

## Brief Research Report

# Physical Activity Motives in the Exercise and Self-Esteem Relationship

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## ABSTRACT

### Aims and Objectives

The purpose of this investigation was to extend research examining physical and social influences in the exercise/self-esteem relationship by investigating the moderating role of physical activity motives. Research reveals multiple motives for exercise participation beyond physical health enhancement. It is thought that these motives may play an important role in the relationship between exercise and self-esteem. Previous research has established the contribution of the physical self-system in the relationship. Furthermore, research examining the contribution social self-system has shown promise, yet the mechanisms operating in the relationship are less clear. It was hypothesized that motivation for physical activity participation may be such a mechanism.

### Results

A population of 147 undergraduates completed assessments of physical activity participation, motives for physical activity, and physical, social and global self-perceptions. As expected, physical activity participation influenced self-esteem through both physical and social systems. Additionally, socially motivated exercisers exhibited greater self-esteem enhancement through the social as opposed to the physical self-system.

### Conclusion

The hypothesis that physical activity motives would play an important role in determining the pathway through which physical activity participation influences self-esteem was partially supported. Results showed that those who reported social motives for physical activity showed greater enhancement in self-esteem through the social self-system, while physical motives did not serve a moderating role. The findings from the present investigation are important not only from the perspective of self-esteem theory but also with regard to the numerous practical implications of the results. The findings confirm that the relationship between exercise participation and self-esteem is more complex than previously thought in that physical activity participation influences self-esteem through multiple pathways. What remains to be investigated is how to best flesh out which pathway is more meaningful to the exerciser and then how to best serve the interests of the exerciser with the ultimate goal of enhancing self-esteem.

### Keywords

Self-esteem, Physical activity, Exercise, Self-concept, Motives.

## INTRODUCTION

In a 1981 a review of literature addressing psychological outcomes related to exercise participation, Folkins et al<sup>1</sup> suggested that one of greatest potential benefits from participation in physical activity is the enhancement of self-esteem. Later, a comprehensive review by Spence and colleagues,<sup>2</sup> concluded that, while there were consistent relationships between physical activity and global self-esteem, the relationships were unsurprisingly small given the trait-like nature of global self-esteem. Furthermore, the authors highlighted the need for investigations of domain-specific

self-perceptions through which physical activity behavior influences self-esteem.<sup>2</sup> The vast majority of existing research has supported a positive change in global self-esteem through a physical self-system, namely, through physical self-efficacy, domain specific physical self-perceptions and physical self-worth.<sup>3</sup> More recent research, however, supports an expanded understanding of self-esteem through multiple self-systems.<sup>3,4</sup> While promising, the mechanisms for change have been almost exclusively limited to the physical self-system described above.<sup>3,5,6</sup> There is utility in investigating how physical activity influences self-esteem outside of the physical self-system. Better understanding of these alternative

relationships could lead to a rapid expansion of our understanding of the physical activity/self-esteem relationship.

Sonstroem et al<sup>7</sup> introduced the exercise and self-esteem (EXSEM) to address shortcomings in the existing literature examining the relationship between the constructs, much of which, as they described, was simplistic and atheoretical in nature.<sup>7</sup> Furthermore, the authors suggested that the mechanisms responsible for the relationship had not been determined.<sup>7</sup> The EXSEM, and later expansions, stemmed from the work of Robert Shavelson and colleagues<sup>8</sup> who proposed a hierarchical model of global self-concept. This model illustrated how activities in domain specific areas; specifically physical, social, emotional and academic, could influence global self-evaluations through increasingly general several perceptions within those domain specific areas. The model has been used as a framework for examinations of the relationship between domain-specific activities and global conceptions of self. Sonstroem and colleagues<sup>6</sup> utilized the Shavelson framework in developing the expanded EXSEM which has been used extensively in examining the relationship between physical activity and self-esteem enhancement.<sup>9,10</sup>

Sonstroem et al<sup>6</sup> hypothesized that physical activity participation could influence global self-esteem through the physical self-system described above. Recent research<sup>4</sup> suggests, however, that Shavelson and colleagues<sup>8</sup> original framework may provide a more useful tool than previously conceptualized.

While the EXSEM model has detailed the physical self-system's role in the relationship, neither the emotional nor the social pathways represented in the Shavelson framework has received systematic investigation. From James<sup>11</sup> original work describing self-esteem, social interactions have played a prominent role in the development of self-perceptions. Closer scrutiny of the relationship between exercise and self-esteem supports this ideation.<sup>4</sup> Preliminary support has been offered for an expanded understanding of the exercise/self-esteem relationship through not only the physical self-system but also through domain specific self-perceptions in the social domain.<sup>4</sup> Additional research is necessary to more clearly define these relationships and potentially expand the EXSEM model. Furthermore, if it can be shown that physical activity influences self-esteem through multiple paths, it will be useful to clarify potential moderators in the relationship to determine the path that is most relevant to the exerciser allowing for the individualized exercise interventions.

