A thesis submitted to the
Kent State University College
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in partial fulfillment of the requirements
for the degree of Master of Exercise Physiology

By
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PURPOSE: Transgender individuals are more likely to be the targets of peer victimization than their cisgender counterparts. Emerging research has demonstrated a potential negative link between peer victimization and physical activity behavior. The purpose was to examine self-reported peer victimization, physical activity behavior and attitudes regarding physical activity in transgender and cisgender adults. Eighty (N = 33 Transgender, and 47 Cisgender) adults completed validated questionnaires assessing; peer victimization, physical activity behavior, social support for physical activity and self-efficacy for physical activity. METHODS: The peer victimization questionnaire asked participants about their peer interactions as children and contained the following sub-scales: Overt Victimization Subscale (OVS), Relational Subscale (RS) and Pro-social Receipt Subscale (PRS). Each of these subscales was summed individually. RESULTS: Transgender individuals had a significantly (p ≤ 0.05) greater BMI, OVS and RS and lower PRS, social support for physical activity and self-efficacy for physical activity than cisgender adults. There was a trend (p = 0.06) towards a difference in physical activity between groups. Self efficacy (r = 0.52), social support (r = 0.49), PRS (r = 0.34), OVS (r = -0.3) and BMI (r = -0.25) were significantly (p ≤ 0.03) correlated to physical activity. RS (r = -0.18) was not (p = 0.1) correlated to physical activity.
CONCLUSION: Transgender individuals were less physically active, received less social support, had lower self-efficacy, were more victimized and had a greater average BMI than cisgender individuals. Transgender individuals appear to be an excellent model for studying the effects of negative social interaction on physical activity behavior.
ACKNOWLEDGMENTS

This thesis could not have been written without the help and support of Dr. Jacob E. Barkley, who encouraged and challenged me through my academic program. He never accepted less than my best efforts. Thank you.

A special thanks to the authors of the articles mentioned in the bibliography page. Without you, this thesis would have taken a lot longer to finish.

Most especially to my family, friends, and my boyfriend, words alone cannot express what I owe them for their encouragement and whose patient love enabled me to complete this project.
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CHAPTER I
INTRODUCTION

Gender is increasingly being understood as having a strong cultural definition in addition to precise biological and extensive psychological components (Dean et al., 2000). Like the general U.S. population, transgender individuals, those who identify with a gender that does not match their biological sex, are diverse in terms of cultural background, ethnic or racial identity, age, education, income, and place of residence (Dean et al., 2000). It is estimated that prevalence of transsexualism ranges around 1:4,500 male-to-female transsexuals and 1:8,000 female-to-male transsexuals worldwide (Olyslager & Conway, 2007). Studies have frequently and incorrectly included transgender individuals under the rubric of gay men or lesbians in spite of the fact that gender identity is clearly distinct from sexual identity (Israel and Tarver, 1997). Other studies have focused on health concerns of transsexuals (originated in the medical and psychological communities to describe persons who have undergone a sex change operation or a person whose sexual identification is entirely with the opposite sex (American Psychiatric Association, 2000)) alone, while ignoring a range of other individuals (e.g., intersex individuals, transvestites) whose behavior and identity make them identify as transgender (Cohen et al, 1997; Gagne et al., 1997; Israel and Tarver, 1997; Mason-Schrock, 1996). As awareness of transgender men and women grows among health care educators, researchers, policymakers, and clinicians of all types, the need to create more inclusive settings also grows. Greater sensitivity, relevant information and
services are required for those working with transgender individuals in a health care setting (Lombardi, 2001). Therefore, there is a need for research to enhance the understanding of transgender health behavior and physical and emotional well-being.

During childhood and into young adolescence transgender individuals report greater amounts of peer victimization than their cisgender (i.e., non-transgender) counterparts (Ryan & Rivers, 2003). Transgender youth regularly report being bullied or physically assaulted (Robin et al. 2002; Russell et al. 2001; Williams et al. 2003, Ryan & Rivers, 2009) and much of the bullying and victimization has strong anti-homosexuality overtones (Poteat & Espelage, 2005). This negative peer interaction has been shown to have deleterious effects on psychological health and emotional well-being including insomnia, anxiety, depression, and even symptoms of posttraumatic stress disorder (Almeida et al., 2009). In a study conducted by Grossman and D’Augelli (2007), more than one-fourth of transgender youth reported a prior suicide attempt claiming the urge came from being transgendered (Almeida et al., 2009). Peer victimization has also been shown to negatively impact self-esteem, cognition, and mood (Bastian & Haslam, 2010; Salvy et al., 2010).

