The Exercise Leader’s Gender and Physique Salience:
Effects on Self-Presentational Concerns in an Exercise Context

Larkin Lamarche, BPhEd

Submitted in partial completion of the requirements for the degree of
Master of Arts in Applied Health Sciences
Health and Physical Education

Under the supervision of Dr. Kimberley Gammage

Faculty of Applied Health Sciences, Brock University
St. Catharines, Ontario

Larkin Lamarche © August, 2007
ABSTRACT

Self-presentation is the process by which individuals attempt to monitor and control how others perceive and evaluate them (Leary, 1992; Leary & Kowalski, 1990). Self-presentational concerns have been shown to influence a number of exercise-related behaviours, cognitions, and affective responses to exercise (e.g., social anxiety). Social anxiety occurs when an individual wants to create a specific impression on others, but is unsure (s)he will be successful (Leary & Kowalski, 1995). Social physique anxiety (SPA) is a specific form of social anxiety related the evaluation of one’s body (Hart, Leary, & Rejeski, 1989). Both social anxiety and SPA may act as deterrents to exercise (Lantz, Hardy, & Ainsworth, 1997; Leary, 1992), so it is important to examine factors that may influence social anxiety and SPA; one such factor is self-presentational efficacy (SPE). SPE is one’s confidence in successfully making desired impressions on others (Leary & Atherton, 1986) and has been associated with social anxiety and SPA (Leary & Kowalski, 1995; Gamage, Martin Ginis, & Hall, 2004).

Several aspects of the exercise environment, such as the presence of mirrors, clothing, and the exercise leader or other participant characteristics, may be manipulated to influence self-presentational concerns (e.g., Gamage, Martin Ginis et al., 2004; Martin & Fox, 2001; Martin Ginis, Prapavessis, & Haase, 2005). Given that the exercise leader has been recognized as one of the most important influences in the group exercise context (Franklin, 1988), it is important to further examine how the leader may impact self-presentational concerns. The present study examined the impact of the exercise leader’s gender and physique salience (i.e., the extent to which the body was emphasized)
on SPE, state social anxiety (SSA), and state social physique anxiety (SPA-S) of women in a live exercise class.

Eighty-seven college-aged female non- or infrequent exercisers (i.e., exercised 2 or fewer times per week) participated in a group exercise class led by one of four leaders: a female whose physique was salient; a female whose physique was non-salient; a male whose physique was salient; or a male whose physique was non-salient. Participants completed measures of SPE, SSA, and SPA-S prior to and following completion of a 30-minute group exercise class. In addition, a measure of social comparison to the exercise leader and other participants with respect to attractiveness, skill, and fitness was completed by participants following the exercise class.

A MANOVA was conducted to examine differences between groups on post-exercise variables. Results indicated that there were no significant differences between groups on measures of SPE, SSA, or SPA-S (all $p's > .05$). However, when all participants were collapsed into one group, a MANOVA showed a significant time effect ($F(3, 81) = 19.45, p < .05, \eta^2 = .419$). Follow-up ANOVAs indicated that post-exercise SPE increased significantly, while SSA and SPA-S decreased significantly (SPE: $F(1, 83) = 30.87, p < .001, \eta^2 = .27$; SSA: $F(1,83) = 11.09, p < .001, \eta^2 = .12$; SPA-S: $F(1,83) = 42.79, p < .001, \eta^2 = .34$). Further, results of a MANOVA revealed that participants who believed they were less fit than other group members (i.e., made negative social comparisons) reported significantly more post-exercise SSA and SPA-S than those who believed they were more fit than the other participants (i.e., made positive comparisons; SSA: $F(2, 84) = 3.46, p < .05, \eta^2 = .08$; SPA-S: $F(2, 84) = 5.69, p < .05, \eta^2 = .12$).
These results may indicate that successfully completing an exercise class may serve as a source of SPE and lead to reduced social anxiety and SPA-S in this population. Alternatively, characteristics of the exercise leader may be less important than characteristics of the other participants. These results also suggest that the types of social comparisons made may influence self-presentational concerns in this sample. Future research should examine how the type of social comparison (i.e., negative or positive) made to the other group members may either generate or reduce anxiety. Also, factors that contribute to the types of social comparisons made with other exercisers should be examined. Implications for practice and research are discussed.
ACKNOWLEDGEMENTS

I would like to thank my committee members, Drs. David Gabriel, Diane Mack, and Philip Sullivan and my faculty supervisor Dr. Kim Gammage. Ticklet, to be frank, you are very unique. I will always remember standing in your office talking about booty/no booty, and exercise givers. You were an excellent mentor who taught me many lessons. Diane, your feedback has strengthened my writing and thought process. Your knowledge in this area has made you an excellent addition to the committee. Mr. Parsimonious, you're not just a pretty face- I appreciate your pickiness (lining up the decimals!). You’re definitely a “study design guy”. Kim, if it wasn’t for your guidance and for keeping me on track by locking me in the cave, I would have never finished. Thank-you for getting me involved in other projects and for challenging me to think. I have really enjoyed working with you and appreciate all of your time, effort, and well-needed feedback. Thanks for putting up with me, for being ok with a fake grad student for a semester while I was in Australia, for plunging over the canyon in Denver, giving me rides to the school, and for putting up with my stubbornness (I still HATE cheese- all types). Most importantly, thanks for always making me laugh (and I know we’ve had a few good ones). I would also like to thank Dr. Cathi Sabiston, my external examiner, for making the trip from McGill University. Your contribution has strengthened this document, and your line of questioning has made me think beyond this project. I hope the stay here wasn’t like the stay in Kingston. All of you have prepared me for the next four years in your own way. I appreciate how each of you challenged me.

I would like to thank my parents, not because I have to, but because they deserve a thanks for all their encouragement. Thank-you for never asking too many questions and
just letting me do what I want (and reminding me to play safe and not get arrested). Be prepared for more school! Thanks to my sister for always making me laugh, keeping me sane (or as sane as a Lamarche can be), reminding me I’m not too crazy for spending so much time in school, and encouraging me to pursue anything. Thanks to my aussie family- for nine months you were my home. Thanks Ryan and Ashlee for playing chasey.

I would also like to thank the Welch Hall Beach gang especially Izzy (for your positive energy), mid/ saint-BoBo (for taking care of me), HO BoBo (for your stories-random), Dodgy BoBo (lurker), “As Kinga” (for cheesecake) and of course James Straw (for letting me bug you, for our Montreal trip, your contagious laugh, and all around good heart… I will need you next year). Yous guys are gems. Thanks WH18 for your facilities.

Essential to my project were the exercise leaders (givers). Brian, you looked great in your spandex shorts- I’m glad I never have to see you again in those. Booty BoBo (Bre), I’m sorry for your nickname (and it will stick with you until you graduate). Both of you were great, reliable, and fun to work with. Also, Heather and Shawna, thanks for your organization, commitment, hard-work, and ability to read 1’s, 2’s, 3’s, etc.

Thanx Adot(०) and Rage (०). Your guys are #1 (sexy font!). Bits, thanks for the comic relief, hybrids, fashioning things, and scratching on the cave door. Thanks for introducing me to the scary balance world; those additional experiences have increased my skill set and knowledge base. Wise man on the mountain (Rage not bits), thanks for pre-made sandwiches, your true and insightful opinions, and your (needed) interruptions.

Finally, thanks to my lunch bag (California Innovations), without you people would be making fun of my baggies of meat instead of you. Also, The PORT- it made me who I am today. Finally, I would like to draw attention to my footnote (see footnote).
# TABLE OF CONTENTS

CERTIFICATE OF APPROVAL .................................................................................. i

TITLE PAGE ......................................................................................................... ii

ABSTRACT ........................................................................................................ iii

ACKNOWLEDGEMENTS ..................................................................................... vi

TABLE OF CONTENTS ....................................................................................... viii

CHAPTER ONE- LITERATURE REVIEW ................................................................ 1

1.1 Self-Presentation ......................................................................................... 2

1.2 Two-Component Model ............................................................................. 2

1.3 Self-Presentation and Exercise-Related Cognitions and Behaviours .......... 4

  1.3.1 Exercise Motivation .............................................................................. 4

  1.3.2 Exercise Frequency ............................................................................. 5

  1.3.3 Exercise Context ............................................................................... 6

  1.3.4 Affective Responses ........................................................................... 6

1.4 Social Anxiety ............................................................................................ 7

1.5 State Social Anxiety in Non-Exercise Settings ......................................... 7

1.6 State Social Anxiety in Exercise ............................................................... 8

1.7 Social Physique Anxiety ............................................................................ 9

  1.7.1 SPA Examined as a Trait Construct ................................................ 10

  1.7.2 SPA Examined as a State Construct .............................................. 12

1.8 Self-Presentational Efficacy ....................................................................... 14

  1.8.1 Components of Self-Presentational Efficacy ................................... 14

  1.8.2 SPE and its Influence on Social Anxiety and SPA ....................... 16
1.9 Exercise Environment Influences on SPE, Social Anxiety, and SPA........... 17
   1.9.1 Presence of Mirrors................................................. 17
   1.9.2 Clothing Type......................................................... 18
   1.9.3 The Presence of a Group........................................... 18
   1.9.4 Gender Composition of the Group................................ 19
   1.9.5 Enthusiasm of Other Group Members............................. 20
   1.9.6 Attractiveness of the Other Exercisers.......................... 21

1.10 The Influence of the Exercise Leader..................................... 21
   1.10.1 Leader Style....................................................... 21
   1.10.2 Attractiveness and Physique Salience of the Leader.............. 23

1.11 Limitations to Extant Research ........................................... 25

1.12 Significance........................................................................ 25

CHAPTER TWO- RATIONALE, PURPOSE, & HYPOTHESES......................... 26
  2.1 Rationale........................................................................ 26
  2.2 Statement of the Purpose.................................................. 28
  2.3 Hypotheses....................................................................... 28

CHAPTER THREE- METHODOLOGY.................................................. 30
  3.1 Participants..................................................................... 30
  3.2 Measures....................................................................... 31
     3.2.1 Demographic Variables............................................ 32
     3.2.2 Physical Activity Readiness Questionnaire (PAR-Q)......... 32
     3.2.3 Impression Motivation (IM)....................................... 32
     3.2.4 Self-Presentational Efficacy (SPE).............................. 32
3.2.5 State Social Anxiety (SSA) ................................................. 33
3.2.6 Social Physique Anxiety-State (SPA-S) .......................... 33
3.2.7 Rating of Perceived Exertion (RPE) ................................. 33
3.2.8 Social Comparison (SC) .................................................. 34

3.3 Procedures ............................................................................ 35
3.3.1 Exercise Class ................................................................. 36
3.3.2 Leader Manipulation ......................................................... 37
3.3.3 Leader Characteristics and Qualifications ....................... 37
3.3.4 Checklist for Class Consistency ....................................... 38
3.3.5 Manipulation Training ...................................................... 38

CHAPTER FOUR- RESULTS .......................................................... 40

4.1 Treatment of Missing Data .................................................. 40
4.2 Reverse Coding and Subscale Score .................................... 40
4.3 Outliers ............................................................................... 40
4.4 Normality of Sampling Distribution: Skewness and Kurtosis 41
4.5 Linearity .............................................................................. 41
4.6 Homogeneity of Variance .................................................... 42
4.7 Multicollinearity .................................................................. 42
4.8 Manipulation Checks .......................................................... 43
4.8.1 Class Consistency ............................................................ 43
4.8.2 Impression Motivation ..................................................... 43
4.8.3 Rating of Perceived Exertion .......................................... 43
4.8.4 Purpose of the Study ....................................................... 44
4.9 Descriptive Statistics ............................................................................................................. 44
4.10 Correlation Analysis ............................................................................................................. 45
4.11 Hypothesis Testing ............................................................................................................... 45
  4.11.1 Gender and Physique Salience: Pre-Exercise ............................................................ 45
  4.11.2 Gender and Physique Salience: Post-Exercise .......................................................... 45
4.12 Exploratory Analyses ......................................................................................................... 46
  4.12.1 Pre- and Post-Exercise Changes .............................................................................. 46
  4.12.2 Social Comparisons ................................................................................................. 47
  4.12.3 Exercise Leader and Attractiveness ....................................................................... 47
  4.12.4 Exercise Leader and Skill ....................................................................................... 48
  4.12.5 Exercise Leader and Fitness .................................................................................... 48
  4.12.6 Other Participants and Attractiveness .................................................................... 48
  4.12.7 Other Participants and Skill .................................................................................... 49
  4.12.8 Other Participants and Fitness ................................................................................ 49
4.13 Exploratory Analysis: Participants’ Fitness Comparison ..................................................... 49
  4.13.1 Outliers .................................................................................................................... 50
  4.13.2 Skewness and Kurtosis ........................................................................................... 50
  4.13.3 Linearity .................................................................................................................. 50
  4.13.4 Homogeneity of Variance ....................................................................................... 50
  4.13.5 Multicollinearity ...................................................................................................... 51
4.14 Manipulation Check .......................................................................................................... 51
  4.14.1 IM ........................................................................................................................... 51
  4.14.2 RPE ......................................................................................................................... 51
4.15 Correlation Analysis ........................................................................................................... 52

4.16 Social Comparison Testing ................................................................................................. 52

  4.16.1 Social Comparison: Pre-Exercise Scores ................................................................. 52

  4.16.2 Social Comparison: Post-Exercise Scores ............................................................... 53

CHAPTER FIVE - DISCUSSION ................................................................................................. 54

5.1 Descriptive Statistics ........................................................................................................... 54

5.2 Influence of Gender of the Exercise Leader ....................................................................... 55

5.3 Influence of Physique Salience of the Exercise Leader ..................................................... 57

5.4 Alternative Explanations ..................................................................................................... 59

5.5 Social Comparisons ........................................................................................................... 62

5.6 Limitations .......................................................................................................................... 63

5.7 Future Directions ................................................................................................................ 66

5.8 Implications ......................................................................................................................... 69

  5.8.1 Implications for Practice .............................................................................................. 69

  5.8.2 Implications for Research ............................................................................................ 70

5.9 Conclusion .......................................................................................................................... 71

REFERENCES .......................................................................................................................... 72

Footnote ..................................................................................................................................... 83

Table 1: Demographic Characteristics of the Entire Sample .................................................... 84

Table 2: Descriptive Statistics for Female, Physique Salient Leader Group ............................. 86

Table 3: Descriptive Statistics for Female, Physique Non-Salient Leader Group ................. 87

Table 4: Descriptive Statistics for Male, Physique Salient Leader Group .............................. 88

Table 5: Descriptive Statistics for Male, Physique Non-Salient Leader Group ................. 89
Table 6: Bivariate Correlations between SPE, SSA, SPA-S, and RPE for Female Leader Conditions ................................................................. 90
Table 7: Bivariate Correlations between SPE, SSA, SPA-S, and RPE for Male Leader Conditions ................................................................. 91
Table 8: Descriptive Statistics for Entire Sample ................................................................................................................................. 92
Table 9: Bivariate Correlations between SPE, SSA, SPA-S, and RPE for Entire Sample ................................................................................................................................. 93
Table 10: Descriptive Statistics for Entire Sample for Social Comparison to the Instructor and Other Participants ................................................. 94
Table 11: Descriptive Statistics for Fitness Comparison to Other Participants ........................................................................................................ 95
Table 12: Bivariate Correlations between SPE, SSA, SPA-S, and RPE for Negative Social Comparison Group ......................................................................................................................................... 96
Table 13: Bivariate Correlations between SPE, SSA, SPA-S, and RPE for Similar Social Comparison Group ................................................................................................................................. 97
Table 14: Bivariate Correlations between SPE, SSA, SPA-S, and RPE for Positive Social Comparison Group ......................................................................................................................................... 98
Figure Captions ............................................................................................................................................................................................ 99
Figure 1: Two-Component Model of Self-Presentation ............................................................................................................................ 100
Figure 2: Photos of Female Physique Salient and Non-Salient Leader ........................................................... 101
Figure 3: Photos of Male Physique Salient and Non-Salient Leader ........................................................................................................... 102
Appendix A: Demographic Questionnaire, PAR-Q, and IM Scale ................................................................. 103
Appendix B: Pre-Exercise Questionnaire Package ................................................................................................. 107
Appendix C: Post-Exercise Questionnaire Package ................................................................................................. 111
Appendix D: Ethics Clearance ................................................................. 119
Appendix E: Verbal Script ................................................................. 121
Appendix F: Recruitment Poster ......................................................... 123
Appendix G: Letter of Invitation and Informed Consent ......................... 125
Appendix H: Debriefing Form & Summary of Results ......................... 128
Appendix I: Exercise Class Checklist ............................................... 133
CHAPTER ONE: LITERATURE REVIEW

The physical, psychological, and emotional benefits of regular physical activity participation are well documented (see Pate et al., 1995 and Pollock et al., 1998 for reviews). Psychologically, even acute bouts of aerobic exercise as short as 10 minutes have been shown to increase exercise-related self-efficacy and positive well-being, and decrease psychological distress (Rudolph & Butki, 1998). Acute bouts of exercise have also been associated with increases in feeling states such as positive affect (McAuley, Talbot, & Martinez, 1999) and revitalization (Bozoian, Rejeski, & McAuley, 1994; Gauvin & Rejeski, 1993) and reductions in negative affect (Petruzzello, Jones, & Tate, 1997) and state anxiety (Breus & O’Connor, 1998).

Despite this knowledge, sedentary lifestyles have been consistently reported. In general, 40 to 60 percent of people residing in industrialized countries (e.g., United States, England, Scotland, Canada, and Australia) do not achieve the recommended amount of physical activity necessary to gain health benefits (Lox, Martin, & Petruzzello, 2003). Furthermore, the estimated financial burden attributable to physical inactivity is estimated to be $5.3 billion per year in Canada and is expected to rise if the population remains insufficiently active (Katzmarzyk & Janssen, 2004). In addition, adherence to exercise programs is disturbingly low (Powell, Spain, Christenson, & Mollenkamp, 1986). Of those who start a regular physical activity program, 50% will dropout within six months (Dishman, 1988). Given the known health benefits of regular activity, the rising financial costs of physical inactivity, and the low adherence and physical activity participation rates, examining factors that influence exercise-related behaviours (e.g., exercise initiation, participation, and adherence) is important. One way to examine
factors that influence exercise-related behaviours is through a self-presentational framework.

1.1 Self-Presentation

Self-presentation refers to the process by which individuals attempt to monitor and control how others perceive and evaluate them (Leary, 1992; Leary & Kowalski, 1990). Although most people try to convey impressions that are generally congruent with their self-concept, self-presentation usually involves selectively presenting the characteristics of oneself that will make favourable impressions within others’ minds, while selectively omitting those characteristics that will create undesired impressions (Leary, 1992; Schlenker & Leary, 1982). Self-presentation is important because the impressions people make have implications for how others perceive, evaluate, and treat them (Leary & Kowalski, 1990). In part, people’s outcomes in life depend on their self-presentations that lead others to respond in desired ways (Leary, 1992). For example, those who are able to make a positive (as opposed to a negative impression) tend to make friends easier, and are more likely to find employment and get a promotion; generally, people are more accepting and pleasant when interacting with someone of whom they hold a positive impression (Leary, 1995).

1.2 Two-Component Model

Leary and Kowalski (1990) proposed a two-component model that conceptualizes self-presentation as comprising two distinct processes. The first process, impression motivation, is cognitive in nature and reflects the desire to create certain impressions in others’ minds (Leary & Kowalski, 1990). Impression construction, the second process, involves overt behaviours engaged in to affect others’ impressions, and consists of
choosing which impressions to create and the ways to create them (Leary & Kowalski, 1990). Leary and Kowalski (1990) suggested that several factors impact impression motivation. These factors include the level of impression motivation and monitoring, discrepancy between one’s desired and one’s current image, importance of the desired impression to the achievement of one’s goal, and the value of the goal associated with making the desired impression. They further outlined other factors, such as beliefs about what images are desirable and undesirable, self-concept, values of the target or audience, role constraints of the individual, and the individual’s current social image which influence impression construction.

More recently, in their review on self-presentation in health-damaging behaviours, Martin Ginis and Leary (2004) suggested these factors could be classified as either dispositional or situational in nature (see Figure 1 for outlined model). Specifically, the level of impression motivation and monitoring was a dispositional influence on impression motivation, whereas the desirable and undesirable images and self-concept were dispositional factors related to impression construction. Although important, research regarding dispositional variables does little to suggest ways to lower self-presentational pressures because such variables are relatively unchanging.

Martin Ginis and Leary (2004) also described situational influences on self-presentation. For example, discrepancies between desired and current images, the goal relevance of the impression, and the goal value all influence impression motivation. In addition, target values, role constraints, and current social image are all situational influences on impression construction. This distinction between dispositional and
situational influences is important because it is the situational influences that may modify exercise-related behaviours and cognitions (Martin Ginis & Leary, 2004).

