). Although it could be argued that "unattractive" could have different meanings to different people, it was implied by Hart et al. that "unattractive" referred to those overweight or obese. Discriminant validity was measured using correlations between the best-fitting SPAS model and social desirability.

Group Differences

Group differences in mean SPAS scores for gender, age, race, exercise groups, and BMI were calculated using t-tests for comparisons involving two groups and analysis of variance (ANOVA) for comparisons involving more than two groups. Post-hoc tests (using the Bonferroni method) were performed to identify groups that differed from each other when ANOVA analyses were significant. The Bonferroni method uses t-tests to

perform pairwise comparisons between group means but controls for overall error, the observed significance level is therefore adjusted for the fact that multiple comparisons are being made.

RESULTS- Phase I

Sample Characteristics

As can be seen in Table 1, 60% of the sample for Phase I self-identified as gay men, 24% self-identified as lesbian, and 16% of sample self-identified as bisexual (10% were men and 6% were women). The average age of the gay, lesbian, and bisexual respondents (n=197) was 37.02 (range=18 to 76; SD=11.13). Eleven percent of the sample reported being HIV+ (18 men and 4 women), 67% were HIV-, and the remaining 22% did not know their HIV serostatus. Fifty-five percent of the samples were Caucasian, 17% Latino/a, 11% African-American, and 17% self-identified in categories other than these three race/ethnicity groups. Almost three-quarters of the sample (74%) reported exercise behavior in the three months prior to the study. Based on self-reported measures of height and weight, the average BMI for the sample was 26.22 (SD=5.81) with no differences between the two genders or four HIV-status groups ($p<.05$). A total of 53% percent of the sample were classified as being overweight or obese. No differences for exercise were reported by gender but Caucasians were more likely to report exercise behavior than African-American respondents ($\chi^2=12.04$; $p<.001$).

Confirmatory Factor Analysis

Recommendations for choosing the "best" structural model when conducting confirmatory factor analyses can be found in the CFA literature (see Bollen and Long, 1993; Mulaik, James, Van Alstine, & Bennett; 1989; or Steiger, 1990). Steiger (1990) specifically discusses the level of subjectivity involved in the process:

> "In the final analysis, it may be, in a sense, impossible to define one best way to combine measures of complexity and measures of 'badness' of fit in a single numerical index, because the precise nature of the best numerical tradeoff between complexity and fit is, to some extent, a matter of personal taste. The choice of a model is a classic problem in the two-dimensional analysis of preference." (p. 179).

As Steiger (1990) illustrates, more than one numerical index is used to judge the balance between parsimony and goodness of fit for a model (parsimonious models are preferred over complex models and well fitting models are preferred over poorly fitting models). The AMOS software can calculate many of the measures that constitute the merit of a model including: the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI) otherwise knows as the Bentler-Bonett Non-normed Fit Index (NNFI), the Goodness-of-Fit Index (GFI), and the root mean square error of approximation (RMSEA).

In addition to these indices, the AMOS program produces the saturated and independence models which offer a perspective of how well the proposed model (default)

fits the data. The AMOS analysis compares the default model to that of the saturated model (which is guaranteed to fit the data perfectly as no constraints are placed on the data) and the independence model (which assumes the data is uncorrelated with each other). In this sense the independence model is the exact opposite of the saturated model, as it is expected to result in the poorest fit to the data. The proposed model in essence exists somewhere between the saturated model (most parsimonious best fitting model) and the independence model (most complex poorest fitting model). The Normed Fit Index (NFI) is a measure of the placement of the proposed model to that of the saturated and independent models. The NFI and other indices of fit are presented in Table 2.

When interpreting results from a CFA, the following are indices of a good fitting model: a non-significant chi-square value; a chi-square/degree of freedom ratio less than three and close to two (Bollen, 1989; Carmines & McIver, 1981; Ullman, 1996); a RMSEA between .00 and .05 (Browne & Cudeck, 1993); and GFI, CFI, NFI, and NNFI indices $\geq$ .90 (Bentler, 1990; Steiger, 1990).

Overall, the proposed two-factor higher order SPAS model fit the data well. The fit indices were adequate. For example, the NFI for the two-factor model was .97, illustrating that the proposed model lies 97% in the direction of the saturated model (most parsimonious or perfectly fitting model) or 3% toward the independence model (most complex or poorest fitting model). The unidimensional model lays almost 10% from the saturated model. A chi-square degree of freedom difference test indicated that the two-factor model was a significant improvement over the unidimensional model ($p<.000$).

It should be noted however that the two-factor model is in need of improvement as the chi-square coefficient was statistically significant and the RMSEA was slightly

above .05 (RMSEA=.08) with a lower bound value of .05 and an upper bound value of .10. Unlike traditional chi-square testing, where researchers hypothesize significantly meaningful differences between two groups, for the purposes of CFA a *non-significant* chi-square indicates that the model fits the data (i.e. the reproduced variance/covariance matrix is not significantly different than the observed variance/covariance matrix). One problem with the chi-square test is that significance is easy to obtain with large sample sizes therefore the root mean square error of approximation (RMSEA) is commonly used to gauge the fit of a model; here the RMSEA was above the desired .05.

Nevertheless, the factor loadings for the two-factor model were adequate and ranged from .46 through .83. Item 11 had the weakest factor loadings, raising the possibility that Item 11 affected the fit of the model. A CFA for the two-factor SPAS model was performed without Item 11; the results were compared to the proposed model using a chi-square difference test. While these results were slightly improved, the CFA failed to show a statistically significant improvement in overall model fit when compared to the 12-items two-factor model.

Although the two-factor model was a better fit to the data than the unidimensional model, Motl & Conroy (2000) found that the two-factor model was a methodological artifact with no conceptually meaning. Rather, the two factors distinguished positively worded items from the negatively worded items. In order to determine whether or not the unidimensional model could be used for the analyses of this study, inter-item reliabilities for the unidimensional SPAS were computed using the total sample and the sample split by gender. These coefficients were adequate and ranged from .78 to .81. The reliability analysis showed that the deletion of any one item did not improve Cronbach's alpha. In

other words, the removal of any one item would not increase the reliability of the 12-item SPAS. Although the two-factor model was found to be a better fit to the data collected for this study, it provides no conceptually meaningful factors (Motl & Conroy, 2000); therefore, the unidimensional SPAS was used in all subsequent analyses as it demonstrated satisfactory reliability coefficients.

Convergent and Discriminant Validity

As can be seen in Table 3, the SPAS scores were moderately correlated with measures of convergent validity. The correlations between the SPAS and the BES subscales show the most interesting patterns. For women, the Weight Concerns factor of the BES was related to SPAS scores ($r = -.47$; $p<.01$) whereas the Sexual Attractiveness and Physical Condition factors did not share a significant relationship with the SPAS. For men, the Upper Body Strength ($r = -.39$; $p<.01$) and Physical Condition ($r = -.35$; $p<.01$) factors were related to SPAS scores.

BMI values were correlated with SPAS scores for men ($r = .20$; $p<.05$), women ($r = .28$; $p<.05$), and the combined sample ($r = .24$; $p<.05$). The measure of discriminant validity, using the Marlowe-Crowne Social Desirability Scale (Form C), was also found to share a significant correlation with SPAS scores indicating that measure may have a problem of eliciting socially desirable responses. Petrie et al. (1996) found a correlation of similar strength between these two measures in their sample.

Group differences on SPA

Group differences in mean SPAS scores for gender, age, race/ethnicity, exercise groups, and BMI were calculated using t-tests for comparison of two groups and ANOVA for comparisons involving more than two groups (see Table 4).

Gender

A t-test for group differences was performed to determine if men and women differed on SPAS scores. The results show that men had a mean SPAS of 34.5 (SD=8.3) and women had a mean SPAS of 31.4 (SD=7.0), although men reported greater SPAS scores than women, the difference did not reach significance ($p>.05$).

Age

Age was measured as a continuous variable in order to determine if SPAS scores increased or decreased with age. However, the variable was collapsed into two age groups (<45 years old and >45 years old) to see if the differences in SPA found by Treasure et al., (1998) could be replicated. There were no significant differences on SPAS means by age for the total sample and when the sample was split by gender.

Race/ethnicity

Due to the small sample size and unbalanced cells, an ANOVA using race/ethnicity as a factor resulted in too few cases in some cells for adequate power. Therefore, the race/ethnicity variable was recoded into two groups, Caucasian and Non-

Caucasian. No difference on mean SPAS scores for these two groups were found for the sample and the sample split by gender ($p>.05$).

Exercise groups

No mean differences were observed between those who reported regular exercise and those who reported no regular exercise in the three months prior to completing the survey. Of those who reported regular exercise ($n=131$), there were no differences on mean SPAS scores between those who exercised at home, at the gym, or at aerobic/dance studios ($p>.05$). The average number of hours spent exercising per week was not related to mean SPAS scores ($r = -.08$).