While there is evidence outlining the negative psychological effects, currently there is a dearth of research examining the impact negative peer interaction may have on physical health in transgender individuals. Emerging research has demonstrated a potential negative link between peer victimization and physical activity behavior in youth. Non-experimental research has demonstrated a negative association between self-reported peer victimization and physical activity behavior in youth (Faith et al, 2002). Recently, a
bout of simulated ostracism (i.e. social exclusion) was shown to significantly decrease physical activity in children (Barkley et al., 2011). No studies that we are aware of have examined physical activity behaviors of transgender individuals, much less its association with measures of peer victimization. Because of their high-rate of peer victimization, transgender individuals are an excellent population to examine to assess the association between peer victimization and physical activity behavior. Furthermore, because of the dearth of research on health behaviors of transgender individuals, new studies are needed to examine the health issues facing this unique population.

**Purpose**

The purpose of this study was to assess self-reported peer victimization, physical activity behaviors and attitudes regarding physical activity in transgender and cisgender adults. We hypothesized that transgender adults would report greater peer victimization and lower physical activity behavior than cisgender adults.
CHAPTER II
METHODOLOGY

Participants

Participants included 33 transgender (25 males identifying as female & 8 females identifying as males), and 47 cisgender (24 females identifying as females & 23 males identifying as males) adults (32 ± 15 years of age). Participants were surveyed from the following locations- the Kent State University campus and support groups for transgender individuals in Akron, Columbus and Cleveland, Ohio. Participants completed an informed consent and validated questionnaires assessing peer victimization, physical activity behavior, social support for physical activity and self-efficacy for physical activity. Participants also self-reported age, height and weight and their body mass index (BMI, kg·m⁻²) was calculated. All procedures were approved by the Kent State University Institutional Review Board.

Measures

The Leisure Time Exercise Questionnaire (LTEQ: Godin & Shephard, 1985) was a simple questionnaire designed to assess leisure time physical activity over a 7-day period. The participant were first asked to indicate the average number of times per week they engage in strenuous, moderate, and mild exercise for more than 15 minutes during their free time. Their response to this question was scored by multiplying the number of times per week that they participated in physical activity by the corresponding anticipated metabolic equivalent (MET) value for strenuous (9 METS), moderate (5 METS) and mild exercise (3 METS) (Hayes et al., 1999). The total score for the first question was
considered by the sum of the three scores (MET values for strenuous, moderate and mild exercise). The second question measured self-reported frequency of “sweat-inducing exercise” by asking participants how often per week, during their leisure time, they engage in regular activity long enough to “work up a sweat.” The participants must answer this question by choosing either ‘often’ (one point), ‘sometimes’ (two points), or ‘never/rarely’ (three points). The total exercise score was found to have a two-week, test-retest reliability of $r = 0.74$ for adults (Godin & Shephard, 1985), and one-month, test-retest reliability of $r = 0.62$ (Jacobs et al., 1993). For the “sweat-inducing” question, the test-retest reliability was $r = 0.80$ over two weeks (Godin & Shephard, 1985) and $r = 0.69$ over one month (Jacobs et al., 1993). Validity has been demonstrated through significant correlations with related constructs (all values $p < 0.05$). The total exercise score for adults has been shown to be related to accelerometer counts ($r = 0.32$), $\text{VO}_2\text{max}$ measured by a graded treadmill exercise test ($r = 0.56$), estimated $\text{VO}_2\text{max}$ percentile measured by the step-test ($r = 0.24$), and percentage body fat ($r = -0.43$), (Godin & Shephard, 1985; Jacobs et al., 1993). The “sweat-inducing” question has been shown to be related to $\text{VO}_2\text{max}$ percentile estimated by the step-test ($r = 0.26$) and body fat percentile ($r = 0.21$) with adults (Godin & Shephard, 1985). Also with adults, Jacobs et al. (1993) showed the question to be related to an accelerometer motion score ($r = 0.29$), percentage body fat ($r = -0.40$), and $\text{VO}_2\text{max}$ measured by a graded treadmill exercise test ($r = 0.57$) (Hayes et al., 1999).

The Physical Self-Perception Profile (PSPP: Fox & Corbin, 1989) was a questionnaire designed to assess self-perceptions in the physical domain. There are five,
six-item subscales in the assessment. The subscales measured are perceived: sport
competence, body attractiveness, physical conditioning, physical strength and general
physical self-worth (PSW) (Hayes et al., 1999). The PSPP uses a structured alternative
format where two alternative statements are presented for each item. Each question had a
scoring range from one (low self-perception) to four (high self-perception). The
subscales were reported to be sensitive to a wide range of individual differences and were
not susceptible to ceiling or bottoming effects (Fox & Corbin, 1989). The internal
consistency of the scales (Cronbach alpha) for males and females ranged from 0.81 to
0.92. Test-retest coefficients ranged from $r = 0.74$ to $0.92$ over a 16-day period and
between $r = 0.81$ and $0.88$ over a 23-day period (Fox & Corbin, 1989; Hayes et al., 1999).
The Self-Efficacy Survey for Exercise Behaviors (Sallis et al., 1988) was a survey
designed to assess personal confidence in motivating oneself to consistently do exercise
related activities for at least 6 months. The survey provided a list of things a person
might do while trying to increase or continue regular exercise (e.g., running, brisk
walking, bicycle riding, or aerobic exercise). Participants must rate how confident they
are that they could motivate themselves to do the listed items consistently for at least six
months. The rating scale included; "I know I can", "Maybe I can", "I know I cannot", and
"Does not apply." Validity and reliability was reported by Sallis et al. (1988). Previous
research has demonstrated a positive relationship ($r = 0.28-0.34$) between self-efficacy
for physical activity and physical activity behavior (Strauss et al., 2001).