1.3 *Self-Presentation and Exercise-Related Cognitions and Behaviours*

Leary (1992) and Hausenblas, Brewer, and Van Raalte (2004) stated that self-presentation is an important process to examine within an exercise setting because it may affect one's exercise-related cognitions and behaviours. For example, exercise motivation (Crawford & Eklund, 1994; Culos-Reed, Brawley, Martin, & Leary, 2002; Eklund & Crawford, 1994; Leary; 1992), exercise frequency (Culos-Reed et al., 2002; Frederick & Morrison, 1996; Lantz, Hardy, & Ainsworth, 1997; Martin, Leary, & O'Brien, 2001), the choice of exercise context (Bain, Wilson, & Chaikind, 1989), and affective responses to exercise (Leary, 1992).

1.3.1 *Exercise Motivation.* One exercise-related cognition that self-presentation concerns have been shown to influence is exercise motivation (Crawford & Eklund, 1994; Culos-Reed et al., 2002; Eklund & Crawford, 1994; Leary; 1992). Some consistently identified reasons for exercise participation (i.e., weight control, improved body tone and physical attractiveness, and maintenance of a social identity of being fit or athletic; Conroy, Motl, & Hall, 2000; Crawford & Eklund, 1994; Culos-Reed et al., 2002; Eklund & Crawford, 1994; Leary, 1992; Silberstein, Striegel-Moore, Timko, & Rodin, 1988; Williams & Cash, 2001) are arguably self-presentational in nature or at least have a self-presentational component. Furthermore, impressions are strongly influenced by physical appearance (Dion, Berscheid, & Walster, 1972; Leary, 1995). For example, physically attractive people are perceived as more sociable, dominant, intelligent, socially skilled, and adjusted than less attractive people (Dion et al., 1972; Leary, 1995). In
addition to improving physical appearance, exercise may help one achieve the current aesthetic cultural standard. For example, a thin and toned body for women, and a lean and muscular one for men (Leit, Pope, & Gray, 2000; Thompson, Heiberg, Altabe, & Tantleff-Dunn, 1999) may be attained, in part, through exercise.

Moreover, simply being perceived as an exerciser has self-presentational advantages; those perceived as exercisers are not only considered fitter, stronger, healthier, more muscular, and more physically attractive than non-exercisers, but also more self-confident, greater in self-control, harder working, more independent, braver, friendlier, neater, more intelligent and more sociable than non-exercisers (Martin, Sinden, & Fleming, 2000). Therefore, it is not surprising that self-presentational motives for engaging in exercise as a means to help create the image of being an exerciser and achieve an ideal, more attractive body, are commonly cited (Hausenblas et al., 2004). Although self-presentational reasons for exercise participation may serve as a motivator, Leary (1992) explained that self-presentational concerns can also act as a demotivator for exercise. For example, people may be concerned about appearing weak, uncoordinated, incompetent, or overweight while exercising, and therefore avoid certain physical activities or exercise altogether.

1.3.2 Exercise Frequency. Exercise frequency is influenced by self-presentational concerns (Culos-Reed et al., 2002; Frederick & Morrison, 1996; Lantz, Hardy, & Ainsworth, 1997; Martin, Leary, & O’Brien, 2001). Martin et al. (2001) found that adolescent girls who were worried about others’ evaluation of their bodies were more likely to avoid exercise because of their concerns about appearing weak, uncoordinated, or unfit (Martin et al., 2001). Also, Culos-Reed et al. (2002) examined the relationship
between self-presentational motives and physical activity in a sample of cosmetic surgery patients. The researchers found that greater self-presentational concerns were associated with exercising fewer times per week. In addition, Lantz et al. (1997) found that greater body-related concerns led to lowered engagement in exercise settings where an individual’s body may be evaluated negatively. However, not all research shows a negative relationship between social physique anxiety (SPA) and exercise frequency; some research suggests that those reporting high levels of SPA may exercise more times per week and display similar characteristics as addicted exercisers (Frederick & Morrison, 1996).

1.3.3 Exercise Context. The context in which exercise occurs is another exercise-related factor affected by self-presentational concerns. Bain et al. (1989) examined the reactions of overweight females to a series of exercise sessions. Concerns of visibility, embarrassment, and judgment by others in the social exercise setting arose as a common theme and limited their willingness to exercise in public or to attend exercise studios. Moreover, because of these self-presentational concerns, many participants preferred an exercise program designed specifically to meet their unique needs as overweight women (Bain et al., 1989).

1.3.4 Affective Responses. Self-presentational concerns can also influence an individual’s affective responses to exercise (e.g., social anxiety; Leary, 1992). Those motivated to make certain impressions on others (e.g., fit, co-ordinated, athletic, or strong, etc.) but who doubt they will be successful in making those impressions are likely to experience some degree of social anxiety (Leary & Kowalski, 1995). Social anxiety at
low levels may take away from the potential emotional rewards of exercise (e.g., exercise enjoyment), and at higher levels may act as a deterrent to exercise (Leary, 1992).

1.4 Social Anxiety

As noted above, individuals who wish to make a specific impression on others, but are unsure they will be successful, are likely to experience social anxiety (Leary & Atherton, 1986; Leary & Kowalski, 1995). Social anxiety is the anxiety, apprehension, and worry experienced from concerns about receiving evaluations from others in real or imagined settings (Schlenker & Leary, 1982). Because social anxiety at low levels may decrease exercise enjoyment, and at higher levels may prevent people from exercising (Leary, 1992), understanding factors related to social anxiety (e.g., self-presentational efficacy) in exercise settings is important. These factors may be particularly relevant among our increasingly sedentary population (Lox et al., 2003) for whom social anxiety may serve as a deterrent to being physically active.

1.5 State Social Anxiety in Non-Exercise Settings

Self-presentational concerns can increase social anxiety in non-exercise contexts (Carron, Estabrooks, Horton, Prapavessis, & Hausenblas, 1999). With respect to general social settings, Carron and Prapavessis (1997) examined the effects of both personality and group influence on social anxiety across three settings varying in group support (alone, with a best friend, or accompanied by a group of friends). Participants ($N = 161$) were asked to describe a social setting in which they would feel anxious about their physique and rated the level of anxiousness they would experience if alone, with their best friend, and with a group of friends. Carron and Prapavessis (1997) found that significantly less social anxiety was experienced with a best friend or a group of friends
compared to being alone, and significantly less social anxiety was experienced with a best friend as opposed to a group of friends.

In a follow-up study, Carron et al. (1999) examined whether being in the company of a group served to decrease social anxiety. Also, to examine whether the decrease in social anxiety was a result of perceptions of anonymity, being distracted, feelings of security, or an expectation that the evaluation would be diffused across all group members. Sixty-one female undergraduate students were presented with two scenarios: a physique salient situation (wearing a bathing suit in a public context) and a more general social situation (a party). Participants were asked to rate their level of social anxiety while alone, in the company of a group of all-female friends, in a group of all-male friends, and in a mixed group of male and female friends, for each scenario. Carron et al. (1999) found that in the physique salient situation, social anxiety was more pronounced in a group of all-male friends or while alone than being with a group of all-female friends or a mixed group of male and female friends. These results were consistent with other research in which people reported greater self-presentational concerns during social interactions involving the opposite sex rather than the same sex (Leary et al., 1994); therefore, it is not surprising to find that women report more anxiety in a group of all-male friends. Also consistent with other research, being in a group compared to being alone serves as a means of diffusing self-presentation evaluation among group members (Carron & Prapavessis, 1997).

1.6 State Social Anxiety in Exercise

Self-presentational concerns have been shown to influence social anxiety in an exercise setting (Martin & Fox, 2001; Van Raalte, Cunningham, Cornelius, & Brewer,
2004). For example, Van Raalte et al. (2004) found that anxiety related to one’s body was significantly higher in the fitness center than the dining hall or the library on a college campus.

Specific characteristics of the exercise environment have been shown to influence social anxiety, such as the enthusiasm of the other exercisers (Martin & Fox, 2001), and the presence of exercise mirrors and revealing clothing (Gammage, Martin Ginis, & Hall, 2004). In addition to increases in state social anxiety, Gammage, Martin Ginis et al. (2004) also reported increases in one form of social anxiety that may be particularly relevant in exercise settings: social physique anxiety (SPA).

1.7 Social Physique Anxiety

In an exercise setting, self-presentational concerns related to one’s body (i.e., SPA) may be the most relevant form of social anxiety. SPA is defined as a trait self-presentational concern associated with the appearance and evaluation of one’s body (Hart, Leary, & Rejeski, 1989). Hart and colleagues (1989) first conceptualized SPA as a trait construct related to one’s body. As a trait, SPA is a relatively stable characteristic, which is consistent across most situations. Thus, an individual who is high in trait SPA would be likely to experience high SPA levels across a variety of settings, such as making a speech, being at a party, or exercising. Hart et al. (1989) found that women higher in SPA were more stressed, uncomfortable, and had more negative thoughts during an evaluation of their bodies compared to women with lower SPA. Although originally conceptualized as a trait, recently, there has been some dispute as to whether SPA may also have a state-like component (Calogero, 2004; Gammage, Martin Ginis et
1.7.1 **SPA Examined as a Trait Construct.** Given its original conceptualization and operationalization, much research that has examined the effects of SPA on exercise has treated it as a trait. This line of research has yielded important information regarding the influence of SPA on exercise-related behaviours (e.g., exercise frequency, adherence, choice of activity, exercise context, and exercise clothing preference; Crawford & Eklund, 1994; Eklund & Crawford, 1994; Frederick & Morrison, 1996; Lantz et al., 1997; Leary, 1992; Spink, 1992; Treasure, Lox, & Lawton, 1998; Walton & Finkenberg, 2002; Yin, 2001). Some research has shown that SPA can negatively impact exercise behaviour. For example, Lantz et al. (1997) found that those higher in SPA engaged in a lower amount of physical activity. Also, among obese, sedentary females, exercise adherence has been shown to be affected negatively by high levels of SPA (Treasure et al., 1998). On the contrary, some researchers have suggested that higher SPA levels may serve to motivate individuals to exercise in order to enhance their social identity and physical appearance (Leary, 1992). In this sample, those reporting high levels of SPA may exercise more times a week as well as be overly concerned about their bodies, displaying similar characteristics as addicted exercisers (Frederick & Morrison, 1996).

SPA levels can also influence the choice of exercise activity. Frederick and Morrison (1996) examined the effects of gender, age, and depression on the relationship between SPA and exercise-related behaviour. Specifically related to SPA and exercise type, people with higher levels of SPA were more likely to engage in fitness-type
activities (e.g., aerobics, weight training) rather than team or individual sports (Frederick & Morrison, 1996).

SPA has also been shown to influence aspects of exercise besides exercise frequency and activity choice. Spink (1992) found that women with higher levels of SPA reported a significant preference to exercise in more private settings than public settings, whereas those scoring lower on SPA did not show any preference with regards to exercise setting. Also, Yin (2001) found that women who exercised in the women-only section of their fitness clubs had a significantly higher level of SPA and were more comfortable exercising in the women’s-only rather than the co-ed section of their fitness club.

Crawford and Eklund (1994) suggested that individuals with higher levels of SPA may prefer to exercise in clothing that de-emphasized the physique (i.e., loose-fitting T-shirts and shorts) compared to clothing that emphasized the physique (i.e., tight-fitting clothing). In a sample of 104 college-aged females, Crawford and Eklund (1994) concluded that a significant positive relationship existed between SPA and favourable ratings of an exercise video that de-emphasized the physique (i.e., exercisers wore loose-fitting T-shirts and shorts); participants with higher levels of SPA preferred the video that de-emphasized the physique.

In a follow-up study designed to replicate and extend the findings of Crawford and Eklund (1994), Eklund and Crawford (1994) found significant associations between questions probing preferences for working out in tight-fitting or loose-fitting aerobics clothing and SPA; SPA was negatively associated with preferences for exercising in tight-fitting aerobic clothing and was positively associated with preferences for loose-
fitting aerobic clothing. Unlike Crawford and Eklund (1994), Eklund and Crawford (1994) found no significant associations between SPA and video presentations featuring exercisers wearing either physique salient or non-salient clothing. However, Eklund and Crawford (1994) stated that the SPA-related patterns of responses to the questions probing preferences for working out in tight- or loose-fitting clothing suggested that self-presentation does contribute to exercise-related behaviour and preferences.

Research that has treated SPA as a trait construct has been able to identify those who may be at a higher risk for physique-related anxiety. For example, women (Frederick & Morrison, 1996), adolescent dieters and non-exercisers (Martin et al., 2001), and those high in variables related to social anxiety such as impression motivation (i.e., public self-consciousness, self-monitoring, fear of negative evaluation; Martin Ginis & Leary, 2004) are all groups who may be at risk for higher SPA. Moreover, potential exercise habits and cognitions (i.e., exercise motivation, frequency, and adherence) and preferences related to the choice of activity, the context in which to exercise, and exercise clothing can be described by research that examines SPA as a trait construct. Because most research has treated SPA as a trait, finding ways to change one’s level of anxiety in an exercise setting has been difficult, as traits are relatively stable and resistant to change. Consequently, research that has examined SPA as a trait has provided few suggestions for alleviating high levels of SPA.

1.7.2 SPA Examined as a State Construct. Other lines of research have begun to investigate and treat SPA as a state construct referring to the level of SPA in a particular situation, and which may change moment to moment. For instance, in a non-exercise setting, Calogero (2004) found that women who anticipated a male gaze reported higher
SPA than those who anticipated a female gaze. In an exercise setting, individuals may experience high SPA while exercising alone, but not with a group of friends, or they may experience high SPA at the beach, but not at school. Van Raalte et al. (2004) examined the relationship between SPA and different types of environments in college-aged men and women in two separate studies. In the first study, SPA was measured after participants imagined themselves in three scenarios on the university campus (i.e., fitness center, dining hall, and library). The results indicated that SPA levels were significantly greater in the fitness center and dining hall compared to the library. In the second study, the SPA of male and female exercisers was measured after participants were actually in the three different environments. Van Raalte et al. (2004) found that SPA was significantly higher in the fitness center than the library and that females had significantly higher SPA than male exercisers. Based on these findings, they suggested that SPA may be influenced by environmental factors.

With regards to an exercise context, other researchers have treated SPA as a state (e.g., Gammage, Martin Ginis et al., 2004; Kruisselbrink et al., 2004; Martin Ginis et al., 2005). For example, Gammage, Martin Ginis et al. (2004) manipulated the exercise environment (e.g., the presence of mirrors, physique salient clothing, a male confederate, nametags) to alter levels of SPA in female university students. Further, Kruisselbrink et al. (2004) found that levels of SPA differed based on the gender composition of the exercise group in women. Although both studies showed that SPA could be changed, only Kruisselbrink et al. (2004) assessed SPA using a state version of a measure. If SPA is reflective of a state variable, situational factors can be modified to alleviate fears of one's body being negatively evaluated (Gammage, Martin Ginis et al., 2004;
Kruisselbrink et al., 2004). One factor that affects social anxiety in general, and SPA specifically, is self-presentational efficacy (SPE; Gammage, Martin Ginis et al., 2004).

1.8 *Self-Presentational Efficacy*

SPE is the subjective probability of successfully portraying desired impressions on others (Leary & Atherton, 1986; Maddux, Norton, & Leary, 1988). As suggested by Leary and Kowalski (1995), feelings of apprehension, worry, and anxiety may not only be influenced by impression motivation, but also SPE; according to the following formula:

$$\text{Social Anxiety} = f \left( \text{Motivation} \times (1 - \text{Self-Presentational Efficacy}) \right)$$

If impression motivation is held constant, decreased SPE are associated with increased social anxiety (and vice versa). Similarly, in situations with high IM, social anxiety should be increased. Consequently, most research suggests that self-presentational concerns and social anxiety are linked (Leary & Atherton, 1986; Leary & Kowalski, 1995; Maddux et al., 1988; Schlenker & Leary, 1982) such that low SPE leads to higher levels of social anxiety. As outlined by Maddux et al. (1988), SPE is comprised of three beliefs (self-presentational efficacy expectancy, self-presentational outcome expectancy, and self-presentational outcome value).

1.8.1 *Components of Self-Presentational Efficacy.* Maddux et al. (1988) stated that SPE is a function of the interaction of three beliefs: self-presentational efficacy expectancy, self-presentational outcome expectancy, and self-presentational outcome value. Self-presentational efficacy expectancy is the subjective probability of conveying a desired impression or performing certain behaviours (e.g., I believe others will think I am physically fit). Self-presentational outcome expectancy refers to the belief that these
impressions and behaviours will lead to the desired outcomes (e.g., if I exercise three
times a week, others will see me as healthy and fit). Self-presentational outcome value is
the importance placed on the outcome (e.g., I value being seen as physically fit). When
self-presentational efficacy expectancy, self-presentational outcome expectancy, and self-
presentational outcome value are high, SPE will also be high; however, if any of these
components are relatively lower, then SPE will also be lower, which in turn can influence
one's affect.

In an academic setting, self-presentational efficacy expectancy and self-
presentational outcome expectancy were found to be negatively correlated with self-
ratings of anticipated anxiety, with self-presentational efficacy expectancy the biggest
predictor of anticipated anxiety (Maddux et al., 1988). In addition, self-presentational
efficacy expectancy has also been shown to be the most important predictor of
anticipated anxiety in physical activity settings (Gammage, Hall, & Martin Ginis, 2004).
Gammage, Hall et al. (2004) illustrated that both self-presentational efficacy expectancy
and self-presentational outcome expectancy accounted for a significant proportion of the
variance in SPA. Self-presentational efficacy expectancy accounted for 13% of the
variance of SPA in their sample of 235 female exercisers, highlighting that self-
presentational efficacy expectancy was an important variable affecting SPA and
potentially exercise behaviour. In short, believing one would successfully convey a
desired impression (self-presentational efficacy expectancy) was most important in
predicting anxiety levels regardless of the belief of whether the behaviour would actually
lead to that desired impression (Gammage, Hall et al., 2004). Therefore, situations that
allow exercisers to feel efficacious in conveying a desired impression may lower their
level of social anxiety. Since SPE has been identified as a significant predictor of SPA levels among female exercisers (Gammage, Hall et al., 2004), examining factors that may influence the relationships between SPE, social anxiety, and SPA may further our knowledge of variables that influence exercise-related behaviours.

1.8.2 SPE and its Influence on Social Anxiety and SPA. Although generating much important information regarding the influence of certain aspects of the exercise environment on self-presentational concerns, these studies did not examine the impact of the exercise environment specifically on SPE and its subsequent influence on social anxiety. Gammage, Martin Ginis et al. (2004) specifically manipulated the exercise environment to create a high and a low self-presentational efficacy group to examine the influence of SPE on various forms of social anxiety in an exercise setting. In a group of college-aged female exercisers, participants in the low efficacy group \( (n = 37) \) were told they would be supplied with exercise attire (i.e., spandex jog bra/cropped top and spandex shorts) and a nametag that was to be worn during the exercise class. Participants in this group were informed that the class would be videotaped by a stationary camera in the corner of the exercise studio and another camera, operated by a male confederate, who would move about the group and take close-ups. Lastly, all mirrors and windows looking out into a public hallway were left uncovered. Conversely, within the high efficacy condition, participants \( (n = 28) \) were told they would wear loose-fitting clothing (i.e., T-shirt and shorts) and the class would be videotaped by two cameras, set-up in the front corners of the studio. However, unlike the low self-presentational efficacy group, the focus of the videotaping was on the group as a whole and not a specific individual (i.e., no close-ups). Also, there was no male confederate present and all mirrors and
windows were covered. After completing the measures of SPE, social anxiety, and SPA, the study was over and the participants were debriefed; thus no exercise actually took place. The results of the study showed that participants within the low self-presentational efficacy condition reported significantly higher levels of social anxiety in exercise classes, SPA, and physical appearance anxiety compared to those within the high self-presentational efficacy group. Therefore, Gammage, Martin Ginis et al. (2004) suggested that by providing a high self-presentational efficacy exercise, state social anxiety, SPA, and physical appearance anxiety could be decreased in female exercisers.

1.9 Exercise Environment Influences on SPE, Social Anxiety, and SPA

Given that situational influences can impact self-presentational concerns, researchers have examined environmental factors that may influence self-presentational concerns in exercise settings. Aspects of the exercise environment including the presence of exercise mirrors (Gammage, Martin Ginis et al., 2004; Katula, McAuley, Mihalko, & Bane, 1998), clothing type (Gammage, Martin Ginis et al., 2004; Sinden, Martin Ginis, & Angove, 2003), gender composition of the exercise group (Kruisselbrink et al., 2004), and characteristics of the exercise leader (Fleming & Martin Ginis, 2004; Martin & Fox, 2001; Martin Ginis et al., 2005) have been shown to influence self-presentational concerns such as SPE, social anxiety, and SPA.

1.9.1 Presence of Mirrors. One factor that may have a significant impact is the presence of mirrors. With regards to SPA specifically, Katula et al. (1998) demonstrated that perceived physical ability and SPA were significant predictors of self-efficacy in women who exercised in front of a mirror. However, within the environment without mirrors (either in a lab setting or a natural setting in which the participant chose their
neither perceived physical ability nor SPA was predictors. Katula et al. (1998) suggested that the mirror created a self-evaluative environment in which the exerciser may have felt anxious because of the perceived discrepancy between him/herself and a personal standard of correctness. The authors concluded that evaluative exercise environments (e.g., mirrors) serve to reduce self-efficacy creating the potential for increased anxiety about one’s body (Katula et al., 1998).