Therefore, the purpose of the present study was to replicate and expand previous work investigating influences that may be operating in the relationship between exercise and self-esteem. Specifically, in addition to the physical self-system, the contribution of the social self-system was investigated. Furthermore, the moderating role played by physical activity motives was examined in both the physical and social self-systems. Physical activity motives have been shown to be predictors of leisure time physical activity,<sup>12</sup> type of physical activity chosen,<sup>13</sup> performances in physical activity tasks<sup>14</sup> as well as exercise adherence.<sup>15</sup> Additionally, research has concluded that physical activity interventions that enhance certain types of motives are likely to enhance general self-esteem.<sup>16</sup>

It was expected that significant positive relationships would be established between physical activity participation and domain specific self-perceptions, specifically physical self-worth and social self-concept. Additionally, it was expected that social self-concept and physical self-worth would serve as significant, independent contributors to overall self-esteem. When examining moderation, it was expected that individuals who reported primarily social reasons for exercise, who exercised more frequently, would exhibit higher-levels of social self-concept. Similarly, it was expected higher-levels of physical activity stemming from physical motives would result in higher-levels of physical self-worth.

## MATERIALS AND METHODS

### Participants

Participants in the investigation were 147 college-aged individuals enrolled in undergraduate courses at a Small Liberal Arts University in the Northeast. There were no criteria for inclusion or exclusion from the investigation. All participants reviewed an implied informed consent form that was in compliance with the University's Institutional Review Board's (IRBs) guidelines for the use of human subjects in research.

### Measures

Physical activity participation was assessed using the Godin Leisure-Time Exercise Questionnaire.<sup>17</sup> Respondents were asked to report their exercise participation at varying intensities (mild, moderate and strenuous) over an average seven day period for the previous year. Level of exercise participation was scored according to scale guidelines; higher total scores were indicative of a more active individual. Jacobs et al<sup>18</sup> reported a one-month test-retest reliability of 0.62; they also found a strong correlation (0.56) between scores on the Godin instrument and cardiovascular fitness (VO<sub>2</sub> max).

Motives for physical activity participation were measured using the motives for physical activity measure—revised Ryan et al<sup>19</sup> Scored on a seven-point Likert scale with the anchors 1 (not at all true for me) and 7 (very true for me), respondents were asked to assess their perceived strength on five different motives for participating in physical activity including fitness, appearance, competence/challenge, social and enjoyment. Sample items include “because I want to be physically fit,” and “because I like engaging in activities which physically challenge me”. Items were summed yielding independent scores for each of the five subscales. Ryan et al<sup>19</sup> reported internal consistencies for the measure and its five subscales ranging from 0.78 to 0.92.

Self-esteem was measured using the Rosenberg Self-Esteem Scale.<sup>20</sup> The Rosenberg scale is one of the most widely used instruments employed for the assessment of self-esteem.<sup>21</sup> Scored using a four-point Likert Scale format with the anchors 1 (strongly disagree) and 4 (strongly agree), respondents were asked the extent to which each of ten items was indicative of their global self-perceptions. Sample items include “I certainly feel useless at times” and “on the whole, I am satisfied with myself”. Items were summed to yield a single scale score representing self-esteem. Higher scores

were indicative of greater self-esteem. Fleming et al<sup>22</sup> reported an internal consistency of 0.88 for the Rosenberg scale.

Social self-concept was measured using the social self-concept scale (SSCS) as developed by Zorich et al.<sup>23</sup> Scored on a five-point Likert scale with the anchors 1 (strongly disagree) and 5 (strongly agree), the scale consists of 45 items that address an individual's evaluation of his or her feelings, thoughts and behaviors when in social situations. Sample items include "I feel isolated from others" and "I often feel like a failure at parties". Item scores were summed to yield a scale score representing social self-concept. Higher scale scores were representative of those with higher-social self-concept. Reported internal consistency for the instrument was high; 0.95.

Physical competence and physical self-worth were measured using the physical self-perceptions profile (PSPP) as developed by Fox et al.<sup>24</sup> The PSPP assesses four domains of physical self-perceptions including body attractiveness, sports competence, physical strength and physical conditioning. The measure also includes an assessment of more general physical self-worth. Measured on a four-point Likert scale with the anchors 1 (not at all true) and 4 (completely true), participants were asked six items that assessed their capabilities in each of the domains. Sample items include "I am physically stronger than most people of my sex", "I do not usually have a high-level of stamina and fitness" and "I feel confident in the physical side of myself". Item scores were summed to yield four separate subscale scores and an additional score representing physical self-worth. Higher scores on each subscale were indicative of higher perceived competence for that domain whereas higher scores of the physical self-worth items were indicative of higher perceived worth for the physical self in general. Fox et al<sup>24</sup> reported internal consistencies that ranged from 0.81 to 0.92.

### Procedures

Participants were recruited for the study from undergraduate courses and participation was voluntary. At the conclusion of a regularly scheduled class time, all participants completed a packet of inventories containing a general demographics questionnaire in addition to the measures described previously. Completion and return of the packet served as an indication of consent to participate in the investigation.