The Social Support and Exercise Survey (Sallis et al, 1987) was a questionnaire that
required the participants rate each question twice. First, participants rated how often family
(or anyone living in their household) has said or done what was described in the list during the last three months. Then participants rated how often their friends, acquaintances or coworkers have said or done what was described in the last three months (examples: During the past three months my family and friends have exercised with me, offered to exercise with me or helped me plan activities around my exercise). Previous research has demonstrated a positive relationship \( r = 0.22-0.48 \) between social support, both from families and peers, and leisure-time physical activity behavior (Treiber et al., 1991).

Social Experiences Questionnaire (SEQ: Crick & Grotpeter, 1996) asked participants about their peer interactions as children. The SEQ was a self-reported measure of victimization and positive peer treatment in which participants indicated the frequency of 15 different peer interactions on a five-point scale (Storch et al., 2003). Crick and Crotpeter’s (1996) factor analysis identified three subscales containing five items each: overt victimization subscale (OVS; assessed how frequently peers attempted to harm the individual’s physical well-being), relational victimization subscale (RS; assessed how often peers attempted to harm the individual’s relationships with other peers), and pro-social receipt subscale (PRS; assessed how often the individual was the recipient of supportive acts by peers). Modest correlations with peer-reports of overt and relational victimization have been found (Crick & Bigbee, 1998) and victimization scores were negatively associated with adjustment variables (e.g., loneliness, depression, social anxiety, social avoidance), supporting the concurrent validity of this measure (Crick & Grotpeter, 1996). Faith et al. (2002) examined the physical inactivity among children and adolescents and found that weight criticism was associated with poorer sports enjoyment,
reduced perceived activity compared with peers, and reduced mild-intensity physical
activity.

**Analytic Plan**

An Independent Samples T-test was used to compare self-reported age between
cisgender and transgender individuals. Because the transgender individuals (41 ± 2.5
years) were significantly ($p < 0.001$) older than the cisgender individuals (27 ± 2.0 years),
age was entered as a co-variate in all subsequent mean comparisons. Multivariate
analysis of co-variance (MANCOVA) was used to examine differences in BMI, physical
activity, Godin sweat, physical self-attributes, self- efficacy, social support, OVS, RS,
and PRS between groups (cisgender, transgender) with age entered as the co-variant.
Bivariate correlation analyses were then performed testing the association between
physical activity and the following variables: physical self-attributes, self- efficacy, social
support, OVS, RS, and PRS.
CHAPTER III

RESULTS

Analysis of Findings

Relative to cisgender individuals, transgender individuals had significantly \( p \leq 0.02 \) lower scores on the following questionnaires: Godin sweat, physical self-attributes, self-efficacy, social support and PRS. There was a trend \( p = 0.06 \) towards a lower self-reported physical activity in the transgender group versus the cisgender group. Transgender individuals also exhibited a greater \( p \leq 0.02 \) BMI and greater scores on the OVS and RS subscales of the peer victimization questionnaire (Table 1).

Self-reported physical activity was positively associated \( r \geq 0.34, p \leq 0.002 \) with physical self-attributes, self-efficacy, social support and PRS and negatively associated \( r = -0.30, p = 0.006 \) with the OVS peer victimization subscale (Table 2). Self-reported physical activity was not significantly associated \( r = -0.18, p = 0.10 \) with the RS subscale.
CHAPTER IV
DISCUSSION

Presently, transgender individuals, relative to cisgender individuals, reported lower social support, physical self-attributes and self-efficacy and greater reports of peer victimization. These variables were significantly related to the lower physical activity levels transgender individuals exhibited relative to their cisgender counterparts. This is the first study to not only assess physical activity behavior in transgender individuals but also the first to assess the association between activity and peer victimization, physical self-perception, self-efficacy and social support. The greater levels of peer victimization and reduced self-efficacy and social support make transgender individuals an intriguing model for studying the effects of negative social interaction on physical activity behavior.