1.9.2 Clothing Type. In a study examining the moderating effects of SPA and physical activity on the relationship between exercise attire and SPE on elderly women, Sinden et al. (2003) found that SPA moderated the effects of exercise attire on SPE. Eighty-one women aged 53 to 84 years either watched an exercise video with class participants wearing non-revealing clothing (short sleeve shirts and trousers) or a video with class members wearing revealing clothing (sleeveless shirts and shorts). Results revealed that among women who watched the video featuring exercisers wearing revealing clothing, there was a significant negative relationship between SPA and SPE. Also, for women with average or high levels of SPA, those who saw the revealing attire group had lower self-efficacy than those who watched the video showing exercisers wearing non-revealing clothing (Sinden et al., 2003).

1.9.3 The Presence of a Group. Carron and Prapavessis (1997) compared individuals with high SPA to individuals with low SPA across three different group settings (exercising alone, with a best friend, or with a group of friends). The authors found that social anxiety was reduced the most when exercising with a best friend as opposed to a group of friends in their sample of 161 university students, although exercising with a group of friends also reduced anxiety compared to exercising alone.
(Carron & Prapavessis, 1997). However, the authors also found that the magnitude of the perceived benefit of having a best friend or a group of friends in a social setting was not significantly greater in individuals having a higher level of trait social anxiety compared to those with a lower level of trait anxiety. Also, individuals who were found to be lower in the trait of SPA perceived less social anxiety regarding their physique independent of the social condition (Carron & Prapavessis, 1997).

1.9.4 Gender Composition of the Group. With respect to everyday interactions, the gender of the interactant is important. It has been suggested that interactions with the opposite sex have a greater interpersonal load than those with the same-sex, and that people are often more highly motivated to make desired impressions on the opposite sex, because success in making the desired impression on the opposite sex affirms one’s social and sexual desirability (Leary & Kowalski, 1995). A high level of impression motivation and the potential to gain positive outcomes of successfully making desired impressions may set the stage for social anxiety. With respect to exercise, Kruisselbrink et al. (2004) found that the gender composition of the exercise group affected the state social anxiety levels of women but not men. Situational SPA and immediate exercise intentions in male and female members of a fitness club were examined in response to three different exercise scenarios (all-female, all-male, and mixed-gender). The results revealed that for female participants only \( n = 61 \), SPA scores increased significantly from an all-female to a mixed-gender to an all-male exercise setting. Also, significantly more women intended to shorten their workout in response to an all-male exercise setting compared to that of an all-female or mixed-gender context. Furthermore, Kruisselbrink et al. (2004) found that the presence of men in an exercise setting might serve as a stimulant
of SPA in women. Therefore, women exercising in an all-male exercise setting as opposed to a co-ed setting experienced higher levels of SPA; by contrast, exercising in an all-female environment was the least anxiety-provoking situation.

1.9.5 **Enthusiasm of Other Group Members.** Martin and Fox (2001) examined the effects of the group environment and group leadership style on social anxiety. With respect to group exercise environment only, the enriched group environment was constructed to create a comfortable, relaxed, and interactive environment for its exercisers. More specifically, confederates were instructed to introduce themselves to participants, initiate casual conversation with other group members, provide encouragement to the group as a whole, and always respond verbally to the leader. Unlike the socially enriched group environment, the bland group environment was structured to create a neutral, non-interactive environment. Study confederates were trained to simply be compliant to the leader’s wishes, but not be enthusiastic or social. Higher levels of social anxiety were reported in the socially enriched group environment compared to the bland group environment. It was suggested that people in the enriched group environment may have become more aware of their self-presentation when others comment or are seen observing their features or behaviours. This excessive public attention may have increased the likelihood that one’s incompetencies might be noticed causing self-consciousness, embarrassment and social anxiety. Also, the participants in the enriched group environment may have liked their fellow exercisers more than did the participants in the bland group environment. These participants may have been more motivated than those within the bland group environment to present themselves favourably for the people
they perceived as friendly and pleasant. This increased impression motivation may have generated anxiety if participants felt they were unable to make desirable impressions.

1.9.6 Attractiveness of the Other Exercisers. Within an exercise setting, Fleming and Martin Ginis (2004) examined the effects of commercial exercise video models on women’s ($N = 101$) SPE. Participants either watched an exercise video featuring "perfect-looking" exercisers or more “normal-looking” exercisers. Results indicated that women who watched the video with perfect-looking models compared to more normal-looking exercisers had lower post-test SPE regardless of their exercise status. Also, infrequent or non-exercisers experienced a decrease in their confidence in their ability to self-present as fit-looking, competent exercisers regardless of which exercise video they viewed (Fleming & Martin Ginis, 2004).

1.10 The Influence of the Exercise Leader

In addition to producing more positive feeling states (Raedeke, Focht, & Scales, 2007; Turner, Rejeski, & Brawley, 1997), the exercise leader has the potential to influence the exercise experience by affecting exercisers’ enjoyment (Bray, Millen, Eidsness, & Lauzinger, 2005; Raedeke et al., 2007), self-efficacy (McAuley & Jacobson, 1991), SPE (Fleming & Martin Ginis, 2004), and social anxiety (Martin & Fox, 2001).

1.10.1 Leader Style. The exercise leader’s style can impact self-presentational concerns. In a study that examined the issues related to the design and delivery of exercise programs for overweight women, it was found that the choice of activities for group exercise classes caused some concern for participants (Bain et al., 1989). Study participants ($N = 18$) were interviewed and asked to participate in a series of five exercise sessions. Unstructured interviews were used to find common themes regarding exercise
programs. A common concern among participants was the exercise instructors' inability to make necessary modifications to accommodate overweight women. Participants felt that many of the chosen activities were inappropriate for their size, and, consequently they felt clumsy and uncoordinated during classes.

Martin and Fox (2001) examined the effects of the group environment and group leadership style on social anxiety. With respect to leadership style only, the enriched leadership style was characterized by pleasant and energetic social interaction. The instructor within the enriched leadership style condition provided a significant amount of encouragement, social interaction, and positive performance feedback to participants (e.g., addressed participants by name, engaged in general conversation, and provided specific reinforcement for positive behaviour). By contrast, the instructor within the bland leadership style condition implemented or omitted certain behaviours in order to discourage social interaction (e.g., avoided conversation, directed comments to the group only and not to individuals, failed to follow up with praise, positive reinforcement, or encouragement). Although not significant, results showed a trend for participants within the enriched leadership condition to report less state social anxiety compared to those exercising under the instruction of an exercise leader using a bland leadership style (Martin & Fox, 2001). The authors attributed these findings to participants possibly having concerns about receiving negative public feedback (as was the case in the bland leadership condition), and that this negative feedback may have elicited self-presentational concerns including social anxiety. Thus, characteristics of the leader have the potential to alter anxiety levels among exercisers through their choice of leadership style (Martin & Fox, 2001).
1.10.2 Attractiveness and Physique Salience of the Leader. Within non-exercise settings, research has shown that in the presence of an individual with an ideal or attractive physique, people experience higher levels of SPA, body dissatisfaction, and self-consciousness, and lower self-esteem (Thornton & Maurice, 1997). Furthermore, those with a higher dispositional public self-awareness experienced lower physical attractiveness, social self-esteem, and higher SPA in the presence of an ideal or attractive physique than those lower in public self-awareness (Thornton & Maurice, 1999). In an exercise setting, the presence of an attractive physique has been qualitatively reported to increase exercisers' self-consciousness about their bodies being on display, make participants feel intimidated, increase the frequency of negative social comparisons; and, in the end, may reduce exercise enjoyment (Greenleaf, McGreer, & Parham, 2006).

With respect to the exercise leader specifically, Martin Ginis et al. (2005) demonstrated that exercise videos that elicited negative social comparisons with the exercise leader with respect to physical attractiveness had detrimental psychological effects on women. These authors attempted to manipulate the direction of the social comparisons participants made to the instructor's body attractiveness in exercise videos. The manipulation goal was to make those exercising with a video featuring a leader whose body was emphasized experience an upward comparison (a comparison made to a superior target on a characteristic of interest; Festinger, 1954). It was hypothesized that these participants would perceive a negative physique discrepancy and report poorer body image, lower SPE, and greater SPA after exercising with the video than those who exercised with a video in which the leader's body was de-emphasized (control group). Further it was hypothesized that participants within the control group would not perceive
a negative physique discrepancy. Eighty sedentary women exercised with a video led by either a physique salient instructor, in which the leader’s body was emphasized by wearing revealing clothing, or physique non-salient instructor, in which the leader’s body was de-emphasized by wearing bulkier, less revealing clothing. After exercise, participants completed measures of body area satisfaction, appearance evaluation, SPA (state), SPE, and social comparison to assess whether participants rated their bodies positively or negatively relative to the exercise instructor. The authors failed to manipulate social comparisons in the hypothesized directions; the majority of women in both conditions perceived a negative physique discrepancy. Results further indicated that regardless of which exercise video was watched, women who made negative social comparisons to the instructor had lower post-exercise SPE, body satisfaction, and appearance evaluation (Martin Ginis et al., 2005).

The findings of Martin Ginis et al. (2005) are consistent with general social comparison literature. Upward social comparisons (i.e., comparisons made with a superior target on an attribute of interest) are made for self-improvement (Wood, 1989) and are associated with increases in body dissatisfaction (Heinberg & Thompson, 1992), emotional distress, and decreases in self-efficacy (Major, Testa, & Bylsma, 1991). By contrast, downward social comparisons (i.e., comparisons made to an inferior target on an attribute of interest) are self-enhancing (Wood, 1989), and are associated with decreases in negative affect, and increases in satisfaction with close relationships with others (Buunk, Ybema, Gibbons, & Ipenburg, 2001) and improvements in mood (Gibbons & Boney McCoy, 1991). Martin Ginis et al. (2005) suggested that future research should examine the influence of social comparisons on women’s psychological responses to
exercise to develop ways to prevent or lessen potential negative outcomes of negative social comparisons.

1.11 Limitations to Extant Research

This line of research has, to this point in time, only examined leaders in exercise videos (Fleming & Martin Ginis, 2004; Martin Ginis et al., 2005; Sinden et al., 2003). Also, participants in studies that use exercise videos either simply watch the videos, which were short in duration (i.e., 2 to 4 minutes and not an entire class; Fleming & Martin Ginis, 2004; Sinden et al., 2003), or exercise with the exercise videos, but while alone (Martin Ginis et al., 2005). This research has not examined the influence of the leader’s physique salience in a live exercise classes. Also, although gender composition of the exercise group is an important influence on self-presentational concerns (Kruisselbrink et al., 2004), the potential influence of the gender of the exercise leader has not been examined.

1.12 Significance

Given the importance of the exercise leader (Franklin, 1988; Turner et al., 1997) and the effects a leader may have on exercisers’ self-presentational concerns (i.e., Bain et al., 1989; Fleming & Martin Ginis, 2004; Martin & Fox, 2001; Martin Ginis et al., 2005) it is important to examine characteristics of the exercise instructor that may influence self-presentational concerns. A better understanding of how these characteristics of the leader influence participant responses may lead to a greater understanding of ways to increase SPE, in hopes of subsequently alleviate social anxiety and SPA.
CHAPTER TWO: RATIONALE, PURPOSE, & HYPOTHESES

Research has suggested that changing the aspects of the exercise environment has the potential to affect self-presentational constructs including SPE, social anxiety, and SPA. Aspects of the exercise environment including the presence of mirrors (Gammage, Martin Ginis et al., 2004; Katula et al., 1998), clothing type (Gammage, Martin Ginis et al., 2004; Sinden et al., 2003), presence of an exercise group (Carron & Prapavessis, 1997), gender composition of the exercise group (Kruisselbrink et al., 2004), enthusiasm of other exercisers (Martin & Fox, 2001) and characteristics of the exercise leader (Fleming & Martin Ginis, 2004; Martin & Fox, 2001; Martin Ginis et al., 2005) have been shown to influence self-presentational concerns, and therefore are important factors contributing to our understanding of exercise-related behaviours.

2.1 Rationale

The benefits of exercise are well documented in exercise psychology literature (Bozoian et al., 1994; Breus & O’Connor, 1998; Gauvin & Rejeski, 1993; McAuley et al., 1999; Petruzzello et al., 1997; Rudolph & Butki, 1998). Furthermore, reported rates of physical activity are poor (Lox et al., 2003). Therefore, it is important to examine factors that influence physical activity participation and adherence. SPE, social anxiety, and SPA may be three factors that influence physical activity behaviours, cognitions, and affective responses to exercise; therefore it is important to examine factors that may influence these variables in an exercise setting.

The exercise leader is highly influential in a group exercise setting (Bain et al., 1989; Bray et al., 2005; Franklin, 1988; Greenleaf et al., 2006; Turner et al., 1997; Raedeke et al., 2007). One potentially important characteristic of the exercise leader that
has yet to be investigated within self-presentational research is the instructor’s gender. Everyday opposite-sex interactions have the potential to increase self-presentational concerns (Leary & Kowalski, 1995) more so than same-sex interactions. Also, individuals may be more motivated to make desired impressions to those who possess desirable characteristics or who are of higher status (Leary, 1995); there may be a higher risk for self-presentational concerns with this high level of impression motivation. In a group exercise setting, the leader is often considered a role model (Greenleaf et al., 2006) and would be expected to have a high status role given their skill, training, and position in the class (Carron & Hausenblas, 1998). When individuals experience social anxiety or SPA in an exercise setting, not only may their impression motivation be high, but their SPE may also be low, leading to the potential for social anxiety (Leary & Kowalski, 1995). Therefore, women in an exercise class led by a male instructor may report lower post-exercise SPE and higher social anxiety and SPA than those in a class led by a female instructor. Although there is little, if any research examining the influence of the gender of the leader on anxiety, feelings states, or self-presentational concerns in other settings (i.e., education, coaching, business), evidence in exercise contexts suggests that the gender of other exercisers can influence SPA (Kruisselbrink et al., 2004). Because the exercise leader is often the focus of attention in an exercise class, this characteristic may be even more important with respect to the leader than with respect to the other exercisers.

Another potentially important characteristic of the exercise leader that may influence exercisers’ self-presentational concerns is the leader’s physical appearance. In an exercise setting, research examining the influence of the presence of other exercisers
with ideal or attractive physiques on college-aged women’s SPE and SPA shows that lower SPE and higher SPA are experienced in the presence of individuals who are perfect-looking, and whose physique is emphasized (Fleming & Martin Ginis, 2004; Sinden et al., 2003).

Finally, as suggested by Martin Ginis et al. (2005), the types of social comparisons made with the exercise leader may influence psychological responses to exercise. Martin Ginis et al. (2005) found that, regardless of which video they exercised with (a video featuring a leader whose physique was emphasized or a video featuring a leader whose physique was de-emphasized), women who made a negative social comparison with the exercise leader (i.e., considered the leader to be more attractive than themselves) experienced lower SPE and higher SPA compared to those who made an equal or positive social comparison.

2.2 Statement of the Purpose

The purpose of the present study was to examine the impact of the exercise leader’s gender and physique salience on self-presentational concerns, specifically SPE, state social anxiety (SSA), and state SPA (SPA-S) of women in a live exercise class. As a secondary purpose, the nature of the social comparisons made to the exercise leader and the other group members on self-presentational concerns (SPE, SSA, and SPA-S) was investigated.

2.3 Hypotheses

The following hypotheses were investigated:

A. Post-exercise SPE would be lower in the presence of a male instructor compared to a female instructor.
B. Post-exercise SPE would be lower in the presence of an instructor whose physique was emphasized compared to an instructor whose physique was de-emphasized.

C. Post-exercise SSA would be higher in the presence of a male instructor compared to a female instructor.

D. Post-exercise SSA would be higher in the presence of an instructor whose physique was emphasized compared to an instructor whose physique was de-emphasized.

E. Post-SPA-S would be higher in the presence of a male instructor compared to a female instructor.

F. Post-SPA-S would be higher in the presence of an instructor whose physique was emphasized compared to an instructor whose physique was de-emphasized.

G. Those participants who make an upward social comparison with the exercise leader on attractiveness, skill, and fitness variables would experience lower SPE, and higher SSA and SPA-S compared to those who make a downward or equal social comparison.
CHAPTER THREE: METHODOLOGY

3.1 Participants

Ninety-two healthy female undergraduate and graduate students were recruited from a university population. Effect sizes from Martin and Fox (2001) and Gammage, Martin Ginis et al (2004), which examined the influence of the exercise environment on SPE, SSA, and SPA-S using samples of non- or infrequent exercisers, ranged from medium (ES = .52) to large (ES = .82; Cohen, 1992). An a priori sample size calculation based on a power of .80 and α level of .05 suggested group sizes ranging from 64 (for medium effect) to 26 (for large effect) were required to test the main effects (i.e., leader gender and physique salience; Cohen, 1992). Thus, the sample size for the present study was deemed adequate.

Only women who exercised two or fewer times per week in the past 6 months were recruited. These participants were labelled as non- or infrequent exercisers in the present study. Non- or infrequent exercisers were recruited to eliminate any potential effects that exercise experience may have on study variables (Gammage, Hall et al., 2004; Fleming & Martin Ginis, 2004; Martin et al., 2005). Leary and Atherton (1986) suggested that the familiarity of the situation may affect self-presentational responses such that those with more experience in a situation may experience higher levels of SPE. More frequent exercisers would likely be more familiar with the exercise environment and with the exercise itself. Further, this specific exercise frequency has been used in previous research (Fleming & Martin Ginis, 2004; Gammage, Hall et al., 2004; Rodgers & Gauvin, 1998). These studies have provided evidence that those who exercise two or fewer times per week and those who exercise three or more times per week are
significantly different on a variety of exercise-related variables including, use of exercise imagery (Gammage, Hall et al., 2004), SPE (Fleming & Martin Ginis, 2004; Gammage, Hall et al., 2004), and self-efficacy and incentives for stress reduction and secondary mental health (Rodgers & Gauvin, 1998).

Five participants were removed because they did not meet the exercise frequency inclusion criteria (i.e., they exercised three or more times per week). The remaining eighty-seven participants had a mean age of 19.82 years ($SD = 2.0$ years), mean height of 65.67 inches ($SD = 2.67$), mean weight of 132.76 lbs ($SD = 17.12$), and mean Body Mass Index (BMI) of 21.64 ($SD = 2.44$). The majority of the participants were students of physical education and kinesiology ($n = 20$), psychology ($n = 17$), and child and youth studies ($n = 17$). The mean physical activity frequency was 1.14 times per week. They had participated in an average of 6.07 ($SD = 10.12$) group exercise classes in their lifetime, and 1.83 ($SD = 5.37$) exercise ball classes. Of those who reported physical activity participation ($n = 69$), fitness activities ($n = 33$; e.g., walking, jogging, swimming), sports ($n = 20$; e.g., soccer, intramural sports, hockey, etc.), and a combination of both fitness and sports ($n = 11$) were reported as activity types. See Table 1 for a summary of participant descriptive statistics.

3.2 Measures

Participants completed three sets of questionnaires: demographics, Physical Activity Readiness Questionnaire, and impression motivation (see Appendix A); pre-exercise measures (see Appendix B); and post-exercise measures (see Appendix C).
3.2.1 *Demographic Variables.* Age, height, weight, major and physical activity behaviour were self-reported. For physical activity behaviour, participants were asked to indicate how many days per week they exercised on average in the past 6 months.

3.2.2 *Physical Activity Readiness Questionnaire (PAR-Q).* The PAR-Q (Canadian Society for Exercise and Physiology, 2002) contains seven questions about their health status, to which participants answer, “yes” or “no”. The PAR-Q was used for physical activity clearance. Participants who answered “no” to all questions were able to participate in the exercise class. Those who answered “yes” to any of the seven questions were not given physical activity clearance to participate in the exercise class and were excluded from further study.

3.2.3 *Impression Motivation (IM).* Social anxiety only occurs when individuals have the desire to create a specific image in other’s minds to some degree (i.e., they are motivated to create a specific impression) and their confidence in their ability to present these images is less than 100% (Leary & Kowalski, 1995). IM was assessed as a manipulation check to establish that participants were at least somewhat motivated to make the impression of being an exerciser. A 4-item measure of general self-presentational motivation in exercise was used (Gammage, Hall, Prapavessis et al., 2004). This scale is based on the Self-Presentation in Exercise Questionnaire (SPEQ; Conroy et al., 2000) and has shown adequate psychometric properties (Gammage, Hall, Prapavessis et al., 2004). For the present study, reliability was adequate for all groups (α’s ranged from .78 to .94; α’s for each group are presented in Tables 2-5).

3.2.4 *Self-Presentational Efficacy (SPE).* SPE was assessed using a 5-item measure of self-presentational efficacy expectancy for exercise. Participants were asked
to complete the Self-Presentational Efficacy Scale (SPES; Gammage, Hall et al., 2004) on which participants indicate on a scale of 0% (not at all confident) to 100% (completely confident) how confident they are that they can present themselves favourably on five dimensions: physical co-ordination, body fitness and tone, stamina, exercise habits, and health. Reliability estimates were adequate for pre-exercise SPE (α's ranged from .91 to .95) and post-exercise SPE in all groups (α's ranged from .87 to .98; α's for each group are presented in Tables 2-5).

