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THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND SELF-ESTEEM AMONG STUDENTS OF ZARQA EDUCATION DIRECTORATE

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ABSTRACT

The purpose of this study was to examine the levels of physical activity and global self-esteem, and the relationships between them, for male and female students of Zarqa education directorate in 7th, 8th and 9th grades. Six hundreds eighty seven students completed the Rosenberg self-esteem scale and Leisure time physical activity questionnaire. Descriptive statistical techniques, Pearson correlation coefficient, and Analysis of Variance (ANOVA) were used to analyze the data of the study.

Results showed significant differences between boys and girls on level of energy expenditure and intensity. The level of physical activity was significantly more strenuous for 7th and 8th graders than for 9th graders for both genders. Significant differences were found for the global self-esteem due to gender, but not for grade. Moreover, results indicated no significant relationship between physical activity and global self-esteem for both males and females.

The researchers suggested that comparison studies relating to the levels of physical activity and global self-esteem is needed in different populations.

Key words: physical activity, global self-esteem, energy expenditure, intensity.

1. INTRODUCTION

The health benefits of regular physical activity is strongly associated with better physical, mental and psychological health outcomes and now has a central role in chronic disease prevention strategies of industrialized nations. Being more active is related to reduced risk of several chronic diseases, thus, the promotion of physical activity is now a high public health priority all over the world in general, and in Jordan in particular.

Self-Esteem

Self-esteem is considered as one of the hot topics in the psychology field. It has become a popular topic of books for parents, teachers, coaches, educators, counselors, and for children themselves. One of the top priorities of educational systems is to enhance children's self-esteem and boost their feelings of self-worth.

Self-esteem has been defined in different ways according to scholars' perspectives and backgrounds. The term "self-esteem" has been used interchangeably with terms such as self-confidence, self-concept, self-efficacy, self-worthy and self-evaluation. In order to understand the meaning of self-esteem, we need to understand what 'self' as a word means. The American Heritage Dictionary defines self as "one's consciousness of one's own being or identity". Allport (1961) used the term "proprium" to cover the self "as object" of knowledge and feeling. "Proprium" unites the aspects of selfhood, which includes awareness of the bodily self, a sense of continuity over time, a need for self-esteem, identification of self beyond the body, a rational process, self-image, the self as knower, and the need to seek out challenge. Gecas (1982) refers the self as "a process", the process of reflexivity that emanates from the dialectics between the "I" and "me". There are two patterns that affect the functioning and structuring of personality, feelings of inferiority and conscience (Allport 1961).

Self-esteem is defined as "an attitude of self-acceptance, self-approval, and self-respect" (Corsini 1999). Rosenberg (1989) described self-esteem as a positive or negative attitude toward a person's self. He concluded that a person with high self-esteem means "an individual who respects himself and considers himself worthy". Self-respect has been defined as what the person feels regarding himself or what other people think and feel regarding him.

Pope et al (1988) has commented that self-esteem and self-concept are the same. Self-esteem is "an evaluation of the information contained in the self-concept and is derived from a child's feelings about all the things he is". Weiss and Ebbeck (1999) found that self-esteem is aligned with self-evaluation, whereas self-concept is aligned with self-description.

Baumeister (1993) used "self-schema" as a term to clarify the differences between self-esteem and self-concept. He said, "Self-concept represents the knowledge aspects of 'self-schema' and self-esteem represents the evaluative aspects of that term". Accordingly, he defined self-esteem as "the product of viewing the self as an object of evaluation", while self-concept means "the beliefs that an individual holds about his/her attributes".

Gecas (1982) distinguished between self-concept (identities) and self-esteem (evaluation). Identity is comprised of the self as an object that gives structure and content to self-concept and fixes the self to social systems. Self-esteem relates to the emotional and evaluative dimensions of self-concept. Although the terms self-esteem and self-concept are clearly interrelated, self-evaluation (self-esteem) is typically dependent on substantive aspects of self-concept and identity typically has evaluative components. Marsh and Shavelson (1985) defined self-concept as a person's perceptions of him/her self. Therefore, self-concept has both a descriptive and an evaluative dimension such that individual may describe himself by saying "I'm happy" and evaluates himself by saying "I do great in science (Marsh & Shavelson, 1985).