### Analytical Strategy

Statistical package for the social sciences (SPSS) version 13.0 for Windows was used to examine the relationships of interest. Linear regression was utilized to assess both main effects of physical activity on physical self-worth and social self-concept and for both domain specific measures and global self-esteem. Regression was also employed to examine moderation of physical activity motives.

### RESULTS

Analyses revealed a significant positive relationship between physical activity participation and physical self-worth. Regression analyses revealed a significant relationship between the physical activity

participation and physical self-worth with 12.8% of the variance in physical self-worth attributable to physical activity participation,  $R^2=0.128$ ,  $F(1,148)=21.29$ ,  $p<0.000$ . Additionally, a significant positive relationship was revealed between physical activity participation and social self-concept. Physical activity accounted for 9% of the variance in social self-concept,  $R^2=0.091$ ,  $F(1,148)=14.79$ ,  $p<0.000$ .

Analyses also supported the hypothesis that social self-concept and physical self-worth would serve as significant independent contributors to the variance in general self-esteem,  $R^2=0.483$ ,  $F(2,145)=67.62$ ,  $p<0.000$ . Individually, social self-concept and physical self-worth contributed 28% and 39% of the variance in self-esteem, respectively.

In examining moderation, partial support was demonstrated. As depicted in Table 1, it was determined that social motives for physical activity moderated the relationship between physical activity participation and social self-concept as expected. However, analyses failed to support physical motivation for physical activity participation as a moderator of the relationship between PA and physical self-worth.

**Table 1.** Summary of Regression for the Analysis of the Moderation of Social Motivation on the Relationship between Physical Activity Participation and Social Self Concept (N=147)

Variable	B	SE B	$\beta$
<b>Step 1</b>			
Physical activity participation	4.25	1.36	0.25*
Social motivation for PA	2.59	1.33	0.16*
<b>Step 2</b>			
Physical activity participation	4.24	1.33	0.25*
Social motivation for PA	3.02	1.31	0.18*
PA *social motivation for PA	3.46	1.29	0.21*

\* $p<0.05$ .

$R^2$  for Step 1=0.107,  $F(2,145)=8.73$ ,  $p<0.000$

$R^2$  for Step 2=0.150,  $F(3,144)=8.47$ ,  $p<0.000$

$R^2$  change=0.043 for Step 2 ( $ps=0.008$ )

PA: Physical activity

### DISCUSSION AND CONCLUSION

The primary objective of the study was to further examine the relationship between exercise and self-esteem through multiple pathways of influence. Consistent with expectations, a positive association was established not only between domain specific self-perceptions and global self-esteem but also between physical activity participation and both physical self-worth and social self-concept. These results replicate findings of previous investigations.<sup>8</sup> Secondly, because the existence of multiple paths of influence in the exercise/self-esteem relationship appears to be viable, it was hypothesized that one's motivation for their physical activity participation would play a moderating role in the relationship. Moderation was only partially supported as only social motivations for exercise served as a moderator between physical activity and social self-concept. Physical motivations for exercise did not moderate the relationship between physical activity and physical self-

perceptions. This result was somewhat surprising and will need further investigation. It is promising, however, that social motivations for physical activity participation significantly moderated the relationship between physical activity and social self-concept. In a related study, Schmidt and colleagues<sup>25</sup> found perceived social acceptance to be a mediator between perceived motor ability and reported self-esteem in boys only. This is an encouraging finding in that it suggests that boys' self-esteem was, in part, influenced by their perceptions of acceptance based on their motor ability. Other studies have concluded that increased participation in physical activity is related to increase social self-perception.<sup>26,27</sup> This would lend support for the hypothesis that physical activity influences self-esteem in a multitude of ways.

The findings from the present investigation are important not only from the perspective of self-esteem theory but also with regard to the numerous practical implications of the results. Results confirm that the relationship between exercise participation and self-esteem may be much more complex than previously thought. Additionally, the results further highlight the importance of social influences that operate in physical activity settings. Social factors have been shown to moderate and mediate the relationship between physical activity participation and other psychological outcomes including self-efficacy, social physique anxiety,<sup>28</sup> choice of exercise location,<sup>29</sup> among others. The established link between physical activity and self-esteem through a social self-system suggests that practitioners should be even more cognizant of the social ramifications of exercise participation.

Finally, the results of the present investigation may be useful in preventing several disease outcomes in individuals across the lifespan. The findings shed additional light on the influence that physical activity has on general self-perceptions. From the perspective of exercise adherence, the identification of additional pathways will lead to more efficacious programs aimed at maintaining participation in physical activity. Increased participation in physical activity is associated with the prevention of several disease outcomes. Hence, not only will the present findings be meaningful from a psychological health perspective, but also with regard to physiological health and other desirable outcomes.

#### INSTITUTIONAL REVIEW BOARD PERMISSION

Yes.

#### CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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