3.2.5 State Social Anxiety (SSA). The State Social Anxiety in Exercise Classes (SSA; Martin & Fox, 2001) questionnaire assessed participants’ social anxiety specific to the exercise class. The SSA is an 8-item scale measuring concerns over being evaluated by the exercise leader and other group members. Each item is rated on a scale ranging from 1 (not at all concerned) to 5 (extreme concern). Reliabilities for pre-exercise SSA (α's ranged from .91 to .97) and post-exercise SSA (α's ranged from .89 to .97) were good in all groups (α's for each group are presented in Tables 2-5).

3.2.6 Social Physique Anxiety-State (SPA-S). Participants completed the 9-item state version of the SPAS-state (SPAS-S; Kruisselbrink et al., 2004; Martin Ginis et al., 2005) which measures SPA specific to an exercise class. The SPAS-S contains items that are measured on a 5-point Likert scale ranging from 1 (not at all characteristic of me) to 5 (completely characteristic of me). Reliabilities for the present study for both pre-exercise SPAS (α's ranged from .85 to .92) and post-exercise SPAS (α's ranged from .81 to .93) were satisfactory in all groups (all α's for each group are presented in Tables 2-5).

3.2.7 Rating of Perceived Exertion (RPE). Research suggests that the intensity of acute bouts of exercise may influence affective responses to exercise (i.e., state
anxiety). For instance, light-intensity aerobic exercise has been shown to reduce state anxiety, moderate-intensity exercise is associated with no change in state anxiety, and high-intensity exercise leads to increased state anxiety following exercise (Katula, Blissmer, & McAuley, 1999). With respect to resistance exercise sessions, state anxiety was reduced following one session of resistance exercise, and this reduction was maintained 120 and 180 minutes following the session (Focht, Koltyn, & Bouchard, 2000). The Borg Rating of Perceived Exertion scale (RPE; Borg, 1970) is a widely used measure used to assess perceived exertion or exercise intensity. Participants rated their level of exertion during the exercise class on a scale ranging from 0 (nothing at all) to 10 (extremely strong- almost maximal). This measure was used as a manipulation check to ensure groups indicated they worked equally hard during the exercise class.

3.2.8 Social Comparison (SC). A social comparison scale (Martin Ginis et al., 2005) assessed participants’ perceived similarity to the instructor and the other participants with regards to several attributes. Participants were asked how similar they were compared to the instructor on age, physical fitness, body’s attractiveness, physical strength, level of co-ordination, and skill at doing exercises in class on a scale ranging from 1 (much less) to 3 (just as) to 5 (much more). The same scale was used to assess participants’ perceived similarities to the other participants with regards to the same attributes. This measure was used to investigate how participants compared themselves to the leader and to other participants, as a potential exploratory variable, based on findings by Martin Ginis et al. (2005).
3.3 Procedures

Ethics clearance was obtained from the Research Ethics Board at Brock University (see Appendix D). Participants were recruited through announcements made in undergraduate classes (see Appendix E for verbal script) and posters placed around Brock University (see Appendix F). Interested individuals were asked to contact the researcher via e-mail. After being contacted, the researcher provided a brief overview of the purpose of the study and exclusion criteria for the study were explained.

Those participants who agreed to participate and who indicated they met study requirements were then randomly assigned to one of the exercise leaders: a female whose physique was emphasized (physique salient); a female whose physique was de-emphasized (physique non-salient); a male whose physique was emphasized (physique salient); or a male whose physique was de-emphasized (physique non-salient). Participants were told the date and time of the class to which they had been assigned, and were asked to attend that class at the Exercise Intervention Lab (Welch Hall 16) on campus. Because some research suggests that the physique salience of other exercisers influences SPE (Fleming & Martin Ginis, 2004; Sinden et al., 2003) and anxiety (Crawford & Eklund, 1994; Eklund & Crawford, 1994), participants were told to arrive in clothing appropriate for exercise (i.e., shorts and a t-shirt with appropriate footwear). Thus, participants’ clothing was standardized across all conditions, and participants wore clothing they were most comfortable wearing in front of others.

Upon arrival at the lab, those participants providing consent (see Appendix G) were asked to complete the PAR-Q. Individuals who answered “yes” to one or more of the questions on the PAR-Q were excluded from further study. All participants received
physical activity clearance, and then completed demographic information and the IM scale. The exercise leader then helped all participants get an exercise mat, stability ball, and a pair of 1-3 pound hand weights. After setting up their equipment in an area on the exercise studio floor, participants next completed a set of pre-class questionnaires (SPES, SSA, and SPAS-S). Participants then completed a 30-minute exercise ball class designed for beginners. Following the class, participants completed a set of questionnaires (SPES, SSA, SPAS-S, RPE, SC, purpose manipulation check). The pre- and post-class questionnaires were counterbalanced to avoid order effects. Upon completion of the questionnaires, participants were debriefed and completed the summary results request form (see Appendix H).

3.3.1 Exercise Class. An exercise ball class was chosen as the mode of exercise for three reasons. Firstly, it is not uncommon for this type of class to be taught by either a female or male instructor. Secondly, structuring an exercise ball class for beginners was relatively easy, as it consists of a series of discrete exercises that are done one at a time. By comparison, step or hi/lo aerobics classes continually move, and exercises are interwoven with one another, making choreography more complex. Thirdly, the ball class could be structured to maximize attention on the leader (e.g., by having him/her demonstrate the exercise first while participants watched).

All classes had six to eight participants. The leaders designed the 30-minute ball class. It consisted of a 5-minute warm-up that included exercises such as basic marching in place and wide and high-knee marching. Following the warm-up, participants were led through 20-minutes of exercises on a stability ball. Prior to starting each exercise, the instructor asked participants to watch him/her and then demonstrated two repetitions of
the exercise. Then, participants completed a 5-minute cool-down that incorporated stretches for all muscle groups worked. The complete class is outlined in Appendix I. Feedback was limited to instructional cues (e.g., how to perform the exercise, reminder of posture, form, or breathing) rather than motivational feedback. The class size, physical exercise environment, music, feedback, and exercise routine were identical; only the exercise leader differed.

3.3.2 Leader Manipulation. One female and one male instructor were used and each completed both physique salient and physique non-salient conditions. A total of four conditions were created: a female, physique salient instructor; a female, physique non-salient instructor; a male, physique salient instructor; and a male physique non-salient instructor. In the physique salient conditions, the leaders wore revealing clothing to emphasize their physiques (i.e., short, tight-fitting shorts and a tight-fitting tank top), whereas in the physique non-salient conditions, the leaders wore less revealing clothing to de-emphasize their physique (i.e., longer, loose-fitting shorts and a long-sleeve, loose-fitting shirt). In each condition, the tops were white and the shorts were black (see Figures 2 and 3 for photos of the female and male leaders, respectively, in physique salient and non-salient conditions).

3.3.3 Leader Characteristics and Qualifications. The female exercise leader was 22 years old, 69 inches tall, and 145 lbs. She has been a varsity swimmer for two years. She has two years experience working at the Zone at Brock University's fitness centre and a year's experience working as a personal trainer. She is a certified personal trainer (Personal Training Specialist) and a CanFitPro-Fitness Instructor Specialist. The male exercise leader was 23 years old, 71 inches tall, and 180 lbs. He has two years
experience working at the Zone at Brock University's fitness centre and a year's experience working as a personal trainer. He is a certified personal trainer (Personal Training Specialist) and a certified fitness consultant (CFC). Physically, both instructors were lean with defined musculature, but not hypermuscular. Also, both leaders were relatively new to teaching group exercise, with less than three months experience.

3.3.4 Checklist for Class Consistency. A detailed outline of the class was created and used as a checklist to evaluate class consistency (see Appendix I). It included each exercise to be performed in order, the number of repetitions to be performed, instructional cues, and starting and finishing times. During each class, the principal investigator (out of view from participants) used the checklist to record whether or not each exercise and instructional cue was performed correctly or not, as well as to record total class duration. A total of 125 exercises and cues were evaluated in each class. If an exercise or cue was missed or performed incorrectly, it was marked as an error. Also, if the leader gave an extra cue it was marked as an error. Each class was given a mark out of 125, which was converted into a percentage of correct exercise and cueing.

3.3.5 Manipulation Training. After designing the exercise class, both exercise leaders practiced leading the exercise class under a variety of situations. For example, the leaders practiced in front of each other, in front of the primary investigator, and in front of a class of individuals similar to the sample used (i.e., female university students who exercised two or fewer times per week) until consistency was reached. Initially, one leader practiced the class in front of the other leader to ensure the class structure followed a logical order, the instructional cues were clear and suitable, and the timing was appropriate. Once the class structure was revised and finalized, each leader taught the
class in front of the primary investigator. At this time, the checklist was used as practice to ensure consistency within the exercise leader and between the two leaders. After consistency was reached, each leader was videotaped and watched both videotapes to look for inconsistencies and reinforce instructional cues and class structure. The primary investigator and faculty advisor also watched both videotapes to ensure consistency and checklist completeness. Once consistency was reached and the checklist was considered complete and functional, each leader led a practice class of female non- or infrequent exercisers. This session was designed to act as additional practice for the leaders and to ensure the class design and timing was appropriate for the sample being used in the present research. Upon completion of the practice sessions, the class structure was deemed suitable for non- and infrequent female exercisers and consistency within and between the two exercise leaders was reached.
CHAPTER FOUR: RESULTS

4.1 Treatment of Missing Data

Data was entered into the quantitative data analysis software program Statistical Package for the Social Sciences (SPSS) version 15.0. It was then screened for data entry errors and missing values by examining univariate frequencies. Less than 1% of the data set was missing. If participants missed an entire questionnaire, they were deleted for that analysis. For the remaining data, visual inspection of the missing values revealed that there was no consistent pattern and were subjectively deemed random. Therefore, mean substitution using the mean of the participant’s subgroup was used where a single item was missing (Tabachnick & Fidell, 2007). Next, physical activity behaviour was screened visually to ensure participants included in the data analysis met the requirements of exercise frequency (i.e., 2 or fewer times per week). Five participants reported exercising three or more times per week and were subsequently removed from further analysis.

4.2 Reverse Coding and Subscale Score

Next, items 5 and 9 on pre- and post-SPA-S were reversed coded such that higher scores represented higher levels of SPA. For each study variable (IM, pre- and post-SPE, SSA, and SPA-S), a mean score was calculated to serve as the subscale score where appropriate.

4.3 Outliers

The data was then screened for univariate and multivariate outliers by group. Values with a standardized score (z-score) in excess of ± 3.29 (p < .001, two-tailed test) as suggested by Tabachnick and Fidell (2007) were considered possible univariate
outliers. An examination of the z-scores for pre- and post-exercise scores (SPE, SSA, and SPA-S), IM, and RPE revealed no univariate outliers.

Next, the data was inspected for multivariate outliers, cases with a strange combination of scores on two or more variables. This was done by assessing Mahalanobis distance. This criteria was evaluated against $x^2$ with degrees of freedom equal to the number of variables of interest ($n = 6$) at $p < .001$ for pre- and post-exercise SPE, SSA, and SPA-S (Tabachnick & Fidell, 2007). Any case with a Mahalanobis distance $\geq 22.46$ was deemed a multivariate outlier. All values were well below this value; therefore, no multivariate outliers were present.

4.4 Normality of Sampling Distribution: Skewness and Kurtosis

All variables were then assessed for normality by examining skewness and kurtosis values by group. The obtained skewness and kurtosis value for each variable by group was tested against a null hypothesis of zero by using a significance test as outlined by Tabachnick and Fidell (2007). Skewness and kurtosis significance tests for all but one variable were non-significant ($p > .001$). The z-score for kurtosis for IM was significant ($Z_k = 4.900, p < .001$) in the male non-salient leader group, suggesting that the distribution was too peaked with short, thick tails. Given that IM was not a major outcome variable, but rather was used as a manipulation check to ensure groups were motivated to make the impression of an exerciser, and that there are no known transformations for kurtosis, this variable was not transformed.

4.5 Linearity

Linearity is the assumption that two variables are related to each other in approximately a straight line relationship (Tabachnick & Fidell, 2007). This assumption
was assessed by examining bivariate scatterplots by group for all possible combinations of variables. Visual inspection of the plots showed that there was no evidence of a curvilinear or any other relationship other than linear; therefore, this assumption was met.

4.6  *Homogeneity of Variance*

Homogeneity of variance, the assumption that the variability in each dependent variable is approximately the same for all groups (Tabachnick & Fidell, 2007), was assessed using $F_{\text{max}}$ in conjunction with sample size ratios as suggested by Tabachnick and Fidell (2007). Given that the group sizes were relatively equal (within a ratio of 4 to 1 or less), an acceptable ratio of the largest to smallest cell variance for pre- and post-exercise SPE, SSA, SPA-S, and IM, and RPE was set at 10 or less (Tabachnick & Fidell, 2007). All variables had an $F_{\text{max}}$ deemed acceptable (range from 1.10 to 1.79); therefore, the assumption of homogeneity of variance was met.

4.7  *Multicollinearity*

Pearson bivariate correlations by group were completed to test for multicollinearity; when variables are very highly correlated, they may contain redundant information (Tabachnick & Fidell, 2007). Variables that were highly correlated ($r = .90$ or higher; $p < .01$) were considered potential multicollinear variables. Results of the analysis revealed two correlations above .90 in the female physique salient leader group. However, these correlations were between pre-SPE and post-SPE ($r = .91, p < .001$) and between pre-SPA-S and post SPA-S ($r = .93, p < .001$). High correlations are expected between the same variable pre- and post-exercise; these values were deemed acceptable (see Tables 6 and 7 for female and male leaders).
4.8 **Manipulation Checks**

4.8.1 **Class Consistency.** The consistency of the exercise classes was evaluated using checklists. Each class was given a mark out of 125 (total number of exercises and cues), which was converted into a percentage of correct exercise and cueing. The percentages ranged from 96.8% to 100% (4 errors to zero errors respectively). These errors included a missed instructional cue or exercise, or an extra cue.

Further, total class duration was assessed for each class. Total times ranged from 29 to 32 minutes. The shorter classes were those in which an exercise was missed. Overall, the classes were deemed to be sufficiently similar with regards to class content, cueing, and duration.

Finally, participants' adherence to the clothing requirement was assessed. All participants wore exercise-appropriate clothing. The majority of participants wore shorts and a T-shirt. Some participants \( n = 3 \) wore long yoga pants. It was deemed that all participants satisfied the clothing requirement.

4.8.2 **Impression Motivation.** To ensure participants were motivated to create an impression of being an exerciser, means for IM for each group were examined (see Tables 2-5). These values correspond to ratings of "somewhat agree" to "moderately agree" suggesting that participants in all groups were somewhat motivated to make the impression of being an exerciser.

4.8.3 **Rating of Perceived Exertion.** In addition to the checklists, a manipulation check was completed to ensure all groups perceived themselves as working equally hard. For this analysis, a 2 (physique salience) x 2 (leader gender) ANOVA was completed with RPE as the dependent variable. Results indicated that there were no differences
between groups on RPE ($p > .05$); therefore, groups reported working equally hard during all classes, regardless of the leader.

4.8.4 Purpose of the Study. To determine whether or not participants were aware of the true purpose of the study, visual inspection of the purpose question was completed. If a participant made any reference to the gender differences in the exercise leader, or clothing or physique of the leader, it was coded as correct. Inspection revealed that all participants were unaware of the true purpose of the study. The majority of participants indicated that they believed the purpose was to examine the benefits of exercise with regards to body image or feelings.

4.9 Descriptive Statistics

Descriptive statistics for the entire sample (Table 8) and for each of the four conditions for each variable including pre- and post-SPE, SSA, SPA-S, and IM, and RPE are presented in Tables 2-5. There are several important points to note. Firstly, there was a general trend for all groups to report higher SPE values post-exercise compared to pre-exercise. Secondly, there was also a general trend for all groups to report lower SSA and SPA-S post-exercise compared to pre-exercise. It is also important to note that the low to moderate values for pre-SSA and pre-SPA-S for this sample were comparable to those cited in previous research using similar samples (i.e., Gammage, Martin Ginis et al., 2004; Kruisselbrink et al., 2004, Martin & Fox, 2001). Also, the values for pre-SPE reported in the present sample were somewhat lower than those of previous research using participants of similar activity levels (Fleming & Martin Ginis, 2004; Gammage, Martin Ginis et al., 2004); however, they were not unreasonably low (Gammage, Hall et al., 2004).
4.10 Correlation Analysis

Bivariate correlations for the entire sample and by group (for female and male leaders) are presented in Table 9 and Tables 6 and 7 respectively. Bivariate correlations were completed by group to investigate relationships between study variables. Correlations ranged from \( r = -0.79 \) \( (p < .001) \) between post-SPE and post-SPA-S to \( r = 0.93 \) \( (p < .001) \) between pre-RRE and post-SPE. There are five important notes to highlight. Firstly, the highest correlations in all groups were between the same variable pre-exercise and post-exercise. Further, in all groups, SSA and SPA-S were positively correlated. Thirdly, SSA and SPA-S were both negatively correlated with SPE in all groups. Fourthly, it is interesting to note that, although these relationships were in the same directions for the female and male leader conditions, the magnitude of these relationships were generally stronger in the female than the male condition. Finally, RPE was unrelated to any of the SPE, SSA, and SPA-S variables in groups.

4.11 Hypothesis Testing

4.11.1 Gender and Physique Salience: Pre-Exercise. A between-subjects multivariate analysis of variance (MANOVA) was conducted to determine if the groups were statistically different on any of the dependent variables pre-exercise. A 2 (leader gender: female versus male) x 2 (physique salience: salient versus non-salient) MANOVA was performed using pre-exercise SPE, SSA, and SPA-S as dependent variables. Results indicated that there were no significant differences on any of the pre-exercise dependent variables \( (p > .05) \).

4.11.2 Gender and Physique Salience: Post-Exercise. Given that groups were not statistically different on pre-exercise dependent variables, a between-subjects MANOVA
was performed on the post-exercise scores to test the study’s hypotheses that SPE would be lower and SSA and SPA-S would be higher in a group led by a male leader or in a group led by a leader whose physique was salient. A 2 (leader gender: female versus male) x 2 (physique salience: salient versus non-salient) MANOVA was conducted with the post-exercise variables serving as dependent variables (post-exercise SPE, SSA, and SPA-S). Results indicated that there were no statistically significant differences between groups on any of the dependent variables ($p > .05$, $\eta^2 = .032$, .014, and .017 for leader gender, leader physique salience, and the interaction of leader gender and physique salience). Examination of effect sizes for univariate follow-up ANOVAs for post-SPE, SSA, and SPA-S ranged from .002 (for SPE in physique salient analysis) to .027 (SPA-S in leader gender analysis).

4.12 Exploratory Analyses

4.12.1 Pre- and Post-Exercise Changes. Because none of the primary hypotheses were supported, participants were collapsed into one group to examine differences from pre-exercise to post-exercise on the dependent variables. A repeated measures MANOVA was performed using time as the within-subjects factor and pre- and post-SPE, SSA, and SPA-S as the dependent variables. Results indicated a significant time effect ($F(3, 81) = 19.45, p < .05, \eta^2 = .419$). For the follow-up univariate ANOVAs, a Bonferroni correction was used to correct for Type 1 error; thus, alpha was set at $\alpha = .05/3 = .017$.

Univariate ANOVAs showed a significant difference for all three variables (SPE: $F(1, 83) = 30.87, p < .001, \eta^2 = .27$; SSA: $F(1,83) = 11.09, p < .001, \eta^2 = .12$; SPA-S: $F(1,83) = 42.79, p < .001, \eta^2 = .34$). Examination of means indicated that SPE increased following the exercise classes while SSA and SPA-S decreased post-exercise (Table 2-5).
4.12.2 Social Comparisons. Given that none of the primary hypotheses were supported, and that Martin Ginis et al. (2005) found differences on post-exercise SPE, SPA, body area satisfaction, and appearance evaluation based on social comparison to the exercise leader, exploratory analyses were performed to determine if social comparisons to the instructor or other participants influenced any of the dependent variables. Three social comparison variables were created for both the instructor and the other participants: body attractiveness (item # 3), skill at doing exercises in class (item # 6), and fitness. The fitness variable was comprised of items reflecting fitness attributes (i.e., item # 2 = physical fitness, item # 4 = physical strength, and item # 5 = level of coordination). For each variable, three groups were created: those rating themselves as less attractive, skilled, or fit than the exercise leader or other participants (negative comparison group); those rating themselves as equally attractive, skilled, or fit as the exercise leader and other participants (similar comparison group); and those rating themselves as more attractive, skilled, or fit than the exercise leader or other participants (positive comparison group). Descriptive statistics for comparison variables of body attractiveness, skill at doing exercises in class, and fitness variables to both the instructor and other participants are presented in Table 10 for the entire sample. An examination of the means shows that, in general, comparisons to the exercise leader were more negative than those to the other class participants on the attractiveness, skill, and fitness comparison variables.

4.12.3 Exercise Leader and Attractiveness. Those who perceived their bodies to be “2 = somewhat less” or “1 = much less” physically attractive than the instructor’s body were classified as the negative comparison group (n = 62). Participants who
perceived their bodies “3 = just as” physically attractive comprised the similar comparison group (n = 20). Those who perceived their bodies to be “4 = somewhat more” or “5 = much more” physically attractive than the leader were classified as the positive comparison group (n = 5). Because of the disparity of the sizes of the groups, further analyses were not conducted.

