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Ashley Danelle Eyre
Brigham Young University - Provo

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THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY LEVELS,
PHYSICAL SELF-WORTH AND GLOBAL SELF-WORTH:

A CORRELATIONAL STUDY

by

Ashley Eyre

A thesis submitted to the faculty of

Brigham Young University

in partial fulfillment of the requirements for the degree of

Master of Science

Department of Exercise Sciences

Brigham Young University

December 2008

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BRIGHAM YOUNG UNIVERSITY

GRADUATE COMMITTEE APPROVAL

of a thesis submitted by

Ashley Eyre

This thesis has been read by each member of the following graduate committee and by majority vote has been found to be satisfactory.

Date

Keven A. Prusak, Chair

Date

Susan V. Graser

Date

Todd R. Pennington

BRIGHAM YOUNG UNIVERSITY

As chair of the candidate's graduate committee, I have read the thesis of Ashley Eyre in its final form and have found that (1) its format, citations, and bibliographical style are consistent and acceptable and fulfill university and department style requirements; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the graduate committee and is ready for submission to the university library.

Date

Keven A. Prusak
Chair, Graduate Committee

Accepted for the Department

Larry T. Hall
Chair, Department of Exercise Sciences

Accepted for the College

Gordon B. Lindsay, Associate Dean
College of Health and Human Performance

ABSTRACT

THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY LEVELS, PHYSICAL SELF-WORTH, AND GLOBAL SELF-WORTH: A CORRELATION STUDY

Ashley Eyre

Department of Exercise Sciences

Master of Science

The purpose of this study was to determine the relationship between physical activity levels, physical self-worth, and its sub-domains; (a) skill, (b) body attractiveness, (c) fitness and conditioning, and (d) strength, and overall global self-worth in high school students. One-hundred and sixty-seven high school students (male = 66; female = 101) from the western United States, ages 13-18, participated in this study. Each participant completed a minimum of four days of physical activity data collection and completed the self-worth questionnaire. Pedometers were used to collect physical activity levels, calculating mean step counts, and the Children and Youth Physical Self-Perception Profile (CY-PSPP) was used to determine physical self-worth (PSW) and global self-worth (GSW) scores. Results showed a positive relationship between physical self-worth and physical activity ($r = 0.19, p < 0.01$), with no relationship shown between physical activity and GSW. Physical activity level was significantly correlated with skill

and body attractiveness ($p < .02$). Quartile analyses of mean step count confirmed a significantly higher PSW in the top three quartiles compared to the bottom quartile. In summary, this study found that physical activity is positively associated with PSW and its two sub-domains of body attractiveness and skill, but physical activity did not show a significant relationship with GSW.

ACKNOWLEDGMENTS

I would like to express my heartfelt appreciation and love to my husband, Ben Eyre, for the constant encouragement, support and confidence in helping me complete this thesis, thank you for believing in me. Thank you to my mom, Megan Bodily, for her constant support and endless help with watching the girls while I finished my thesis. Special thanks go to my committee, Dr. Keven Prusak, Dr. Sue Graser, and Dr. Todd Pennington, for accommodating my short timeline and special requests to finish my thesis on time for graduation. Thank you to Sandy Alger for her constant help with all of my questions and getting all of my forms signed and paperwork processed after I had left Utah. I am extremely grateful to Suzy Young for her countless hours of time helping me with all of my statistical analysis, I never would have finished on time without her help. A very special thank you goes to my Grandma Smith for instilling the value of education in me and believing that I could finish.

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Running head: PHYSICAL ACTIVITY LEVELS, PHYSICAL SELF-WORTH AND
GLOBAL SELF-WORTH

The Relationship between Physical Activity Levels, Physical
Self-worth and Global Self-worth: A Correlational Study

Ashley Eyre, MS.

Suzanne Young, MPH,

Keven Prusak, PhD,

Susan Graser Vincent, PhD

Todd Pennington, PhD.

ashleyandben@msn.com

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ABSTRACT

The purpose of this study was to determine the relationship between physical activity levels, physical self-worth, and its sub-domains; (a) skill, (b) body attractiveness, (c) fitness and conditioning, and (d) strength, and overall global self-worth in high school students. One-Hundred and sixty-seven students (male = 66; female = 101) from the western United States, ages 13-18, participated in this study. Each participant completed a minimum of four days of physical activity (PA) data collection and completed the self-worth questionnaire. Pedometers were used to collect PA levels, calculating mean step counts, and the Children and Youth Physical Self-Perception Profile (CY-PSPP) was used to determine physical self-worth (PSW) and global self-worth (GSW) scores. Results showed a small but positive relationship between physical self-worth and PA level ($r = 0.19, p < 0.01$), with no relationship shown between PA level and GSW. Physical activity level was significantly correlated with skill and body attractiveness ($p < .02$). Quartile analyses of mean step count confirmed a significantly higher PSW in the top three quartiles compared to the bottom quartile. In summary, this study found that PA levels is positively associated with PSW and its two sub-domains of body attractiveness and skill, but PA levels did not show a significant relationship with GSW.

Key words: physical activity, physical self-worth, global self-worth, physical self-perception, adolescents, physical education

INTRODUCTION

Self-worth is generally accepted as a fundamental contributor to human behavior. Once thought to be a unidimensional construct, self-worth is now seen as a multifaceted, multidimensional hierarchical structure with many different domains and sub-domains (see Figure 1; Fox & Corbin, 1989; Harter, Waters, & Whitesell, 1998). Sub-domains affects one's self-concept or self-perception at each level in the hierarchy – affecting first one's physical self worth (PSW) and ultimately global self-worth (GSW). One's GSW, at the apex of the hierarchical construct, is a relatively stable trait. As one descends the hierarchy, self-concept becomes less stable and more situation-specific (Marsh & Shavelson, 1985).

In addition to the many health benefits (i.e., reduced risk of obesity, cancer, cardiovascular disease, Type-2 diabetes, and osteoporosis (U.S. Public Health Service, 2007), studies (e.g., Eyster, Brownson, Bacak, & Houseman, 2003; Sonstroem, 1984) have confirmed that physical activity (PA) is also associated with an increase in self-confidence and an improved sense of well-being. The Surgeon Generals Report (2007) has also highlighted PA for its role in one's emotional and mental health, reducing symptoms of anxiety and depression and aids in decreasing stress levels.

While some research (e.g., Boyd & Hrycaiko, 1997; Fox, 1999, 2000) has examined behavioral influences on self-worth, finding PA to be an important component of positive self-perceptions, some studies have concluded that this relationship in adolescents remains unclear (Sallis, Prochaska, & Taylor et al, 2000). A possible reason could be the lack of conceptual clarity in measuring the causal flow of this relationship

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(McAuley, Elavsky, Motl, Konopack, Liang, & Marquez, 2005). Research has been done with adults and early elementary age children with the effects of PA on psychological variables. Results in these demographics have determined self-worth and PA to be correlated (McAuley et al., 2005; Sallis, et al., 2000). A variety of studies have been performed on adolescent teenagers and report inconsistent results pertaining to the effects of PA on feelings of self-worth. Sallis et al. (2000) illustrated in a review of literature from 1970-1998 that adolescents' self-efficacy and perceived confidence had an undetermined relationship with PA. A possible reason for this outcome could be due to the subjective measures used to monitor PA. Only "four percent of the 54 studies" (Sallis et al., 2000) used objective measures to monitor PA.

Due to conflicting findings, research into the relationship between PA and measures of self-worth is warranted, particularly in the adolescent years (Daley, 2002; Stein, Fisher, Berkey, & Coldit 2007). Physical self-worth is thought to be a powerful and strong domain within the hierarchal structure of global self-worth (Fox & Corbin, 1989; Kowalski, Crocker, Kowalski, Chad, & Humbert, 2003; Raustorp, Ståhle, Gudasic H, Kinnunen, & Mattsson, 2005a).

Fox and Corbin (1989) developed the Physical Self-Perception Profile (PSPP) based on the hierarchical model (see Figure 1) and measures physical self-perception and its relationship to overall global self-worth. The PSPP is both hierarchal and multidimensional with GSW at the apex of the hierarchal structure and physical self-worth (PSW) at the domain level with (a) skill, (b) body attractiveness, (c) fitness and

conditioning, and (d) physical strength as sub-domains (Campbell, Pungellow, & Miller, 2002; Fox & Corbin, 1989; Harter et al., 1998).

The PSPP was tested on youth, adolescents and college students and found valid and reliable in testing physical self-perception (Asci, F., Asci, A., & Zorba, E. 1999; Fox & Corbin, 1989; Raustorp et al., 2005). Subsequently, Ecklund, Whitehead, & Welk (1997) and Welk, Corbin, Dowell, & Harris (1997) modified and validated the PSPP for its use with children and youth (CY-PSPP) as young as nine years of age through high school (Asci et al, 199; Raustorp et al, 2005a).

While PA can be measured with an array of instruments, pedometers are commonly used to objectively collect PA levels (Schneider, Crouter, & Bassett, 2004). Pedometers have the advantage of being unobtrusive, lightweight, and easy to use in the assessment of PA (Tudor-Locke, 2002). They measure duration of activity levels by monitoring step counts and they provide an objective measure of PA (Bassett, 2000; Welk, Corbin, & Dale, 2000).

It has been suggested that the ambiguity in the nature of the relationship between PA and GSW has been due to a former lack of objective PA measures. It is the goal of this study to determine the relationship of PA using an objective measure—the pedometer, PSW, and GSW via the CY-PSPP in adolescents. The purpose of this study, therefore is to (a) determine the relationship between PA, skill, body attractiveness, fitness and conditioning, strength and PSW, and (b) determine the relative contribution of these variables to PSW and its next higher level, GSW.