Previous research has found that having little or no social support may lead to a decrease in physical activity levels in adults (Eyler et al., 1999). The present findings support not only the limited research on adults but also those studies outlining the impact of social support on physical activity in children. Negative social interactions with peers via peer victimization, rejection or prejudice has been correlated with decreased physical activity participation in children and adolescents (Faith et al., 2002). Additionally, a recent experimental study found that, after experiencing a bout of simulated ostracism, children significantly decreased physical activity intensity and allocated more time to sedentary activities versus an included condition (Barkley et al., 2011). These results suggest that peer difficulties such as ostracism may decrease physical activity and increase sedentary behaviors in children. Presently, transgender individuals reported
greater childhood peer victimization and lower levels of social support as adults which were negatively related to physical activity behavior. This is the first time the negative association between peer victimization and physical activity has been demonstrated in adults.

There is strong evidence of the effectiveness of regular physical activity on the treatment and prevention of depression (Warburton et al., 2006). Greater amounts of occupational and leisure-time physical activity are associated with reduced symptoms of depression and anxiety in adults (Dunn et al., 2001). This is of particular relevance to transgender individuals as there are higher rates of mental health problems, including depression, anxiety, and various addictions, as well as a higher suicide rate among untreated transsexual people than in the general population (Hellman et al., 2002). Depression can lead to changes in self-perception resulting in negative thoughts and a lack of self-confidence (Israel et al., 1997). While our present study did not assess mental health, the lower self-efficacy and physical self-attributes noted in the transgender participants indicate that this group may have a negative self-perception (Israel et al., 1997). Given the greater prevalence of depression, it is worrisome that transgender individuals are less active than their cisgender peers, who reported greater self-efficacy and physical self-attributes, as the anti-depressive benefits of physical activity may be of great importance to transgender individuals.

Though the present results are both novel and of potential importance, there are some limitations to the study. Primarily, the study was survey based and therefore does not allow for causal inference. Additionally, participants were only surveyed at
transgender support meetings and at the Kent State University campus in Kent, Ohio. Even though we controlled for age we could not control access to different physical activities. Since a majority of the cisgender participants were surveyed on the college campus, as students, faculty and staff they may have had more opportunities to be active, such as walking to class, free or reduced cost membership at an on-campus recreation center or intramural sports compared to their transgender (the majority of which were non-student/faculty) counterparts.

Future research should include objective measures of physical activity levels. This could include the use of pedometers or accelerometers to provide more accurate assessments of daily physical activity behavior.

**Conclusion**

This is the first study to compare social support, peer victimization, self-efficacy, physical self-worth and physical activity behaviors in transgender to cisgender individuals. After co-varying for age differences between the two groups, transgender individuals reported lower physical activity, physical self-attributes, self-efficacy and social support. They also reported a greater BMI and greater peer victimization. Physical self-attributes, self-efficacy and social support were all positively associated with physical activity. Peer victimization was negatively associated with physical activity. Taken together, these results indicate that negative social interactions as a child, a lack of social support as an adult and a lack of confidence in one’s self (i.e. low self-efficacy) are associated with decreased physical activity in adult transgender individuals.
This is of particular concern as transgender individuals, who are prone to depression, may benefit greatly from the anti-depressive effects of regular physical activity.
APPENDICES
Table 1: Comparison between Transgender and Cisgender Individuals. Data are means ± standard deviations. *Indicates a significant difference (p ≤ 0.02) between groups. †Indicates a trend towards a difference (p = 0.06) between groups.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Transgender</th>
<th>Cisgender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Activity†</td>
<td>29.6 ± 7.6</td>
<td>48.0 ± 21.9</td>
</tr>
<tr>
<td>Self-attributes*</td>
<td>663.5 ± 231.2</td>
<td>931.0 ± 279.0</td>
</tr>
<tr>
<td>Self-efficacy*</td>
<td>32.3 ± 13.4</td>
<td>42.7 ± 9.4</td>
</tr>
<tr>
<td>Social support*</td>
<td>31.0 ± 9.1</td>
<td>53.3 ± 18.7</td>
</tr>
<tr>
<td>OVS*</td>
<td>12.5 ± 4.2</td>
<td>9.0 ± 4.1</td>
</tr>
<tr>
<td>RS*</td>
<td>14.5 ± 4.0</td>
<td>10.7 ± 3.9</td>
</tr>
<tr>
<td>PRS*</td>
<td>12.4 ± 3.4</td>
<td>16.9 ± 3.8</td>
</tr>
<tr>
<td>BMI (kg·m⁻²) *</td>
<td>28.4 ± 7.6</td>
<td>23.3 ± 5.0</td>
</tr>
</tbody>
</table>
APPENDIX B

TABLE 2
**APPENDIX B**

Table 2

Table 2 *Relationship between self-reported physical activity and other variables.*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Correlation to physical activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Self-attributes</td>
<td>$r= 0.54, p= 0.001$</td>
</tr>
<tr>
<td>Self efficacy</td>
<td>$r= 0.52, p= 0.001$</td>
</tr>
<tr>
<td>Social support</td>
<td>$r= 0.49, p=0.001$</td>
</tr>
<tr>
<td>OVS</td>
<td>$r= -0.30, p= 0.006$</td>
</tr>
<tr>
<td>RS</td>
<td>$r= -0.18, p= 0.111$</td>
</tr>
<tr>
<td>PRS</td>
<td>$r= 0.34, p=0.002$</td>
</tr>
</tbody>
</table>
APPENDIX C

Letter of Consent

Informed Consent to Participate in a Research Study

Study Title: Peer Victimization and Physical Activity Attitudes and Behaviors in Transgender and Cisgender Individuals.