4.12.4 Exercise Leader and Skill. Using the same classifications as above, three comparison groups were created based on responses to the “skill at doing exercises in class” item. Again, the groups created were unequal in size (n = 70, n = 14, n = 3 for the negative, similar, and positive comparison groups respectively). Subsequently, no further analyses were completed.

4.12.5 Exercise Leader and Fitness. The above process was repeated to create comparison groups for the variable fitness. Similar to the other instructor comparison variables, the group sizes were very unequal (n = 80, n = 0, and n = 7 for the negative, similar, and positive comparison groups respectively). Further analyses were not completed.

4.12.6 Other Participants and Attractiveness. The same process was undertaken for comparison of body attractiveness with the other participants. Some participants perceived their bodies “much less” or “somewhat less” attractive than other participants (n = 17). Most participants perceived their bodies “just as” attractive to the other participants (n = 61). The minority of participants perceived their bodies to be “much more” or “somewhat more” attractive compared to the other participants (n = 9). No further analyses were completed, given the large group size differences.
4.12.7 Other Participants and Skill. Similar to physical attractiveness, few participants felt they were "much less" or "somewhat less" skilled at doing the exercises in class than the other participants \((n = 11)\). Most participants indicated they were "just as" skilled at doing the exercises in class \((n = 58)\), while some participants felt they were "much more" or "somewhat more" skilled at doing the exercises in class than the other participants \((n = 18)\). Due to large group size differences, further analyses were not completed.

4.12.8 Other Participants and Fitness. Those who perceived themselves as "much less" or "somewhat less" fit than the other participants comprised the negative comparison group \((n = 29)\). Those who perceived themselves "just as" fit as the other participants made up the similar comparison group \((n = 25)\). Those making up the positive comparison group perceived themselves as "much more" or "somewhat more" fit than the other participants in the class \((n = 33)\). Given that these group sizes were relatively equal, further exploratory analysis was completed on these groups.

4.13 Exploratory Analysis: Participants’ Fitness Comparison

Descriptive statistics for comparison groups on the participants’ fitness comparison variable are found in Table 11. Reliabilities were calculated for each social comparison group (negative, similar, and positive) for pre- and post-exercise SPE, SSA, and SPA-S (see Table 11). All reliabilities were satisfactory. Before conducting the analyses, data was screened for the presence of univariate and multivariate outliers, and skewness, kurtosis, linearity, homogeneity of variance, and multicollinearity were assessed.
4.13.1 Outliers. The data was screened for the presence of univariate outliers by examining the standardized scores (z-scores) for each variable by group (negative, similar, and positive comparison groups). A z-score in excess of ±3.29 \( (p < .001, \text{ two-tailed test}) \) as suggested by Tabachnick and Fidell (2007) was considered to be a potential outlier. An examination of the z-scores for pre- and post-exercise scores (SPE, SSA, and SPA-S) showed no univariate outliers.

Next, the data was screened for potential multivariate outliers by group using Mahalanobis distance. This criteria was evaluated against \( x^2 \) with degrees of freedom equal to the number of variables of interest \( (n = 6) \) at \( p < .001 \) including pre- and post-exercise SPE, SSA, and SPA-S (Tabachnick & Fidell, 2007). Any cases with a Mahalanobis distance \( \geq 22.46 \) were considered possible multivariate outliers. No multivariate outliers were found (all values \( \leq 15.91 \)).

4.13.2 Skewness and Kurtosis. Next, the normality of the sampling distribution was assessed by examining skewness and kurtosis values by group. The obtained skewness and kurtosis value for each variable by group was tested against a null hypothesis of zero (Tabachnick & Fidell, 2007). Skewness and kurtosis significance tests for all variables for all groups were non-significant (all \( p's > .05 \)).

4.13.3 Linearity. Linearity was assessed by examining bivariate scatterplots by group for all possible combinations of variables. Visual inspection of all plots showed that this assumption was met.

4.13.4 Homogeneity of Variance. By using \( F_{\text{max}} \) in conjunction with sample size ratios, homogeneity of variance was assessed (Tabachnick & Fidell, 2007). The sample sizes were within a ratio of 4 to 1 or less, and therefore were deemed relatively equal.
suggested by Tabachnick and Fidell (2007), an acceptable ratio of largest to smallest cell variance for pre- and post-exercise SPE, SSA, and SPA-S was set at 10 or less. All variables had an acceptable $F_{max}$ (range from 1.16 to 1.80); therefore, the assumption of homogeneity of variance was met.

4.13.5 Multicollinearity. Pearson bivariate correlations by group were completed to test for multicollinearity. Variables that were highly correlated ($r = .90$ or higher; $p < .01$) were considered redundant. However, results revealed no correlations above this value ($r = .90$); therefore all values were deemed acceptable (see Tables 12-14 for negative, similar, and positive comparison groups respectively).

4.14 Manipulation Check

4.14.1 IM. In order to ensure that each group was at least minimally motivated to create the impression of being an exerciser. Means for IM were examined by social comparison group and are shown in Table 11. All values ranged between “somewhat agree” to “moderately agree” suggesting that participants in each group were motivated to make the impression of being an exerciser. Reliability for IM was calculated for each social comparison group ($\alpha = .93$, .86, and .85 for negative, similar, and positive comparison groups respectively).

4.14.2 RPE. In order to ensure that all three groups indicated working equally hard during the exercise classes, a one-way ANOVA was conducted, with fitness comparison group (negative, similar, and positive) as the independent variable, and RPE as the dependent variable. The results showed there was no significant difference between the groups ($p > .05$).
4.15 Correlation Analysis

Prior to hypothesis testing, correlations were conducted for the pre- and post-exercise SPE, SSA, SPA-S, and RPE variables by group. Correlations ranged from $r = -0.42 \ (p < .001; \text{between pre-SPE and post-SPA-S})$ to $r = 0.88 \ (p < .001; \text{between pre-SPA-S and post-SPA-S})$. There are four important notes to highlight. Firstly, in all groups, SSA and SPA-S were positively correlated. Secondly, SSA and SPA-S were both negatively correlated with SPE in all groups. Finally, it should also be noted that, for the negative comparison group, pre-SPE scores were positively correlated to RPE while pre-SSA and SPA-S scores were negatively correlated to RPE (see Tables 12, 13, and 14).

4.16 Social Comparison Testing

4.16.1 Social Comparison: Pre-Exercise Scores. To determine if there were differences between groups on pre-exercise scores, a MANOVA was conducted using the fitness comparison group (negative, similar, and positive) as the independent variable and pre-SPE, SSA, and SPA-S as the dependent variables. Results revealed a significant difference ($F(6, 160) = 4.30, \ p < .001, \eta^2 = .14$). Follow-up ANOVAs revealed there was a significant difference only on pre-SPE, $F(2, 81) = 15.50, \ p < .001, \eta^2 = .28$, while no significant differences were found between groups with respect to pre-SSA ($p > .05$) or pre-SPA-S ($p > .05$). Examination of means showed participants in the negative comparison group scored lower on SPE than those in the similar comparison group and those in the positive comparison group. Also, those in the similar comparison group reported significantly lower SPE than those in the positive comparison group (see Table 11). A one-way ANOVA was conducted to examine if there were differences in exercise frequency between those making negative, similar, or positive social comparisons. The
results showed that there was a significant difference \( F(2, 84) = 5.19, p = .008 \). Tukey post-hoc tests showed that those in the positive comparison group \( (M = 1.47, SD = .69) \) exercised significantly more frequently than those in the negative or similar comparison groups \( (M = .91, SD = .77; M = .98, SD = .77 \text{ respectively; all } p's < .04) \).

### 4.16.2 Social Comparison: Post-Exercise Scores

Because there were differences found on pre-SPE between fitness comparison groups, an ANCOVA was conducted using fitness comparison group as the independent variable, post-SPE as the dependent variable, and pre-SPE as the covariate. Results revealed that there was no difference between groups on post-SPE \( (p > .05) \).

Given that there were no differences on pre-exercise SSA and SPA-S, a MANOVA was conducted on post-exercise SSA and SPA-S. The fitness comparison group (negative, similar, and positive) served as the independent variable and the post-exercise scores served as the dependent variables. Results revealed a significant difference \( F(2, 168) = 2.69, p < .001, \eta^2 = .06 \). Follow-up univariate ANOVAs showed that there were significant differences on both post-SSA \( F(2, 84) = 3.46, p < .05, \eta^2 = .08 \) and post-SPA-S \( F(2, 84) = 5.69, p < .05, \eta^2 = .12 \). Examination of means indicated that those in the negative comparison group reported higher post-SSA than those in the positive comparison group. Those in the negative comparison group reported higher post-SPA-S than those in the positive comparison group. Neither group was significantly different than the similar group on either variable \( (p's > .05; \text{ see Table 11}) \).
CHAPTER FIVE: DISCUSSION

The present study examined whether the exercise leader’s gender and physique salience influenced women’s SPE, SSA, and SPA-S in a live group exercise class. It was hypothesized that those in a class led by a male exercise leader, or by a leader whose physique was salient, would report lower post-exercise SPE and higher post-exercise SSA and SPA-S than those in a class led by a female instructor, or by a leader whose physique was non-salient. These hypotheses were not supported, suggesting that the exercise leader’s gender and physique salience are minimally influential characteristics in influencing self-presentational concerns in non- or infrequent female exercisers. The reported effect sizes for gender and physique salience for post-exercise SPE, SSA, and SPA-S were very small, providing support for this contention. That is, any differences based on leader gender or physique salience are, from a practical standpoint, not meaningful.

5.1 Descriptive Statistics

Values for pre-SPE in the present study were somewhat lower than those reported in previous studies (range 59 to 68; i.e., Fleming & Martin Ginis, 2004; Gammage, Hall et al., 2004, Gammage, Martin Ginis et al., 2004). Differences in participant backgrounds may, in part, explain these differences. In the present study, participants were recruited from a wide variety of departments (e.g., psychology, physical education and kinesiology, and child and youth studies). By contrast, the participants recruited in other studies (e.g., Gammage, Hall et al., 2004, Gammage, Martin Ginis, 2004) comprised solely of undergraduate students from a kinesiology program, who maybe more likely to have experience in evaluative physical activity environments. Other studies (e.g.,
Fleming & Martin Ginis, 2004) have not made clear the backgrounds of participants. This relatively low SPE in the present study may explain in part why all groups showed an increase in SPE; the increase across all groups may simply reflect a floor effect.

Values for SSA and SPA-S in the present study were low to moderate, consistent with those reported in previous literature (i.e., Gammage, Martin Ginis et al., 2004; Kruisselbrink et al., 2004, Martin & Fox, 2001). These values suggested the current sample was not particularly high in SSA or SPA-S. This may have been expected since this sample’s mean BMI fell toward the lower end of the healthy range for women (Mean = 21.64, SD = 2.44; Health Canada, 2003). Research shows that there is a positive relationship between body composition and SPA (Eklund & Crawford, 1994; Hart et al., 1989).

These initial values may in part explain why the present study failed to find an effect based on leader gender or physique salience. Previous work suggesting the exercise environment can increase self-presentational concerns (e.g., social anxiety), affect, and enjoyment (Focht & Hausenblas, 2003, 2004; Raedeke, Focht, & Scales, 2007) has primarily been conducted using samples of women high in SPA (i.e., individuals scoring a total of 36 or higher out of a possible 40 or, a mean of 4 out of 5 on the SPAS). Thus, it may be that exercise environment manipulations are most influential for those with high trait self-presentational concerns.

5.2 Influence of Gender of the Exercise Leader

The present study found that the gender of the exercise leader did not affect SPE, SSA, or SPA-S. Several reasons may explain why these hypotheses were not supported. Firstly, suggestions that interactions with the opposite sex have a greater potential to
increase anxiety (i.e., Leary & Kowalski, 1995), and increase SPA (Calogero, 2004) may be true during one-on-one interactions but not in a group setting (i.e., exercise classes) that offers less interaction. Merely watching the exercise leader as one exercises may not influence SPE or social anxiety as strongly as one-on-one interaction. Secondly, a greater amount of interaction than what occurred between the leader and class participants in the present study may be necessary for leader gender to have an effect. Although the time spent in the presence of the instructor during each class was maximized, the interaction was minimal at best, and related strictly to the exercise itself. According to Leary and Kowalski (1995), one reason opposite-gender interactions increase IM is due to the opportunity to affirm social and sexual desirability. In the current study, participants may not have perceived that opportunity to have existed adequately. That is, given that participants were involved in a research study (rather than an ‘everyday’ interaction), with little or no chance of future interactions, they may not have been concerned with the impression made on the exercise leader, even if he was male. This contention is supported by the fact that participants in the current study were only somewhat to moderately motivated to create the impression of being an exerciser; lower IM should lead to less social anxiety in general (Leary & Kowalski, 1995).

Thirdly, any interaction that occurred with the male leader was shared across 5-7 other participants. Research examining social anxiety and group influence suggests that for women, especially in physique salient settings (e.g., exercise), a group of all-female friends, or of both male and female friends, compared to being alone or in a group of all-male friends, significantly reduces social anxiety (Carron et al., 1999). These authors suggested that being in a group, compared to being alone, diffuses self-presentational
evaluation among all group members (Carron et al., 1999). The presence of only one male, even though that male was the exercise leader, in an otherwise all-female exercise class may not have been strong enough to negatively impact SPE, SSA, or SPA-S.

5.3 Influence of Physique Salience of the Exercise Leader

The present study found that the physique salience of the exercise leader did not affect SPE, SSA, or SPA-S, in contrast to the present study’s hypotheses. This finding suggests that other factors may be more important in influencing these variables. One such factor may be the physique salience of other exercisers. For example, there is some evidence to suggest that the attractiveness or physique salience of other exercisers may influence SPE. Fleming and Martin Ginis (2004) found that both regular and infrequent female college-aged exercisers reported lower SPE after watching an exercise video featuring “perfect-looking” compared to more “normal-looking” exercisers. Furthermore, they also found that non- or infrequent exercisers reported lower SPE than regular exercisers after watching either video (Fleming & Martin Ginis, 2004). Similarly, Sinden et al. (2003) found that older women with average or higher levels of SPA reported less SPE after watching a video featuring exercisers wearing revealing clothing compared to women who watched a video featuring exercisers wearing non-revealing clothing. Some research also suggests that, for women with higher levels of SPA, the degree to which the other participants’ bodies are salient influences anxiety (Crawford & Eklund, 1994; Eklund & Crawford, 1994).

In addition to the clothing and appearance of the other exercisers in the class, participants’ own exercise attire could also have been important, as participants were able to choose their own clothing. The choice to wear loose-fitting clothing may be a way to
cope with self-presentational concerns (Brewer, Diehl, Cornelius, Joshua, & Van Raalte, 2004; Crawford & Eklund, 1994; Kowalski, Mack, Crocker, Niefer, & Fleming, 2006; Leary & Kowalski, 1995), and help overcome other potentially negative environmental factors. Women in the current study may not have experienced self-presentational concerns because they wore clothing in which they felt comfortable. By contrast, Gammage, Martin Ginis et al. (2004) found that women who did not have control over their choice of clothing and were told they would have to wear revealing clothing during exercise experienced lower SPE and higher SSA and SPA than those who were told they would wear loose-fitting clothing. However, this manipulation was only one of several features (i.e., the presence of mirrors, windows looking out into a public hallway, male confederate, nametags) designed to influence SPE, making it difficult to conclude which manipulation or combination of manipulations contributed to the change in SPE. However, together these studies suggest that what participants themselves wear may be more influential in determining self-presentational concerns than what others wear.

Alternatively, the degree to which the leader’s body is salient may not have been influential for this particular group of women, as participants may have expected that the exercise leader would be dressed in revealing clothing and be fit-looking, toned, strong, and co-ordinated regardless of his/her clothing. That is, prior to entering the class, participants may have expected an exercise leader to fit a specific stereotype of a fitness instructor (i.e., slim, toned and muscular, fit). In a qualitative study examining the physique attitudes and self-presentational concerns of aerobic exercisers and instructors, Greenleaf et al. (2006) found that although the exercisers did not expect the leader to have a “perfect” body, they did expect the leaders to be thin, toned, in shape, and not
flabby. Therefore, whether leaders were dressed in revealing clothing that emphasized their bodies, or non-revealing clothing that de-emphasized their bodies, may not have been important in affecting self-presentational concerns among this sample of women.

5.4 *Alternative Explanations*

Given that neither manipulation (i.e., leader gender or physique salience) influenced self-presentational concerns, it is important to understand why the leader (who has been called the most influential factor in group exercise; Franklin, 1988) failed to impact self-presentational concerns in the present study. One possibility is that characteristics of the leader were less important than characteristics of the other exercisers. People tend to compare themselves to similar others when evaluating their bodies (Franzoi & Klaiber, 2007), therefore, because all exercisers were non- or infrequent exercisers (and therefore more similar to each other than to the exercise leader), other participants may have been a more important influence on exercise-related cognitions, and in particular SPE, which would in turn impact SSA and SPA-S. This explanation is consistent with Social Cognitive Theory (Bandura, 1997).

Bandura (1997) suggested that having more similar models (i.e., class participants) is a stronger source of self-efficacy information than less similar models (i.e., exercise leader). The present study supports this contention. In the present study, a greater number of positive comparisons were made to other participants compared to the number of positive comparisons with the exercise leader on all social comparison variables (i.e., attractiveness, skill, and fitness), suggesting that the other participants (i.e., the other non- or infrequent exercisers) may represent a more appropriate comparison group. This finding is consistent with previous research (Franzoi & Klaiber, 2007) which
found that university students are more likely to compare their bodies to people in the
general population than with models or elite athletes.

Further, aside from specific characteristics of other participants, the number of
other participants may have made these characteristics more influential. There were many
more exercisers compared to leaders (5-7 versus 1) in each class, and therefore there were
simply a greater number of potential influences by the other exercisers than by the single
leader.

Another reason for failing to support our hypotheses was the group environment.
Martin and Fox (2001) found that participants reported significantly more social anxiety
in the enriched group condition (a condition designed to encourage social interaction)
than those in the bland group condition (a condition designed to discourage social
interaction). The present study’s group environment more closely resembled the bland
group condition in Martin and Fox (2001) than the enriched group condition. This type of
group environment may have made participants feel at ease in the class as there was
minimal interaction between the members in the exercise group. In this sense,
participants may have felt anonymous in the group since attention was not drawn to them
(Martin & Fox, 2001) leading to higher SPE and lower SSA and SPA-S. Therefore, an
exercise group environment (i.e., bland) that may have reduced participants’ social
anxiety may have masked the potential effects of the gender or physique salience of the
exercise leader.

With respect to SPE in particular, the lack of exercise leader effect may have been
due to the wording of the SPE scale. For example, an item on the SPE scale asked for
participants to rate their confidence on a scale of 0 (not at all confident) to 100%
(completely confident) that “these other people will think that you [the participant] have good physical co-ordination”. Participants within this study may have considered “these people” as the other participants and not the exercise leader, or if the exercise leader was considered, that consideration may have been small since there was one leader and 5 to 7 other participants. Therefore, participants’ SPE scores in this study may be more reflective of their confidence to successfully present themselves as co-ordinated, fit and toned, and as an exerciser to the other participants in the class and not to the exercise leader specifically.

Another explanation for failing to find support for the hypotheses should also be considered. Whereas participants in the current study completed the exercise class, those in Crawford and Eklund (1994), Eklund and Crawford (1994), Fleming and Martin Ginis (2004), and Sinden et al.’s (2003) studies participants only watched an exercise video and thought about themselves participating in the class. Successfully completing the exercise class may itself serve as a source of SPE, which would in turn decrease SSA and SPA-S. By completing the class, participants may have believed that they successfully presented exercise-related images such as co-ordination, fitness, and stamina to the other participants. This suggestion was supported in the current study, all groups, regardless of the leader gender or physique salience, increased in SPE and decreased in SSA and SPA-S following exercise, indicating exercise itself was a source of self-efficacy.

Bandura (1997) suggested that mastery experiences are the strongest source of self-efficacy; because SPE is a specific type of self-efficacy, the finding that all groups reported higher SPE following the exercise class is consistent with Social Cognitive Theory (Bandura, 1997). In short, completing the exercise class may have served as a
mastery experience for all these participants. In turn, higher levels of SPE should be associated with lower levels of SSA and SPA-S.

Finally, acute exercise as short as 10 minutes has been shown to lead to decreases in state anxiety (Breus & O’Connor, 1998; Focht & Hausenblas, 2003). For instance, Focht and Hausenblas (2003) found that acute exercise reduced social anxiety five minutes following exercise in both a laboratory and naturalistic exercise environment. Acute exercise has also been associated with improvements in other variables including positive (McAuley et al., 1999; Raedeke, 2007) and negative (Petruzzello et al., 1997; Raedeke, 2007) affect and revitalization (Bozoian et al., 1994; Gauvin & Rejeski, 1998). Participants within the present study successfully completed the exercise class and, therefore, may have experienced not only mastery that increased SPE, but also reductions in social anxiety as found in previous research (Focht & Hausenblas, 2003). Completion of the exercise class may have overridden the effects of the gender or physique salience of the exercise leader.