BMI

BMI was recoded into the four categories as described earlier in this chapter. Those with below average BMI category were excluded from analysis as the cell size for this category was too small ($n=2$). Three BMI categories were therefore used in the analyses: normal BMI, overweight, and obese. No gender differences were found within the BMI categories ($p>.05$). The ANOVA revealed that there was a significant difference on SPAS scores between the BMI categories ($F_{2, 163} = 3.54$; $p=.03$). Post-hoc analyses revealed that those who were classified as obese reported greater SPAS scores than those classified as having a normal BMI. No significant mean differences on the SPAS were found between those classified as obese and those classified as overweight ($p>.05$).

Summary of Phase I Results

The goal of this study was to validate the SPAS in a sample of the gay and lesbian community. Although the two-factor SPAS model fit the data better than the unidimensional SPAS model, some measures of goodness-of-fit indicate that the model could be improved upon. Motl and Conroy (2000) found that the two-factor model is an artifact of the positively and negatively worded items and not conceptually meaningful factors. In other words, the two-factor SPAS model is meaningful statistically but not conceptually. For this sample of gay/bisexual men and lesbian/bisexual women, the SPAS demonstrated convergent validity but not discriminant validity as it was slightly correlated with social desirability. Petrie et al. (1996) also observed a significant correlation between these two constructs. The examination of the relationship between SPAS and social desirability needs to be explored in future studies.

Although the Phase I data was a convenience sample, it was diverse with respect to gender and age. To date, this study represents the only research study to examine SPA in the gay and lesbian community and one of the few that examines differences by race/ethnicity. Patterns found in data from heterosexual samples were not necessarily found in this sample as differences in SPAS scores were not observed across gender, age, race/ethnicity, or exercise groups. The gay/bisexual men in this study reported greater SPAS than the lesbian/bisexual women but the difference did not reach significance ($p>.05$). The lesbian/bisexual women in this sample seemed to score much lower than the women in Hart et al.'s (1989) study ($M=31.4$ vs. 37.9). These differences will need to be explored in research that includes a representative sample of gay/bisexual men,

lesbians/bisexual women and heterosexual men and women as comparisons cannot be made across these studies.

In conclusions, BMI was the only factor for which statistically significant mean differences for SPAS scores were observed. While there were no gender differences for mean BMI scores, those in the study who were classified as obese reported greater SPAS scores than those who were classified as being within a normal BMI range. The second phase of this study (Phase II) is presented below and examines the physical and psychosocial predictors of SPA.

Phase II

Sociodemographic variables, BMI, and SPA were measured and calculated the same in Phase II as in Phase I. Please refer to the Phase I section of this chapter for details on these measures. A total of 279 respondents completed the Phase II survey at Pridefest 2002. As the goal of this study was to determine the predictors of Body Dissatisfaction and SPA in a sample of the gay, lesbian, and bisexual community only those who self-identified as such were included in the analyses (n=239). Four transsexual respondents completed the survey but were not included in the analyses.

Measures

The remainder of this section describes measures that were administered in the Phase II study. These measures were used to test the hypotheses stated in Chapter 2.

Exercise Behavior

Exercise behavior was measured using self-reported physical activity for the three months prior to the date of the self-administered paper-and-pencil survey. Exercise

behavior was recorded using yes/no response format. If exercise behavior was reported, the average number of hours spent exercising per week was recorded.

Trait Anxiety

The Trait Anxiety Inventory of the State-Trait Anxiety Inventory (STAI; Spielberger, 1977) is comprised of 20-items that measure the general and long-standing quality of trait anxiety. The 20-item list of general feelings is rated on a 4-point Likert-type scale (1=Not at all to 4=Very much so) with possible total scores ranging from 20 to 40. Higher scores indicate a greater degree of trait anxiety. The STAI-T includes such statements as "I feel nervous and restless" and "I worry too much over something that really doesn't matter." Items 1, 3, 6, 7, 10, 13, 14, 16, and 19 are reverse scored items. The reliability for the STAI-T ranges from .65 to .86. STAI-T scores correlate well with other measure of anxiety such as the IPAT Anxiety Scale (Krug et al. 1976), the Taylor Manifest Anxiety Scale (Taylor, 1953), and the Multiple Affect Adjective Check List (Zuckerman & Lubin, 1965).

Body Dissatisfaction

The Body Dissatisfaction subscale of the Eating Disorders Inventory (EDI; Garner, Olmstead, & Polivy, 1983) consists of 9 items. Each item reflects a specific body part that may be of concern for women (e.g., "I think that my thighs are too large"; "I like the shape of my buttocks"). Items are rated on 6-point Likert-type scale (1=Never to 6=Always) with possible total score ranging from 9 to 45. Higher scores indicate greater dissatisfaction with one's body. Items 3, 4, 5, 7, and 8 are reverse scored items.

Although the Body Dissatisfaction subscale was developed to measure body dissatisfaction among women, the internal consistency has been deemed adequate in samples of men (Eberenz & Gleaves, 1994; Garner, 1991; Schoemaker, van Strien, & van der Staak, 1994). As this is a subscale of the EDI, the items tend to inquire about parts of the body that are affected by weight gain and loss (i.e. stomach, hips, thighs, buttocks) and are of greatest concern to those with eating disorders. Two items were added to measure body parts that may be of concern for both men and women when reporting body dissatisfaction, these items concerned the arms and chest/breasts. For this sample, measures of reliability for the original subscale of the EDI were low for both men (α=.60) and for women (α =.68). The item that was negatively impacting the reliability of the scale the most was: "I think that my hips are too big." With the removal of this item and the addition of items regarding the arms and chest, Cronbach's alpha increased to an acceptable level, for men α =.80 and for women α =.82. The resulting 10-item scale was used for all analyses in this study.

Ideal and Ought Weight Discrepancies

In addition to self-reported actual weight, respondents were asked to report their ideal weight "How much would you *like* to weigh?" and ought weight (others) "Others think I ought to weight _____ pounds." A measure of actual:ideal weight discrepancy was calculated by subtracting the respondent's self-reported actual weight from self-reported ideal weight (ex. 180 lbs – 200 lbs = -20 lbs). The outcome of this calculation tells us that the respondent's ideal weight is 20 pounds less than his/her actual weight. To determine what percentage of actual weight the respondent needed to lose or gain to

achieve his/her ideal weight another variable was computed by dividing the actual:ideal discrepancy by the participant's actual weight (-20 lbs / 200 lbs = -.10) then multiplying it by 100 (-.10 x 100 = -10.0). This outcome tells us that in order for the respondent to reach his/her ideal weight, the respondent must lose 10% of his/her body weight. Using a percentage of actual:ideal weight discrepancy, rather than a difference score from the weight measures, provides a better idea of how realistic one's goal weight is by factoring in the respondent's actual weight. For example using only the weight discrepancy value (-.20 lbs) without calculating the percentage, would assign the following two respondents the same value: a respondent with an actual weight of 125 pounds and ideal weight as 105 pounds and a respondent with an actual weight of 200 pounds with an ideal weight of 180 pounds. When using the percentages we see that the 125 pound individual has an ideal weight which is 16% less than his/her actual body weight compared to the 200 pound individual who has an ideal body weight which is only 10% less than his/her actual body weight. An ought weight discrepancy percentage (actual:ought) was also calculated by using the same method described above only this calculation utilized the actual weight and ought weight (others) values.

Relevance of Fit or Muscular Body to Self and Others

As explained in Chapter 1, affective responses to discrepant self-beliefs and self-guides are more likely to be present when the self-belief is personally relevant. The importance of having a fit or muscular body (self-relevance) and the importance of what others think about one's body (others-relevance) were measured using two items that were rated on a 6-point Likert-type scale (1=Never to 6=Always). The self-relevance

item was worded as such: "Having a fit or muscular body is an important part of my gay/lesbian/bisexual identity." The others-relevance item was "What my sex partners think about my body is important to me."

Analysis Plan

T-tests and analyses of variance were used to determine differences between grouping variables such as age and race/ethnicity for Trait Anxiety, Body Dissatisfaction, and SPAS scores. Correlations were computed to determine which continuous variables share a relationship with SPAS scores.

To test Hypothesis 1, a regression analysis was performed with Body Dissatisfaction scores entered as the dependent variable. Actual:ideal weight discrepancies and self-relevance were entered as the independent variables.

To test Hypothesis 2, a regressions analysis was performed with SPA scores entered as the dependent variable and actual:ought weight discrepancies and others-relevance entered as the independent variables.

To test Hypothesis 3, a hierarchical linear regression was performed with Trait Anxiety entered at Step 1; Body Dissatisfaction entered at Step 2; and actual:ought weight discrepancies and others-relevance entered at Step 3. Although previous analyses found a significant relationship between BMI and SPAS scores, the BMI variable was excluded from this analysis as it overlapped with the actual:ought weight discrepancy variable.