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METHODS

Participants

Three-hundred and eighty-five high school physical education students (age range = 13-18 years), from three teachers and 11 periods, and from one high school in the western United States were asked to volunteer their participation in this study. Permission to conduct this study was obtained from the school district and participants and their parent/guardian with signed informed ascent letters prior to any data collection. All procedures were reviewed and approved by a university Institutional Review Board. Of the 385 students who initially volunteered for the study, 215 participants were dropped from the study for the following reasons: not turning in a signed ascent form, incomplete questionnaires, not enough data for PA and/or lack of effort in completing the questionnaire resulting in a final number of participants ($n=170$) used for initial analysis. Analysis revealed and additional three participants were outside of two and a half standard of deviations and were removed from subsequent analysis leaving a final $n=167$.

Instruments

Measures of Self-Worth: The 36 item, six sub-scale CY-PSPP (Ecklund et al. 1997) was developed to assess one's perceptions of GSW, PSW and its sub-domains (skill, body attractiveness, fitness and conditioning, and strength) in children and adolescents. For each question, participants decide between two statements that best describe their beliefs and then decide if it is sort of true or really true for them. Each question gives a score between one and four, with four being the highest self-perception.

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The maximum score for each domain is 24 (the sum of six items associated with each domain scale).

Measures of Physical Activity: Pedometers objectively measure daily step counts, total activity time, and calculate estimates of caloric expenditure and distance in ambulatory PA. They can be used to measure differences between individual steps per day, PA increases with interventions, conduct studies comparing different cultures, and compare time trends in PA (Schneider, Crouter, & Bassett, 2004; Welk, Corbin, & Dale, 2000; Bassett, 2000). Validity and reliability of pedometers have been established in several studies (see Bassett, 2000; Tudor-Locke, 2002; Rowe, Mahar, Raedeke, & Lore, 2004).

Due to the inconsistent activity patterns among teenagers Trost, Pate, Freedson and Sallis (2000) determined that four to nine days of monitoring PA is required to achieve .70 to .80 reliability with seventh to twelfth grade adolescents. Participants in this study used the My Life Stepper 2515 digital pedometer (MLS 2500 series, Walk-4-Life, Plainfield, IL). This pedometer has been shown to be valid and reliable in collecting step counts and total activity time in youth (Beets, Patton & Edwards, 2005, Beighle, Morgan, Le Masurier, & Pangrazi, 2006, Beighle & Pangrazi, 2006, Vincent Graser, Pangrazi, & Vincent, 2007).

Data Collection

To acquaint them with the pedometer, all participants received an orientation on their proper use and function. To diminish curiosity and increase participants' comfort in using the pedometer, participants wore an unsealed pedometer for one physical education

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class period. Participants were instructed to wear the pedometer all waking hours of the day. Physical activity was monitored for six-week days (Troost et al. 2000; Rowe et al. 2004) over a three-week period in order to accurately collect a true average of adolescent PA. Researchers had enough pedometers to measure only half of the students and thus had to break the participants into two groups. The first half wore the pedometers on Monday through Thursday of week one and Monday through Tuesday of week two. Group two wore the pedometers Wednesday through Thursday of week two and Monday through Thursday of week three. During data collection all pedometers were sealed with a cable tie to ensure the data was not lost through accidentally resetting of the pedometer.

Pedometers were distributed prior to the beginning of classes on day one. Each of the following mornings of the data collection period students returned to one of three stations located at various school entrances to have their data recorded. For those students who came late to school, data was recorded between first and second periods. The researchers unsealed the pedometers, recorded number of steps and time, reset and resealed the pedometer, and immediately returned it to the participant.

The CY-PSPP was administered by the researcher during the third day of data collection in each of the eleven physical education classes. Participants were told to answer each question as best they could and to choose the statement that best described them, there were no right or wrong answers and questionnaires would not be graded. Bubble sheets were used for ease of data recording and subsequent analysis. The researcher then examined each questionnaire to be sure it was completed with the name, age, gender, and grade filled in correctly. Questionnaires not filled out correctly were

then removed from the study. Questionnaire data was formatted in comma-delimited layout at the University Testing Center and put into Stata statistical software for data analyses. Data was then examined for missing information.

Data Analysis

The following statistical analyses were completed using Stata release 8.0 (STATA Corporation, College Station, TX). Mean daily step counts were calculated. Cronbach's Alpha test was performed to examine intra-class correlations to determine the minimum number of days of pedometer data necessary for inclusion in this study. An intra-class correlation of at least 0.80 was the cut-off. Cronbach's Alpha values determined that three days of pedometer data for females was reliable. However, three days of pedometer data for all males was less than 0.80 ($r = .48$). Therefore, four days of pedometer data was determined to be valid and reliable for the total study population (see Table 1). All participants with less than four days of pedometer data were dropped from the study ($n=32$) leaving 170 participants with at least four days of pedometer data and complete questionnaire data. The three subjects with the highest mean daily step counts ($>20,000$ steps/day; >2.5 SD of the mean) were considered outliers and dropped from further analyses. Literature has confirmed that two or three standard of deviations is valid, for this study ± 2.5 standard of deviations was used to remove extreme outliers and normalize the data (Zhou Q, Li S, Li X, Wang W, Wang Z. 2006). A final count ($n=167$) was used in the analysis of this study.

Correlations and partial correlations were calculated. *T*-tests and ANOVA tests were used to examine the differences in PA, physical self-worth, and global self-worth by

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gender, age, and grade. Linear regression models examined the relationship of PA using quartiles of daily means step counts to PSW and GSW. Linear regression model was also used to look at the relationship of the sub-domain levels to physical self-worth. The statistical significance level was set at $p < 0.05$. All p -values are 2-sided.

RESULTS

Total participants ($n=167$) included 101 (60%) females and 66 (40%) males. Mean steps for females were 10,095 and 9,990 for males (see Table 2). Contrary to most studies, findings in this study revealed an anomaly—girls demonstrating higher activity levels than boys. The researcher has no evidence for explaining the difference in this population. Mean age of participants was 14.9 years of age (*range*: 13-18), consisting of 119 freshmen (9th grade), 39 sophomores (10th grade), and 9 juniors/seniors (11th & 12th grade). Mean steps were 10,084, 10,246, 8,818, respectively (see Table 2). PA level did not vary by gender. Male subjects showed a slightly higher PSW than female subjects (17.5 vs. 16.2), but the increase was only borderline significant ($p = 0.06$). There were no other differences between gender, age or grade for PSW and GSW.

Relationship between CY-PSPP domains

The Pearson Correlation Table (Table 4) showed a moderate to high significant correlation between physical self-worth and all of its sub-domains (see Table 4). Global Self-worth also showed a moderate to high significantly positive correlation with PSW and all four sub-domains, with body attractiveness being the highest ($r = .46, p \leq .05$) next to PSW ($r = .62, p \leq .05$). Male subjects revealed that PSW was highly correlated

with the sub-domains of body attractiveness and skill, while females PSW exhibited a higher correlation to body attractiveness and fitness and conditioning (See Tables 5 & 6).

A summary of the relationship between the sub-domains of the CY-PSPP and PSW is presented in Table 7. Most notably, body attractiveness was found to be the strongest predictor of PSW for the total population ($r = 0.59, p < 0.001$) as well as for each gender sub-group ($r = 0.60$ girls; $r = 0.56$ boys). The next strongest predictor for girls was fitness and conditioning ($r = 0.34, p < 0.001$) and skill for boys ($r = 0.33, p = 0.005$). Skill was the weakest predictor of PSW in girls while fitness and conditioning was the weakest in the boys. Overall, the sub-domains explained 68% of the variance in PSW for the total population (adjusted R^2). Part and partial analysis removes shared variance between the variables explained 61% of the variance in PSW.

Relationship between physical activity and PSW, GSW, and sub-domains

Physical activity level showed a small, positive but significant correlation to Physical Self-Worth ($r = 0.19, p = 0.01$). But PA level did not show a correlation to overall global self-worth (see Table 8). Physical activity showed a small but significant correlation with skill and body attractiveness ($r = .18$ & $r = .17$, respectively; $p = 0.02$ for both) but not with the other sub-domains of fitness and conditioning or strength. Using a partial correlation analysis adjusting for skill and body attractiveness, PA had a correlation of 0.08 ($p = 0.33$, data not shown) with PSW.

Quartile analyses of mean step counts confirms a significantly lower PSW in the bottom quartile as compared to the top three quartiles than. The 2nd, 3rd, and 4th quartiles of daily mean steps all had significantly higher physical self-worth scores

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compared to the 1st quartile (Figure 2). The adjusted linear regression model predicts a similar increase in PSW scores for the 2nd ($\beta = 2.24, p = 0.01$), 3rd ($\beta = 2.29, p = 0.01$) and 4th quartile ($\beta = 2.07, p = 0.02$) compared to the 1st quartile. No significant differences were found between quartiles for GSW.

DISCUSSION

The main purpose of this study was to determine the relationship between PA and feelings of global self-worth and physical self-worth. The hypothesis of this study is partially supported in that analyses showed PA was positively related to one's PSW though the relationship was small. Physical activity correlated the strongest with body attractiveness and skill. Adjusted regression models determined PA to be related to PSW through the four sub-domains, and most strongly through body attractiveness and skill. Partial correlation analysis revealed that when adjusting for the four sub-domains, PA did not have a direct relationship to PSW. Physical activity was determined a mediated variable of PSW through the four sub-domains and cannot have a direct effect on PSW by itself.