Principal Investigator: Megan Muchicko

You are being invited to participate in a research study. This consent form will provide you with information on the research project, what you will need to do, and the associated risks and benefits of the research. Your participation is voluntary. Please read this form carefully. It is important that you ask questions and fully understand the research in order to make an informed decision. You will receive a copy of this document to take with you.

Purpose:

The purpose of this study is to compare transgender individual’s physical activity levels to those of their non-transgender peers.

Procedures

You will be asked to complete a medical questionnaire and four questionnaires that will assess your physical activity behavior and attitudes about being physically active. You are not required to provide any identifying information and will not be asked any follow-up questions.
Benefits

This research will not benefit you directly. However, your participation in this study will help us to better understand daily physical activity levels between different genders/gender identities. You will receive a gift card for the amount of $5.00 to Walmart for completion of the five surveys.

Risks and Discomforts

Some of the questions that you will be asked are of a personal nature and may cause you embarrassment or stress. You may ask to see the questions before deciding whether or not to participate in the study.

Privacy and Confidentiality

No identifying information will be collected. Your signed consent form will be kept separate from your study data, and responses will not be linked to you.

Voluntary Participation

Taking part in this research study is entirely up to you. You may choose not to participate or you may discontinue your participation at any time without penalty or loss of benefits to which you are otherwise entitled. You will be informed of any new, relevant information that may affect your health, welfare, or willingness to continue your study participation.

Contact Information

If you have any questions or concerns about this research, you may contact Megan Muchicko at mmuchick@kent.edu or 724-504-8984 or Dr. Jacob Barkley at jbarkle1@kent.edu. This project has been approved by the Kent State University
Institutional Review Board. If you have any questions about your rights as a research participant or complaints about the research, you may call the IRB at 330.672.2704.

**Consent Statement and Signature**

I have read this consent form and have had the opportunity to have my questions answered to my satisfaction. I voluntarily agree to participate in this study. I understand that a copy of this consent will be provided to me for future reference.

Participant Signature _____________________ Date _____________________

“I have witnessed the consent process and believe that the participants listed above have been fully informed, understand the project and what they will have to do, and have voluntarily agreed to participate.”
APPENDIX D

Medical History Form

Name: ____________________________ Date: ______________

Biological Sex: _________________ Identifying Gender: ____________

Medical History Form

Name: ____________________________ Date: ______________________

Telephone: ____________________

Date of Birth: __________ Age: _______ Height: _______ Weight: _______

In Case of Emergency Contact: __________________ Relationship: ________

Address: ______________________ Phone: __________

Physician: _______________________ Specialty: ________

Address: ___________ Phone: _______

Are you currently under a doctor’s care: Yes ☐ No ☐

If yes, explain: ________________________________

When was the last time you had a physical examination? ____________

Have you ever had an exercise stress test: Yes ☐ No ☐ Don’t Know ☐

If yes, were the results: Normal ☐ Abnormal ☐

Do you take any medications on a regular basis? Yes ☐ No ☐

If yes, please list medications and reasons for taking: _______________________

Have you been recently hospitalized? Yes ☐ No ☐

If yes, explain: __________________________________________

Do you smoke? Yes ☐ No ☐

Are you pregnant? Yes ☐ No ☐

Do you drink alcohol more than three times a week? Yes ☐ No ☐

Is your stress level high? Yes ☐ No ☐

Are you moderately active on most days of the week? Yes ☐ No ☐

Do you have:

High blood pressure? Yes ☐ No ☐
High cholesterol? Yes ☐ No ☐
Diabetes? Yes ☐ No ☐

Have parents or siblings who, prior to age 55 had:

A heart attack? Yes ☐ No ☐
A stroke? Yes ☐ No ☐
High blood pressure? Yes ☐ No ☐

High cholesterol? Yes ☐ No ☐
Known heart disease? Yes ☐ No ☐
Rheumatic heart disease? Yes ☐ No ☐
A heart murmur? Yes ☐ No ☐
Chest pain with exertion? Yes ☐ No ☐
Irregular heartbeat or palpitations? Yes ☐ No ☐
Lightheadedness or do you faint? Yes ☐ No ☐
Unusual shortness of breath? Yes ☐ No ☐
Cramping pains in legs or feet? Yes ☐ No ☐
Emphysema? Yes ☐ No ☐
Other metabolic disorders (thyroid, kidney, etc.)? Yes ☐ No ☐
Epilepsy? Yes ☐ No ☐
Asthma? Yes ☐ No ☐
Back pain: upper, middle, lower? Yes ☐ No ☐
Other joint pain (explain on back of form)? Yes ☐ No ☐
Muscle pain or an injury (explain on back of Form)? Yes ☐ No ☐

To the best of my knowledge, the above information is true.