Gecas (1982) tried to differentiate between various aspects of self-esteem such as self-esteem based on a sense of competence, power or efficacy and self-esteem based on a sense of virtue or moral worth. These two bases of self-esteem may be a function of different processes of self-concept formation constitute different sources of motivation (Gecas 1982).

Therefore, in order to understand the definition of self-esteem, we need to understand the difference between the perceived self and the ideal self. Perceived self represents an objective view of those skills and characteristics we possess. The ideal self is the image that a person would like to possess such as a millionaire or a movie star (Pope et al., 1988; Biddle et al., 1993) concluded that self-esteem equals self-worth. They defined it as "the awareness of the good possessed by the self and represents how positive individuals feel about themselves in general". Allport (1961) described pride and self-love as common synonyms for self-esteem.

According to the above-mentioned definitions of self-esteem, the operational definition for self-esteem would be "how do I feel, think, judge, and evaluate myself as an individual, satisfied or unsatisfied; positive or negative"

Self-esteem is associated with four factors: the instability of the self-image, vulnerability, the presenting self, and feelings of isolation. These factors as Rosenberg (1989) stated contribute to the relationship between self-esteem and anxiety. Effectively controlling any one of those factors will decrease the anxiety to some degree.

High self-esteem represents a "healthy" view of the self. A person who has a positive self-esteem evaluates him/herself in a positive way and feels good about him/herself. Low self-esteem often shows an artificially positive self-attitude to the world in an attempt to prove to him/herself as well others that he/she is an adequate person. In other words, a person with low self-esteem is indeed a person who fears contact with others, rejects himself, and feels no pride in himself as a person (Pope et al., 1988). Individuals with high self-esteem employ self-enhancing styles and show a willingness to take risks, engage in strategic ploys, and focus on other outstanding qualities. On the other hand, individuals with low self-esteem employ self-protective styles and show unwillingness to take risks, avoid strategic ploys, focus on avoiding their bad qualities, demonstrate reluctance to call attention to themselves, and feel inadequate in domains where success is critical and valuable in their lives (Baumeister 1993). Actually, low self-esteem has been considered one of the risk factors for smoking, particularly in females (Lewis et al, 2001).

In fact, different approaches should be taken in order to change a child's self-esteem. These approaches are focusing on a particular area that is a problematic (social, family, academic), looking at the discrepancy between perceived and ideal selves, and finally teaching the child skills that will improve his actual performance in a particular area. These approaches depend on each child's needs (Pope, McHale et al. 1988).

Self-esteem is changeable over time and influences diverse areas in the individual's life such as competition, attraction, conformity, causal attribution, helpfulness, achievement, and coping with stressful life events (Baumeister 1993). Also, self-esteem has been found to affect the ability to persuade, interpersonal attraction, moral behavior and various aspects of personality and mental health (Wells & Marwell 1976).

Physical Activity:

There is no doubt that physical activity plays a major role in children's lives to become healthy and productive citizens in their countries in the future. Physical activity and fitness should remain a top priority of any country. Physical activity has been defined as "any bodily movement produced by skeletal muscles that result in energy expenditure" (Bouchard, et al., 1994; Marti & Carol 2000). This definition includes all daily living activities; home and childcare, occupation, transportation, leisure, and various types of inactivity.

Because our children are our future, investing time and money in their health now will shape the health of our own countries in the following years. Modern technology has promoted a more sedentary lifestyle with more and more individuals spending time sitting in front of the computer at their jobs and at homes. Children and youth find watching TV or playing video games more desirable and easier than participation in physical activities.

An inadequate amount of physical activity has become a serious health problem in the U.S. and other countries. In the U.S., 54%-60% of adults are not active enough to achieve healthful benefits, and 25% are sedentary or not active at all (Department of Health and Human Services, 1996). A lack of physical activity is associated with many major health problems such as obesity, heart disease, some forms of cancers, diabetes, and some psychological conditions such as depression, stress and low self-esteem.