Skill, body attractiveness, fitness and conditioning and strength accounted for 68% of the total variance of PSW. Body attractiveness alone, accounted for 42%, over half of the entire variance, giving more evidence that physical self-perceptions in teenagers is strongly linked to their body appearance. Raustorp, Mattsson, Svensson, and Ståhle (2005b) found similar results when looking at Swedish teens. The physical self-perceptions of males and females was very highly correlated to body appearances and body mass indexes (BMI), further suggesting that today's teenagers link physical

appearance and perceptions to their feelings of worth in the physical domain. Huang, Norman, Zabinski, Calfas, and Patrick (2007) also found comparable results with an improvement in body image and self-esteem as a result of PA intervention.

If PA is a mediated variable of PSW through these four sub-domains, it is important for physical education teachers to acknowledge that getting students physically active in classes will help students improve self-perceptions of skill, body attractiveness, fitness and conditioning, and strength. It is recommended for further research to compare technique and skill models of teaching to overall PA in physical education class and see how they differ in the affect on students PSW.

In opposition to the second hypothesis, PA was not found to be a predictor of overall GSW in this population. Physical activity showed to be a mediated variable of PSW and therefore was not strong enough to impact the higher GSW domain. Stein, Fisher, Berkey, and Coldit (2007) found similar results by surveying 8,670 youth from ages 10-18. Their findings reported PA to be positively related to social and physical self-perceptions, but not overall global self-perceptions.

The quartile analysis proved a significantly lower PSW for the least active quartile as compared to the top three mean step quartiles. However, PSW did not yield a higher score as activity levels increased across the 2nd, 3rd, and 4th quartiles, suggesting a plateau effect of PA on PSW. Participants who dropped below the 2nd quartile of PA demonstrated a significant decrease in feelings of PSW. It is this group of adolescents that physical education teachers should be aware of when designing class instructions. The students with the least amount of PA, have lower physical self-worth and therefore

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are in need of special attention to get physically active in physical education to help build physical self-worth which is related to global self-worth.

As should be expected, physical self-worth was strongly correlated with all of the sub-domains: skill, fitness and conditioning, strength, and body attractiveness and the high domain of global self-worth. For females, body attractiveness ($r = .80$) and fitness and conditioning ($r = .64$) were the highest predictors of positive PSW, while male PSW had a higher correlation to body attractiveness ($r = .69$) and skill ($r = .61$). Once more determining that teenagers view physical appearance as the most important variable of their PSW. Body attractiveness contributed to 42% of totally variance, while fitness and conditioning, strength and skill accounted for 10%, 6%, and 3%, respectfully.

Percentages show a clear indication that teenagers are very aware of appearances affecting their physical self. This result is similar to Raustorp et al. (2005b) where body attractiveness was found to be the most important sub-domain for PSW in Swedish teens and preteens as well.

Limitations of actual PA collection need to be considered. Physical activity was objectively measured with a valid pedometer, but appropriate wearing of the pedometer is subject to the discipline of the participant. Potential studies should consider a longer orientation period to familiarize participants with pedometers and make it a habit of wearing them prior to data collection.

A high attrition rate (57%) occurred after participants returned signed ascent form. Participants were taken out of the study for lack of participation in PA collection or incomplete questionnaire data, limiting the number of participants sampled. The 167

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participants surveyed perhaps were self-selected and were not rewarded for participation in this study and could represent a biased group of self-motivated students. Personal information about the participants regarding race, ethnicity, body mass index (BMI), and team sport participation were not collected and could possibly affect the relationship between PA, PSW and GSW and are recommended to be surveyed with future studies involving PA and self-worth relationships. The teenage years are filled with many physical, emotional, academic, and social changes. Further research should look into measuring the social, emotional and academic self, while collecting objective measures PA levels.

In summary, this study shows that the level of PA of high school physical education participants has a direct correlation to the feelings of one's physical self, through perceptions of body attractiveness and skill. This study also indicated that PA alone, is too far removed from GSW to have a direct impact on one's level of overall self-worth.

REFERENCES

- Asci, H. F., Gokmen, H., Tiryaki, G., & Asci, A. (1997). Self-concept and body image of Turkish high school male athletes and nonathletes. *Adolescence*, 32, 128, 959-968.
- Asci, F., Asci, A., & Zorba, E. (1999). Cross-cultural validity and reliability of physical self-perception profile. *International Journal of Sport Psychology*, 30, 399-406.
- Bassett, D.R., Jr. (2000). Validity and reliability issues in objective monitoring of physical activity. *Research Quarterly for Exercise and Sport*, 2, 30-36.
- Beets, M.W., Patton, M.M., & Edwards, S. (2005). The accuracy of pedometer steps and time during walking in children. *Medicine & Science in Sport and Exercise*, 37(3), 513-520.
- Beighle, A., Morgan, C.F., Le Masurier, G., & Pangrazi, R.P. (2006). Children's physical activity during recess and outside of school. *Journal of School Health*, 76(10), 516-520.
- Boyd, K. R., & Hrycaiko, H. W. (1997). The effect of physical activity intervention package on the self-esteem of pre-adolescent and adolescent females. *Adolescence*, 32, 693-708.
- Campbell, F., Pungello, E., & Miller-Johnson, S. (2002). The development of perceived scholastic competence and global self-worth in African-American adolescents from low-income families: The role of family factors, early educational intervention and academic experience. *Journal of Adolescent Research*, 17, 277-302.

- Daley, A. J. (2002). Extracurricular physical activities and physical self-perceptions in British 14-15 year-old male and female adolescents. *European Physical Education Review*, 8, 37-49.
- Eklund, R. C., Whitehead, J. R., & Welk, G. J. (1997) Validity of the Children and Youth Physical Self-Perception Profile: A confirmatory analysis. *Research Quarterly for Exercise and Sport*, 68(3), 249-256.
- Eyler, A. A., Brownson, R. C., Bacak, S. J., & Housemann, R. A. (2003). The epidemiology of walking for physical activity in the United States. *Medicine and Science in Sports and Exercises*, 35(9), 1529-1536.
- Fox, K. R., & Corbin, C. B. (1989). The physical self-perception profile: Development and preliminary validation. *Journal of Sport and Exercise Psychology*, 11, 408-430.
- Fox, K. R., (1999). The influence of physical activity on mental well-being. *Public Health Nutrition*, 2, 411-418.
- Fox, K. R. (2000). Self-esteem, self-perceptions and exercise. *International Journal of Sport Psychology*, 31, 228-240.
- Harter, S., Waters, P., & Whitesell, N. R. (1998). Relational self-worth: differences in perceived worth as a person across interpersonal contexts among adolescents. *Child Development*, 69(3), 756-766.
- Huang, J.S., Norman, G.J., Zabinski, M.F., Calfas, K., & Patrick, K. (2007). Body image and self-esteem among adolescents undergoing an intervention targeting dietary and physical activity behaviors. *Journal of Adolescent Health*, 40(3), 245-251.

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- Kowalski, K. C., Crocker, P. R. E., Kowalski, N. P., Chad, K. E., & Humbert, M. L. (2003). Examining the physical self in adolescent girls over time: Further evidence against the hierarchical model. *Journal of Sport and Exercise Psychology, 25*, 5-18.
- Le Masurier, G. C., Beighle, A., Corbin, C. B., Darst, E. W., Morgan, C., Pangrazi, R. P., et al. (2005). Pedometer-determined physical activity levels of youth. *Journal of Physical Activity and Health, 2*, 159-168.
- Marsh, H. W., & Shavelson, R. (1985). Self-concept: Its multifaceted, hierarchical structure. *Educational Psychologist, 20*(3), 107-123.
- McAuley, E., Elavsky, S., Motl, R. W., Konopack, J. F., Liang, H., & Marquez, D. X. (2005). Physical activity, self-efficacy, and self-esteem: Longitudinal relationships in older adults. *Journal of Gerontology, 60*, 268-275.
- Raustorp, A., Ståhle, A., Gudasic, H., Kinnunen, A., & Mattsson, E. (2005a). Physical activity and self-perception in school children assessed with the Children and Youth-Physical Self-Perception Profile. *Scandinavian Journal of Medicine and Science in Sports, 15*(2), 126-134.
- Raustorp, A., Mattsson, E., Svensson, K., Ståhle, A. (2005b). Physical activity, body composition and physical self-esteem: a 3-year follow-up study among adolescents in Sweden. *Scandinavian Journal of Medicine & Science in Sports, 16*(4), 258-266.

- Sallis, J. F., Prochaska, J. J., & Taylor, W. C. (2000). A review of correlates of physical activity of children and adolescents. *Medicine and Science in Sports and Exercise*, 32(10), 963-975.
- Schneider, P. L., Crouter, S. E., & Bassett, D. R., Jr. (2004). Pedometer measures of free-living physical activity: Comparison of 13 models. *Medicine and Science in Sports and Exercise*, 36(3), 331-335.
- Stein, C. J., Fisher, L., Berkey, C., & Coldit, G. A. (2007). Adolescent physical activity and perceived competence: Does change in activity level impact self-perceptions? *Journal of Adolescent Health*, 40(5), 462E1-462E.8.
- Sonstroem, R. J. (1984). Exercise and self-esteem. *Exercise and Sports Sciences Reviews*, 12, 123-155.
- Trost, S.G., Pate, R., Freedson, P.S., Sallis, J.F., & Taylor, W.C. (2000). Using objective physical activity measures with youth: How many days of monitoring are needed? *Medicine and Science in Sports and Exercise*, 32(2), 426-431.
- Tudor-Locke, C.E. (2002). Taking steps toward increased physical activity: Using pedometers to measure and motivate. *President's Council on Physical Fitness and Sports Research Digest*, 17.
- Tudor-Locke, C.E. & Myers, A.M. (2001). Challenges and opportunities for measuring physical activity in sedentary adults. *Sport Medicine*, 31, 91-100.