Signature ____________________________

Date ____________________ Witness ____________________
APPENDIX E

GODIN LEISURE-TIME EXERCISE QUESTIONNAIRE
APPENDIX E

Godin Leisure-Time Exercise Questionnaire

Godin Leisure-Time Exercise Questionnaire

1. During a typical 7-Day period (a week), how many times on the average do you do the following kinds of exercise for more than 15 minutes during your free time (write on each line the appropriate number).

   Times Per
   Week

   a) STRENUOUS EXERCISE
      (HEART BEATS RAPIDLY)
      (e.g., running, jogging, hockey, football, soccer,
      squash, basketball, cross country skiing, judo,
      roller skating, vigorous swimming,
      vigorous long distance bicycling)

   b) MODERATE EXERCISE
      (NOT EXHAUSTING)
      (e.g., fast walking, baseball, tennis, easy bicycling,
      volleyball, badminton, easy swimming, alpine skiing,
      popular and folk dancing)

   c) MILD EXERCISE
      (MINIMAL EFFORT)
      (e.g., yoga, archery, fishing from river bank, bowling,
      horseshoes, golf, snow-mobiling, easy walking)

2. During a typical 7-Day period (a week), in your leisure time, how often do you engage in any regular activity long enough to work up a sweat (heart beats rapidly)?

   OFTEN       SOMETIMES       NEVER/RARELY
   1. ⬤       2. ⬤            3. ⬤
APPENDIX F

THE PHYSICAL SELF-ATTRIBUTE QUESTIONNAIRE
APPENDIX F

The Physical Self-Attribute Questionnaire

This questionnaire has to do with your attitudes about some of your activities and abilities. For the first nine items below, you will rate yourself relative to other people your age and gender by using the following scale:

<table>
<thead>
<tr>
<th>Bottom</th>
<th>Lower 5%</th>
<th>Lower 10%</th>
<th>Lower 20%</th>
<th>Lower 30%</th>
<th>Lower 50%</th>
<th>Upper 50%</th>
<th>Upper 30%</th>
<th>Upper 20%</th>
<th>Upper 10%</th>
<th>Top 5%</th>
</tr>
</thead>
</table>

An example of the way the scale works is as follows: if one of the traits that follows was "height," a woman who is just below average in height would choose "lower 30%" whereas a woman who is taller than 80% (but not taller than 90%) of her female counterparts would choose "upper 20%.

Relative to others your age and gender, rate your physical strength, with those in the "top 5%" being the strongest:

Relative to others your age and gender, rate your physical endurance, with those in the "top 5%" being those with the most endurance:

Relative to others your age and gender, rate your body attractiveness, with those in the "top 5%" being the most attractive:

Relative to others your age and gender, rate your sport competence, with those in the "top 5%" being the most competent in sports:

Relative to others your age and gender, rate your flexibility, with those in the "top 5%" being the most flexible:

On the 15 questions that follow, you will be asked to rate how certain you are of the first nine responses given above, the importance of each domain to you personally, and how you compare to your "ideal self" within each domain. Feel free to mark any one of the nine boxes that best describes your feelings.

Now rate how certain you are of your standing on each of the above traits:

<table>
<thead>
<tr>
<th>Not at all certain</th>
<th>Moderately certain</th>
<th>Extremely certain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Physical Strength:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Physical Endurance:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Body Attractiveness:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Sport Competence:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Flexibility:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Now rate how personally important each of these domains is to you:

<table>
<thead>
<tr>
<th>Not at all important to me</th>
<th>Moderately important to me</th>
<th>Extremely important to me</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Physical Strength:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Physical Endurance:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Body Attractiveness:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Sport Competence:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Flexibility:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Now rate yourself relative to your "ideal self": the person you would be if you were exactly the way you would like to be:

<table>
<thead>
<tr>
<th>Very short of my ideal self</th>
<th>Somewhat like and somewhat unlike my ideal self</th>
<th>Very much like my ideal self</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Physical Strength:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Physical Endurance:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Body Attractiveness:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Sport Competence:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Flexibility:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX G

THE EXERCISE CONFIDENCE SURVEY
## APPENDIX G

### The Exercise Confidence Survey

#### EXERCISE CONFIDENCE SURVEY

Below is a list of things people might do while trying to increase or continue regular exercise. We are interested in exercises like running, swimming, brisk walking, bicycle riding, or aerobics classes.