RESULTS-Phase II

Sample Characteristics

As can be seen in Table 5, 48% of the sample self-identified as gay men, 37% self-identified as lesbian and 15% as bisexual (10% men and 5% women). The average age of the gay, lesbian, and bisexual respondents (n=239) was 35.56 (range=18 to 83; SD=11.34). Eleven percent of the sample reported being HIV+ (23 men and 4 women), 82% were HIV-, and the remaining 7% did not know their HIV serostatus. Fifty-five percent of the samples were Caucasian, 18% Latino/a, 14% African-American, and 12% self-identified in categories other than these three race/ethnicity groups. Fifty-eight percent of the sample reported exercise behavior in the three months prior to the study. The mean BMI for the sample was 26.66 (SD=5.91) with no gender difference observed for mean BMI scores. A total of 55% percent of the sample meet the criteria for being classified as overweight (33%) or obese (22%). No differences for exercise behavior were reported by gender or by race/ethnicity ($p>.05$).

The sample reported an average of 4.02 hours of exercise per week (range 0 – 20 hours a week; SD=5.11) after one case was dropped for being an outlier (i.e. reported an average of 30 hours of exercise each week). Of those reporting exercise (n=139), men reported an average of 6.95 hours of exercise per week (SD=4.28), women reported an average of 6.37 hours of exercise per week (SD=5.12). These means did not significantly differ from one another ($p>.05$).

As for differences between the Phases I & II samples, there were no statistically significant differences on age or BMI between Phase I & II respondents, differences were found between the two samples on gender and exercise behavior. Specifically,

respondents in Phase I were more likely to be male ($\chi^2 = 10.50$; $p<.001$) and more likely to report having exercised in the three months prior to completing the survey (74% vs. 58%; $\chi^2 = 12.75$, $p<.001$).

The self-reported actual, ideal, and ought weight for the men and women in the sample are listed in Table 6. The men in the sample reported a statistically significantly greater actual, ideal, and ought weight than the women. No differences between HIV+ and HIV- men were found for actual, ideal, and ought weight.

Actual:Ideal and Actual:Ought Weight Discrepancies

Actual:ideal and actual:ought weight discrepancy percentages were highly correlated with each other (r = .89). Although the men weighed significantly more than the women, the women's percentage of actual:ideal weight discrepancy was more than double that of the men's. Women's actual:ought weight discrepancies were almost triple that of the men's. In other words, to achieve their ideal and ought weight (others), the subset of men in the sample would need to lose on average approximately 5% of their body weight but in order for women to achieve their ideal and ought weight, the women in the sample would need to lose on average approximately 13%-16% of their body weight.

This seemed to be a large difference between the male and female respondents. It was suspected that some men in the sample may have wanted to gain weight by building muscle and this may have influenced the actual:ideal and actual:ought means (drawing the means closer to zero). Therefore, the actual:ideal and actual:ought weight discrepancy means were computed using only the men and women who wanted to lose

weight (n=156). The analysis did indeed show that the men's actual:ideal and actual:ought discrepancies increased from 5.3% and 5.4% to 12.0% and 14.6%, but the women's actual:ideal and actual:ought discrepancies also increased from 13% and 15% to 20% and 21%, respectively. Based on the sample's average height (M = 69.6 inches for men and 64.8 for women), ideal and ought BMI scores were computed. The men and women's ideal and ought BMI were nearly equal (ideal and ought BMI = 23 and 24, respectively). Therefore the sample as a whole desired to have a reasonable ideal and ought BMI as a normal BMI ranges from 19 to 25.

Group Differences on SPA and Body Dissatisfaction

In order to determine if group differences exist for mean SPAS and Body Dissatisfaction scores, t-tests were performed for variables with two groups (e.g. gender) and ANOVA were performed on variables with more than two groups (e.g. race/ethnicity). Post-hoc tests (Bonferroni) were performed to identify groups that differed from each other when ANOVA analyses were significant.

SPAS

The results of the t-tests (see Table 7) indicated that there were no difference in mean SPAS scores between the men or women, the two age groups (<45 years of age and >45 years of age), race/ethnicity, and exercise groups (exercisers and non-exercisers). Differences were found for the BMI categories ($F_{2,227} = 8.40$; $p<.01$). Post-hoc comparisons showed that those who were classified as obese reported greater SPAS scores than those who were classified as having a normal BMI ($p<.01$). The obese group

did not report statistically significant different SPAS scores than those who were classified as normal weight or overweight ($p>.05$).

Mean differences were also examined for exercisers and non-exercisers in each of the three BMI groups. Although those who were classified as obese and reported exercise scored greater on the SPAS than the non-exercise and BMI groups, this difference did not reach statistical significance ($p>.05$).

SPAS scores were significantly correlated with both actual:ideal ($r = -.32$; $p<.001$) and actual:ought weight discrepancies ($r = -.40$; $p<.001$) indicating that higher SPAS scores were associated with negative weight discrepancies (i.e. needing to lose a greater percentage of body weight to reach one's ideal or ought weight).

Body Dissatisfaction

SPAS scores were correlated with measures of Body Dissatisfaction for men ($r = .60$; $p<.001$), women ($r = .75$; $p<.001$), and the combined sample ($r = .68$; $p<.001$). The results of the t-tests with Body Dissatisfaction as the test variable (see Table 8) indicated that there were no differences in mean Body Dissatisfaction scores between the gender, race/ethnicity, or two age groups (<45 years of age and >45 years of age). Non-exercisers (M=37.9; SD=10.1) reported greater Body Dissatisfaction than exercisers (M=34.3; SD=10.5; $p<.05$).

An ANOVA indicated that differences were found for the three BMI categories ($F_{2,206} = 7.65$; $p<.001$). Post-hoc comparisons showed that those who were classified as having a normal BMI reported less Body Dissatisfaction than those in the overweight ($p>.005$) and obese ($p<.001$) groups.

Body Dissatisfaction scores were significantly correlated with actual:ideal (r = -.39; p<.001) and actual:ought weight discrepancies (r = -.34; p<.001) indicating that greater Body Dissatisfaction scores were associated with negative weight discrepancies (i.e. needing to lose a greater percentage of body weight to reach one's ideal or ought weight).

Trait Anxiety

SPAS scores were correlated with measures of Trait Anxiety for men (r = .53; p<.001), women (r = .55; p<.001), and the combined sample (r = .54; p<.001). The results of the t-tests with Trait Anxiety scores as the test variable indicated that there were no difference in mean Trait Anxiety scores for gender (see Table 9), the two age groups (<45 years of age and >45 years of age), race/ethnicity groups, or exercise groups. An ANOVA indicate that there were no differences in Trait Anxiety scores for the three BMI categories ($F_{2,195}$= .532; p>.05).

Testing for Interactions

To determine if there were interactions between the actual:ideal and self-relevant variables and actual:ought and the others-relevant variable on SPAS and Body Dissatisfaction scores, two separate analysis of variances were preformed in SPSS.

To accommodate the analyses, the continuous actual:ideal and actual:ought variables were recoded into categorical variables each with three levels. Respondents were assigned to one of the following three groups for the actual:ideal and actual:ought variables: 1) those who had no weight discrepancy; 2) those who had a negative weight

discrepancy (would need to lose weight to reach their ideal or ought weight); or 3) those with a positive weight discrepancy (would need to gain weight in order to reach their ideal or ought weight).

Due to the small sample size, the categorical self- and others-relevance variables were each collapsed from six categories to two (less relevance and greater relevance). This produced large enough cell sizes to determine if SPAS and Body Dissatisfaction mean differences existed for the self- and others-relevance variables.

Univariate Analysis for Body Dissatisfaction

The first analysis of variance tested whether there were mean differences on the Body Dissatisfaction scores for actual:ideal weight discrepancies, self-relevance of having a fit or muscular body and the interaction between these two variables. The results of this analysis (see Table 10) indicated that there were mean differences for main effects of actual:ideal discrepancy ($F_{2,187}$=20.61; $p<.001$) and self-relevance ($F_{1,187}$=4.45; $p<.05$) groups, but the interaction between actual:ideal and self-relevance was not statistically significant for Body Dissatisfaction scores for the entire sample or the sample split by gender ($p>.05$).

Actual:Ideal Weight Discrepancy and Body Dissatisfaction

Of the three actual:ideal weight discrepancy groups, men and women with a negative actual:ideal weight discrepancy reported the greatest body dissatisfaction (M=38.8; SD=8.3) followed by those with a positive actual:ought weight discrepancy (M=31.7; SD=9.2). The men and women in the sample with no actual:ought weight

discrepancy reported the lowest body dissatisfaction (M=27.7; SD=9.4). Post-hoc analyses revealed that those reporting a negative actual:ideal weight discrepancy reported significantly greater Body Dissatisfaction scores than those reporting no actual:ideal weight discrepancy ($p<.001$) and those reporting a positive actual:ideal weight discrepancy ($p<.005$). Significant differences were not found between the positive actual:ideal weight discrepancy groups and those having no weight discrepancies ($p>.001$).

Self-Relevance and Body Dissatisfaction

The post-hoc test for these analyses showed that the men and women in the sample who reported greater self-relevance for having a fit or muscular body reported greater Body Dissatisfaction (M=37.5; SD=8.6) than those with less self-relevance (M=33.5; SD=10.8) for having a fit or muscular body ($p<.05$).