Increasingly, physical activity is becoming as a national priority for the U.S. and other countries in the world. Children and adolescents who are physically active have higher levels of academic achievement and maintain healthy body weight, bone strength and psychological well-being. Johnson (2000) indicated that motivation and self-image are important to physical activity behavior from school age upwards.

Parents, teachers, coaches, physical education instructors and principals are required to provide the opportunities for youth to be physically active by providing children with a variety of pleasurable and easy physical

activities to do. Children and adolescents need to remain active to maintain a healthy fitness level and they must adhere to a routine of physical activities as part of their lifestyle. The sedentary lifestyle adopted by many youths these days has negatively affected their health and caused many sicknesses and unhealthy behaviors as well.

Television viewing for long period of times, video and computer games, advanced technology for transportation, and the breakdown of the social network have all resulted in rapid growth of childhood obesity.

Regular physical activity is associated with improvement in numerous physiological and psychological variables (Sallis et al., 1997). Prevention is much better than medication, therefore, early prevention programs maybe critical to reducing the rates of chronic diseases such as diabetes, colon cancer, obesity, and other psychological risks such as depression and anxiety.

Increasing physical activity for those who are not typically active should be our top priority of the public health agenda for individuals of all ages (Tudor-Locke & Myers 2001).

As society becomes increasingly successful in reducing our need to move, physical activity becomes an important and difficult task. Scientific evidence indicates that physical fitness and changes in fitness are causally related to long term health (Erikssen, 2001).

Kohl et al. (2000) stated two fundamental assumptions regarding physical activity. First, there are inherent, acute physical and psychological benefits to physical activity among children and adolescents. Second, physical activity behaviors between childhood and adulthood are correlated. Therefore, physically active youth are more likely to be physically active adults.

In Arab countries, a lack of physical activity is a more prevalent behavior than in more developed countries because of the shortage of facilities and playgrounds and also cultural barriers, especially the culture of shame that hinders youth and adults, particularly females, from participation. In our country, Jordan, as an example of an Arab country, school programs have just one physical education class per week for children in 4th to 10th grades and two classes for those in 1st to 3rd grades, while students in 11th and 12th grades have only one physical education class and usually students choose not to participate.

Physical Activity and Self-Esteem:

Mental health is positively affected by the impacts of vigorous physical activity on improving self-image, self-confidence, well-being, sexual satisfaction, social skills, anxiety reduction, and positive influences on intellectual functioning. Physical activity may also alleviate some symptoms related with mild to moderate depression and it might improve cognitive functioning and provide a beneficial adjunct for alcoholism and substance abuse programs (Taylor et al., 1985). Many researchers have studied the impact of physical activity on self-esteem in many populations and have found positive effects (Özşaker, Dorak, & Vurgun, 2012; Gruber, 1986; McPhie & Rawana, 2012). Özşaker et al., found statistically significant relationships between self-esteem of the children aged between 12-14 who actively participated in physical activity and their strength, speed and cardiovascular endurance.

Tremblay, Inman, and Willms (2000) found that physical activity had a positive relationship with self-esteem. Botha males and females who were more physically active had considerably higher levels of self-esteem. Gruber (1986) stated that directed play and/or physical education programs contributed to the development of self-esteem in elementary school age children.

Based on the Surgeon General Report (Department of Health and Human Services, 1996) physical activity helps reduce feelings of anxiety, stress, moodiness, depression and improves self-esteem and psychological well-being. Consequently, increased high-level physical activity is an important factor in improving self-esteem (Strauss, Rodzilsky et al. 2001). Similar conclusions have been reached by Sonstroem and Morgan (1989), that is, one of the most important outcomes of exercise is enhanced self-esteem. Hawkins and Gruber (1982) studied the self-esteem of 94 little league players after a season by using Coopersmith's self-esteem inventory to measure self-esteem. They found significant improvement in the players' self-esteem. Biddle and Armstrong (1992) concluded that the quality of experiences in sporting activities can have positive emotional effects in terms of increasing self-esteem.