Whether you exercise or not, please rate how confident you are that you could really motivate yourself to do things like these consistently, for at least six months.

Please circle one number for each question. How sure are you that you can do these things?

<table>
<thead>
<tr>
<th>I know I cannot</th>
<th>Maybe I can</th>
<th>I know I can</th>
<th>Does not apply</th>
</tr>
</thead>
</table>

21. Get up early, even on weekends, to exercise.  
22. Stick to your exercise program after a long, tiring day at work.  
23. Exercise even though you are feeling depressed.  
24. Set aside time for a physical activity program; that is, walking, jogging, swimming, biking, or other continuous activities for at least 30 minutes, 3 times per week.  
25. Continue to exercise with others even though they seem too fast or too slow for you.  
26. Stick to your exercise program when undergoing a stressful life change (e.g., divorce, death in the family, moving).  
27. Attend a party only after exercising.  
28. Stick to your exercise program when your family is demanding more time from you.  
29. Stick to your exercise program when you have household chores to attend to.  
30. Stick to your exercise program even when you have excessive demands at work.  
31. Stick to your exercise program when social obligations are very time consuming.  
32. Read or study less in order to exercise more.

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<table>
<thead>
<tr>
<th>1 English</th>
<th>2. Spanish</th>
<th>Date: Entered</th>
<th>Coder:</th>
</tr>
</thead>
</table>

October 7, 1988

31
APPENDIX H

SOCIAL SUPPORT AND EXERCISE SURVEY
APPENDIX H

Social Support and Exercise Survey

SOCIAL SUPPORT AND EXERCISE SURVEY

Below is a list of things people might do or say to someone who is trying to exercise regularly. If you are not trying to exercise, then some of the questions may not apply to you, but please read and give an answer to every question.

Please rate each question twice. Under family, rate how often anyone living in your household has said or done what is described during the last three months. Under friends, rate how often your friends, acquaintances, or coworkers have said or done what is described during the last three months.

Please write one number from the following rating scale in each space:

<table>
<thead>
<tr>
<th>none</th>
<th>rarely</th>
<th>a few times</th>
<th>often</th>
<th>very often</th>
<th>does not apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>8</td>
</tr>
</tbody>
</table>

During the past three months, my family (or members of my household) or friends:

<table>
<thead>
<tr>
<th>11. Exercised with me.</th>
<th>Family</th>
<th>Friends</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Offered to exercise with me.</td>
<td>12.</td>
<td>12</td>
</tr>
<tr>
<td>13. Gave me helpful reminders to exercise (&quot;Are you going to exercise tonight?&quot;).</td>
<td>13.</td>
<td>13</td>
</tr>
<tr>
<td>14. Gave me encouragement to stick with my exercise program.</td>
<td>14.</td>
<td>14</td>
</tr>
<tr>
<td>15. Changed their schedule so we could exercise together.</td>
<td>15.</td>
<td>15</td>
</tr>
<tr>
<td>16. Discussed exercise with me.</td>
<td>16.</td>
<td>16</td>
</tr>
<tr>
<td>17. Complained about the time I spend exercising.</td>
<td>17.</td>
<td>17</td>
</tr>
<tr>
<td>18. Criticized me or made fun of me for exercising.</td>
<td>18.</td>
<td>18</td>
</tr>
<tr>
<td>19. Gave me rewards for exercising (sought me something or gave me something I like).</td>
<td>19.</td>
<td>19</td>
</tr>
<tr>
<td>20. Planned for exercise on recreational outings.</td>
<td>20.</td>
<td>20</td>
</tr>
<tr>
<td>21. Helped plan activities around my exercise.</td>
<td>21.</td>
<td>21</td>
</tr>
<tr>
<td>22. Asked me for ideas on how they can get more exercise.</td>
<td>22.</td>
<td>22</td>
</tr>
<tr>
<td>23. Talked about how much they like to exercise.</td>
<td>23.</td>
<td></td>
</tr>
</tbody>
</table>

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☐ 1. English ☐ 2. Spanish Date: Entered ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ .
APPENDIX I

SOCIAL EXPERIENCE QUESTIONNAIRE
APPENDIX I

Social Experience Questionnaire

THINGS THAT HAPPENED TO ME

DIRECTIONS: Here is a list of things that sometimes happened to kids at school. How often did they happen to you at school?