To determine if there were gender differences for these variables, an ANOVA was performed with four groups (men-high self-relevance, men-low self-relevance, women-high self-relevance, women-low self-relevance). The ANOVA compared the mean Body Dissatisfaction scores of each group to all other groups. The results indicated that there were statistically significant differences between these groups ($p<.05$). Specifically, post-hoc analyses using Bonferroni revealed that the male respondents who reported high self-relevance for having a fit or muscular body reported greater Body Dissatisfaction scores (M=36.4; SD=8.5) than the male respondents who reported low self-relevance (M=31.7; SD=10.8). These differences were significant with $p<.05$. The female respondents who reported high self-relevance for having a fit or muscular body

reported greater Body Dissatisfaction scores (M=37.3; SD=11.0) than any of the other groups. Although these scores were not significantly different from the female respondents who reported low self-relevance for having a fit or muscular body (M=34.7; SD=11.1), they were significantly different than the male respondents who reported low self-relevance ($p<.05$). In other words, the men with low self-relevance reported less Body Dissatisfaction than the male and female respondents with high self-relevance ($p<.01$). Of the four comparison groups, the women who reported high self-relevance scored the highest on the Body Dissatisfaction.

Univariate Analysis for Social Physique Anxiety

The second group of analyses tested whether there were mean differences on the SPAS scores for the main effects of actual:ought weight discrepancies and others-relevance of having a fit or muscular body and the interaction between these two variables. The results of this analysis (see Table 11) indicated that there were mean difference for the main effect of actual:ought discrepancy ($F_{2,187}=12.50$; $p<.001$) and others-relevance ($F_{1,187}=8.30$; $p=.004$) groups, but the interaction between actual:ought and others-relevance was not statistically significant for the SPAS scores of the entire sample or the sample split by gender ($p<.05$).

Actual:Ought Weight Discrepancy and SPAS

Of the three actual:ought weight discrepancy groups, those with a negative actual:ought weight discrepancy reported the greatest SPAS scores (M=37.5; SD=8.1) followed by those with a positive actual:ought weight discrepancy (M=30.3; SD=8.7).

Those with no actual:ought weight discrepancy reported the lowest SPAS scores (M=26.5; SD=7.8). Post-hoc analyses revealed that those with a negative actual:ought weight discrepancy reported greater SPAS scores than those reporting no actual:ought weight discrepancy ($p<.001$) and those reporting a positive actual:ought weight discrepancy ($p<.001$). No mean differences for SPAS scores were found between those reporting a positive weight discrepancy and no actual:ought weight discrepancy ($p>.05$).

Others-Relevance

The post-hoc test for these analyses showed that the men and women in the sample who reported high others-relevance reported greater SPAS scores (M=36.1; SD=9.2) when compared to those with low others-relevance (M=31.4; SD=9.4; $p<.001$).

To determine if there were gender differences for these variables, an ANOVA was performed with four groups (men-high others-relevance, men-low others-relevance, women-high others-relevance, women-low others-relevance). The ANOVA compared the mean SPAS scores of each group to all other groups. The results indicated that there were statistically significant differences between these groups ($p<.01$). Specifically, the male respondents who reported high others-relevance for having a fit or muscular body reported greater SPAS scores (M=36.7; SD=9.2) when compared to the male (M=30.7; SD=8.6) and female respondents (M=32.2; SD=9.9) who reported low others-relevance. These differences were significant with $p<.01$. There were no significant SPAS differences between the women who reported low (M=32.2; SD=9.9) and high others-relevance (M=35.5; SD=9.6). Of the four comparison groups, the men who reported high others-relevance scored the highest on the SPAS.

Hierarchical Linear Regression

Based on the results of the above analyses it was determined that the interaction between actual:ideal weight discrepancy and self-relevance and actual:ought weight discrepancy and others-relevance were not statistically significant. Therefore each hypothesis was tested as stated using a hierarchical linear regression.

The results of the first hierarchical linear regression that tested the predictors of Body Dissatisfaction scores showed that the actual:ideal weight discrepancy and self-relevance variables accounted for 21% of the variance in Body Dissatisfaction scores (see Table 12). The results of the second hierarchical linear regression indicated that actual:ought weight discrepancy and others-relevance predicted SPAS scores accounting for 22% of the variance in SPAS scores (see Table 13). The result of the third regression, indicated that neither actual:ought weight discrepancy nor others-relevance were significant predictors of SPAS scores once Trait Anxiety and Body Dissatisfaction were entered into the model. Although BMI was found to be associated with SPAS in earlier analyses, the variable was excluded from these analyses as it overlapped with the actual:ought weight discrepancy variable ($r = .78$). Together, Trait Anxiety and Body Dissatisfaction accounted for 60% of the variance in SPAS scores (see Table 14).

Summary of Phase II Results

The goal of this study was to determine whether applying principles of the self-discrepancy theory (Higgins, 1987) could identify which types of weight discrepancies predict body dissatisfaction and which predict SPA in a sample of the gay, lesbian, and bisexual community. Because women were underrepresented in Phase I (i.e. women

represented only 34% of the sample), more women were targeted than men during Phase II recruitment. Although recruitment records regarding this matter were not kept, it is believed that the equal number of men and women recruited for Phase II was a result of increasing the number of female recruiters and reminding all recruiters to obtain equal numbers of male and female respondents.

Based on the published research on body concerns in the gay, lesbian, and bisexual community, the lack of significant mean differences for the sociodemographic variables for the SPAS and Body Dissatisfaction scores was expected. It was surprising however, that exercise groups did not report mean differences in SPAS scores as Hart et al. (1989) would believe that SPA may deter some from engaging in exercise behavior.

As was found in Phase I, there were no gender differences for the BMI but those in the BMI categories differed on mean SPAS scores. Specifically, those who were classified as obese reported greater SPA than those who were classified as having a normal BMI. This supports Hart et al.'s (1989) belief that those who weigh more would report greater SPA. It was suspected that those who were classified as obese and reported regular exercise would report significantly greater SPAS scores than the other exercising and non-exercising groups, but these differences did not reach significance. This may be a result of a small sample size which did provide the adequate cell sizes needed for multiple levels of comparison.

Mean differences in Body Dissatisfaction scores were observed for the exercise groups and BMI groups. Those who reported that they did not engage in regular exercise reported greater Body Dissatisfaction than those who reported regular exercise.

Respondents who meet the BMI criteria for being overweight or obese reported greater Body Dissatisfaction than those who were in the normal BMI group.

Because there was a high correlation between the two weight discrepancy variables, the discriminant validity of the two weight discrepancy variables is in question. With that in mind, the discrepancy variables were significantly related to the body concerns measured in this study. Although the correlations between the weight discrepancy variables and Body Dissatisfaction and SPAS score reached significance, actual:ideal weight discrepancies shared a stronger relationship with Body Dissatisfaction than it did to SPAS scores. Similarly, actual:ought weight discrepancies shared a stronger relationship with SPAS scores than it did with Body Dissatisfaction scores lending some support to the self-discrepancy theory.

The actual:ideal and actual:ought weight discrepancy groups and self- and others-relevance groups were found to differ on Body Dissatisfaction and SPAS scores. Those who would need to lose weight to reach their ideal or ought weight reported the greatest body dissatisfaction and greatest SPA than those who would need to gain weight to reach their self-guides regardless of whether they reported that having a fit or muscular body was important to their self.

Women who reported that having a fit body was an important part of their lesbian/bisexual identity reported the greatest body dissatisfaction compared to the men who reported that having a fit body was not important to their gay/bisexual identity. Men who reported a greater importance of what their sex partners think about their body reported greater SPAS scores than the men and women who placed less importance on what sex partners thought about their body.

As there were no interactions between the weight discrepancy and self- and others relevance variables, Hypotheses 1 and 2 were tested as stated in Chapter 2. Actual:ideal weight discrepancy and self-relevance accounted for approximately 21% of the variance in Body Dissatisfaction. Actual:ought weight discrepancy and others-relevance were found to be predictors of SPAS scores accounting for 22% of the variance in SPAS scores. Although actual:ought weight discrepancy and others-relevance for having a fit or muscular body predicted SPAS scores, these variables did not add to the prediction of SPA once Trait Anxiety and Body Dissatisfaction were added into the model. The Trait Anxiety and Body Dissatisfaction variables provided a parsimonious model with these two variables accounting for 60% of the variance in SPAS scores.

Chapter 4

GENERAL DISCUSSION

The overall goal of this research was to broaden the scope of the SPA literature by applying the principles of the self-discrepancy theory to study different types of body concerns in the gay, lesbian, and bisexual community. The data collected in the first phase of this research was used to validate the SPAS in a sample of gay, lesbian, and bisexuals in the New York Metropolitan Area. Although the results show that the two-factor SPAS model is in need of improvement, the model better fit the data than the unidimensional model proposed by Hart et al. (1989). Data collected from heterosexual samples have also supported the two-factor model (Eklund et al., 1997; Motl & Conroy, 2000; Petrie et al., 1996).