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U. S. Public Health Service. (2007). Overweight and obesity: health consequences.

Washington, DC: U.S. Department of Health and Human Services. Retrieved on November 7, 2008, from http://www.surgeongeneral.gov/topics/obesity/calltoaction/fact_consequences.htm

Vincent Graser, S., Pangrazi, R.P., & Vincent W. J. (2007). Effects of placement, attachment, and weight classification on pedometer accuracy. *Journal of Physical Activity & Health*, 4(4), 359-369.

Welk, G. J., Corbin, C. B., & Dale, D. (2000). Measurement issues in the assessment of physical activity in children. *Research Quarterly for Exercise and Sport*, 71, 59-73.

Welk, G. J., Corbin, C. B., Dowell, M. N., & Harris, H. (1997). The validity and reliability of two different versions of the Children and Youth Physical Self-Perception Profile. *Measurement in Physical Education and Exercise Science*, 1(3), 163-177.

Welk, G. J., Corbin, C. B., & Lewis, L. A. (1995). Physical self-perceptions of high school athletes. *Pediatric Exercise Science*, 7, 152-161.

Zhou Q, Li S, Li X, Wang W, Wang Z. (2006) Detection of outliers and establishment of targets in external quality assessment programs. *Clinica Chimica Acta*. Oct; 372(1-2):94-97.

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Table 1

Cronbach's Alpha for Daily Mean Step Counts

Number of Days	All Subjects	Females	Males
3	0.617	0.831*	0.483
4	0.824*	0.832	0.814*
5	0.801	0.814	0.786
6	0.837	0.864	0.805

* An intra-class correlation of at least .80 or higher was the cut-off for determining the minimum number of days necessary for inclusion in the study.

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Table 2

Mean Step Counts (SD) by Subject Demographics

Variable	N	(%)	Mean steps/ day	SD
Total	167	(100)	10053	(3232)
Gender				
Female	101	(60)	10095	(3144)
Male	66	(40)	9990	(3386)
Grade				
Freshman (9th)	119	(71)	10084	(3296)
Sophomore (10th)	39	(23)	10246	(3321)
Junior/Senior (11/12th)	9	(6)	8818	(1506)
Age (years)				
13	3	(2)	7596	(4587)
14	51	(31)	10385	(3531)
15	82	(49)	10172	(2852)
16	27	(16)	9601	(3741)
17	2	(1)	8211	(1050)
18	2	(1)	8342	(1484)

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Table 3

Mean Physical Self-Worth and Global Self-Worth (SD) by Subject Demographics

Variable	N	(%)	PSW	(SD)	GSW	(SD)
Total	167	100	16.7	4.2	17.4	3.6
Gender						
Female	101	60	16.2	4.2	17	3.5
Male	66	40	17.5	4.2	17.8	3.8
Grade						
Freshman (9th)	119	71	17	4.3	17.5	3.6
Sophomore (10th)	39	23	16.3	3.7	17.1	3.7
Junior/Senior (11/12th)	9	6	14.9	5.1	16	3.8
Age (years)						
13	3	2	17.3	7	17.7	3.2
14	51	31	17.2	4.1	17.8	3.5
15	82	49	16.9	4.3	17.4	3.8
16	27	16	15.5	3.8	16.7	3.6
17	2	1	18.3	4	17.5	3.5
18	2	1	12.5	2.1	14	1.4

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Table 4

Correlation Table between CY-PSPP and Self-Worth Index Items- all subjects (n=167)

	Skill	Fitness	Body Attractiveness	Strength	Physical Self- Worth
Skill					
Fitness	0.55 *				
Body Attractiveness	0.44 *	0.43*			
Strength	0.41 *	0.35*	0.36*		
Physical Self-Worth	0.55 *	0.58*	0.76*	0.48*	
Global Self-Worth	0.41 *	0.35*	0.46*	0.39*	0.62*

* p -value ≤ 0.05

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Table 5

Correlation Table between CY-PSPP and Self-Worth Index Items - All Male Subjects (n=66)

	Skill	Fitness	Body Attractiveness	Strength	Physical Self-Worth
Skill					
Fitness	0.59*				
Body Attractiveness	0.37*	0.28*			
Strength	0.41*	0.34*	0.41*		
Physical Self-Worth	0.61*	0.48*	0.69*	0.57*	
Global Self-Worth	0.52*	0.30*	0.52*	0.43*	0.66*

* p -value ≤ 0.05

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Table 6

Correlation Table between CY-PSPP and Self-Worth Index Items - All Female Subjects (n=101)

	Skill	Fitness	Body Attractiveness	Strength	Physical Self-Worth
Skill					
Fitness	0.52 *				
Body Attractiveness	0.46 *	0.51 *			
Strength	0.33 *	0.34 *	0.32 *		
Physical Self- Worth	0.49 *	0.64 *	0.80 *	0.38 *	
Global Self-Worth	0.32 *	0.38 *	0.43 *	0.33 *	0.58 *

* p -value ≤ 0.05

Table 7

Adjusted Regression Model of Sub-domains with PSW

Variable	Total Population (n=167)		Girls (n=101)		Boys (n=66)	
		<i>p</i> value		<i>p</i> value		<i>p</i> value
Body Attractiveness	0.59	<0.001	0.60	<0.001	0.56	<0.001
Fitness & Conditioning	0.27	<0.001	0.34	<0.001	0.14	0.20
Strength	0.19	0.004	0.10	0.20	0.28	0.01
Skill	0.14	0.03	0.04	0.63	0.33	0.005

* _ = beta coefficient for physical self-worth adjusting for the other sub-domains

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Table 8

Correlations of Physical Activity Level with Physical Self-Worth, and Global Self-Worth

	Mean Step Correlation	p Value
Physical Self-Worth	0.19	0.01*
General Self-Worth	0.03	0.68
Skill	0.18	0.02*
Fitness and conditioning	0.12	0.13
Body Attractiveness	0.17	0.02*
Strength	0.004	0.96