A literature survey of the prominent psychological effects and therapeutic applications of physical activity in mental health conducted by Gleser and Mendelberg (1990) has similar conclusions as the previous studies. The authors concluded that regular physical activity, exercise, and sport had been found to enhance self-esteem/self-concept in a variety of the population. Also, they concluded that physical activity decreases anxiety and depression and improves self-image. Twenty articles dealing with 11 to 21 year-old-youth were reviewed by Calfas and Taylor (1994) about the relationship between physical activity and a number of psychological variables. The investigators concluded similar results consistent with the above-mentioned researchers that physical activity was psychologically beneficial for youth, particularly with regard to self-esteem, stress, depression and anxiety. They recommended that adolescents should participate in vigorous aerobic activity at least 3 days per week for at least 60 minutes. Dilorenzo et al. (1998) stated that enhancing self-efficacy for exercise appears pertinent to promoting continued physical activity among girls.

Despite the finding that participation in physical activity positively impacts self-esteem, self-confidence also has been shown as a psychological factor affecting athletic performance (Lirgg, 1991).

A study was conducted by Crocker et al. (2000) regarding the relationship between physical activity and physical self-perceptions profile (PSPP) on 466 Canadian boys and girls aged between 10-14 years. A seven-day recall of physical activity questionnaire and physical self-perception profile (PSPP) were administered to the group to determine the relationship between physical activity and (PSPP). They found physical self-perceptions, particularly sport skills and physical conditioning, are significantly correlated with physical activity. A similar study by Hays et al. (1999) concluded the same results, which is that physical activity is positively correlated with (PSPP) and significantly correlated with physical conditioning for both men and women. A meta-analysis of 84 studies concluded that physical education programs positively influence self-esteem in elementary school children (Gruber,

1986). Also, Sonstroem et al. (1994) concluded in their study on 216 female aerobic dancers that exercise in adult female aerobic dancers is associated with positive evaluation of their physical condition.

Study Questions

- 1) What is the level and intensity of physical activity in male and female students in Zarqa education directorate in the 7th through 9th grades?
- 2) What is the level of global self-esteem in male and female students in Zarqa education directorate in the 7th through 9th grades?
- 3) What is the relationship between physical activity and global self-esteem in male and female students in Zarqa education directorate in the 7th through 9th grades?

2. METHODOLOGY

Design

A descriptive design was used to study the relationship among physical activity level and global self-esteem for male and female students in grades 7 through 9 in the selected schools in Zarqa education directorate.

Participants

A sample of 687 male and female students, grades 7 through 9, from two public schools in Zarqa area served as the study subjects (see Table 1). Schools were randomly selected according to the information received from the director of Zarqa education directorate.

Table 1. Number of male and female participants by grade

Grade \ Gender	7 th	8 th	9 th	Total
Male	64	92	73	229
Female	114	64	280	458
Total	178	156	353	687

Instruments

In order to measure the relationship between physical activity and global self-esteem, two questionnaires were administered: Leisure Time Physical Activity Questionnaire, and Rosenberg Self-Esteem Scale.

Leisure Time Physical Activity Questionnaire. This is a simple self-report measure designed to assess overall activity patterns among adults and children. Respondents report the number of times in an average week that they spend more than 15 minutes in activities that are classified as mild (e.g., easy walking), moderate (e.g., fast walking), or strenuous (e.g., jogging). Scores from the Leisure Time Physical Activity Questionnaire has been reported to be a valid and reliable measure of physical activity participation (Godin, 2011; Sallis et al., 1997).

In the current study reliability of this questionnaire was determined by a two-week test-retest on a sample of 50 male and female students in the 7th through 9th grades. The correlation coefficient was 0.84.