5.5 Social Comparisons

Exploratory analysis in the present study did find differences in social anxiety based on social comparison, similar to findings by Martin Ginis et al. (2005), who found that those making negative social comparisons to the exercise leader’s body attractiveness reported less SPE, body appearance satisfaction, and appearance evaluation and higher SPA-S than those women who made positive social comparisons, regardless of the salience of the leader’s physique. The present study extends these findings, as it investigated social comparisons with other participants in addition to the leader.

Interestingly, the effect of comparisons made to other class participants in the present
study is consistent with the findings of Martin Ginis et al. (2005); negative comparisons, to either the leader or other participants, negatively impacted self-presentational concerns. It is possible that these social comparisons have a stronger effect on self-presentational concerns than the effects of specific leader characteristics.

Both the present study and Martin Ginis et al’s (2005) findings are consistent with Social Comparison Theory (Festinger, 1954). This theory suggests that people define themselves, at least in part, by the comparisons they make with other people. The effect of these comparisons may depend on characteristics of the target that is selected. Upward comparisons (i.e., when comparisons are made to a superior target on a characteristic of interest) may increase body dissatisfaction (Heinberg & Thompson, 1992), and emotional distress and decrease self-esteem (Major et al., 1991). By contrast downward comparisons (i.e., those that are made to an inferior target) tend to be self-enhancing (Wood, 1989) and make the individual feel better about him/herself. The present study confirms these contentions. Participants who made upward comparisons (i.e., who thought they were less fit than other participants) were higher in SSA and SPA-S. By contrast, those individuals making downward comparisons (i.e., who thought they were more fit than other participants) scored lower on SSA and SPA-S. Perhaps when individuals believe they are “better” (or more fit) than others in the group, they feel more confident and less concerned that they will be evaluated negatively or be embarrassed.

5.6 Limitations

Several limitations to the present study should be acknowledged. Firstly, the results can only be generalized to healthy female university non- or infrequent exercisers, who fall toward the low end of a healthy BMI. The effects of leader gender and physique
salience may be different in other populations, such as men, older adults, or special populations. It is also possible that a more active population (i.e., those who exercise three or more times per week) would also show different results. For example, these participants may be more likely to make social comparisons to the exercise leader because the leader may serve as a more similar or realistic comparison, consistent with Social Comparison Theory, which suggests individuals prefer to make comparisons with more similar others (Miller, Turnbull, & McFarland, 1988). More active exercisers would have experience in exercise settings, and may hold higher expectations of themselves, believing the leader is a good comparison target on characteristics such as their skill or fitness level.

Another limitation to the present study was that participants may have been randomly assigned to the same class as a friend or at least someone who participants could recognize. Carron and Prapavessis (1997) found that the company of a best friend served to reduce anxiety the most compared to being alone or in a group of friends. Because participants were drawn from a closed population this possibility could not be avoided.

Also, the degree of physique salience between the two conditions might not have been significantly different enough to influence SPE, SSA, or SPA-S. The difference between tight-fitting, shorter shorts and loose-fitting, longer shorts, although realistic, might have been too subtle. For instance, Martin Ginis et al. (2005) failed to find an influence of physique salience on SPE and body image, although their non-salient condition was more extreme than the present study (i.e., several layers of clothing, sweatshirt and sweat pants), creating greater disparity in the two conditions. By contrast,
in Gammage, Martin Ginis et al. (2004) the level of physique salience of the exercise clothing provided to the participants influenced SPE, SSA, and SPA-S (as part of the overall manipulation). However, the physique salient clothing was highly salient, consisting of spandex shorts and a jog bra. It should be noted however, that while the salience of the leader in the physique salient condition may be viewed as a limitation to this study, the present study had a more ecologically valid design than previous research (e.g., Gammage, Martin Ginis et al., 2004; Martin Ginis et al., 2005) in that the clothing worn by the leaders was attire they would normally wear to teach classes.

Another limitation to the present study is that there was no guarantee that the majority of participants’ attention was devoted to the exercise leader. Although every attempt was made to place focus on the leader, participants’ attention may have been divided between the instructor, other participants, or themselves (in the exercise mirrors). Participants may have only watched the instructor demonstrate the exercise, and then watched the other participants to see if they were performing the exercises correctly. This would have weakened the impact of the leader.

Furthermore, only short-term, immediate responses to the leader manipulations were examined; it was not possible to determine if any long-term consequences exist, or if repeated exposure to specific leaders can impact self-presentational concerns. It is possible that repeated comparisons over time may have an additive effect, leading to changes in self-presentational concerns. In the present design, it was not possible to investigate this issue.

Finally, demand characteristics may have played a role in this study. Participants may have tailored their answers to provide the researcher with the “correct” results.
Because the majority of the participants thought the study was examining the benefits of exercise, their answers may have reflected this belief. Therefore, the increases in SPE and the decreases in SSA and SPA-S post-exercise for participants may be artificial. However, given the strong evidence in past literature of the benefits of acute exercise (Bozoian et al., 1994; Breus & O’Connor, 1998; Gauvin & Rejeski, 1993; McAuley et al., 1999; Petruzzello et al., 1997; Rudolph & Butki, 1998), this explanation may be unlikely.

5.7 Future Directions

Most research that has examined the influence of the exercise leader in group exercise classes has used step aerobics as the mode of exercise. Examining the influence of the exercise leader in different types of exercise (i.e., spin, yoga, and aqua-fit) may provide greater understanding of the impact of certain exercise leader characteristics on SPE, social anxiety, and SPA. Some modes of exercise may influence self-presentational concerns to a greater degree than other modes (e.g., in aqua-fit, where the body is more salient) or to a lesser degree (e.g., yoga, where the focus is internal). Also, most research conducted within this area has used undergraduate students, especially women, as participants; therefore, using other populations, such as, older adults, men, or adolescents, may prove to be beneficial to advancing this field.

Further, examining the relative influence of the exercise environment and leader characteristics (e.g., leader behaviors, mirrors, degree of physique salience of the other participants, group gender composition) that influence self-presentational concerns may prove to be helpful in reducing levels of social anxiety and SPA. For example, other characteristics of the leader may be more important in influencing self-presentational
concerns in this population. Previous research shows that the ability of exercise leaders to successfully change exercises to suit exercisers’ needs and abilities is important in making participants comfortable in the class (Bain et al., 1989). Also, the exercise instructor’s leadership style (e.g., bland versus enriched) has been shown to influence state social anxiety (Martin & Fox, 2001) and exercise enjoyment (Bray et al., 2005). In a study that examined the preferred body type of fitness instructors among university students, Evans, Cotter, and Roy (2005) found that 90% of participants felt that the leader’s level of enthusiasm or motivation was an important characteristic of exercise leaders. Also, 86%, 80%, and 72% believed that physical fitness, ability to cue well or show proper technique, and ability to lead a variety of activities were also important characteristics of an exercise leader; by contrast, only 12% and 6% of participants felt that the gender of the leader (i.e., same-sex as the participant) and being thin were important characteristics of an exercise leader. Therefore, other aspects of the leader may be more important than gender and physique salience of the leader.

It should also be noted that the sample of women in the present study were all classified as non- or infrequent exercisers (i.e., 2 or fewer times per week). This definition is consistent with previous research in this area (e.g., Fleming & Martin Ginis, 2004; Gammage, Hall, et al., 2004; Gammage, Martin Ginis et al., 2004). This group has been shown to be homogeneous, and, compared to those exercising three or more times per week, different on exercise-related cognitions such as exercise imagery (Gammage, Hall, Prapavessis et al., 2004), as well as several self-presentational variables, such as SPE and SPA (e.g., Fleming & Martin Ginis, 2004; Gammage, Hall, et al., 2004; Gammage, Martin Ginis et al., 2004). However, it is possible that differences within this
group (e.g., between non- and infrequent exercisers) exist\(^1\). Future work should attempt to verify if, in fact, this group is actually comprised of two distinct subgroups.

There is also a measurement issue that may be an important point to highlight with respect to SPE and SSA. Although the Cronbach’s alphas in the present study for SPE (\(\alpha_1 = .87\) to \(.98\)) were consistent with previous research (Fleming & Martin Ginis, 2004; Gammage, Hall et al., 2004; Gammage, Martin Ginis et al., 2004; Martin Ginis et al., 2005; Sinden et al., 2003), these values tend to be consistently high across studies (i.e., > .96). Although there is no conventional cut-off for a high value for reliability (Streiner, 2003), very high internal consistencies may suggest that some items on the scale are redundant and unnecessary (Streiner, 2003). Future studies may want to investigate the high level of internal consistency that is consistently reported in the literature for SPE. It should be noted, however, that a recent examination of the validity and reliability of this scale provided support for its use (Strong & Martin Ginis, 2007).

The present study also found high Cronbach’s alphas for SSA for the present study (\(\alpha = .91\) to \(.97\)) which were relatively higher than previous research (i.e., \(\alpha = .90, .89\); Gammage, Martin Ginis et al., 2004; Martin & Fox, 2001). Future studies may want to examine the validity of SSA, which has not yet been investigated. Cortina (1993) and Streiner (2003) suggested that measures may have high internal consistencies, but be multidimensional. The SSA is composed of eight items; each of four items assesses social anxiety with respect to the leader and with respect to other participants. Thus, high internal consistencies may reflect redundancies in this measure (Streiner, 2003). Alternatively, the SSA may comprise two factors (i.e., social anxiety with respect to the
leader and with respect to the other participants); future research should examine the factor structure and construct validity of this measure.

Finally, examining social comparisons as a mechanism that influences self-presentational concerns may prove to be beneficial. The type or number of social comparisons people make may mediate the relationship between the specific characteristics of the exercise leader and self-presentational concerns. Further, examining the influence that characteristics of the other participants may have on social comparisons to determine which are most influential may extend this literature.

5.8 Implications

5.8.1 Implications for Practice. The present study's results have practical implications for fitness centers. Firstly, other aspects of the exercise leader may be more important than physical characteristics (e.g., leadership style, instructional ability, ability to show proper technique). Although there tends to be a bias for thin body types in the health professional field (Schwartz, Chambliss, Brownell, Blair, & Billington, 2003; Teachman & Brownell, 2001), research suggests that other non-physical factors are equally, if not more important (Evans et al., 2007). Therefore, fitness centers may want to emphasize these characteristics when hiring fitness instructors.

Secondly, members, especially new exercisers, may benefit from group exercise classes geared toward their fitness and skill level. Offering a wide variety of group exercise classes that suit different skill or activity levels may be helpful for participants wanting to join an exercise group. Although this is commonly advocated in the fitness industry, providing beginner-specific classes may not be implemented in practice, as gyms feel pressured to provide classes for the majority of their members, who are not
new. By providing convenient, beginner classes, new participants can exercise in a class with similar others; this may provide participants with a more realistic comparison group and could facilitate more positive as opposed to negative comparisons.

Also, with respect to the fitness comparison variable, since it was found that those who made positive as opposed to negative social comparisons to the other participants reported lower social anxiety and SPA-S post-exercise, it may be important for leaders to find ways to encourage non- or infrequent female exercisers to make positive social comparisons to the other participants (e.g., everyone looks strong), or to avoid making comparisons at all. Greenleaf et al. (2006) stated that aerobics instructors attempt to create positive body environments; however, more research is needed to understand how to effectively create these environments. Some instructors reported focusing on instruction and providing positive feedback and encouragement to create a positive body environment; these strategies may help participants make more positive comparisons by making them focus on the exercise itself and not their bodies.

Finally, even though there are aspects of the exercise environment that have been shown to heighten self-presentational concerns (i.e., the presence of mirrors, gender composition of the exercise group, physique salience of other exercisers), these influences may be overcome by ensuring that exercisers complete the actual exercise. Successfully completing the class may override feelings of social anxiety and SPA. Thus, structuring classes to ensure everyone can experience success and complete the exercise class may be critical.

5.8.2 Implications for Research. Research within this field should consider more ecologically valid designs. Although exercise videos may control for extraneous variables
that may occur in a live exercise class, imagining other people evaluating one’s physique or the impression one might have made on others in an exercise class is much different from actually being in a class with that evaluative threat present (i.e., in a live exercise class). Exercising in front of a video or alone provides no real opportunity for evaluation by others. Participation in a live exercise class instead of simply watching an exercise video or exercising alone with an exercise video may provide a clearer understanding of how the social environment influences self-presentational concerns in real life. It is possible that the negative effects on self-presentational concerns that arise from the exercise environment may be improved by actually exercising.

5.9 Conclusion

The present study found that the gender and physique salience of the exercise leader did not influence SPE, SSA, or SPA-S of female, college-aged, non- and infrequent exercisers during a live group exercise class. Participants reported more SPE and less SSA and SPA-S post-exercise relative to pre-exercise regardless of the condition. Therefore, completing the exercise class may serve as a mastery experience and a source of SPE (Bandura, 1997), which may help to reduce SSA and SPA-S. Physical characteristics of the exercise leader may not be as important in determining self-presentational concerns as other non-physical characteristics, such as leadership style. This study suggests that fitness centers may help their members by providing classes that group individuals together with common characteristics and abilities (i.e., physical activity or skill level) to promote appropriate models for positive social comparisons, and by providing group exercise experiences that foster success in completing the exercise itself.
REFERENCES


Culos-Reed, S. N., Brawley, L. R., Martin, K. A., & Leary, M. R. (2002). Self-
presentation concerns and health behaviours among cosmetic surgery patients.


Spink, K. S. (1992). Relation of anxiety about social physique to location of


Footnote

1 The possibility that this group was not homogenous on study variables was examined. A series of one-way ANOVAs were conducted to look for differences based on whether participants indicated they exercised zero (n = 20), one (n = 19), or two (n = 29) times per week. The only variable on which there was a significant difference was IM (F(2, 65) = 3.87, p = .03). A Tukey post-hoc test showed those who exercised zero times per week scored significantly lower on IM (M = 3.85, SD = 1.40) than those who exercised two times per week (M = 4.63, SD = .82; p = .02). There were no significant differences on any other demographic or dependent variables.

Further, a chi-square analysis was conducted to see if the frequency of exercise (i.e., exercise zero, one, or two times per week) was independent of the social comparisons to other participants on the fitness comparison variable (i.e., negative, similar, or positive). The results approached significance (χ²(4) = 9.24), p = .055). Examination of cell counts showed there were more individuals who exercised two times per week in the positive comparison group than expected. Thus, it is possible that some differences do exist within this group of women, although these differences appear to be relatively minor, at least with respect to the variables examined in the present study.
Table 1

Demographic Characteristics of the Entire Sample (N = 87)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD) or Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>19.82 (2.04)</td>
</tr>
<tr>
<td>Height (in inches)</td>
<td>65.67 (2.67)</td>
</tr>
<tr>
<td>Weight (in lbs.)</td>
<td>132.76 (17.12)</td>
</tr>
<tr>
<td>BMI</td>
<td>21.64 (2.44)</td>
</tr>
<tr>
<td>University Major (five most frequent)</td>
<td></td>
</tr>
<tr>
<td>Physical Education &amp; Kinesiology</td>
<td>20</td>
</tr>
<tr>
<td>Psychology</td>
<td>17</td>
</tr>
<tr>
<td>Child &amp; Youth Studies</td>
<td>17</td>
</tr>
<tr>
<td>Education</td>
<td>6</td>
</tr>
<tr>
<td>Science</td>
<td>5</td>
</tr>
<tr>
<td>Exercise Frequency (per week)</td>
<td>1.14 (0.78)</td>
</tr>
<tr>
<td>0 times per week</td>
<td>20</td>
</tr>
<tr>
<td>1 time per week</td>
<td>25</td>
</tr>
<tr>
<td>1.5 – 2 times per week</td>
<td>42</td>
</tr>
<tr>
<td>Exercise Type</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>18</td>
</tr>
<tr>
<td>Sports</td>
<td>20</td>
</tr>
<tr>
<td>Fitness</td>
<td>33</td>
</tr>
<tr>
<td>Combination of Sports &amp; Fitness</td>
<td>11</td>
</tr>
</tbody>
</table>
Group Class Frequency (lifetime classes) 6.07 (10.12)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>27</td>
</tr>
<tr>
<td>Yes</td>
<td>60</td>
</tr>
</tbody>
</table>

Exercise Ball Class Frequency (lifetime classes) 1.83 (5.37)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>62</td>
</tr>
<tr>
<td>Yes</td>
<td>25</td>
</tr>
</tbody>
</table>

*Note. For continuous variables, means (SD) are provided. For nominal variables, frequencies are reported.*
Table 2

*Descriptive Statistics for Female, Physique Salient Leader Group*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>α</th>
<th>Skewness (SE)</th>
<th>Kurtosis (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-exercise</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPE (n = 21)</td>
<td>57.53 (21.34)</td>
<td>.95</td>
<td>-1.12 (0.50)</td>
<td>1.34 (0.97)</td>
</tr>
<tr>
<td>SSA (n = 21)</td>
<td>1.86 (0.92)</td>
<td>.97</td>
<td>0.60 (0.50)</td>
<td>-1.11 (0.97)</td>
</tr>
<tr>
<td>SPA-S (n = 21)</td>
<td>2.66 (0.82)</td>
<td>.92</td>
<td>0.56 (0.50)</td>
<td>-0.50 (0.97)</td>
</tr>
<tr>
<td><strong>Post-exercise</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPE (n = 22)</td>
<td>63.32 (21.23)</td>
<td>.95</td>
<td>-0.97 (0.49)</td>
<td>1.37 (0.95)</td>
</tr>
<tr>
<td>SSA (n = 22)</td>
<td>1.69 (0.91)</td>
<td>.97</td>
<td>1.63 (0.49)</td>
<td>2.22 (0.95)</td>
</tr>
<tr>
<td>SPA-S (n = 22)</td>
<td>2.32 (0.82)</td>
<td>.93</td>
<td>0.90 (0.49)</td>
<td>0.32 (0.95)</td>
</tr>
<tr>
<td>IM (n = 22)</td>
<td>4.73 (0.69)</td>
<td>.78</td>
<td>-0.15 (0.49)</td>
<td>-0.61 (0.95)</td>
</tr>
<tr>
<td>RPE (n = 22)</td>
<td>3.52 (1.95)</td>
<td></td>
<td>0.33 (0.49)</td>
<td>-1.02 (0.95)</td>
</tr>
<tr>
<td>BMI (n = 22)</td>
<td>21.66 (2.19)</td>
<td></td>
<td>0.92 (0.49)</td>
<td>1.00 (0.95)</td>
</tr>
</tbody>
</table>

*Note. SPE ranges from 0-100; SSA ranges from 1-8; SPA-S ranges from 1-9; IM ranges from 1-6; RPE ranges from 0-10.*
Table 3

Descriptive Statistics for Female, Physique Non-Salient Leader Group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>α</th>
<th>Skewness (SE)</th>
<th>Kurtosis (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-exercise</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPE (n = 25)</td>
<td>54.23 (19.51)</td>
<td>.91</td>
<td>-0.57 (0.46)</td>
<td>-0.08 (0.90)</td>
</tr>
<tr>
<td>SSA (n = 25)</td>
<td>2.06 (0.75)</td>
<td>.93</td>
<td>0.34 (0.46)</td>
<td>-0.45 (0.90)</td>
</tr>
<tr>
<td>SPA-S (n = 24)</td>
<td>2.75 (0.83)</td>
<td>.89</td>
<td>0.10 (0.47)</td>
<td>-0.49 (0.92)</td>
</tr>
<tr>
<td><strong>Post-exercise</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPE (n = 25)</td>
<td>58.44 (16.44)</td>
<td>.88</td>
<td>0.00 (0.46)</td>
<td>-0.38 (0.90)</td>
</tr>
<tr>
<td>SSA (n = 25)</td>
<td>2.00 (0.75)</td>
<td>.93</td>
<td>0.27 (0.46)</td>
<td>-0.47 (0.90)</td>
</tr>
<tr>
<td>SPA-S (n = 25)</td>
<td>2.49 (0.72)</td>
<td>.85</td>
<td>0.40 (0.46)</td>
<td>-0.02 (0.90)</td>
</tr>
<tr>
<td>IM (n = 25)</td>
<td>4.26 (0.70)</td>
<td>.83</td>
<td>-0.75 (0.46)</td>
<td>1.52 (0.90)</td>
</tr>
<tr>
<td>RPE (n = 25)</td>
<td>4.12 (2.13)</td>
<td></td>
<td>1.16 (0.46)</td>
<td>1.21 (0.90)</td>
</tr>
<tr>
<td>BMI (n = 25)</td>
<td>21.50 (2.43)</td>
<td></td>
<td>-0.13 (0.46)</td>
<td>-1.04 (0.90)</td>
</tr>
</tbody>
</table>

*Note.* SPE ranges from 0-100; SSA ranges from 1-8; SPA-S ranges from 1-9; IM ranges from 1-6; RPE ranges from 0-10.
Table 4