* $p < 0.05$

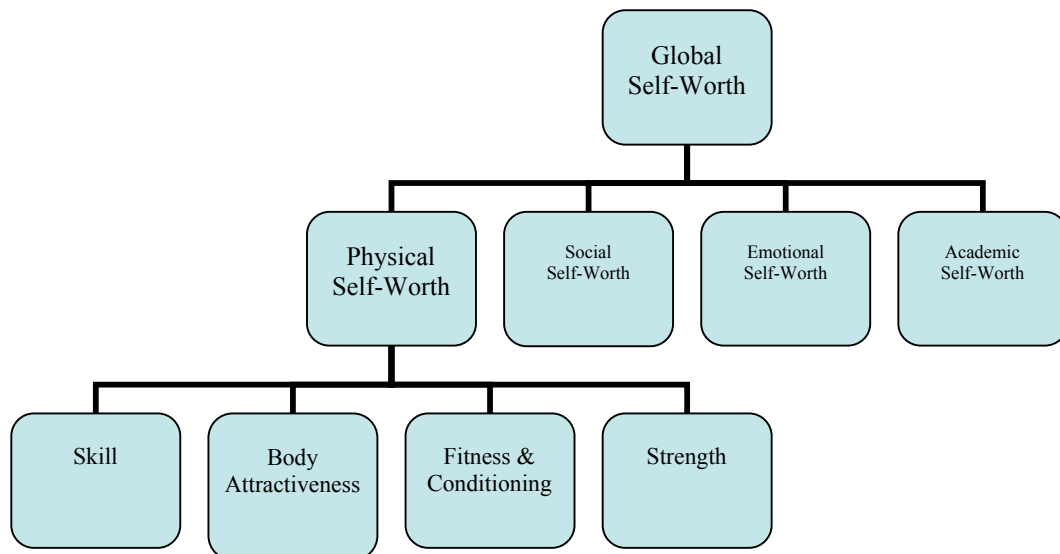


Figure 1. Global Self-worth Hierarchical Structure

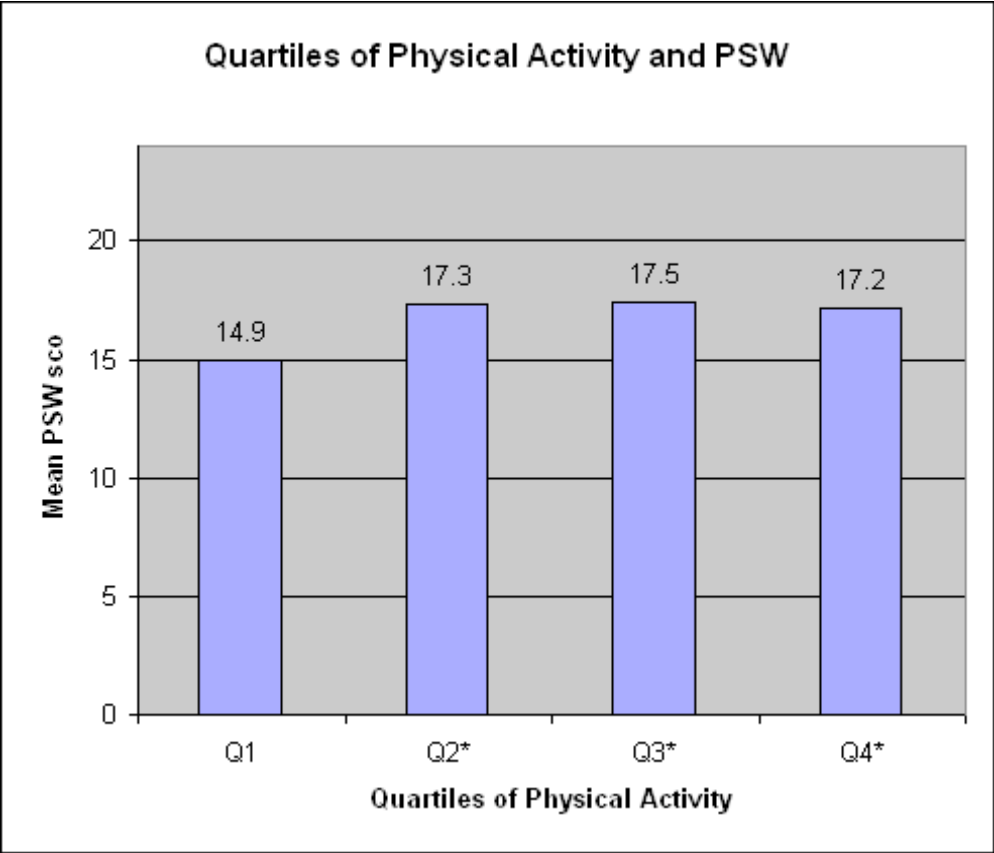


Figure 2 Quartiles of Physical Activity and PSW

* p-value <0.05 compared to Q1

Appendix A

Prospectus

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Chapter 1

Introduction

Psychologists generally agree that positive self-worth has a significant impact and is an important component of physical and psychological well-being (Campbell, Pungello, & Miller-Johnson, 2002). Self-worth has consistently occupied an essential part in explaining human behavior (Fox & Corbin, 1989; Jaffee & Manzer, 1992). It is the value we attach to ourselves (Lirgg, 1992), and therefore has an important role in shaping the direction of our lives. This study will examine the relationship of physical activity and physical self-perceptions as a component of overall global self-worth.

In recent years there has been a shift in how global self-worth is viewed. Past research had indicated that global self-worth was a unidimensional construct with several sub-domains contained within one entity (Fox & Corbin, 1989; Harter, Waters, & Whitesell, 1998). Recent research has proposed that global self-worth exists in a hierarchical structure with global self-worth at its apex with four sub-domains; each of which have their own sub-domains, all contributing to overall global self-worth at different levels (Campbell, et al., 2002, Harter, et al., 1998; Fox & Corbin, 1989; Welk, Corbin, & Lewis, 1995). An overall global self-worth score is represented by averaging items that tap general satisfaction with oneself as a person at each level in the hierarchical structure (Harter, et al., 1998).

A powerful sub-domain of global self-worth is physical self-worth (Fox & Corbin, 1989; Jaffee & Manzer, 1992; Kowalski, Crocker, Kowalski, Chad, & Humbert, 2003; Raustorp, Ståhle, Gudasic H, Kinnunen, & Mattsson, 2005). Research has shown

that physical activity plays an important role in the developing of self-worth, and self-worth and physical activity have a positive relation (Boyd & Hrycaiko, 1997; Daley, 2002; Jaffee and Manzer, 1992). Because of this relationship, physical self-worth is one of the domains of global self-worth and therefore has an effect on the global self-worth of an individual (Fox & Corbin, 1989).

Females and males both benefit physically and psychologically when they participate in physical activity (Jaffee & Manzer, 1992; Asci, Gokmen, Tiryaki & Asci, 1997). Physical activity has been shown to result in positive effects on the body, including reducing risks of heart disease, certain types of cancer, diabetes, and strokes. The exact effect it has on the psychological facets is not clearly understood, but we do know it has a positive affect (Boyd & Hrycaiko, 1997; U.S. Public Health Service, 2007).

Fox and Corbin (1989) developed the Physical Self-Perception Profile (PSPP) that measures physical self-perception and its relationship to overall global self-worth. This profile has been tested on youth, adolescents and college students and has been found valid and reliable in testing physical self-perception (Fox & Corbin, 1989; Asci, Gokmen, Tiryaki & Asci, 1997). This profile will be used to examine the relationship between physical activity and physical self-perception in high school students.

Lockhart and Rencher (1997) developed the Worth Index that measures conditional and unconditional self-worth (Lockhart & Rencher, 1997). It has been tested on college students and has been shown to be valid and reliable in measuring overall self-worth (Lockhart & Rencher, 2002).

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Physical activity will be measured for six days by pedometers and physical self-perception will be assessed using the PSPP . Overall global self-worth will be measured using the Worth Index.

Statement of Problem

The purpose of this study is to 1) determine the relationship between physical activity levels and physical self-perception, 2) determine the relationship between physical activity levels and physical self-worth, and 3) determine the relationship between self-worth (as identified by the Worth Index) and global self-worth of high school students.

Hypothesis

1. There is a positive relationship between physical activity levels and physical self-worth of high school students.
2. There is a strong and positive relationship between physical activity levels and self-worth.

Null Hypothesis

1. There is a negative relationship between physical activity levels and physical self-worth of high school students.
2. There is a negative relationship between physical activity levels and self-worth.

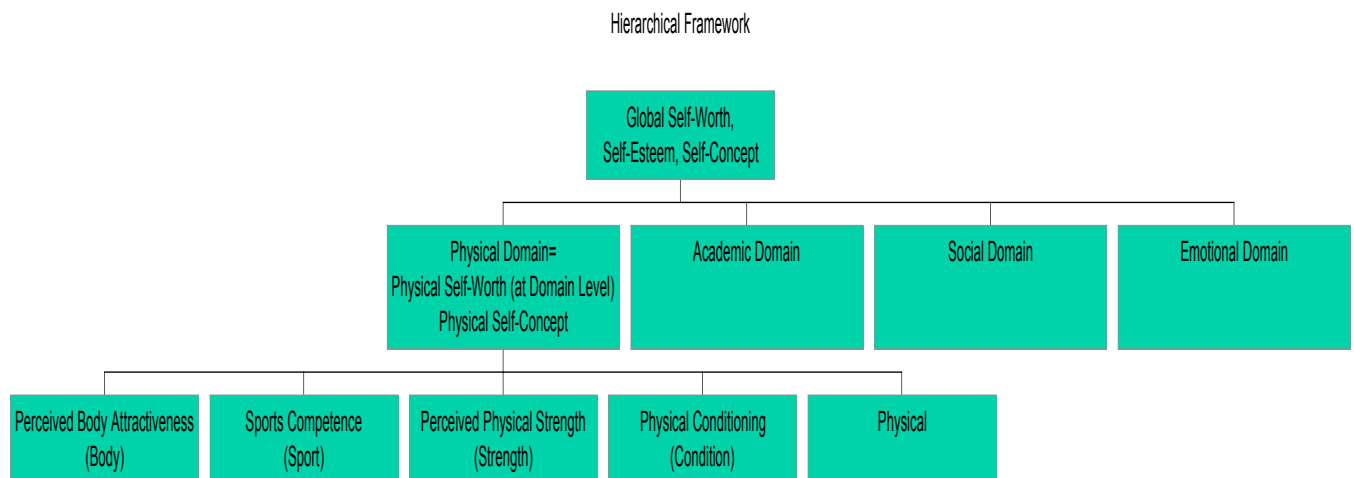
Definition of Terms

Self-Worth-the value we attach to ourselves (Lirg, 1992).

Self-Esteem-the value we attach to ourselves (Lirg, 1992).

Self-efficacy-the confidence in one's abilities to carry out a specific task. It is the belief in one's own capabilities to successfully execute necessary courses of action, it is applicable to forseen tasks and cannot measure overall feelings and perceptions of oneself (McAulley &Blissmer, 2000; Lirg, 1992)

Self-concept-the way we feel about ourselves internally as a result of our outward view. It is a system of ideas, attitudes, and values that constitute a person's inner world (Pangrazi, 1982).



Assumptions

1. Participants will wear pedometers all hours they are awake for the six days of researching.
2. Participants will maintain their normal physical activity patterns during data collection.
3. Participants will respond honestly to profile questionnaires.

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Delimitations

This study will be limited to:

1. Ninth to 12th grade students enrolled in physical education class at Washington High School in California.
2. The use of pedometers as the only form of measuring physical activity levels.

Limitations

The following are limitations:

1. Participants must wear a pedometer for six full days.
2. Participants must fill out the Physical Self-Perception Profile.
3. Participants must complete the Worth Index Questionnaire.

Significance of the Study

Physical activity is essential in maintaining good health and has shown to have an affect on our psychological well-being (Campbell et al., 2002). Determining the relationship of physical activity levels to physical self-worth and global self-worth will help to provide more evidence for the need for physical education and physical activity in our society.

Chapter 2

Review of Literature

Research has examined the effects of physical activity on confidence levels, self-efficacy and the physical self-worth of individuals (Miller, Ogletree & Welshimer, 2002). Evidence suggests that physical activity has potential psychological and physical benefits (Bungum, Pate, Dowda, & Vincent, 1999; Hausenblas, Nigg, Downs, Fleming, & Connaughton, 2002). Along with benefits to the psyche, physical activity has also shown to result in positive effects on the physical aspects of the body including reducing risks of heart disease, certain types of cancer, diabetes and strokes (Miller, et al., 2002; U.S. Surgeon General's Report, 2007). The U.S. Surgeon General's Report (2007) has noted that physical activity has also shown to have a positive effect on our psychological welfare as well as our physical well-being. It has proven to reduce the risk of chronic illness and can reduce symptoms of depression and anxiety, improve mood and enhance one's ability to perform daily tasks throughout life. Because self-esteem is anticipated to be a significant aspect in emotional well-being, and the physical self has been noted to be an important component of this overall global self (Fox, 1998; Kowalski, Crocker, Kowalski, Chad, & Humbert, 2003) this study will be looking at how the concept of the physical self is affected by physical activity and how it relates to the overall global self-worth of an individual.

