Chapter 17

SELF-ESTEEM, PHYSICAL SELF-PERCEPTION AND PHYSICAL ACTIVITIES PROGRAMS FOR ADOLESCENTS

Simona Nicolosi and Mario Lipoma
Kore University of Enna, Faculty of Physical activities and wellness sciences, Italy

ABSTRACT

During the adolescence, the changes, related to individual and environmental factors, lead to a revision of bodily dimension of Self, with effects in global self-perception, in identity processes, and in emotional sphere of the individuals.

Campbell argued that the Self contents shared in two parts: the cognitive-descriptive one and the evaluative one. The first aspect concerns the believes about features, social roles, values and objectives of each one, the second instead pertains to the assessment about self (Campbell, 1990). Several studies made a distinction between Self and Self-esteem (Pope et al., 1988) although this separation has not yet been empirically demonstrated (Meleddu & Scalas, 2003).

Crocker, Eklund, and Kowalski (2000) have shown that the different domains of self, such as social, physical or cognitive, nested under global self-esteem. According to Bracken’s theory (1993), if all events are evaluated by the subject, self-esteem also reflects this complexity, giving rise to a multi-dimensional construct.

The present chapter provides a review of the literature on relationship among self-esteem, physical self perception, and physical activities in adolescents.

After a critical examination of main researches, followed by a discussion of most relevant findings, it concludes with hypothesis for future research.

INTRODUCTION

Since the 1990s, many researchers have been interested in the relationship between self-esteem, self and physical activity [14][32][33][34].
It was found that physical activity produces both physical and mental benefits [3][29]. In several studies, self-esteem is considered the most important measure of psychological well-being [4][12] and is listed as one of the psychological dimensions that most benefits from the effects of regular exercise, [2][46] from the enhancement of physical skill and physical conditions [52]. In his review of the literature on the effects of exercise on the self-esteem, Sonstroem said that: “the consistently positive results (…) suggest a basis for the belief in the healthy effects of physical training programs. It is concluded that exercises programs are associated with significant increases in the self-esteem scores of participants” [49, p.138].

However, such considerations are made in relation to exercise programs and are always based on the scores obtained by instruments measuring self-esteem, and may be distinguished from self-esteem per se. This argument takes on greater emphasis when it connects to the themes of self-esteem and psychological well-being in specific stages of the life span, especially in childhood and adolescence.

The present chapter provides a review of the literature on relationship among self-esteem, physical self perception, and physical activities in adolescents. After a critical examination of main researches, followed by a discussion of most relevant findings, it concludes with hypothesis for future research.

**GLOBAL SELF-ESTEEM AND PHYSICAL SELF-ESTEEM: DEFINITION AND STRUCTURE**

All events experienced by the subject covered in an assessment of the actions he does or who does it incurs. Self-esteem is a personal evaluation of his or her own characteristics [44], the set of the values attached to the self descriptors by the subject [4]. There is thus a close connection between representations of self and self-evaluations. The former are understood as those attributes or characteristics provided by the individual himself or herself answering the question “who am I?”, while the latter are understood as all the reviews, both general and specific, assigned to these attributes, when the subject asked to himself or herself “how good I am?”. However, it is not yet clarified the nature of this relationship. Although some authors have felt the need to distinguish between the processes of self-description and the self-evaluation of the self, indeed, this separation is only partly the result of the use of different methodologies and tools that were constructed on the basis of these methodologies [21]. In fact, in many instruments is explicitly required to the subjects to evaluate certain statements, expressing an opinion on how they view certain aspects of himself. For example, they are asked to respond to assertions about their social competence or academic skill showing a positive or negative opinion. In this way the individuals evaluate himself or herself. Alternatively, Gordon and colleagues have asked the subject to respond the open-ended question “Who am I?”. With this kind of question, the respondents freely express their self-descriptions which are then categorized by the researchers through a content analysis, and that help to build a self-description of individuals. In this case they are called attributes that contribute to the formation of a self-description.