The leisure time physical activity score is expressed in units and can be computed in two steps. First, weekly frequencies of strenuous, moderate, and mild activities are multiplied by nine, five, and three, respectively; these three latter values correspond to MET value categories of the activities listed. Then, the total weekly leisure activity score is computed in arbitrary units by summing the products of the separate components, as shown in the following formula:

$$\text{Weekly leisure time activity score} = (9 \times \text{Strenuous}) + (5 \times \text{Moderate}) + (3 \times \text{Mild}) \text{ (Godin, 2011).}$$

Rosenberg Self-Esteem Scale (RSES). The RSES is the most popular measure of global self-esteem. It is a 10-item Likert-type scale with items answered on a four-point scale from "strongly agree" to "strongly disagree". Five of the items have positively worded statements and five have negatively worded ones. The scale measures state self-esteem by asking the respondents to reflect on their current feelings.

Scores of the RSES are gained by summing the ratings assigned to all the items after reverse scoring the positively worded items. Scores range from 10 to 40, with higher scores indicating higher self-esteem

The Rosenberg Self-Esteem Scale has demonstrated good reliability and validity across a large number of different sample groups (e.g.: Piyavhatkul et al., 2011; Vermillion & Dodder, 2007; Tinakon & Nahathai, 2012).

In the current study reliability of this questionnaire was determined by a two-week test-retest on a sample of 50 male and female students in the 7th through 9th grades. The correlation coefficient was 0.87.

Procedures

Two types of consents were obtained: school and subject. Participants signed the consent form prior to answering the actual survey. Participants were required to read the instructions before beginning to answer the

instruments' items. The survey was administered on Monday, Tuesday, Wednesday, and Thursday of one week in mid-April, 2011. One class period was sufficient to obtain the participants' written consent, read the instructions, and answer the questionnaires. All questionnaires were given at the same time and given in the following order: physical activity then global self-esteem.

The researchers and their assistants administered the surveys. Survey administrators introduced themselves to the participants and briefed them on the objective of the survey and its importance. They emphasized that these questionnaires were voluntary and that all information would be held in complete confidence. The survey did not include any identifying information.

Instructions about completing the questionnaires were read orally in front of each class and examples were given. Also, each instrument had its own written instructions. Participants were allowed to ask questions at any time during testing.

Data Analysis

Statistical analysis was conducted using the Statistical Package of Social Sciences (SPSS). Means, standard deviation, Pearson Correlation Coefficient, and ANOVA were utilized to answer the study questions.

3. RESULTS AND DISCUSSION

The purpose of this study was examine the level of physical activity and global self-esteem in male and female students in 7th, 8th, and 9th grades in Zarqa education directorate. It also investigated the relationship between physical activity and global self-esteem in that population.

The results are presented in three sections: physical activity; global self-esteem; and relationship among physical activity and global self-esteem. Grade (3) x gender (2) ANOVAs were used to evaluate differences for the dependent variables. An overview of the results section showed significant differences between males and females in physical activity, favoring males. Physical activity does not correlate with a global self-esteem for both females and males. In general, physical activity was more highly valued by boys than girls.

Means and standard deviations for the two dependant variables (physical activity, and global self-esteem) by grade and gender are presented in Table 2. Results of the ANOVAs are presented and discussed.

Table 2. Descriptive statistics for physical activity and global self-esteem, by grade and gender

Grade & Gender		Physical Activity		Self Esteem	
Grade	Gender	M	SD	M	SD
7 th grade	Males(n=64)	113.31	140.44	3.19	.35
	Females(n=114)	76.33	83.22	3.21	.59
	Total (n=178)	89.63	108.43	3.20	.52
8 th grade	Males (n=92)	76.28	40.52	3.08	.39
	Females(n=64)	80.52	70.29	3.27	.35
	Total (n=156)	78.02	54.56	3.16	.38
9 th grade	Males (n=73)	73.04	55.79	2.99	.41
	Females (n=280)	62.74	29.89	3.28	.49
	Total (n=353)	64.87	36.91	3.22	.49
Total	Total males (n=229)	85.60	85.96	3.09	.39
	Total females (n=458)	68.61	54.72	3.26	.50

Physical Activity

Physical activity was measured in two ways: energy expenditure and intensity of activity. The first analysis reviews overall energy expenditure, followed by intensity of activity.