EXAMPLE:

A. How often did you eat lunch at school?

<table>
<thead>
<tr>
<th>1 NEVER</th>
<th>2 ALMOST NEVER</th>
<th>3 SOMETIMES</th>
<th>4 ALMOST ALL THE TIME</th>
<th>5 ALL THE TIME</th>
</tr>
</thead>
</table>

B. How often did your class go outside to play?

<table>
<thead>
<tr>
<th>1 NEVER</th>
<th>2 ALMOST NEVER</th>
<th>3 SOMETIMES</th>
<th>4 ALMOST ALL THE TIME</th>
<th>5 ALL THE TIME</th>
</tr>
</thead>
</table>

1. How often did another kid give you help when you needed it?

<table>
<thead>
<tr>
<th>1 NEVER</th>
<th>2 ALMOST NEVER</th>
<th>3 SOMETIMES</th>
<th>4 ALMOST ALL THE TIME</th>
<th>5 ALL THE TIME</th>
</tr>
</thead>
</table>

2. How often did you get hit by another kid at school?

<table>
<thead>
<tr>
<th>1 NEVER</th>
<th>2 ALMOST NEVER</th>
<th>3 SOMETIMES</th>
<th>4 ALMOST ALL THE TIME</th>
<th>5 ALL THE TIME</th>
</tr>
</thead>
</table>
3. How often did other kids leave you out on purpose when it was time to play or do an activity?

<table>
<thead>
<tr>
<th>1</th>
<th>NEVER</th>
<th>2</th>
<th>ALMOST NEVER</th>
<th>3</th>
<th>SOMETIMES</th>
<th>4</th>
<th>ALMOST ALL THE TIME</th>
<th>5</th>
<th>ALL THE TIME</th>
</tr>
</thead>
</table>

4. How often did other kids yell at you and call you mean names?

<table>
<thead>
<tr>
<th>1</th>
<th>NEVER</th>
<th>2</th>
<th>ALMOST NEVER</th>
<th>3</th>
<th>SOMETIMES</th>
<th>4</th>
<th>ALMOST ALL THE TIME</th>
<th>5</th>
<th>ALL THE TIME</th>
</tr>
</thead>
</table>

5. How often did another kid try to cheer you up when you felt sad or upset?

<table>
<thead>
<tr>
<th>1</th>
<th>NEVER</th>
<th>2</th>
<th>ALMOST NEVER</th>
<th>3</th>
<th>SOMETIMES</th>
<th>4</th>
<th>ALMOST ALL THE TIME</th>
<th>5</th>
<th>ALL THE TIME</th>
</tr>
</thead>
</table>

6. How often did a kid who was mad at you try to get back at you by not letting you be in their group anymore?

<table>
<thead>
<tr>
<th>1</th>
<th>NEVER</th>
<th>2</th>
<th>ALMOST NEVER</th>
<th>3</th>
<th>SOMETIMES</th>
<th>4</th>
<th>ALMOST ALL THE TIME</th>
<th>5</th>
<th>ALL THE TIME</th>
</tr>
</thead>
</table>

7. How often did you get pushed or shoved by another kid at school?

<table>
<thead>
<tr>
<th>1</th>
<th>NEVER</th>
<th>2</th>
<th>ALMOST NEVER</th>
<th>3</th>
<th>SOMETIMES</th>
<th>4</th>
<th>ALMOST ALL THE TIME</th>
<th>5</th>
<th>ALL THE TIME</th>
</tr>
</thead>
</table>
8. How often did another kid do something that made you feel happy?

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>ALMOST NEVER</th>
<th>SOMETIMES</th>
<th>ALMOST ALL THE TIME</th>
<th>ALL THE TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. How often did a classmate tell lies about you to make other kids not like you anymore?

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>ALMOST NEVER</th>
<th>SOMETIMES</th>
<th>ALMOST ALL THE TIME</th>
<th>ALL THE TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. How often did another kid kick you or pull your hair?

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>ALMOST NEVER</th>
<th>SOMETIMES</th>
<th>ALMOST ALL THE TIME</th>
<th>ALL THE TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. How often did another kid say they wouldn’t like you unless you did what they wanted you to do?

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>ALMOST NEVER</th>
<th>SOMETIMES</th>
<th>ALMOST ALL THE TIME</th>
<th>ALL THE TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. How often did another kid say something nice to you?

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>ALMOST NEVER</th>
<th>SOMETIMES</th>
<th>ALMOST ALL THE TIME</th>
<th>ALL THE TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
13. How often did a kid try to keep others from liking you by saying mean things about you?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEVER</td>
<td>ALMOST NEVER</td>
<td>SOMETIMES</td>
<td>ALMOST ALL THE TIME</td>
<td>ALL THE TIME</td>
</tr>
</tbody>
</table>

14. How often did another kid say they would beat you up if you didn’t do what they wanted you to do?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEVER</td>
<td>ALMOST NEVER</td>
<td>SOMETIMES</td>
<td>ALMOST ALL THE TIME</td>
<td>ALL THE TIME</td>
</tr>
</tbody>
</table>

15. How often did other kids let you know that they cared about you?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEVER</td>
<td>ALMOST NEVER</td>
<td>SOMETIMES</td>
<td>ALMOST ALL THE TIME</td>
<td>ALL THE TIME</td>
</tr>
</tbody>
</table>
REFERENCES