Self-Efficacy, Self-Esteem, Self-Worth, and Self-Concept

Self-worth, also referred to as self-esteem throughout literature, is the value we attach to ourselves (Lirg, 1992) Self-efficacy is the belief in one's own capabilities to

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successfully execute a task. It is situationally specific, applying to specific tasks and is not generalizable. It cannot measure overall feelings and perceptions of one's self (Lirg, 1992; McAuley & Blissmer, 2000). Self-concept refers to the label or description given to oneself concerning attributes, characteristics or emotional qualities; it is a system of ideas, attitudes, and values that constitute a person's inner world (Lirg, 1992; Pangrazi, 1982). Self-concept is interchangeable with self-worth and self-esteem at the apex level of the hierarchical framework, constituting an overall feeling of self. If self-worth is the value we attach to ourselves, and self-efficacy is how we feel about ourselves in relationship to a specific task, then our self-concept can be affected by our self-efficacy pertaining to the tasks we involve ourselves with and thus interchangeable at the domain level as well. Harter (1990) argued in regards to self-concept that a high level of physical competence seems to reinforce a positive self-concept and contributes to a more positive global self-worth. Throughout literature there are a variety of terms used in explaining and defining how a person feels about himself, for the purpose of clarity in this paper, the term self-worth will be used.

For many years self-worth was seen as a unidimensional construct. Global self-worth was compromised of one entire realm with different contributing variables inside of it. Because this theory failed to differentiate and recognize the different weightings and relationships among the variables that contributed to overall feelings of self-worth, a multidimensional structure was examined (Fox & Corbin, 1989). This multidimensional structure proposed that global self-worth was at the heart with different dimensions

branching off. This view produced a deeper picture of self-worth content and presents a more enlightening map for plotting self-worth change.

With this vantage point, researchers have now looked at global self-worth within a hierarchical framework. Global self-worth is located at the apex with domains and sub-domains umbrellaed underneath. The sub-domains include academic, social, emotional and physical domains all contributing to the overall global self-worth (Fox & Corbin, 1989).

The hierarchical structure shows that the domains that are farther from the apex of global self-worth are less stable, and consequently become more situation-specific; therefore, they can be more easily influenced and altered according to situations (Boyd & Hrycaiko, 1997; Marsh & Shavelson, 1985).

Recent literature and research have shown conflicting views in looking at global self-worth as multidimensional or hierarchical. In this study we will be using Fox and Corbin's (1989) examination of self-worth via the hierarchical model allowing for multidimensionality at the sub-domain level.

This study will be looking at the relationship of physical activity with one's physical self-perception, which in turn affects our global self-worth at different levels. This will be moderated by the PSPP. Global self-worth will then be measured by the Worth Index.

Physical Self-Perception Profile

Physical self-perceptions have shown to be important determinants of self-worth and exercise behavior (Welk, Corbin, Dowell, & Harris, 1997). Fox and Corbin (1989)

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developed the PSPP for measuring physical self-perception as a subscale of global self-worth. Welk, Corbin, Dowell, & Harris then validated the PSPP for children and youth as young as nine years of age. The Children and Youth Physical self-perception profile assesses perceptions of the physical self as a domain of overall global self-worth (Welk, Corbin, Dowell, & Harris, 1997). The CY-PSPP evaluates an individual's perceptions of five different domains which will influence an individual's overall sense of physical self-worth. Global self-worth will then be influenced to the degree to which the individual values the importance of physical self-worth (Welk, Corbin, and Lewis, 1995).

The instrument consists of five 6-item subscales designed to measure sport competence (Sport), perceived bodily attractiveness (Body), perceived physical strength and muscular development (Strength), perceived level of physical conditioning and exercise (Condition), and general physical self-worth (PSW) (Fox & Corbin, 1989; Asci, Asci, & Zorba 1999). The CY-PSPP is constructed and validated to reflect prominent self-perception content and test the dimensionality and hierarchical structuring of physical self-perception. The CY-PSPP has been shown to be valid and reliable (Fox & Corbin, 1989; Kowalski, Crocker, Kowalski, Chad, & Humbert, 2003; Asci et al., 1999; Welk et al., 1997).

After four phases of construction to the CY-PSPP, the final CY-PSPP is based on the idea of a multidimensional self-concept in the physical domain (Kowalski et al., 2003). In phase two of the construction of the CY-PSPP, physical self-worth was measured at the domain level with the four subscales (body, condition, sport and strength) beneath it in a hierarchical nature. The final version of the CY-PSPP has

general physical self-worth at the sub-domain level, allowing for multidimensionality within the physical domain.

Worth Index

The Worth Index measures self-worth as the perception of the source of one's worth or value as a human being (Lockhart & Rencher, 1997). It was developed to distinguish between perceptions of unconditional worth and conditional worth (Lockhart, Merrill, & Bird, 2002). Unconditional worth is the value of worth we put on ourselves that is neither earned nor developed (Lockhart et al., 2002). Conditional worth is the value we feel is earned and requires effort (Lockhart et al., 2002).

The Worth Index consists of 26 items, 12 to identify whether perceived worth is conditional, or earned, 12 designed to learn if perceived worth is unconditional, or inherent, and two items that measure one's overall evaluation of personal self-worth. Items 1 to 24 reflect four subscales of worth: Basic Human Worth, Personal Security, Performance, and Physical Self. The Worth Index has been shown to be valid and reliable (Lockhart & Rencher, 1997).

Summary

There are many aspects to positive feelings of global self-worth. Each domain and sub-domain play a role in determining one's self-worth. The physical self-perception profile takes into account all the variables that might play a role in the physical domain as it pertains to an individual physical self-worth.

As physical activity has shown to be a positive influence in one's self-worth and the CY-PSPP measures physical self-perceptions as it pertains to global self-worth, this

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study will look at the relationship between different levels of physical activity and how they connect to an individual's perception of himself or herself.

The purposes of this study are (a) to examine the relationship physical activity has with the physical self-worth of high school students participating in physical education and (b) to observe the relationship between global self-worth and physical activity levels of each participant.

Chapter 3

Methods

This study will examine the relationship between physical activity levels and perceptions of physical self-worth and the overall global self-worth of high school students. Data will be collected from high school physical education classes at Washington High School in Fremont, California. There will be a total of 400 participants over a three-week period. Data collection will be divided into two, one and a one-half week collection times.

Participants

Approximately 400 students in physical education classes in grades 9-12 from Washington High School in Fremont, California will be asked to participate. Participants will be selected on a volunteer basis. Each participant will be assigned a pedometer to wear for the duration of the study. Permission to conduct this study will be obtained from the University Institutional Review Board, the public school system, the participants and their parent/guardian. All participants must have an informed consent form signed and turned into the researcher prior to any data collection.

Instruments

Pedometers will be used to assess physical activity patterns by calculating daily step count and total physical activity time. The CY-PSPP will be used to measure participant's physical self-worth as a sub-domain of global self-worth and the Worth Index will be used to assess overall global self-worth.

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Pedometers

Pedometers are designed to accurately measure physical activity levels. The pedometers objectively calculate daily step counts, caloric expenditure, distance, and total time of physical activity. Pedometers are used for several reasons, including measuring differences between individual steps per day, measuring physical activity increases with interventions, to conduct studies comparing different cultures, and they are used to compare time trends in physical activity (Schneider, Crouter, & Bassett, 2004). Pedometers are unobtrusive, lightweight, and easy to use in the assessment of physical activity levels (Tudor-Locke, 2002). For the purpose of this study we will be using the pedometers to measure the differences in step counts of individuals and total activity time over a six-day period to determine the participant's physical activity level. The participants will use the My Life Stepper 2515 digital pedometer (MLS 2500 series, Walk-4-Life, Plainfield, IL). The pedometer has a horizontal, spring suspended lever arm, the vertical movement from each step when walking or running causes an electrical circuit to close which records the step. Pedometers have been proven valid in several studies (Bassett, 2000; Tudor-Locke, 2002). Pedometers measure duration by monitoring step counts and provide an objective measure of physical activity (Welk, Corbin, & Dale, 2000; Bassett, 2000).

CY-PSPP

The CY-PSPP assess perceptions of sport competence (sport), physical conditioning (condition), strength (strength), and body attractiveness (body). Perceptions in these domains then influence one's physical self-worth (Welk, Corbin, & Lewis,

1995). Global Self-worth will then be influenced by the amount of importance one places on their physical self. The PSPP was originally validated with a college-aged population has been proven valid and reliable for children and youth as young as nine years of age (Welk, Corbin, Dowell, & Harris, 1997).

Worth Index

The Worth Index measures one's perception of value or worth as a human being. It is designed to evaluate whether one sees their worth as conditional or unconditional. Conditional worth is value that has to be earned. Unconditional worth is the value one feels is innate and cannot be earned with wealth, prestige, appearance (Lockhart & Rencher, 1997) The Worth Index has been validated at the college-age population.