Level of Physical Activity (Energy Expenditure). Level of physical activity was measured in terms of energy expenditure and calculated by applying the following equation:

$$(T) = (9 * \text{strenuous}) + (5 * \text{moderate}) + (3 * \text{mild})$$

A grade * gender ANOVA was calculated with energy expenditure as the dependent variable (see Table 3).

Table 3. Analysis of variance (ANOVA) for physical activity across grade and gender

Source	df	SS	MS	F	p
Grade	2	69681.90	34840.95	8.02	0.00
GENDER	1	27187.28	27187.28	6.26	0.013
GRADE * GENDER	2	34971.85	17485.92	4.02	0.018
ERROR	681	2959184.56	4345.35		

There are significant differences among the 7th, 8th, and 9th grade students with respect to the level of energy expenditure. The results of Tukey post hoc comparisons showed that the mean for 7th grade (M=89.63) was significantly higher than the mean of both 8th grade (M=78.02) and 9th grade (M=64.87). No significant differences appeared between the 8th and 9th grades for level of energy expenditure. Also, a significant difference does exist between males and females. Male students (M=85.60, SD=85.96) expend more energy than females (M=68.61, SD=54.72).

Intensity of Physical Activity A follow-up question to energy expenditure was whether there were gender differences in the intensity of the physical activity. Means and standard deviations for the three levels of intensity of physical activity are presented in Table 4. Results of the ANOVA's are presented and discussed.

Table 4. Descriptive statistics on participation in physical activity by intensity of the physical activity

Intensity of the Exercise Grade & Gender		Strenuous		Moderate		Mild	
		M	SD	M	SD	M	SD
7 th grade	Males (n=64)	8.20	11.5	4.52	5.35	5.19	5.65
	Females (n=114)	3.97	4.99	6.05	7.64	4.48	5.55
	Total (n=178)	5.49	8.21	5.50	6.93	4.74	5.58
8 th grade	Males (n=92)	4.68	3.36	4.11	2.86	4.36	3.60
	Females(n=64)	3.86	3.98	5.86	6.29	5.64	6.10
	Total (n=156)	4.35	3.64	4.83	4.65	4.88	4.81
9 th grade	Males (n=73)	4.51	3.41	5.03	7.56	3.48	3.02
	Females (n=280)	2.84	1.97	5.71	3.41	4.01	2.43
	Total (n=353)	3.18	2.43	5.57	4.58	3.90	2.57
Total males (n=229)		5.61	6.90	4.52	5.42	4.31	4.16
Total females (n=458)		3.62	3.32	5.82	5.20	4.36	4.08

The **strenuous physical activity** ANOVA results regarding strenuous physical activity are presented in Table 5. Significant differences were found between males and females, favoring males (M=5.61, SD=6.90) over females (M=3.26, SD=3.32) (p < 0.00). Therefore, there are significant gender differences regarding strenuous physical activity. Also, grade differences were existed. The results of Tukey post hoc comparison showed that the mean of 7th grade (M=5.49) was significantly higher than the mean of both 8th (M=4.35) and 9th (M=3.18) grades regarding strenuous physical activity. Also, the mean of 8th grade (M=4.35) was significantly higher than 9th grade (M=3.18).

Table 5. Analysis of variance (ANOVA) for strenuous physical activity across grade and gender

Source	df	SS	MS	F	P
GRADE	2	577.71	288.86	12.98	0.000
GENDER	1	663.00	663.00	29.80	0.000
GRADE*GENDER	2	265.55	128.27	5.77	.003
ERROR	681	15150.89	22.25		

The **moderate physical activity** ANOVA results regarding moderate physical activity are presented in Table 6. Males (M=4.52, SD=5.42) participated less in moderate physical activities than females (M=5.82, SD=5.20). This indicates a difference between males and females regarding moderate intensity, favoring females. No significant differences were found with regard to grade level.