*Descriptive Statistics for Male, Physique Salient Leader Group*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>α</th>
<th>Skewness (SE)</th>
<th>Kurtosis (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-exercise</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPE (n = 20)</td>
<td>57.67 (21.09)</td>
<td>.94</td>
<td>-0.96 (0.51)</td>
<td>1.04 (0.99)</td>
</tr>
<tr>
<td>SSA (n = 20)</td>
<td>1.91 (0.67)</td>
<td>.90</td>
<td>0.89 (0.51)</td>
<td>-0.02 (0.99)</td>
</tr>
<tr>
<td>SPA-S (n = 20)</td>
<td>2.43 (0.68)</td>
<td>.85</td>
<td>0.68 (0.51)</td>
<td>0.19 (0.99)</td>
</tr>
<tr>
<td><strong>Post-exercise</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPE (n = 20)</td>
<td>63.25 (20.83)</td>
<td>.96</td>
<td>-1.60 (0.51)</td>
<td>3.59 (0.99)</td>
</tr>
<tr>
<td>SSA (n = 20)</td>
<td>1.73 (0.57)</td>
<td>.87</td>
<td>0.40 (0.51)</td>
<td>-1.20 (0.99)</td>
</tr>
<tr>
<td>SPA-S (n = 20)</td>
<td>2.16 (0.59)</td>
<td>.81</td>
<td>1.03 (0.51)</td>
<td>0.68 (0.99)</td>
</tr>
<tr>
<td>IM (n = 20)</td>
<td>4.09 (1.24)</td>
<td>.94</td>
<td>-0.60 (0.51)</td>
<td>0.68 (0.99)</td>
</tr>
<tr>
<td>RPE (n = 20)</td>
<td>3.91 (2.15)</td>
<td></td>
<td>0.23 (0.51)</td>
<td>-1.30 (0.99)</td>
</tr>
<tr>
<td>BMI (n = 20)</td>
<td>21.75 (3.14)</td>
<td></td>
<td>0.67 (0.51)</td>
<td>0.42 (0.99)</td>
</tr>
</tbody>
</table>

*Note.* SPE ranges from 0-100; SSA ranges from 1-8; SPA-S ranges from 1-9; IM ranges from 1-6; RPE ranges from 0-10.
Table 5

*Descriptive Statistics for Male, Physique Non-Salient Leader Group*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>α</th>
<th>Skewness (SE)</th>
<th>Kurtosis (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-exercise</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPE (n = 20)</td>
<td>55.32 (19.16)</td>
<td>.95</td>
<td>-0.69 (0.51)</td>
<td>0.15 (0.99)</td>
</tr>
<tr>
<td>SSA (n = 20)</td>
<td>2.21 (0.98)</td>
<td>.97</td>
<td>0.22 (0.51)</td>
<td>-1.63 (0.99)</td>
</tr>
<tr>
<td>SPAS (n = 20)</td>
<td>2.59 (0.71)</td>
<td>.90</td>
<td>0.28 (0.51)</td>
<td>-0.38 (0.99)</td>
</tr>
<tr>
<td><strong>Post-exercise</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPE (n = 20)</td>
<td>64.62 (21.59)</td>
<td>.98</td>
<td>-0.56 (0.51)</td>
<td>-0.50 (0.99)</td>
</tr>
<tr>
<td>SSA (n = 20)</td>
<td>1.75 (0.60)</td>
<td>.92</td>
<td>0.63 (0.51)</td>
<td>-0.16 (0.99)</td>
</tr>
<tr>
<td>SPA-S (n = 20)</td>
<td>2.20 (0.62)</td>
<td>.85</td>
<td>0.32 (0.51)</td>
<td>-0.91 (0.99)</td>
</tr>
<tr>
<td>IM (n = 20)</td>
<td>4.50 (1.07)</td>
<td>.89</td>
<td>-1.75 (0.51)</td>
<td>5.37 (0.99)</td>
</tr>
<tr>
<td>RPE (n = 20)</td>
<td>4.13 (1.95)</td>
<td></td>
<td>0.27 (0.51)</td>
<td>0.10 (0.99)</td>
</tr>
<tr>
<td>BMI (n = 20)</td>
<td>21.67 (2.08)</td>
<td></td>
<td>0.23 (0.51)</td>
<td>-0.31 (0.99)</td>
</tr>
</tbody>
</table>

*Note.* SPE ranges from 0-100; SSA ranges from 1-8; SPA-S ranges from 1-9; IM ranges from 1-6; RPE ranges from 0-10.
Table 6

*Bivariate Correlations between SPE, SSA, SPA-S, and RPE for Female Leader*

*Conditions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PRESPE</td>
<td></td>
<td>-.51*</td>
<td>-.62**</td>
<td>.91**</td>
<td>-.53*</td>
<td>-.70**</td>
<td>-.28</td>
</tr>
<tr>
<td>2. PRESSA</td>
<td>-.37</td>
<td></td>
<td>.71**</td>
<td>-.42</td>
<td>.76**</td>
<td>.68**</td>
<td>.15</td>
</tr>
<tr>
<td>3. PRESPA-S</td>
<td>-.32</td>
<td>.80**</td>
<td></td>
<td>-.65**</td>
<td>.80**</td>
<td>.93**</td>
<td>.21</td>
</tr>
<tr>
<td>4. POSTSPE</td>
<td>.86**</td>
<td>-.27</td>
<td>-.43*</td>
<td></td>
<td>-.54*</td>
<td>-.79**</td>
<td>-.38</td>
</tr>
<tr>
<td>5. POSTSSA</td>
<td>-.27</td>
<td>.67**</td>
<td>.77**</td>
<td>-.33</td>
<td></td>
<td>.82**</td>
<td>.15</td>
</tr>
<tr>
<td>6. POSTSPA-S</td>
<td>-.34</td>
<td>.57**</td>
<td>.85**</td>
<td>-.42*</td>
<td>.82**</td>
<td></td>
<td>.29</td>
</tr>
<tr>
<td>7. RPE</td>
<td>.22</td>
<td>-.32</td>
<td>-.15</td>
<td>-.00</td>
<td>-.20</td>
<td>-.23</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Correlations for female salient leader (*n = 21*) above the diagonal; correlations for female non-salient leader (*n = 25*) below the diagonal; *p ≤ .05; **p ≤ .005.*
Table 7

Bivariate Correlations between SPE, SSA, SPA-S, and RPE for Male Leader Conditions

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PRESPE</td>
<td>___</td>
<td>-.23</td>
<td>-.22</td>
<td>.88**</td>
<td>-.32</td>
<td>-.11</td>
<td>.03</td>
</tr>
<tr>
<td>2. PRESSA</td>
<td>-.28</td>
<td>___</td>
<td>.52*</td>
<td>-.20</td>
<td>.89**</td>
<td>.61**</td>
<td>-.13</td>
</tr>
<tr>
<td>3. PRESPA-S</td>
<td>-.49*</td>
<td>.54*</td>
<td>___</td>
<td>-.18</td>
<td>.47*</td>
<td>.83**</td>
<td>.04</td>
</tr>
<tr>
<td>4. POSTSPE</td>
<td>.77**</td>
<td>.09</td>
<td>-.16</td>
<td>___</td>
<td>-.28</td>
<td>-.15</td>
<td>.11</td>
</tr>
<tr>
<td>5. POSTSSA</td>
<td>-.32</td>
<td>.77**</td>
<td>.49*</td>
<td>-.03</td>
<td>___</td>
<td>.51*</td>
<td>.17</td>
</tr>
<tr>
<td>6. POSTSPA-S</td>
<td>-.76**</td>
<td>.50*</td>
<td>.69**</td>
<td>-.48*</td>
<td>.60**</td>
<td>___</td>
<td>-.04</td>
</tr>
<tr>
<td>7. RPE</td>
<td>.02</td>
<td>.27</td>
<td>-.03</td>
<td>.04</td>
<td>-.08</td>
<td>-.13</td>
<td>___</td>
</tr>
</tbody>
</table>

*Note.* Correlations for male salient leader (n = 20) above the diagonal; correlations for male non-salient leader (n = 20) below the diagonal; *p ≤ .05; **p ≤ .005.
### Table 8

*Descriptive Statistics for Entire Sample*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>Skewness (SE)</th>
<th>Kurtosis (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-exercise</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPE (n = 86)</td>
<td>56.09 (19.96)</td>
<td>-0.78 (0.26)</td>
<td>0.28 (0.51)</td>
</tr>
<tr>
<td>SSA (n = 86)</td>
<td>2.01 (0.83)</td>
<td>0.47 (0.26)</td>
<td>-0.96 (0.51)</td>
</tr>
<tr>
<td>SPA-S (n = 85)</td>
<td>2.62 (0.76)</td>
<td>0.40 (0.26)</td>
<td>-0.48 (0.52)</td>
</tr>
<tr>
<td><strong>Post-exercise</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPE (n = 87)</td>
<td>62.20 (19.76)</td>
<td>-0.73 (0.26)</td>
<td>0.63 (0.51)</td>
</tr>
<tr>
<td>SSA (n = 87)</td>
<td>1.80 (0.73)</td>
<td>0.91 (0.26)</td>
<td>0.62 (0.51)</td>
</tr>
<tr>
<td>SPA-S (n = 87)</td>
<td>2.30 (0.70)</td>
<td>0.71 (0.26)</td>
<td>0.10 (0.51)</td>
</tr>
<tr>
<td>IM (n = 87)</td>
<td>4.93 (0.95)</td>
<td>-1.07 (0.26)</td>
<td>2.51 (0.51)</td>
</tr>
<tr>
<td>RPE (n = 87)</td>
<td>3.93 (2.03)</td>
<td>-1.07 (0.26)</td>
<td>-0.18 (0.51)</td>
</tr>
</tbody>
</table>

*Note.* SPE ranges from 0-100; SSA ranges from 1-8; SPA-S ranges from 1-9; IM ranges from 1-6; RPE ranges from 0-10.
### Table 9

*Bivariate Correlations between SPE, SSA, SPA-S, and RPE for Entire Sample*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PRESPE</td>
<td></td>
<td>-.36**</td>
<td>-.42**</td>
<td>.85**</td>
<td>-.37**</td>
<td>-.48**</td>
</tr>
<tr>
<td>2. PRESSA</td>
<td></td>
<td></td>
<td>.64**</td>
<td>-.19</td>
<td>.73**</td>
<td>.57**</td>
</tr>
<tr>
<td>3. PRESPA-S</td>
<td></td>
<td></td>
<td></td>
<td>-.37**</td>
<td>.68**</td>
<td>.84**</td>
</tr>
<tr>
<td>4. POSTSPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.34*</td>
<td>-.50**</td>
</tr>
<tr>
<td>5. POSTSSA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.74**</td>
</tr>
<tr>
<td>6. POSTSPA-S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *p = .002; **p ≤ .001.*
Table 10

*Descriptive Statistics for Entire Sample for Social Comparison to the Instructor and Other Participants (n = 87)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>Skewness (SE)</th>
<th>Kurtosis (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCI Attractiveness</td>
<td>2.16 (.80)</td>
<td>.40 (.26)</td>
<td>-.12 (.51)</td>
</tr>
<tr>
<td>SCI Skill</td>
<td>2.00 (.82)</td>
<td>1.16 (.26)</td>
<td>2.76 (.51)</td>
</tr>
<tr>
<td>SCI Fitness</td>
<td>1.79 (.80)</td>
<td>1.72 (.26)</td>
<td>2.97 (.51)</td>
</tr>
<tr>
<td>SCP Attractiveness</td>
<td>2.90 (.63)</td>
<td>-.21 (.26)</td>
<td>2.22 (.51)</td>
</tr>
<tr>
<td>SCP Skill</td>
<td>3.10 (.68)</td>
<td>.32 (.26)</td>
<td>1.67 (.51)</td>
</tr>
<tr>
<td>SCP Fitness</td>
<td>3.07 (.63)</td>
<td>.12 (.26)</td>
<td>.02 (.51)</td>
</tr>
</tbody>
</table>

*Note.* SCI = Social Comparison to the instructor; SCP = Social Comparison to the other Participants. All variables range from 1 = much less to 3 = just as to 5 = much more.
### Table 11

**Descriptive Statistics for Fitness Comparison to Other Participants**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Negative Comparison</th>
<th>Similar Comparison</th>
<th>Positive Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$(n = 29)$</td>
<td>$(n = 25)$</td>
<td>$(n = 33)$</td>
</tr>
<tr>
<td>Mean $(SD)$</td>
<td>$\alpha$</td>
<td>Mean $(SD)$</td>
<td>$\alpha$</td>
</tr>
<tr>
<td>Pre-SPE</td>
<td>42.79 (21.99) .94</td>
<td>54.84 (16.48) .90</td>
<td>67.54 (12.27) .83</td>
</tr>
<tr>
<td>Pre-SSA</td>
<td>2.19 (.75) .92</td>
<td>2.07 (.83) .96</td>
<td>1.87 (.89) .97</td>
</tr>
<tr>
<td>Pre-SPA-S</td>
<td>2.80 (.83) .88</td>
<td>2.66 (.76) .91</td>
<td>2.42 (.69) .88</td>
</tr>
<tr>
<td>Post-SPE</td>
<td>48.70 (21.07) .95</td>
<td>61.76 (12.54) .85</td>
<td>74.39 (14.97) .90</td>
</tr>
<tr>
<td>Post-SSA</td>
<td>2.06 (.84) .95</td>
<td>1.79 (.64) .92</td>
<td>1.58 (.62) .93</td>
</tr>
<tr>
<td>Post-SPA-S</td>
<td>2.62 (.80) .91</td>
<td>2.28 (.62) .84</td>
<td>2.05 (.55) .78</td>
</tr>
<tr>
<td>IM</td>
<td>4.13 (1.08) .93</td>
<td>4.40 (0.96) .86</td>
<td>4.62 (0.78) .85</td>
</tr>
<tr>
<td>RPE</td>
<td>4.57 (2.01) ____</td>
<td>3.46 (1.83) ____</td>
<td>3.71 (2.11) ____</td>
</tr>
<tr>
<td>BMI</td>
<td>21.88 (2.64) ____</td>
<td>21.30 (2.40) ____</td>
<td>21.67 (2.34) ____</td>
</tr>
</tbody>
</table>

*Note.* Negative Comparison = participants rated themselves as much less or less fit than other participants; Similar Comparison = participants rated themselves just as fit to other participants; positive comparison = participants rated themselves as much more or more fit than other participants; SPE ranges from 0-100; SSA ranges from 1-8; SPA-S ranges from 1-9.
Table 12

Bivariate Correlations between SPE, SSA, SPA-S, and RPE for Negative Social Comparison Group (n = 29)

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PRESPE</td>
<td></td>
<td>-.32</td>
<td>-.33</td>
<td>.85**</td>
<td>-.24**</td>
<td>-.42*</td>
<td>.39*</td>
</tr>
<tr>
<td>2. PRESSA</td>
<td></td>
<td></td>
<td>.72**</td>
<td>-.17</td>
<td>.67**</td>
<td>.58**</td>
<td>-.47*</td>
</tr>
<tr>
<td>3. PRESPA-S</td>
<td></td>
<td></td>
<td></td>
<td>-.40*</td>
<td>.77**</td>
<td>.88**</td>
<td>-.46*</td>
</tr>
<tr>
<td>4. POSTSPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.26</td>
<td>-.52**</td>
<td>.20</td>
</tr>
<tr>
<td>5. POSTSSA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.74**</td>
<td>-.26</td>
</tr>
<tr>
<td>6. POSTSPA-S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.39*</td>
</tr>
<tr>
<td>7. RPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. *p < .05; **p ≤ .001.
Table 13

*Bivariate Correlations between SPE, SSA, SPA-S, and RPE for Similar Social Comparison Group (n = 25)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PRESPE</td>
<td></td>
<td>-.29</td>
<td>-.34</td>
<td>.85**</td>
<td>-.36**</td>
<td>-.26</td>
<td>-.27</td>
</tr>
<tr>
<td>2. PRESSA</td>
<td></td>
<td></td>
<td>.66**</td>
<td>-.03</td>
<td>.78**</td>
<td>.62**</td>
<td>.06</td>
</tr>
<tr>
<td>3. PRESPA-S</td>
<td></td>
<td></td>
<td></td>
<td>.78**</td>
<td>.84**</td>
<td>.32</td>
<td></td>
</tr>
<tr>
<td>4. POSTSPE</td>
<td></td>
<td></td>
<td></td>
<td>-.22</td>
<td>-.26</td>
<td>-.16</td>
<td></td>
</tr>
<tr>
<td>5. POSTSSA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.85**</td>
<td>.15</td>
<td></td>
</tr>
<tr>
<td>6. POSTSPA-S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.17</td>
<td></td>
</tr>
<tr>
<td>7. RPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. *p < .05; **p ≤ .001.*
Table 14

Bivariate Correlations between SPE, SSA, SPA-S, and RPE for Positive Social Comparison Group (n = 33)

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PRESPE</td>
<td></td>
<td>-.41*</td>
<td>-.48**</td>
<td>.67**</td>
<td>-.29</td>
<td>-.42*</td>
<td>-.01</td>
</tr>
<tr>
<td>2. PRESSA</td>
<td></td>
<td></td>
<td>.55**</td>
<td>-.13</td>
<td>.79**</td>
<td>.53**</td>
<td>.28</td>
</tr>
<tr>
<td>3. PRESPA-S</td>
<td></td>
<td></td>
<td></td>
<td>-.19</td>
<td>.41*</td>
<td>.80**</td>
<td>.13</td>
</tr>
<tr>
<td>4. POSTSPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.18</td>
<td>-.28</td>
<td>-.03</td>
</tr>
<tr>
<td>5. POSTSSA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.56**</td>
<td>.08</td>
</tr>
<tr>
<td>6. POSTSPA-S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.08</td>
</tr>
<tr>
<td>7. RPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. *p < .05; **p ≤ .001.
Figure Captions

*Figure 1.* Two-Component Model of Self-Presentation (Martin Ginis & Leary, 2004).

*Figure 2.* Photos of Female Physique Salient and Non-Salient Leader.

*Figure 3.* Photos of Male Physique Salient and Non-Salient Leader.
<table>
<thead>
<tr>
<th>Impression Motivation</th>
<th>Impression Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dispositional Influences</strong></td>
<td></td>
</tr>
<tr>
<td>Level of impression motivation and monitoring</td>
<td>Beliefs about what images are desirable/ undesirable</td>
</tr>
<tr>
<td></td>
<td>Self-concept</td>
</tr>
<tr>
<td><strong>Situational Influences</strong></td>
<td></td>
</tr>
<tr>
<td>Discrepancy between one’s desired and current image</td>
<td>Values of target/ audience</td>
</tr>
<tr>
<td>Importance of desired impression to the achievements of one’s goal</td>
<td>Individual’s role constraints</td>
</tr>
<tr>
<td>Value of goal associated with making desired impression</td>
<td>Individual’s current social image</td>
</tr>
</tbody>
</table>

*Figure 1.*
Figure 2.
Figure 3.
Appendix A

Demographic Questionnaire, PAR-Q, and IM Scale
Demographic Information

Please fill out the following information:

Age ______
Gender ______
Height ______
Weight ______

How many days (in the last 6 months) on average do you exercise per week ______

If any, what types of activities do you participate in __________________________________________

Have you ever participated in a group exercise class ______
  if so, how many ______

Have you ever participated in an exercise ball class ______
  If so, how many ______
**PAR-Q & YOU**

*(A Questionnaire for People Aged 15 to 69)*

Regular physical activity is fun and healthy, and increasingly more people are starting to become more active every day. Being more active is very safe for most people. However, some people should check with their doctor before they start becoming much more physically active.

If you are planning to become much more physically active than you are now, start by answering the seven questions in the box below. If you are between the ages of 15 and 69, the PAR-Q will tell you if you should check with your doctor before you start. If you are over 69 years of age, and you are not used to being very active, check with your doctor.

Common sense is your best guide when you answer these questions. Please read the questions carefully and answer each one honestly: check YES or NO.

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Has your doctor ever said that you have a heart condition and that you should only do physical activity recommended by a doctor?</td>
<td></td>
</tr>
<tr>
<td>2. Do you feel pain in your chest when you do physical activity?</td>
<td></td>
</tr>
<tr>
<td>3. In the past month, have you had chest pain when you were not doing physical activity?</td>
<td></td>
</tr>
<tr>
<td>4. Do you lose your balance because of dizziness or do you ever lose consciousness?</td>
<td></td>
</tr>
<tr>
<td>5. Do you have a bone or joint problem (for example, back, bone or hip) that could be made worse by a change in your physical activity?</td>
<td></td>
</tr>
<tr>
<td>6. Is your doctor currently prescribing drugs (for example, water pills) for your blood pressure or heart condition?</td>
<td></td>
</tr>
<tr>
<td>7. Do you know of any other reason why you should not do physical activity?</td>
<td></td>
</tr>
</tbody>
</table>

**If you answered YES to one or more questions**

Talk with your doctor by phone or in person BEFORE you start becoming much more physically active or BEFORE you have a fitness appraisal. Tell your doctor about the PAR-Q and which questions you answered YES.

- You may be able to do any activity you want — as long as you start slowly and build up gradually. Or, you may need to restrict your activities to those which are safe for you. Talk with your doctor about the kinds of activities you wish to participate in and follow his/her advice.
- Find out which community programs are safe and helpful for you.

**NO to all questions**

If you answered NO honestly to all PAR-Q questions, you can be reasonably sure that you can start becoming much more physically active — begin slowly and build up gradually. This is the safest and easiest way to go.