Procedures

Participants will be given a sealed pedometer on the first day of data collection. The pedometers will be numbered for identification purposes during data collection. Prior to data collection, students will have the opportunity to wear a pedometer in their physical education class to experiment and familiarize themselves with the instrument. This will help diminish curiosity and increase the student's comfort with wearing the data collection instrument. The pedometers will be distributed to participants before school on the first day of data collection by the researcher and research assistance. Pedometers will be worn on the waistband of participants clothing, when no waistband is available a small belt will be provided to attach the pedometer. Every morning before school for the six days of data collection, the research team will record the data from each participant's pedometer. The researcher will then reset, reseal, and return the pedometer to the

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participant. Students will fill out the CY-PSPP, the Worth Index, and a self-report of physical activity levels on the first day of data collection in their physical education class.

Design & Statistical Analysis

Sampling will be divided into quartiles. Subsequent analysis will compare between group differences based on these quartiles using ANOVA. Dependent variables will include activity rates via pedometers, physical self-worth indices, and Worth Index indices.

References

- Asci, F., Asci, A., & Zorba, E. (1999). Cross-cultural validity and reliability of physical self-perception profile. *International Journal of Sport Psychology, 30*, 399-406.
- Asci, F., Gokmen, H., Tiryaki, G., & Asci, A. (1997). Self-concept and body image of Turkish high school male athletes and nonathletes. *Adolescence, 32*, 959-968.
- Boyd, K., & Hrycaiko, D. (1997). The effect of a physical activity intervention package on the self-esteem of pre-adolescent and adolescent females. *Adolescence, 32*, 693-708.
- Bungum, T., Pate, R., Dowda, M., & Vincent, M. (1999). Correlates of physical activity among African-American and Caucasian female adolescents. *American Journal of Health Behavior, 23*, 25-31.
- Campbell, F., Pungello, E. & Miller-Johnson, S. (2002). The development of perceived scholastic competence and global self-worth in African-American adolescents from low-income families: The role of family factors, early educational intervention and academic experience. *Journal of Adolescent Research, 17*, 277-302.
- Fox, K., & Corbin, C. (1989). The physical self-perception profile: Development and preliminary validation. *Journal of Sport and Exercise Psychology, 11*, 408-430.
- Harter, S. (1990). Causes, correlates, and the functional role of global self-worth: A life span perspective. In R. J. Sternberg & J. Kolligan (Eds.), *Competence considered* (Vol. 3, pp. 67-97). New Haven, CT: Yale University Press.

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- Harter, S., Waters, P., & Whitesell, N. (1998). Relational self-worth: Differences in perceived worth as a person across interpersonal contexts among adolescents. *Child Development, 69*, 756-766.
- Jaffee, L., & Manzer, R. (1992). Girl's perspectives: Physical activity and self-esteem. *Melpomene Journal, 11*, 14-22.
- Hausenblas, H., Nigg, C., Downs, D., Fleming, S., & Connaughton, D. (2002). Perceptions of exercise stages, barrier self-efficacy, and decisional balance for middle-level school students. *Journal of Early Adolescence, 22*, 436-454.
- Kowalski, K., Crocker, P., Kowalski, N., Chad, K., & Humbert, M. L. (2003). Examining the physical self in adolescent girls over time: Further evidence against the hierarchical model. *Journal of Sport and Exercise Psychology, 25*, 5-18.
- Lirgg, C. (1992). Girls and women, sport, and self-confidence. *Quest, 44*, 158-178.
- Lockhart, B., Merrill, R., & Bird, J. (2002). Perceptions of unconditional and conditional worth among college students. *Perceptual and Motor Skills, 94*, 489-498.
- Lockhart, B., & Rencher, A. (1997). Worth Index. *Perceptual and Motor Skills, 85*, 827-834.
- Marsh, H., & Shavelson, R. (1985). Self-concept: Its multifaceted, hierarchical structure. *Educational Psychologist, 20*, 107-123.
- McAuley, E., & Blissmer, B. (2000). Self-efficacy determinants and consequences of physical activity. *Exercise and Sport Sciences Reviews by the American College of Sports Medicine, 85-88*.

- Miller, K., Ogletree, R., & Welshimer, K. (2002). Impact of activity behaviors in physical activity identity and self-efficacy. *American Journal of Health Behavior*, 26, 323-330.
- Pangrazi, R. (1982). Physical education, self-concept, and achievement. *Journal of Physical Education, Recreation and Dance*. Nov./Dec., 16-18.
- Raustorp, A., Ståhle, A., Gudasic, H., Kinnunen, A., & Mattsson, E. (2005). Physical activity and self-perception in school children assessed with the Children and Youth-Physical Self-Perception Profile. *Scandinavian Journal of Medicine and Science in Sports*, 15(2),126-134.
- Schneider, P., Crouter, S., & Bassett, D. (2004). Pedometer measures of free-living physical activity: Comparison of 13 models. *Medicine and Science in Sports and Exercise*. 36(2), 331-335,
- U. S. Public Health Service. (2007). Overweight and obesity: health consequences. Washington, DC: U.S. Department of Health and Human Services. Retrieved on November 7, 2008, from http://www.surgeongeneral.gov/topics/obesity/calltoaction/fact_consequences.htm
- Welk, G., Corbin, C. & Lewis, L. (1995). Physical self-perceptions of high school athletes. *Pediatric Exercise Science*, 7, 152-161.
- Welk, G., Corbin, C., Dowell, M., & Harris, H. (1997). The validity and reliability of two different versions of the children and youth physical self-perception profile. *Measurement in Physical Education and Exercise Science*, 3, 163-177.

50 Physical Activity, Physical Self-Perception and Self-Worth

Wiess, M. (1987). Self-esteem and achievement in children's sport and physical activity. In D. Gould & M. Weiss (Eds.), *Advances in pediatric sport sciences: Vol.2, Behavioral issues*, 87-119. As quoted by C. Lirgg.

Appendix-A1

Questionnaires

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<i>Name</i>	<i>Age</i>	<i>Gender</i>
<i>Teacher</i>	<i>Grade</i>	<i>Period</i>

Please look at the sample question first. Put an X on one of the four lines. Please choose only one answer to each question. There are no right or wrong answers. Simply mark the line you think is most true of you.

#	Really True for me	Sort of True for me	SAMPLE SENTENCE		Sort of True for me	Really True for me
			Some kids would rather play outdoors in their spare time.	BUT	Other kids would rather watch TV.	

#	Really True for me	Sort of True for me			Sort of True for me	Really True for me
1.			Some kids do very well at all kinds of sports	BUT	Other kids don't feel that they are very good when it comes to sports.	
2.			Some kids feel uneasy when it comes to doing vigorous physical exercise.	BUT	Other kids feel confident when it comes to doing vigorous physical exercise.	
3.			Some kids feel that they have a good-looking (fit-looking) body compared to other kids.	BUT	Other kids feel that compared to most, their body doesn't look so good.	
4.			Some kids feel that they lack strength compared to other kids their age.	BUT	Other kids feel that they are stronger than other kids their age.	
5.			Some kids are proud of themselves physically.	BUT	Other kids don't have much to be proud of physically.	
6.			Some kids are often unhappy with themselves.	BUT	Other kids are pretty pleased with themselves.	

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#	Really True for me	Sort of True for me			Sort of True for me	Really True for me
7.			Some kids wish they could be a lot better at sports.	BUT	Other kids feel that they are good enough at sports.	
8.			Some kids have a lot of stamina for vigorous physical exercise.	BUT	Other kids soon get out of breath and have to slow down or quit.	
9.			Some kids find it difficult to keep their bodies looking good physically.	BUT	Other kids find it easy to keep their bodies looking good physically.	
10.			Some kids think that they have stronger muscles than other kids their age.	BUT	Other kids feel that they have weaker muscles than other kids their age.	
11.			Some kids don't feel confident about themselves physically.	BUT	Other kids really feel good about themselves physically.	
12.			Some kids are happy with themselves as a person.	BUT	Other kids are often not happy with themselves.	
13.			Some kids think they could do well at just about any new sports activity they haven't tried before.	BUT	Other kids are afraid they might not do well at sports they haven't ever tried.	
14.			Some kids don't have much stamina and fitness.	BUT	Other kids have lots of stamina and fitness.	
15.			Some kids are pleased with the appearance of their bodies.	BUT	Other kids wish that their bodies looked in better shape physically.	
16.			Some kids lack confidence when it comes to strength activities.	BUT	Other kids are very confident when it comes to strength activities.	
17.			Some kids are very satisfied with themselves physically.	BUT	Other kids are often dissatisfied with themselves physically.	
18.			Some kids don't like the way they are leading their life.	BUT	Other kids do like the way they are leading their life.	

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#	Really True for me	Sort of True for me			Sort of True for me	Really True for me
19.			In games and sports some kids usually watch instead of play.	BUT	Other kids usually play rather than watch.	
20.			Some kids try to take part in energetic physical exercise whenever they can.	BUT	Other kids try to avoid doing energetic exercise if they can.	
21.			Some kids feel that they are often admired for their good-looking bodies.	BUT	Other kids feel that they are seldom admired for the way their bodies look.	
22.			When strong muscles are needed, some kids are the first to step forward.	BUT	Other kids are the last to step forward when strong muscles are needed.	
23.			Some kids are unhappy with how they are and what they can do physically.	BUT	Other kids are happy with how they are and what they can do physically.	
24.			Some kids like the kind of person they are.	BUT	Other kids often wish they were someone else.	
25.			Some kids feel that they are better than others their age at sports.	BUT	Other kids don't feel they can play as well.	
26.			Some kids soon have to quit running and exercising because they get tired.	BUT	Other kids can run and do exercises for a long time without getting tired.	
27.			Some kids are confident about how their bodies look physically.	BUT	Other kids feel uneasy about how their bodies look physically.	
28.			Some kids feel that they are not as good as others when physical strength is needed.	BUT	Other kids feel that they are among the best when physical strength is needed.	
29.			Some kids have a positive feeling about themselves physically.	BUT	Other kids feel somewhat negative about themselves physically.	
30.			Some kids are very unhappy being the way they are.	BUT	Other kids wish they were different.	