Table 6. Analysis of Variance (ANOVA) for Moderate Physical Activity Across Grade and Gender

Source	df	SS	MS	F	P
GRADE	2	14.06	7.03	0.25	.77
GENDER	1	231.35	231.35	8.29	.004
GRADE *GENDER	2	31.40	15.70	.56	.57
ERROR	681	19013.8	27.92		

The **mild physical activity** ANOVA results for mild physical activity are presented in Table 7. No significant differences exist due gender. However, grade level differences were existed. The results of Tukey post hoc comparison showed that the mean for 8th (M=4.88) was significantly higher than the mean of the 9th grade (M=3.90). No significant differences between 7th grade (M=4.74) and 8th grade (M=4.88).

Table 7. Analysis of variance (ANOVA) for mild physical activity across grade and gender

Source	df	SS	MS	F	p
GRADE	2	184.46	92.23	5.55	.004
GENDER	1	18.02	18.02	1.08	.298
GRADE * GENDER	2	80.26	40.13	2.41	.090
ERROR	681	11321.30	16.62		

Global Self-Esteem. Results of the ANOVA for global self-esteem are presented in Table 8. Significant differences were found regarding this variable due to gender. No significant differences were found with regard to grade level.

Table 8. Analysis of variance (ANOVA) for global self-esteem across grade and gender

Source	df	SS	MS	F	P
GRADE	2	.38	.19	.87	.420
GENDER	1	3.56	3.56	16.37	.000
GRADE * GENDER	2	1.82	.91	4.20	.015
ERROR	141	147.93	.22		

Relationships between Physical activity and Global Self-Esteem

Correlations were calculated between physical activity (energy expenditure), and global self-esteem. Results are presented in Tables 9 and 10. No significant relationships were found between physical activity and global self-esteem either for males or females. This means that having a higher level of physical activity did not mean having a higher level of self-esteem with regard to gender. No significant relationships between physical activity and global self-esteem with regard to grade level were found.

Table 9. Relationships between Physical Activity and Global Self-Esteem by gender

Gender	Variables	Mean	SD	Correlation	Sig
Males	Physical activity	85.60	85.96	0.016	0.809
	Self-esteem	3.9	0.39		
Females	Physical activity	68.61	54.72	0.044	0.34
	Self-esteem	3.26	0.50		

Table 10. Relationships between physical activity and global self-esteem by grade

Grade	Variables	Mean	SD	Correlation	Sig
7 th	Physical activity	89.60	108.43	0.055	0.46
	Self-esteem	3.20	0.52		
8 th	Physical activity	78.02	54.56	0.081	0.314
	Self-esteem	3.16	0.38		
9 th	Physical activity	64.87	36.91	0.093	0.081
	Self-esteem	3.22	0.49		

Physical Activity

Physical activity differences did exist across grade in favor of 7th grade with regard to level of energy expenditure. Also, differences existed between 7th and 9th grade in favor of 7th grade and between the 8th grade and 9th grade in favor of 8th for the strenuous physical activity. For the mild physical activity, differences appeared between the 8th and 9th grade in favor of the 8th grade. No differences appeared on the moderate physical activity. Gender differences did exist for energy expenditure, strenuous and moderate physical activity. An explanation of these differences follows.

Level of Physical Activity (Energy Expenditure). Results revealed a significant difference between boys and girls regarding level of physical activity among students across grade levels. The findings of this study revealed that males had higher levels of physical activity than females, which is consistent with previous research (Crespo, 2000; Crespo et al., 2001; Ismail et al., 2002; King et al., 2000; Sonstroem & Morgan, 1989; Strauss et al., 2001).

Girls in Jordan demonstrated lower levels of intrinsic interest with more barriers to participation in physical activity when compared to boys. The nature of the nurturing and raising of youth encourages boys to be more physically active than girls, especially among those parents who adopt strict traditional Arabic values. Therefore, the lack of family encouragement could be a reason for lower intrinsic interest in physical activity among girls. In other words, having lower levels of intrinsic interest led females to have lower levels of energy expenditure and intensity (strenuous) of physical activity than males.

The researchers believe that girls face more barriers to participating in physical activity than boys across all grades in Zarqa area. Barriers included social and cultural aspects that preclude them from involvement in physical activity such as the number of opportunities and the amount of time to participate.