To date, Motl and Conroy's (2000) study of the psychometric properties of the SPAS provides the most comprehensive analyses of the factorial structure of the SPAS. Motl and Conroy determined that the two-factor model was a methodological artifact with no conceptual meaning. In other words, the two factors distinguished positively worded items from the negatively worded items. Although nine-item and seven-item SPAS models have been suggested in the literature, the 12-item SPAS was used in this study as its conceptualization was clearly outlined by Hart et al. (1989) and the unidimensional model produced reliability coefficients that were satisfactory for this sample. In addition, the SPAS demonstrated convergent validity. The discriminant validity of the SPAS is in question as it was found to be associated with social desirability. Petrie et al. (1996) found a similar association indicating that the SPAS may elicit socially desirable responses.

Although there were no gender differences for SPA in this sample, the construct was associated with body esteem as measured by the BES. Specifically, negative feelings about weight for women and negative feelings about upper body strength and physical conditioning for men was associated with greater SPA scores. This indicates that gay/bisexual men and lesbian/bisexual women rely on different areas of their body to find their body esteem. In Hart et al.'s (1989) development and validation study, the SPAS was significantly correlated with all three of the BES factors in both male and female participants. Taking together with the previous findings outlined in Chapter 2, the present results indicate that the relationship between body esteem and SPA may differ between heterosexual and gay, lesbian, and bisexual respondents. If these findings are replicated, it would be interesting to determine the sociocultural differences that influence body esteem in these groups.

The published research in this area shows that body weight is typically at the core of women's body concerns (Cash, Winstead, & Janda, 1986; Fallon & Rozin, 1985) whereas muscularity is more important in men's satisfaction with the body (Pope, et al. 2000). Petrie et al.'s (1996) study found that women who are exposed to images of the attractive *thin* ideal report greater SPA than those not exposed to these images indicating that SPA increases for some women who are exposed to images of the thin ideal. This effect has not been examined in samples of men. The results from this present study suggest that in order to manipulate SPA in a sample of men, images that embody upper body strength and physical conditioning (i.e. images of physically fit or muscular men) rather than a thin ideal, may need to be presented.

The lack of gender differences for SPA challenges the published SPA literature which has consistently shown that women report greater SPA than men (Frederick & Morrison, 1996; Hart et al. 1989; Martin & Mack, 1996; McAuley et al., 1995; McAuley et al., 2002). These findings raise some interesting questions. What could explain why heterosexual women consistently report greater SPA than heterosexual men but no differences are found between men and women in the gay community? Is SPA influenced by physical appearance norms as suggested by Hart et al. (1989)? The answers to these questions depend on whether the lack of gender differences for SPA in the gay, lesbian, and bisexual community is a result of the gay/bisexual men reporting greater SPA than heterosexual men, lesbians/bisexual women reporting less SPA than heterosexual women or a combination of both. The present research design does not permit this type of analysis. Future research could examine questions such as these using a representative sample drawn from heterosexual and gay, lesbian, and bisexual communities.

Data from Phase II may provide some clues to situations in which men may report greater SPA than women. Gay and bisexual men with high others-relevance (those who place importance on what their sex partners think about their bodies) reported greater SPA than both the men and women with low others-relevance. This is an important finding, as other male populations generally do not score greater on the SPAS than their female counterparts. These results indicate that gay/bisexual men and lesbian/bisexual women who place importance on what their sexual partners think about their bodies differ in their feelings about the body; those with low others-relevance do not share these same feelings. Future research could explore whether these results are influenced by

such factors as cultural expectations or social comparison with sexual partners and whether heterosexual men express these concerns when with their sex partners.

One of the physical characteristics that were examined in Phase I and II, body leanness (as measured by the BMI), was found to be associated with SPA. This is consistent with the published SPA research from heterosexual samples (Eklund & Crawford, 1994; Hart et al., 1989; Hausenblas & Fallon, 2002; Thompson & Chad, 2002; Treasure et al., 1998; Yin, 2001). This lends support to Hart et al.'s (1989) notion that overweight or obese individuals are more likely to report SPA. Future research on this population could explore the behavioral outcomes associated with SPA.

The primary purpose of the second study was to determine if discrepancies between self-beliefs and self-guides for body weight would predict body dissatisfaction and SPA. Specifically, it was expected that the degree of discrepancy between actual weight and ideal weight would predict body dissatisfaction while the degree of discrepancy between actual weight and ought weight would predict SPA. It was also thought that an interaction may exist between the weight discrepancy and self- and others-relevance variables as the self-discrepancy theory states that the self-beliefs must be salient for the individual in order for affective responses to occur. The literature on body dissatisfaction also shows that dissatisfaction with the body consists of the belief that one's appearance or physical attributes do not meet a *personally relevant ideal* standard (Cash & Green, 1986; Lerner & Karabenick, 1974; Lerner et al., 1973). Although the hypotheses regarding the weight discrepancy variables were supported, no interactions were found.

With regard to the lack of interaction between the weight discrepancy and body relevance variables, it is suspected that these interactions may have been found if global measures of self-discrepancies were used. This present study measured *specific* beliefs and guides about weight rather than *global* self-belief and self-guides. Self-discrepancies are traditionally measured by requesting research participants to spontaneously list attributes of the self that are currently possessed. These self-generated attributes are then rated by the research participant to determine the extent to which each attribute is of importance to that individual. Each attribute is then scored by the researcher as matching or not matching a self-guide (ideal or ought attribute) which was also elicited from the research participant. This process increases the likelihood of obtaining accessible and personally relevant attributes (Higgins, King, & Marvin, 1982) and also treats the self as multifaceted. Therefore, a more application of the self-discrepancy theory would have examined discrepancies between a list of self-relevant attributes rather than the more specific *weight* discrepancies. This present study may have underestimated the complex relationships between discrepant self-beliefs and self-guides from other domains of the self-concept.

The mean comparisons of SPAS scores showed that, on average, the women in the sample weighed significantly less than the men but they had a greater discrepancy between their self-beliefs and self-guides for weight. Meaning that, on average, the women needed to lose more weight than the male participants if they were to meet their ideal or ought weight. Even more interesting is that although the women in the sample reported greater percentages of body weight discrepancies than the men, the women in the sample scored no differently on the body dissatisfaction or SPAS measures.

However, the men and women in the negative weight discrepancy group did report greater body dissatisfaction and SPA than those in the no weight discrepancy or positive weight discrepancy group. This indicates that in this sample of gay/bisexual men and lesbian/bisexual women weight discrepancies were more important than gender in accounting for differences in body dissatisfaction and SPA.

The regression analyses support the first two hypotheses of this study which state that actual:ideal discrepancies would predict body dissatisfaction and actual:ought discrepancies would predict SPA. The third hypothesis was also supported as trait anxiety was found to predict SPA. Individually these results support the self-discrepancy theory but when taken together these results do not lend support to the hypothesis that states that actual:ought weight discrepancies predict SPAS scores after personality traits are accounted for in the same model. This is an important finding, as the present study is the first to examine the degree to which one's disposition to experience anxiety predicts SPA. In addition this study shows that personality factors such as trait anxiety may contribute to how one responds to discrepant self-beliefs and self-guides.

Although the hypotheses that were stated in Chapter 2 were supported, the results of the regression analyses should be interpreted with caution for two main reasons. First, actual:ought weight discrepancy did not account for any variance in the SPAS scores once body dissatisfaction and trait anxiety were added into the equation. Because this study measured a specific discrepancy between self-beliefs and self-guides for body weight, one must wonder whether an assessment of discrepancies between global rather than specific self-beliefs and self-guides would have the same results. Second, the values for the actual:ideal and actual:ought weight discrepancies were highly correlated. The

high correlation between the two different types of self-discrepancies raises the issue of discriminant validity between the different types of discrepancies proposed by Higgins (1987). Critique of the overlap between actual:ideal and actual:ought constructs appears in the self-discrepancy literature (see Tangney, Neidenthal, Covert, & Barlow, 1998).

Another problem with this study was the way in which self- and other-relevance was measured. Respondents in this study were asked to indicate the degree to which a fit or muscular body is important to their gay/lesbian/bisexual identity and the importance of what sex partners may think of their body. Because ratings of self- and others-relevance were measured independently from the weight discrepancy, the body-relevance items may have introduced some noise into the research design by measuring the importance of "the body" rather than one's specific weight. Respondents may have considered more than just their body weight when they responded to these questions. These constructs may have also been problematic as each was measured using one item. Other problems arise with these constructs as the self-relevance item inquired about the importance of having a fit body to one's gay/lesbian/bisexual *identity* while the others-relevance item inquired about the importance that one places on what *sex partners* think about their body. This is problematic for two reasons. First, the importance that a fit or muscular body has to one's gay/lesbian/bisexual identity may differ from the importance that a fit or muscle has to the *self*. Next, the others-relevance item only measures one's perception of what one group of people (sex partners) may think of their body. This does not account for other, and maybe more important individuals in the respondent's life, such as family members, friends, and co-workers.