- Take part in a fitness appraisal — this is an excellent way to determine your basic fitness so that you can plan the best way for you to live activity. It is also highly recommended that you have your blood pressure evaluated. If your reading is over 140/94, talk with your doctor before you start becoming much more physically active.

**DELAY BECOMING MUCH MORE ACTIVE:**

- If you are not feeling well because of a temporary illness such as a cold or a fever — wait until you feel better; or
- If you are or may be pregnant — talk to your doctor before you start becoming more active.

**PLEASE NOTE:** If your health changes so that you then answer YES to any of the above questions, tell your doctor or health professional. Ask whether you should change your physical activity plan.

Information on the PAR-Q: The Canadian Society for Exercise Physiology, Health Canada, and the researchers assume no liability for persons who undertake physical activity and fill in doubt after completing this questionnaire, consult your doctor prior to physical activity.

**No changes permitted. You are encouraged to photocopy the PAR-Q only if you use the entire form.**

**Note:** This physical activity clearance is valid for a maximum of 12 months from the date it is completed and becomes invalid if your condition changes so that you would answer YES to any of the seven questions.

© Canadian Society for Exercise Physiology

*Supported by:* Health Canada, Santé Canada

---

**Exercise Leaders 105**
Using the following response scale, please indicate how strongly you agree which each of the following statements by circling the appropriate number.

1 = Strongly Disagree  
2 = Moderately Disagree  
3 = Somewhat Disagree  
4 = Somewhat Agree  
5 = Moderately Agree  
6 = Strongly Agree

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>I value the attention and praise of others when they regard me as being in good shape</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I enjoy the praise I receive for exercising</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I try to appear toned or fit to others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I value the attention and praise offered by others in regard to appearing physically fit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B

Pre-Exercise Questionnaire Package
**SPES**

Think about the exercise class that you will be doing today. Using any values from this scale (0 to 100%), please indicate how confident you are for each of the following:

0%---------------------50%----------------------100%
Not at all confident Completely Confident

How confident are you that...

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. These other people will think that you have good physical co-ordination</td>
<td></td>
</tr>
<tr>
<td>2. These other people will think that your body looks fit and toned</td>
<td></td>
</tr>
<tr>
<td>3. These other people will think that you have good stamina</td>
<td></td>
</tr>
<tr>
<td>4. These other people will think that you are someone who works out regularly</td>
<td></td>
</tr>
<tr>
<td>5. These other people will think that you are in good shape</td>
<td></td>
</tr>
</tbody>
</table>
SSA

Read each of the following statements carefully and indicate the degree to which the statement is characteristic or true of you as you think of today’s exercise class. Use the following scale for your ratings.

1 = Not at all a concern  
2 = Slightly a concern  
3 = Average concern  
4 = Above average concern  
5 = Extreme concern

<table>
<thead>
<tr>
<th></th>
<th>I am concerned about looking uncoordinated in front of the instructor</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I am concerned about looking uncoordinated in front of the other participants</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Throughout the class, I will be worried about embarrassing myself in front of the instructor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Throughout the class, I will be worried about embarrassing myself in front of the other participants</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>During the class, I am worried that the instructor will be evaluating my physique/ figure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>During the class, I am worried that the other participants will be evaluating my physique/ figure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I am concerned that the instructor will think that I am in poor physical condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I am concerned that the other participants will think that I am in poor physical condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Read each of the following statements carefully and indicate the degree to which the statement is characteristic or true of you in this situation (exercise class). Use the following scale. Circle the appropriate value following each statement.

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

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel uptight about my physique/figure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. I am bothered by thoughts that the other people in the room are evaluating my weight or muscular development negatively</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Unattractive features of my physique/figure make me nervous in this setting.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. In this environment, I feel apprehensive about my physique/figure.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. I am comfortable with how fit my body appears to the others.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. It would make me uncomfortable to know that other people in the room were evaluating my physique/figure.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. When it comes to displaying my physique/figure in this setting, I feel shy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. Sitting here in my workout clothes, I feel nervous about the shape of my body.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. I feel relaxed when it is obvious that others are looking at my physique/figure.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix C

Post-Exercise Questionnaire Package
SPES

Think about the exercise class that you just completed today. Using any values from this scale (0 to 100%), please indicate how confident you were for each of the following:

0%-----------------------------------50%----------------------------------100%
Not at all confident                  Completely Confident

How confident were you that…

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. These other people thought that you had good physical co-ordination</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. These other people thought that your body looked fit and toned</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. These other people thought that you had good stamina</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. These other people thought that you were someone who works out regularly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. These other people thought that you were in good shape</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SSA

Read each of the following statements carefully and indicate the degree to which the statement is characteristic or true of you as you think of today’s completed exercise class. Use the following scale for your ratings.

1 = Not at all a concern  
2 = Slightly a concern  
3 = Average concern  
4 = Above average concern  
5 = Extreme concern

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I was concerned about looking uncoordinated in front of the instructor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I was concerned about looking uncoordinated in front of the other participants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Throughout the class, I worried about embarrassing myself in front of the instructor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Throughout the class, I worried about embarrassing myself in front of the other participants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. During the class, I was worried that the instructor was evaluating my physique/figure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. During the class, I was worried that the other participants were evaluating my physique/figure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I was concerned that the instructor thought that I was in poor physical condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I was concerned that the other participants thought that I was in poor physical condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SPAS - S

Read each of the following statements carefully and indicate the degree to which the statement is characteristic or true of you in the exercise class you just completed. Use the following scale. Circle the appropriate value following each statement.

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

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I felt uptight about my physique/figure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I was bothered by thoughts that the other people in the room were evaluating my weight or muscular development negatively</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Unattractive features of my physique/figure made me nervous in this setting.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. In this environment, I felt apprehensive about my physique/figure.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I was comfortable with how fit my body appeared to the others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. It made me uncomfortable to know that other people in the room were evaluating my physique/figure.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. When it came to displaying my physique/figure in this setting, I felt shy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Sitting here in my workout clothes, I felt nervous about the shape of my body.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. I felt relaxed when it was obvious that others were looking at my physique/figure.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Read each of the following carefully and indicate the degree to which you feel similar to your instructor. Use the following scale for your ratings.

1 = much less  
2 = somewhat less  
3 = just as  
4 = somewhat more  
5 = much more

Compared to your instructor rate how similar you are on each of the characteristic:

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Physical fitness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Body’s physical attractiveness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Physical strength</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Level of coordination</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Skill at doing exercises in class</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Read each of the following carefully and indicate the degree to which you feel similar to the other exercisers. Use the following scale for your ratings.

1= much less
2= somewhat less
3= just as
4= somewhat more
5= much more

Compared to the other exercisers, rate how similar you are on each of the characteristic:

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Physical Fitness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Body’s physical attractiveness</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Physical strength</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Level of coordination</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Skill at doing exercises in class</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
RPE

Using the scale below, which number best describes your level of exertion during the exercise class.

0  nothing at all
.5  extremely weak (just noticeable)
1  very weak
2  weak (light)
3  moderate
4  somewhat strong
5  strong (heavy)
6  
7  very strong
8  
9  
10 extremely strong (almost maximal)

My level of exertion during this exercise class was ________.
PURPOSE

What do you think the purpose of today’s study was?
Appendix D

Ethics Clearance
June 21, 2006

Linda Rose-Krasnor, Chair
Research Ethics Board (REB)

Kim Gammage, PEKN
Larkin Lamarche

05-304 LAMARCHE

The Exercise Environment and Self-Presentational Concerns

The Brock University Research Ethics Board has reviewed the above research proposal.

DECISION: Accepted as clarified.

This project has received ethics clearance for the period of June 21, 2006 to June 1, 2007 subject to full REB ratification at the Research Ethics Board's next scheduled meeting. The clearance period may be extended upon request. The study may now proceed.

Please note that the Research Ethics Board (REB) requires that you adhere to the protocol as last reviewed and cleared by the REB. During the course of research no deviations from, or changes to, the protocol, recruitment, or consent form may be initiated without prior written clearance from the REB. The Board must provide clearance for any modifications before they can be implemented. If you wish to modify your research project, please refer to http://www.brocku.ca/researchservices/forms to complete the appropriate form Revision or Modification to an Ongoing Application.

Adverse or unexpected events must be reported to the REB as soon as possible with an indication of how these events affect, in the view of the Principal Investigator, the safety of the participants and the continuation of the protocol.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of any research protocols.

The Tri-Council Policy Statement requires that ongoing research be monitored. A Final Report is required for all projects upon completion of the project. Researchers with projects lasting more than one year are required to submit a Continuing Review Report annually. The Office of Research Services will contact you when this form Continuing Review/Final Report is required.

Please quote your REB file number on all future correspondence.

LRK/bb

Brenda Brewster, Research Ethics Assistant
Office of Research Ethics, MC D250A
Brock University
Office of Research Services
500 Glenridge Avenue
St. Catharines, Ontario, Canada L2S 3A1
phone: (905)688-5550, ext. 3035 fax: (905)688-0748
email: reb@brocku.ca
http://www.brocku.ca/researchservices/ethics/humanethics/
Appendix E

Verbal Script for Recruitment in Undergraduate Classes
My name is Larkin Lamarche, I am a graduate student at Brock University within Applied Health Sciences working under the supervision of Dr. Kimberley Gammage. I am the principal investigator in a research project examining the influences of exercise-related feelings and cognitions in a group exercise class. Participation takes about an hour of your time– you will be asked to complete a set of questionnaires prior to and following participation in a group exercise class led by a qualified instructor designed for beginners. I am looking for volunteers to participate in my research.

Hand out slips of paper summarizing the purpose of the study and contact information.
Appendix F

Recruitment Poster
Research Participants
Wanted:

Participation Counts Towards PSYC 1F90 Research Practicum (1 Hour)

Who?  Female Brock Students, good general health
Who exercise 2 or fewer times per week

What?  Participate in a free group exercise class for beginners

- 60 minutes total
- Complete several questionnaires and participate in a group exercise class for beginners led by a qualified exercise instructor

Contact one of the following:

Dr. Kim Gammage  Larkin Lamarche
kgammage@brocku.ca  larkin.lamarche@brocku.ca
905-688-5550 ext. 3772

Department of Physical Education and Kinesiology
This study has been reviewed by, and received ethics clearance through the Office of Research Ethics, Brock University [REB # 05-304].
Appendix G

Letter of Invitation and Informed Consent
Letter of Invitation and Informed Consent

Date: November 2006
Project Title: The Exercise Environment and Self-Presentational Concerns in Group Exercise Classes

Principal Investigator: Larkin Lamarche, Masters of Arts Candidate Faculty of Applied Health Sciences Larkin.lamarche@brocku.ca

Faculty Supervisor: Kimberley L. Gamage, Ph.D. Associate Professor, Physical Education & Kinesiology Faculty of Applied Health Sciences (905) 688-6550 Ext. 3772 kgammage@brocku.ca

INVITATION
You are invited to participate in a study that involves research. The purpose of this study is to examine influences on exercise-related feelings and cognitions.

WHAT'S INVOLVED
As a participant, you will be asked to complete two sets of questionnaires prior to and after participating in a group exercise class designed for beginners led by a qualified exercise instructor. Participation will take place at the Brock University exercise lab (WH 16). Participation will take approximately 60 minutes of your time. Please note that you must pass a health screening test prior to be eligible to participate in the exercise class.

POTENTIAL BENEFITS AND RISKS
Your participation will help to further our understanding of how exercise leaders impact the exercise experiences of women. You will have the opportunity to increase your knowledge of influences of the exercise environment and participate in a free exercise class. Participation in this study counts as 1 hour of PSYC 1F90 research participation. There are minimal physical risks associated with participating in this study due to the nature of the exercise class and you may experience some discomfort due to the nature of the questions being asked.

CONFIDENTIALITY
Any information that arises from participants will be treated with confidentiality. Data collected during this study will be stored in the locked office of Dr. Gamage at Brock University and will be shredded one year following the completion of the study. Access to this data will be restricted to the principal investigator, faculty supervisor, and research assistant.

VOLUNTARY PARTICIPATION
Participation in this study is voluntary. If you wish, you may decline to answer any questions or participate in any component of the study. Further, you may decide to withdraw from this study at any time and may do so without any penalty or loss of benefits to which you are entitled.

PUBLICATION OF RESULTS
Results of this study may be published in professional journals and presented at conferences. You’re your request you may receive a summary of results by contacting the principal investigator or faculty supervisor by e-mail.

CONTACT INFORMATION AND ETHICS CLEARANCE
If you have any questions about this study or require further information, please contact the Principal Investigator or the Faculty Supervisor using the contact information provided above. This study has been
reviewed and received ethics clearance through the Research Ethics Board at Brock University (File 05-304). If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

Thank you for your assistance in this project. Please keep a copy of this form for your records.

CONSENT FORM

I agree to participate in this study described above. I have made this decision based on the information I have read in the Information-Consent Letter. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future. I understand that I may withdraw this consent at any time.

Name: ____________________________

Signature: ____________________________ Date: ____________________________

Research Signature: ____________________________ Date: ____________________________
Appendix H

Debriefing Form and Summary of Results
Thank you for participating in this study. In this study, we were examining the influence exercise instructor gender (male or female) and physique salience (revealing or non-revealing clothing) on self-presentational concerns such as self-presentational efficacy, social anxiety, and social physique anxiety as well as social comparisons. All participants completed the same exercise class. However, the classes were led by two different instructors (one male and one female) wearing different clothing (loose-fitting shorts and long-sleeve t-shirt or fitted shorts and sleeveless top). In order to obtain your true responses to the exercise environment, the details of the other instructors were not initially provided. If you have any questions about the study, please contact either Larkin Lamarche or Dr. Kimberley Gammage at the above e-mail addresses.

Thank you for your participation
This project has been reviewed by, and received ethics clearance through the Office of Research Ethics Board
(File # 05-304)
Brock University, Faculty of Applied Health Sciences
Summary of Results Request

Title of Study: The Exercise Environment and Self-Presentational Concerns
Principal Researcher: Larkin Lamarche, Master of Arts Candidate, Faculty of Applied Health Sciences
Faculty Supervisor: Dr. Kimberley L. Gammage, Associate Professor, Dept. of Physical Education and Kinesiology

If you would like to receive a summary of the results of the study, please complete the following information.

If you would like to receive the information by email:

Name: ____________________________________________

Email Address: ______________________________________

If you would like to receive the information by mail please provide your name and address:

Name: ____________________________________________
(First Name) (Last Name)

Address: __________________________________________
(Street Number) (Street)

(City) (Province) (Postal Code)
Summary of Results

Title of Study: The Exercise Environment and Self-Presentational Concerns

Principal Researcher: Larkin Lamarche, Master of Arts Candidate, Faculty of Applied Health Sciences

Faculty Supervisor: Dr. Kimberley L. Gammage, Assistant Professor, Dept. of Physical Education and Kinesiology

Dear Participant,

We greatly appreciated your involvement in our study on “The Exercise Environment and Self-Presentational Concerns”. Because of your involvement in our study, we are able expand our knowledge on how the exercise leader’s gender affects exercisers’ anxiety and efficacy in exercise classes. We will be able to conduct future research examining the influence of the exercise leader on men and women’s exercise experiences.

We greatly appreciated your time and willingness to be a part of this study and with this in mind we would like to offer our thanks.

Our study concluded that

These are very important findings because of

Thank you again for your help in this study. We hope it has been an enjoyable and informative experience for you. If you have any further questions regarding the study or the results themselves please feel free to contact Larkin Lamarche by email at ll01ae@brocku.ca.

Sincerely,
Larkin Lamarche, BPhEd.
Master of Arts Candidate,
Faculty of Applied Health Sciences

----------------------------------
Kimberley L. Gammage, PhD.
Assistant Professor,
Faculty of Applied Health Science
Appendix I

Exercise Class Checklist
Beginning of Class:

Hi, my name is ________________. Welcome. This is a beginner core strengthening class that everyone can do, even if you've never exercised in your life. We will be doing a 5 minute warm-up with ball, a 20 minute workout with the ball and weights, and then a 5 minute cool-down. You should all have a ball, mat and a set of weights nearby. Once we get started, I'll tell you what exactly we will be doing, then giving you a demonstration. I'll also be giving you several tips along the way to help you keep proper form. Do your best at everything – if you need to take a break at anytime to rest, or for water, go ahead. Any questions? Then let's get started.

EXERCISE

CHECKLIST

Basic Warm Up

16 basic march
16 step touch
16 step touch w/ twist
16 step touch w/ low ball
16 step touch w/ high ball
16 wide knee march
doubles
16 wide knee march
16 step touch w/ twist
16 regular squats

End Time: ______

Standing

16 Single Leg Lifts, 16 pulses
16 Single Leg hold (16 counts)
16 Single Leg lifts with squat
Standing Squats holding ball (16)

End Time: ______

ON BALL

Bicep Curls (16 single counts, hold at 90 degrees for 16 counts, 16 singles)-

Sit tall in the ball, abs tight, feet shoulder width apart-breathe

Reach up to the corners X 2

Keep your weight in your heels

For this section – announce the move, then demo sideways– once they are set up then start the sets

Do these 2 exercises on the right leg, then on the left leg

flat back, abs pulled in tight

Place ball on opposite side of body to leg working & hold with one hand. Abs tight, back flat.

Weight in heels, abs tight, upper body tall, bum down to floor – only need to go down as far as comfortable
open out full to face class
Shoulder Press (16 single counts, 16 doubles) – facing class
Chest Press (16 singles, 16 doubles) – turn so facing sideways
Triceps- laying on ball (16 singles, 16 doubles, 16 hold) – facing sideways
Laying squats (16 singles) – facing sideways
Calf Raises (16 both legs at once, then 16 each side, alternating one leg at a time) – face sideways

**End Time: __________**

**Abdominals - Back**

Plank pose on ball (16 counts)
Back extensions over ball (16 counts)
Push-ups over top of ball (8 total)
Abdominal set on the top of the ball (16 singles, 16 doubles, 16 singles)
Hip raises and static hold 16 seconds

Hamstring curls both legs (16 singles)

Sit tall on the ball, abs tight, feet shoulder width apart, press up just slightly in front of forehead

Roll out on ball until shoulder blades and head resting on ball. Hold hips high, keep abs pulled in tight. Arms straight above head, breathe, bring arms down and press back up

Same body position – shoulders/head on ball, hips up, abs tight – turn weights in so they are touching – elbows in – keep arms still from elbow to shoulder – bend elbows so weights drop towards top of head and press back up – when finished – sit back up on the ball

Roll down so bum squats down towards floor then roll back up – hands on hips – finish sitting up on ball to demo next exercise

Roll out so head & shoulders on ball, hips high, abs tight – raise up on toes with both legs, then one at a time alternated

All sideways – start them kneeling on mat, elbows on ball – demo all these exercises first – once they are in position, start

Roll ball out to front – weight into elbows on ball – abs tight, back straight and hold

Roll out so laying overtop of ball – feet behind, shoulder width apart – hands at ears – breathe – back extensions – don’t have to be big – when done – round over ball to stretch

Roll out over top of ball so it is underneath hips – hands on floor lined up right under shoulders, abs tight, back straight

Sitting on ball – roll down so lower back pressed into ball – hands at ears – crunch up – only as high as you feel comfortable

Lay on floor with feet up on ball, legs straight – heels pressed into ball – raise hips to ceiling, keep abs tight

Same starting position as last – heels dig into ball, legs straight, hips to ceiling, curl/roll ball in and out on floor to body
Abdominal set with legs on the ball (16 singles, 16 doubles, 16 singles)

End Time: 

Stretching w/ ball

Whole Body

reverse child’s pose (10 seconds)
hamstrings (hold 10 seconds, then switch to other leg)
figure 4 stretch (10 seconds, then switch to other leg)
reach forward with ball, one side/other side/center (10 seconds each)
hip flexor stretch over ball (hold 10 seconds each)

Chest

Triceps
Shoulder
biceps (hold 10 seconds each)

-deep breathing (3 times)

Lie on floor, feet on ball, knees bent at 90 degrees – hands at ears – basic crunch – abs pulled in tight

Great job - all we have left is to stretch

Lay on back, feet on ball – lengthen body as much as possible with hands over top head
Knees to chest, feet still on ball, upper body lifts slightly
Lift one leg up, extend as much as possible, hold behind hamstring, rotate ankle one way, then other, flex foot, try to bring foot in a little closer for deeper stretch if you can
Cross one ankle over opposite knees – knee towards chest

Into v-sit – legs wide (inner thigh stretch)
Roll ball out to center as far as you can – then roll to right – then through center to left
Arch back as far as you - reach behind you – arms towards floor – so arched backwards over ball – then come up slightly so back laying on ball – arms to side and relax out
Stand up – place ball between legs – reach arms forward and round out – then take hands out to side - then take hand behind you and press back – then one arm across front of body – hold just above elbow – bring arm up straight above head, bend elbow back so hand between shoulder blade & press elbow back – then repeat last 2 on other side
Squat down bringing arms down and exhale, bring arms over head and breathe in

Thanks for coming – great job. Now you are going to fill out a few more questionnaires.
End of Class:

Thanks for coming – great job. Now you are going to fill out a few more questionnaires.

Total Time: __________

Class Day/ Time

Leader/ Physique salience