Also, researchers believe that security and safety issues are major concerns for girls in Zarqa area. Parents do not allow their daughters to go to the parks or nearby playgrounds to participate in physical activities without an adult escort, while they are more lenient on this issue when it comes to their sons. This means less involvement of girls in physical activity because of the unavailability of an adult to supervise.

Intensity of Physical Activity. Results showed significant differences between males and females regarding intensity of physical activity, favoring males for strenuous levels and favoring females for moderate physical activity. No significant gender differences were found for mild physical activity level although there was a tendency for females to participate in more mild physical activity than males. The findings of this study that showed that males participated in vigorous physical activity significantly more than females are consistent with Morgan et al. (2003). In general, Arab and Muslim girls participate in moderate and mild physical activities through helping their parents in the housework, walking near their houses, or exercising in the houses as long as these kinds of activities are consistent with their culture and religion. Boys are allowed to practice all kinds of activities, go to gyms, and run without being accompanied by an adult family member.

Global Self-Esteem. The results of this study showed that there were significant differences between males and females on global self-esteem in favor of females. This finding does support most of the previous research with regard of gender differences in global self-esteem (Elbedour, 1998; Hoare et al., 1993; Mboya, 1995; Tomori, et al., 2000; Verkuyten, 1990), but is not consistent with Abu-Saad (1999), Asci et al. (2001), Quatman and Watson (2001) and Swanson and Lease (1990). The higher levels of self-esteem among girls refer from the researcher point of view to the way of nurturing girls in Arab and Muslim societies. In general, parents deal with their daughters in sympathetic and nice way; they give more interest and care to females rather than males. However, results regarding significant differences between males and females on global self-esteem remain controversial among researchers, and further studies are needed. Interestingly, both genders appeared to have higher global self-esteem.

In summary, no grade differences were found regarding global self-esteem. The reason for this might be that the grade levels tested here, 7th, 8th and 9th, represent the same middle adolescent age group. Gender differences existed, for global self-esteem.

Having explored physical activity and Global self-esteem similarities and differences, the next question is to learn if there are relationships between these variables. The following section reviews question three regarding relationships between physical activity and Global self-esteem.

Relationships among Variables

The main question of this study was about the relationship between physical activity and global self-esteem. This study does not found a relationship between physical activity and global self-esteem for both males and females. For females, this study does not support previous research for global self-esteem (Sonstroem & Morgan, 1989). The finding for males does support previous research for global self-esteem (Hawkins & Gruber, 1982).

In summary, boys had higher levels and intensity (strenuous) of physical activity than girls. Girls had higher moderate and mild physical activity than boys. Girls had higher levels of global self-esteem than boys. No significant relationships were found between physical activity and self-esteem.

4. CONCLUSION

The differences and relationships between physical activity and global self-esteem were measured on 687 students in 7th, 8th and 9th grades in first directorate of Zarqa education area in 2011. What can be concluded from the data?

First, there are major differences in participation in physical activity between boys and girls. However, the reasons for these gender differences might be different.

As expected, strenuous physical activity decreased with age. With age, the students did maintain their moderate and mild levels of participation. For health benefits, though, it is important that the students participate in higher levels of strenuous physical activity (Department of Health and Human Services, 1996).

Research should move from studying relationships between physical activity and global self-esteem to studying relationships between global self-esteem and specific components of self-esteem. Participation in physical activity is critical, not participation in athletics. Also, the absence of the significant relationships between physical activity and global self-esteem for both males and females should be studied further.

Based on these findings, the following areas for further research and in-depth study are suggested:

- What are the barriers that limit females' participation in physical activity in Jordan communities, and how can they be eliminated?
- What motivates youth students, especially females to participate more fully in physical activity?
- Are the physical activities of Zarqa students different other areas in Jordan?

It is also suggested that there is a need for comparison studies relating the levels of physical activity, global self-esteem.

Leisure time physical activity might be used as an instrument in studying various populations, including all grades and educational types (public, charter, and private).

The role of the socio-economic status of parents might be studied to understand its impact on encouraging or discouraging Arab-American youth from participating in physical activity.

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