Although this study provides information that is useful for the study of body concerns in the gay/lesbian and bisexual community in New York City, the generalizability of these findings is limited to this sample for a number of reasons. First, the results of this study are based on self-reported data from a convenience sample. This convenience sample is self-selected and limited a small subset of the gay, lesbian, and bisexual community in the New York Metropolitan Area, namely those who wished to show their pride and support for the gay, lesbian, and bisexual community on the days that the survey was available. Because respondents were recruited from a gay pride event, respondents may have felt a heightened sense of pride and acceptance; these feelings may have been reflected in their responses. In addition, those who completed the survey were spectators of the parade and may have differed from those who chose to march in the parade. Although this study utilized measures that are well-established in the literature, many of the measures are not validated in the gay, lesbian, and bisexual community and all measures relied on self-report.

One of the strengths of this research study is that it enrolled a diverse sample from the gay, lesbian, and bisexual community in the New York Metropolitan Area. This research is an important first step in the examination of SPA in this community. Although there has been little support for Hart et al.'s (1989) theory that SPA deters some from engaging in exercise settings, the SPAS is an instrument with items that are general enough for use in most populations and across many social setting. Examining the different social contexts in which gay/bisexual men and lesbian/bisexual women experience SPA would help understand the extent to which SPA inhibits social behaviors and which, if any, negative health behaviors it promotes. The SPAS may also be of use

for studying body concerns in those living with HIV/AIDS as wasting syndrome, lipodystrophy (i.e. uneven distribution of body fat), and other side effects of the HIV treatments are likely to impact bodily functions, body shape and size, and how those living with HIV/AIDS feel about the body.

The self-discrepancy theory provides a well-establish social psychological model and structure that is useful for studying different body concerns. It was expected that the measurement of weight discrepancies, rather than self-discrepancies, would be sufficient to study body concerns such as body dissatisfaction and SPA. The method used to measure self-discrepancies may have underestimated the role that global self-beliefs play in cognition and affect regarding the body. It is still believed that the self-discrepancy theory can offer a useful foundation for understanding different body concerns. Future research in this area may want to consider utilizing the Selves Questionnaire (Higgins, Bond, Klein, & Straumann, 1986) to obtain "chronically accessible and personally relevant" attributes that then can be used to study body concerns.

Conclusion

This study has shown that regardless of the population being studied, the factor structure and utility of the SPAS still remains in question. Future research needs to examine these areas and settle upon a self-reported measure of SPA once and for all. Identifying other methods that may be useful in measuring SPA is also welcome and may include the measurement of physiological responses to SPA and whether anxiety related to evaluation of the body by others interferes with participation and performance in exercise and other social settings. Finally, the SPA literature is in need of research that

links the SPA construct to behavioral outcomes. Linking the SPA construct to negative health behaviors, such as deterring exercise behavior, will show that this construct is important to the psychological literature on body concerns.

Discrepancies between self-beliefs and self-guides for weight were found to predict the vulnerability to different types of body concerns. Future research in this area will need to examine if global discrepancy measures are more appropriate than specific beliefs about weight for differentiating between feelings of body dissatisfaction and SPA. The results indicate that trait anxiety is an important factor in the experience of SPA and works with body dissatisfaction to account for a large percentage of variance in SPAS scores.

Phase I
Sociodemographic and Exercise Measures

1. Please indicate your gender ____Male ____Female ___Transgender

2. Height _____feet ____inches

3. Age _____years old

4. I currently weigh? _____pounds

5. I would like to weigh? _____pounds

6. I think I ought to weigh? _____pounds

7. Others think I ought to weigh? _____pounds

8. Sexual Orientation Gay Lesbian Bisexual Heterosexual

9. Race/Ethnicity African-American Latino/a Caucasian Other

10. Do you exercise on a regular basis? _____Yes ____No (skip to next section)

11. Check ALL the settings you have exercised during the pas three months.

___Home ___Outdoors ___Gym/Fitness Center ___Aerobic/Dance Studio

12. Please place a check mark next to each activity that you have engaged in during the last three months, then fill in the average number of days per week that you did each activity and the average number of minutes that you spent doing each activity.

Weight/Strength training ____ time(s) per week ___ minutes per session

Sports (tennis, basketball, etc..) ____ time(s) per week ___ minutes per session

Aerobic/cardio (jog, bike, etc...) ____ time(s) per week ___ minutes per session

13. How would you rate your current muscle build? (Please check one)

___Below average
___Slightly below average
___Average
___Slightly above average
___Above average

Interaction Anxiousness Scale (Leary, 1983b)

Instructions: Please read each of the following statements carefully and indicate the degree to which each applies to you.

1= Not at all
2= Slightly
3= Moderately
4= Very Much
5= Extremely

1. I often feel nervous even in casual get-togethers.	1	2	3	4	5
2. I usually feel uncomfortable when I am in a group of people that I do not know.	1	2	3	4	5
3. I am usually at ease when speaking to someone of the same sex.	1	2	3	4	5
4. I get nervous when I must talk to a teacher/boss.	1	2	3	4	5
5. Parties often make me feel anxious and uncomfortable.	1	2	3	4	5
6. I am probably less shy in social interactions than most people.	1	2	3	4	5
7. I sometimes fell tense when talking to others if I don't know them very well.	1	2	3	4	5
8. I would be nervous if I was being interviewed for a job.	1	2	3	4	5
9. I wish I had more confidence in social situations.	1	2	3	4	5
10. I seldom feel anxious in social situation.	1	2	3	4	5
11. In general, I am a shy person.	1	2	3	4	5
12. I often feel nervous when talking to an attractive member of the same sex.	1	2	3	4	5
13. I often feel nervous when calling someone I don't know very well on the telephone.	1	2	3	4	5
14. I get nervous when I speak to someone in a position of authority.	1	2	3	4	5
15. I usually feel relaxed around other people even people who are quite different from me.	1	2	3	4	5

Phase I

Brief Fear of Negative Evaluation Scale (Leary, 1983a)

Instructions: Please read each of the following statements carefully and indicate the degree to which each applies to you.

1= Not at all
2= Slightly
3= Moderately
4= Very Much
5= Extremely

1. I worry about what other people will think of me even when I know it doesn't make any difference.	1	2	3	4	5
2. I am unconcerned even if I know people are forming an unfavorable opinion of me.	1	2	3	4	5
3. I am frequently afraid of other people noticing my shortcomings.	1	2	3	4	5
4. I rarely worry about what kind of impression I am making on someone.	1	2	3	4	5
5. I am afraid that others will not approve of me.	1	2	3	4	5
6. I am afraid that people will find fault with me.	1	2	3	4	5
7. Other people's opinions of me do not bother me.	1	2	3	4	5
8. When I am talking to someone, I worry about what they may be thinking about me.	1	2	3	4	5
9. I am usually worried about what kind of impression I make.	1	2	3	4	5
10. If I know someone is judging me it has little effect on me.	1	2	3	4	5
11. Sometimes I think I am too concerned with what other people think of me.	1	2	3	4	5
12. I often worry that I will say or do the wrong things.	1	2	3	4	5

Phase I

Body Esteem Scale (Franzoi & Shield, 1984)

Instructions: Please read each of the following statements carefully and indicate how you feel

1=Strong negative feelings
2=Moderately negative feelings
3=No feelings either way
4=Moderately positive feelings
5=Strong positive feelings

1. Body scent	1	2	3	4	5
2. Appetite	1	2	3	4	5
3. Nose	1	2	3	4	5
4. Physical stamina	1	2	3	4	5
5. Reflexes	1	2	3	4	5
6. Lips	1	2	3	4	5
7. Muscle development	1	2	3	4	5
8. Waist	1	2	3	4	5
9. Energy level	1	2	3	4	5
10. Thighs	1	2	3	4	5
11. Ears	1	2	3	4	5
12. Biceps	1	2	3	4	5
13. Chin	1	2	3	4	5
14. Body build	1	2	3	4	5
15. Coordination	1	2	3	4	5
16. Buttocks	1	2	3	4	5
17. Agility	1	2	3	4	5
18. Width of shoulders	1	2	3	4	5
19. Arms	1	2	3	4	5
20. Chest/Breasts	1	2	3	4	5
21. Appearance of eyes	1	2	3	4	5
22. Cheeks/Cheekbones	1	2	3	4	5
23. Hips	1	2	3	4	5
24. Legs	1	2	3	4	5
25. Figure/physique	1	2	3	4	5
26. Sex drive	1	2	3	4	5
27. Feet	1	2	3	4	5
28. Sex organs	1	2	3	4	5
29. Stomach (Abs)	1	2	3	4	5
30. Health	1	2	3	4	5
31. Sex activities	1	2	3	4	5
32. Body hair	1	2	3	4	5
33. Physical condition	1	2	3	4	5
34. Face	1	2	3	4	5
35. Weight	1	2	3	4	5

Phase I and Phase II
Social Physique Anxiety Scale
Hart, Leary, and Rejeski (1989)