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#	Really True for me	Sort of True for me			Sort of True for me	Really True for me
31.			Some kids don't do as well at new outdoor games.	BUT	Other kids are good at new games right away.	
32.			When it comes to activities like running, some kids are able to keep going.	BUT	Other kids soon have to quit to take a rest.	
33.			Some kids don't like how their bodies look physically.	BUT	Other kids are pleased with how their bodies look physically.	
34.			Some kids think that they are strong and have good muscles compared to kids their age.	BUT	Other kids think that they are weaker and don't have such good muscles as other kids their age.	
35.			Some kids wish that they could feel better about themselves physically.	BUT	Other kids always seem to feel good about themselves physically.	
36.			Some kids are not very happy with the way they do a lot of things.	BUT	Other kids think the way they do things is fine.	

Appendix-A2

Worth Index

Worth Index

Instructions: These 24 items are designed to determine your perceptions about human worth. There are no right or wrong answers since people's perceptions differ. PLEASE give your honest, immediate response. The seven-point scale enables you to indicate the intensity of your perception. Select number ONE if you very strongly Disagree up to seven if you very strongly AGREE. If you don't select one or seven, use numbers two, three, four, five, or six to indicate varying degrees of your disagreement or agreement.

	Strongly Agree	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree	Strongly Disagree
41. All people have worth whether they know it or not.	A	B	C	D	E	F	G
42. Every human being has worth throughout all of life.	A	B	C	D	E	F	G
43. A person can lose the worth they once had.	A	B	C	D	E	F	G
44. I identify more with the person I am than with what I do.	A	B	C	D	E	F	G
45. For the most part, I wish I were someone else.	A	B	C	D	E	F	G
46. The value of my life is not affected by the responsibilities I am given.	A	B	C	D	E	F	G
47. I like myself even if other people are critical of my looks.	A	B	C	D	E	F	G
48. A position of authority makes one's life of more value because of the important responsibilities that person has.	A	B	C	D	E	F	G
49. I am not responsible for the way my life is.	A	B	C	D	E	F	G
50. People close to me know that my self-acceptance goes up and down with my weight.	A	B	C	D	E	F	G
51. Each person must earn his/her worth; it is not a "freebie."	A	B	C	D	E	F	G
52. Being confident in my abilities makes me like who I am.	A	B	C	D	E	F	G
53. It is not possible for a person to lose his/her worth because one's worth is always present.	A	B	C	D	E	F	G
54. I could like myself more if I had a better body.	A	B	C	D	E	F	G

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55. Being attractive gives a person more worth.	A	B	C	D	E	F	G
56. I respect myself as a valuable human being even when I behave in ways that I do not like.	A	B	C	D	E	F	G
57. People's lives are only of worth if they believe they are.	A	B	C	D	E	F	G
58. It is thrilling for me to help others achieve high levels of success, even if its better than I can do.	A	B	C	D	E	F	G
59. I have a unique worth as a whole person.	A	B	C	D	E	F	G
60. I feel my life is of value whether other people accept me or not.	A	B	C	D	E	F	G
61. Being successful in the eyes of other people is vital to one's happiness.	A	B	C	D	E	F	G
62. When things go wrong, I still accept myself.	A	B	C	D	E	F	G
63. I am grateful for my body.	A	B	C	D	E	F	G
64. I do not like myself as well when other people outdo me.	A	B	C	D	E	F	G
Summary Statements: (use same 7-point scale)							
65. Overall, I am grateful to be me and have a good sense of self.	A	B	C	D	E	F	G
66. I would consider my self-esteem to be stable, constant, not often fluctuating.	A	B	C	D	E	F	G

(Lockhart and Rencher, 1997)

Appendix-A3

Scoring the Self-worth Index

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Scoring the Worth Index:

The scoring guide following lists the four subscales of the Index and the items that make up each one. The interpretation guide gives the interpretation of scores on the Index. You will have two scores, one for the unconditional worth items and one for the conditional worth items. Sum up the unconditional responses and then sum up the conditional responses.

Scale

Basic Human Worth

1	_____	2	_____	13	_____	Total	_____	Unconditional Worth
3	_____	11	_____	17	_____	Total	_____	Conditional Worth

Personal Security Factor

4	_____	18	_____	20	_____	Total	_____	Unconditional Worth
5	_____	9	_____	24	_____	Total	_____	Conditional Worth

Performance Factor

6	_____	16	_____	22	_____	Total	_____	Unconditional Worth
8	_____	12	_____	21	_____	Total	_____	Conditional Worth

Physical Self

7	_____	19	_____	23	_____	Total	_____	Unconditional Worth
10	_____	14	_____	15	_____	Total	_____	Conditional Worth
						Total	_____	Unconditional Worth
						Total	_____	Conditional Worth

Scoring guide to Worth Index

Write in your score next to the items from the 24-Item Worth Index listed by respective scales, unconditional and conditional, and four subscales.

Interpretation of Worth Index

Interpretation of your total Unconditional Worth/Conditional Worth Total. 84/12 would be the strongest unconditional score; 12/84 would be the strongest conditional score.

Measure

Scale	High	High Moderate	Moderate	Low Moderate	Low
Unconditional Worth	70-84	56-69	42-55	29-41	12-28
Conditional Worth	70-84	56-69	42-55	29-41	12-28

Subscales

Scale	High	High Moderate	Moderate	Low Moderate	Low
Unconditional Worth	18-21	14-17	11-13	8-10	3-7
Conditional Worth	18-21	14-17	11-13	8-10	3-7

Appendix-A4

Consent To Be a Research Participant

Consent To Be a Research Participant

Dear Parent/Guardian,

Physical activity has shown to have a positive affect on health and evidence suggests that it has potential psychological and physical benefits. I am conducting a research study to determine the relationship between physical activity levels and physical self-perceptions and self-worth. Self-worth is the value we attach to ourselves and physical self-perception is the way we view our outer self as a result of our inward feelings.

In this research study we will measure physical activity with pedometers for six days. Self-worth and physical self-perceptions will be measured through surveys.

Your adolescent's participation will involve wearing a pedometer for six days, taking two surveys and filling out a self-reporting questionnaire in their physical education class period. A pedometer is a simple device that is worn on the waistband of shorts or pants that measures vertical movement. Data that will be recorded from the pedometers are the number of steps taken and total physical activity time in a twenty-four hour period. The pedometer data and survey results will be known only by the researchers.

Your adolescent's participation in this study is voluntary. There are minimal risks, such as discomfort of wearing a pedometer for six days, only to be taken off when showering and sleeping, and answering survey questions. The surveys include questions about how your adolescent feels in certain circumstances concerning physical activity and how your child values him/herself. The self-reporting physical activity questionnaire simply asks how much physical activity your adolescent thinks they participate in daily. Blank surveys will be available upon request for parental preview. If you choose not to let your adolescent participate, or if you or your adolescent choose to withdraw at any time it will not affect your adolescent's grade or standing in school in any way.

On the first day of the study, your adolescent will be given a pedometer to wear for one class period of physical education. He/She will be able to experiment with the pedometer for the class period and explore all that the pedometer does. The researcher will then collect the pedometers at the end of that class period. The next morning before school begins, your adolescent will pick up a pedometer that will be sealed with a cable tie to wear for twenty-four hours, only to be taken off when sleeping and showering. That day in physical education class, your adolescent will take two surveys, The Worth Index and the Physical Self-Perception Profile. They will also fill out a self-reporting physical activity questionnaire.

Every morning for six consecutive days (excluding weekends) your adolescent will need to report in at a research desk before school begins to have their pedometer data recorded by a researcher. The researcher will then record, reset and reseal the pedometer and return it to the participant. This will take two minutes of time in the morning before school begins. On the sixth morning pedometers will be collected.

(See other side)

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There are no direct benefits to participants. However, the indirect benefit of your adolescent's participation is a better understanding of youth's activity levels and how it relates to self-worth. The results of this project may be published in a journal and/or presented at a professional conference. Your adolescent's name or identity will not be revealed.

If you have any questions concerning this research study or your child's participation please contact Ashley Eyre at ashleyandben@msn.com, Dr. Keven Prusak, Brigham Young University at (801) 422-1569. If you have any questions regarding your adolescent's rights as a participant in this research, you may contact Dr. Renea Beckstand, IRB Chair, at (801) 433-3873, Rm. 422 SWKT, Brigham Young University.

Sincerely,

Ashley Eyre
Graduate Student- Brigham Young University

Adolescent's Name _____

Parent/Guardian Name _____

Parent/Guardian Signature _____ Date: _____

My parent/guardian has given me permission to participate in this project using pedometers and surveys. I understand that I will be wearing a pedometer that is the size of a small pager that is worn on my waistband and measures vertical movement. I will wear the pedometer each day being careful not to get it wet and I will check into the researchers station each morning for the six days of the project to have my pedometer data recorded. I agree to fill out surveys to measure my self-worth and physical self-perceptions during one physical education class period. I realize that I am under no obligation to answer any questions that I do not want to.

Adolescent's Signature _____