Instructions: Please read each of the following statements carefully and indicate how characteristic it is of you according to the following scale:

1=Not at all characteristic of me
2=Slightly characteristic of me
3=Moderately characteristic of me
4=Very characteristic of me
5=Extremely characteristic of me

Item 1. I am comfortable with the appearance of my physique/figure.	1	2	3	4	5
Item 2. I would never worry about wearing clothes that might make me look too thin or overweight.	1	2	3	4	5
Item 3. I wish I wasn't so uptight about my physique/figure.	1	2	3	4	5
Item 4. There are times when I am bothered by thoughts that other people are evaluating my weight or muscular development negatively	1	2	3	4	5
Item 5. When I look in the mirror I feel good about my physique/figure.	1	2	3	4	5
Item 6 Unattractive features on my physique/figure make me nervous in certain social situations.	1	2	3	4	5
Item 7. In the presence of others I feel apprehensive about my physique/figure.	1	2	3	4	5
Item 8. I am comfortable with how fit my body appears to others.	1	2	3	4	5
Item 9. It would make me uncomfortable to know others were evaluating my physique/figure.	1	2	3	4	5
Item 10. When it comes to displaying my physique/figure to others, I am a shy person.	1	2	3	4	5
Item 11. I usually feel relaxed when it is obvious that others are looking at my physique/figure.	1	2	3	4	5
Item 12 When in a bathing suit, I often feel nervous about the shape of my body.	1	2	3	4	5

Phase I

Social Desirability (Reynolds, 1982)

Instructions: Please read each of the following statements carefully and decide if each is true for you.

1. It is sometimes hard for me to go on with my work if I am not encouraged.	True	False
2. I sometimes feel resentful when I don't get my way.	True	False
3. On a few occasions I have given up doing something because I have thought too little of my ability.	True	False
4. There have been times when I felt like rebelling against people in authority even though I knew they were right.	True	False
5. No matter whom I am talking to I am always a good listener.	True	False
6. There have been occasions when I took advantage of someone.	True	False
7. I am always willing to admit it when I make a mistake.	True	False
8. I sometimes try to get even rather than forgive and forget.	True	False
9. I am always courteous even to people who are disagreeable.	True	False
10. I have never been irked when people express ideas very different from my own.	True	False
11. There have been times when I was quite jealous of the good fortune of others.	True	False
12. I am sometimes irritated by people who ask favors of me.	True	False
13. I have never deliberately said something that hurt someone's feelings.	True	False

Phase II
Sociodemographics and Exercise

1. Please indicate your gender ____Male _____Female ____Transgender

2. Height _____feet ____inches

3. Age _____years old

4. I currently weigh? _____pounds

5. I would like to weigh? _____pounds

6. Others think I ought to weigh? _____pounds

7. Sexual Orientation Gay Lesbian Bisexual Heterosexual

8. Race/Ethnicity African-American Latino/a Caucasian Other

9. Do you exercise on a regular basis? ____Yes ____No (skip to next section)

10. On average, how many hours a week do you spend exercising? _____hours

Phase II

Body Dissatisfaction (EDI; Garner et. al., 1981)

Instructions: Please read each of the following statements carefully and decide how often each is true for you.

1=Always
2=Usually
3=Often
4=Sometimes
5=Rarely
6=Never

Item 1. I think that my stomach is too big.	1	2	3	4	5	6
Item 2. I think that my legs are too large .	1	2	3	4	5	6
Item 3. I think that my stomach is just the right size.	1	2	3	4	5	6
Item 4. I feel satisfied with the shape of my body.	1	2	3	4	5	6
Item 5. I like the shape of my buttocks.	1	2	3	4	5	6
Item 6. I think my hips are too big.	1	2	3	4	5	6
Item 7. I think my thighs are just the right size.	1	2	3	4	5	6
Item 8. I think that my buttocks are too large.	1	2	3	4	5	6
Item 9. I think that my hips are just the right size	1	2	3	4	5	6
Item 10. I think my chest is just the right size.	1	2	3	4	5	6
Item 11. I think my arms are just the right size.	1	2	3	4	5	6

Phase II

Trait Anxiety Scale (STAI-T; Spielberger, 1970)

Instructions: Please read each of the following statements carefully and indicate how you generally feel.

1=Not at all
2=Somewhat
3=Moderately so
4=Very much so

Item 1. In general, I feel pleasant.	1	2	3	4
Item 2. In general, I feel nervous and restless.	1	2	3	4
Item 3. In general, I feel satisfied with myself.	1	2	3	4
Item 4. In general, I wish I could be as happy as others seem to be.	1	2	3	4
Item 5. In general, I feel like a failure.	1	2	3	4
Item 6. In general, I feel rested.	1	2	3	4
Item 7. In general, I am "calm, cool, and collected".	1	2	3	4
Item 8. In general, I feel that difficulties are piling up so that I cannot overcome them.	1	2	3	4
Item 9. In general, I worry too much over something that really doesn't matter.	1	2	3	4
Item 10. In general, I am happy.	1	2	3	4
Item 11. In general, I have disturbing thoughts.	1	2	3	4
Item 12. In general, I lack self-confidence	1	2	3	4
Item 13. In general, I feel secure.	1	2	3	4
Item 14. In general, I make decisions easily.	1	2	3	4
Item 15. In general, I feel inadequate.	1	2	3	4
Item 16. In general, I am content.	1	2	3	4
Item 17. In general, some unimportant thought runs through my mind and bothers me.	1	2	3	4
Item 18. In general, I take disappointments so keenly that I can't put them out of my mind	1	2	3	4
Item 19. In general, I am a steady person.	1	2	3	4
Item 20. In general, I get in a state of tension or turmoil as I think over my recent concerns and interests.	1	2	3	4

Figure 1. The Self-Discrepancy Theory: The compartmentalization of self in six self-states.

		Standpoints of the self	
		Own	**Other**
Domains of the self	**Actual**	Actual/Own	Actual/Other
	Ideal (self-guide)	Ideal/Own	Ideal/Other
	Ought (self-guide)	Ought/Own	Ought/Other

Figure 2: The Self-Discrepancy Theory: Examples of different types of self-discrepancies and the emotional state associated with each discrepancy

Type of discrepancy	Emotional states
Actual (own) vs. Ideal (own)	Dejection-related emotions (e.g. disappointment, dissatisfaction)
Actual (own) vs. Ideal (other)	Dejection-related emotions (e.g. shame, embarrassment)
Actual (own) vs. Ought (own)	Agitation-related emotions (e.g. guilt, self-contempt)
Actual (own) vs. Ought (other)	Agitation-related emotions (e.g. fear, feeling threatened)

Table 1. Characteristics of the Phase I sample

Continuous Variables	Mean	SD	Range	n
Age	37.02	11.14	18 - 76	193

Categorical Variables	Percent	n
Sexual Orientation (n=197)		
Gay	60%	118
Lesbian	24%	47
Bisexual Men	10%	20
Bisexual Women	6%	12
HIV Serostatus (n=189)		
HIV-	67%	124
HIV+	11%	21
Don't know HIV status	22%	44
Race/Ethnicity (n=197)		
Caucasian	55%	109
Latino/a	17%	33
African-American	11%	22
Other	17%	33
Physical Activity Level (n=197)		
Exercisers	74%	146
BMI (n=191)		
Below Average (<18.5)	1%	2
Normal (18.6 - 24.9)	43%	85
Overweight (25 - 29.9)	36%	71
Obese (>30)	17%	33

Table 2. Results of the CFA for the two-factor and the 12-item unidimensional SPAS models

Models (n=197)	χ^2	*df*	χ^2/df	CFI	NNFI	NFI	GFI	RMSEA
Two-Factor Model	93.8*	53	1.8	.98	.98	.97	.96	.08(.05-.10)
Saturated Model	0							
Independence Model	2934.3	78						
Unidimensional Model	410.2**	54	7.6	.92	.90	.92	.85	.18(.16-.20)
Saturated Model	0							
Independence Model	5081.2	78						

Note: The number of parameters for the two-factor model, the saturated model and the independence model were 37, 90, and 12 for the two-factor model and 36, 90, and 12 for the unidimensional model.

*p<.01
**p<.001

Table 3. Correlations for measures of convergent and discriminant validity

	SPA TOTAL(n)	Male (n)	Female(n)
Body Esteem			
Female Factors			
Sexual Attractiveness	-	-	-.23 (53)
Physical Conditioning	-	-	-.24 (53)
Weight Concern	-	-	**-.47****(53)
Male Factors			
Physical Attractiveness	-	-.16 (112)	-
Physical Conditioning	-	**-.35****(108)	-
Upper Body Strength	-	**-.39****(109)	-
Fear of Negative Evaluation	**.42****(158)	**.41****(108)	**.51****(50).
Interaction Anxiousness	**.45****(154)	**.40****(108)	**.55****(46)
Body Mass Index (BMI)	**.24*** (165)	**.20*** (112)	**.28*** (53)
Social Desirability	**-.24****(164)	**-.21*** (109)	**-.29*** (52)

Note: Correlations with the Body-Esteem Scale are not reported for the total sample because the three subscales involve different items for men and women .

*p<.05
**p<.01

Table 4. Mean differences for SPAS scores by groups

Variables	Mean	Standard Deviation	p-value
Gender			
Men (n=120)	34.5	8.3	n.s.
Women (n=59)	31.4	7.0	
Age			
<45 years old	35.8	9.6	n.s
>45 years old	32.7	9.2	
Race/Ethnicity			
Caucasian (n=100)	34.5	8.7	n.s.
Non-Caucasian (n=81)	33.0	8.4	
Exercise Groups			
Exercisers (n=131)	33.9	9.1	n.s.
Non-Exercisers (n=41)	33.4	6.8	
BMI Group Comparisons*			
Normal (n=71) vs.	32.0	8.7	n.s.
Overweight (n=62)	35.1	7.9	
Normal (n=71) vs.	32.1	9.2	**<.05**
Obese (n=30)	36.5	8.9	
Overweight (n=62) vs.	35.1	7.9	n.s
Obese (n=30)	36.5	8.9	

*Bonferroni post-hoc tests

Table 5. Characteristics of the Phase II sample

Continuous Variables	Mean	SD	Range	n
Age	35.56	11.44	18 - 83	239
Average number of hours per week of exercise	4.02	5.11	0 – 20	238

Categorical Variables	Percent	n
Sexual Orientation (n=238)		
Gay	48%	114
Lesbian	37%	88
Bisexual Men	10%	24
Bisexual Women	5%	12
Race/Ethnicity (n=238)		
White	55%	131
Latino/a	18%	43
African-American	14%	33
Other	12%	31
HIV Serostatus (n=237)		
HIV-	82%	197
HIV+	11%	27
Don't know HIV serostatus	7%	13
Exercise Behavior (n=238)		
Exercisers	58%	139
BMI (n=238)		
Below Average (<18.5)	2%	5
Normal (18.5-24.9)	43%	102
Overweight (25-29.9)	33%	79
Obese (>30)	22%	52

Table 6. Means actual:ideal and actual:ought weight discrepancies by gender

Variable	n	Mean pounds	Standard Deviation	p-value
Actual Weight				
Men	125	187.78	42.13	**<.001**
Women	110	160.82	37.14	
Total	*235*	*172.50*	*41.28*	
Ideal Weight				
Men	118	170.64	28.71	**<.001**
Women	100	137.39	20.70	
Total	*218*	*155.39*	*30.26*	
Ought Weight				
Men	110	169.51	27.76	**<.001**
Women	93	135.22	24.06	
Total	*203*	*153.80*	*31.18*	

Table 7. Mean differences for SPAS scores by groups

Variable	Mean	Standard Deviation	p-value
Gender			
Men (n=120)	34.3	9.2	n.s.
Women(n=59)	34.1	9.8	
Age			
<45 years old	34.2	9.9	n.s
>45 years old	34.1	7.5	
Race/Ethnicity			
Caucasian (n=100)	32.4	9.1	n.s.
Non-Caucasian (n=81)	35.6	9.5	
Exercise Groups			
Exercisers (n=139)	33.6	9.8	n.s.
Non-Exercisers(n=41)	35.0	8.9	
BMI Group Comparisons*			
Normal (n=99) vs.	32.1	9.2	n.s.
Overweight (n=75)	34.8	8.7	
Normal (n=99) vs.	32.1	9.2	**<.001**
Obese (n=50)	38.4	10.2	
Overweight (n=75) vs.	34.8	8.7	n.s
Obese (n=50)	38.4	10.2	

*Bonferroni post-hoc tests

Table 8. Mean differences for Body Dissatisfaction scores by groups

Variables	Mean	Standard Deviation	p-value
Gender			
Men (n=115)	34.8	9.7	n.s.
Women(n=104)	36.8	11.3	
Age			
<45 years old (n=179)	35.8	10.8	n.s
>45 years old (n=32)	34.8	8.2	
Race/Ethnicity			
Caucasian (n=122)	34.5	10.4	n.s.
Non-Caucasian (n=81)	36.7	10.5	
Exercise Groups			
Exercisers (n=130)	34.3	10.5	**<.05**
Non-Exercisers (n=89)	37.9	10.1	
BMI Group Comparison*			
Normal (n=94) vs.	32.3	10.0	**<.005**
Overweight (n=66)	37.8	9.4	
Normal (n=94) vs.	32.3	10.0	**<.001**
Obese (n=47)	41.3	9.6	
Overweight (n=66) vs.	37.8	9.4	n.s
Obese (n=47)	41.3	9.6	

*Bonferroni post-hoc tests

Table 9. Mean differences for Trait Anxiety scores by groups

Variables	Mean	Standard Deviation	p-value
Gender			
Men (n=106)	41.6	11.4	n.s.
Women(n=101)	41.4	11.6	
Age			
<45 years old (n=172)	41.2	11.8	n.s
>45 years old (n=28)	42.6	10.5	
Race/Ethnicity			
Caucasian (n=117)	40.4	11.9	n.s.
Non-Caucasian (n=89)	43.0	10.9	
Exercise Groups			
Exercisers (n=122)	41.1	11.6	n.s.
Non-Exercisers (n=85)	42.1	11.3	

Variable	Mean	Standard Deviation	F	*df*	p-value
BMI Categories					
Normal (n=89)	41.0	12.2	.532	2,195	n.s.
Overweight (n=64)	40.8	10.9			
Obese (n=43)	43.4	11.9			

Table 10. Analysis of variance for Body Dissatisfaction scores

	F	df	p-value
Main Effects			
Actual:Ideal Weight Discrepancy	20.6	2,187	**<.001**
Self-Relevance	4.5	1,187	**<.05**
Interaction			
Actual:Ideal Weight Discrepancy x Self Relevance	2.6	2,187	n.s.

Post-Hoc Tests	**Mean**	**n**	**SD**	**p-value**
Actual:Ideal Weight Discrepancy Groups				
Negative Actual:Ideal Discrepancy vs.	38.8	144	8.3	**<.001**
No Actual:Ideal Discrepancy	31.7	28	9.2	
Negative Actual:Ideal Discrepancy vs.	38.8	144	8.3	**<.005**
Positive Actual:Ideal Discrepancy	27.7	28	9.4	
No Actual:Ideal Discrepancy vs.	31.7	28	9.2	n.s.
Positive Actual:Ideal Discrepancy	27.7	28	9.4	
Self-Relevance Groups				
Greater Self-Relevance vs.	37.5	121	8.6	<.05
Less Self-Relevance	33.5	66	10.8	

Table 11. Analysis of variance for SPAS scores

	F	df	p-value
Main Effects			
Actual:Ought Weight Discrepancy	12.5	2,187	**<.001**
Others-Relevance	8.3	1,187	**<.005**
Interaction			
Actual:Ought Weight Discrepancy x Others-Relevance	.24	2,187	n.s.

Post-Hoc Tests	**Mean**	**n**	**SD**	**p-value**
Actual:Ought Weight Discrepancy Groups				
Negative Actual:Ought Discrepancy vs.	37.5	84	8.1	**<.001**
No Actual:Ought Discrepancy	26.5	18	7.9	
Negative Actual:Ought Discrepancy vs.	37.5	84	8.1	**<.001**
Positive Actual:Ought Discrepancy	30.3	24	8.7	
No Actual:Ought Discrepancy vs.	26.5	18	7.9	n.s.
Positive Actual:Ought Discrepancy	30.3	24	8.7	
Other-Relevance Groups				
Greater Others-Relevance	36.1	127	9.2	**<.001**
Less Others-Relevance	31.4	88	9.4	

Table 12. Summary of Regression Analysis for Weight Discrepancy and Body Relevance Variables Predicting Body Dissatisfaction (n=189)

Variable	B	SE	β	Sig.
Actual:Ideal Weight	-.323	.049	-.43	**.000**
Self-Relevance	-.790	.364	-.14	**.031**

Note: $R^2 = .21$ for this model; $F_{2,187} = 24.57$; $p<.001$

Table 13. Summary of Regression Analysis for Weight Discrepancy and Body RelevanceVariables Predicting SPAS (n=201)

Variable	B	SE	β	Sig.
Actual:Ought Weight	-.172	.048	-.30	**.000**
Others-Relevence	-2.07	.510	-.33	**.000**

Note: $R^2 = .22$; $F_{2,199}=26.44$; $p<.001$

Table 14. Summary of Hierarchical Regression Analysis for Variables Predicting SPAS scores (n=179)

Step	Variable	β	SE	R^2 Change	R^2 Cumulated	F	Sig.
One	Trait Anxiety	.423	.061	.30	.30	48.63	**.000**
Two	Body Dissatisfaction	.541	.058	.30	.60	86.04	**.000**
Three	Actual:Ought Weight Discrepancy	-.002	.043	.00	.60	1.08	n.s.
	Others-Relevance	-.610	.421				

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