In the discussion of the construct of self-concept, Campbell drew a distinction between cognitive-components and descriptive evaluative components [10].
The first concerns the beliefs about their characteristics, roles, values, and personal goals. The second concerns, however, the comments and opinions about themselves. According to Biddle and Mutrie [4], self-esteem is an extension of the concept of self, while according to Pope it is distinguished from the self-concept, that it's "a constellation of elements to which a person referenced to describe herself" [44]. According to Harter [21], however, we can say that the distinction between self-description and self-assessment is arbitrary and and still poorly defined. If in the theoretical contexts, the self-concept is considered to be different from self-esteem by many authors [16][36][44][10], but this distinction has not yet empirical evidence [38].

As far as concerns the structure of the self-esteem, we must distinguish between global representations of the self-esteem, or unidimensional, and specific-domains related ones, or multidimensional. Some authors relate it to global self evaluations, including the need to build assessment tools that taken as an overall evaluation of the self [45][18][20]; other authors accepted a multi-faceted and hierarchical structure of the self-esteem, which covers the most important evaluation contexts for the individuals. Fox and Marsh's models of the physical self-concept, referring to the model developed by Shavelson and colleagues in 1976 [47], suggest not only a physical self-concept as a general component, in which at the intermediate level there are several specific subdomains, but also a close connection with self-esteem, at the apex of the hierarchy of the self. Crocker, Eklund, and Kowalski [11] have also shown that the different domains of self, such as social, physical or cognitive, nested under global self-esteem. According to Bracken's theory [8], the self-esteem is a multidimensional construct consisting of six key areas that represent complementary aspects of the global self-esteem (interpersonal, educational, emotional, family, experienced bodily, environment control subdomains), while Pope et al. [44] argue that self-esteem is divided into specific components related to the most important aspects of our lives (social, educational, family, body image subdomains).

**SELF-ESTEEM AND PHYSICAL ACTIVITY: A LITERATURE REVIEW**

Duncan [12] and Biddle and Mutrie [4] found that who is responsible for promoting participation in physical activities or sports or teaching physical education to children and young people, in general, also believes that exercise positively affects the self-esteem. Some authors [35] [17] have supported the positive effect of physical activity on self-esteem in children, while other studies have also confirmed the strength of this effect (e.g. Calfias and Taylor [9] with regard to young people). The lack of uniformity in results often depends on the inability to obtain conclusive data on the educational phenomena. Sometimes the problem is the inclusion in the analysis of specific variables (in addition to variables that include a whole assessments, which likely attenuate the results from the specific variables). A recent survey by Schmalz et al. [48] has just shown that, for several decades, has been declared the existence of many benefits derived from participation in physical activity and self-esteem, although the empirical support has been weak and indecisive.

Studies on the relationship between self-esteem and physical activity will be analyzed on the basis of the hierarchical and multidimensional perspective of the concept of physical self [13][14][15][32][33] [34] [19]. As noted previously by several authors [50][4][12], the impact
on self-esteem of participation in physical activity can not be accepted outright, but – through the examination of the literature – may still be accepted providing some details and taking into account the heterogeneity and methodological limitations of some studies, and some aspects related to the same phenomenon investigated.

Llewellyn [30] analyzed 10 studies on self-esteem of children with physical disabilities, but the investigation findings were incoherent, in particular on the concept of self. The results showed that in three studies was found a low self-esteem in young people with physical disabilities compared to the sample of non-disabled peers, while in 7 no significant difference compared with control groups. Another meta-analytic study of Calfas and Taylor [9], tried to identify significant relationships between several psychological variables (self-esteem/self-concept, stress/anxiety and depression) and physical activity in a sample of young people aged 11 to 21. The authors found an effect size (ES) of 0.12 for the variables self-esteem and self-concept of stress and anxiety to -0.15 and -0.38 for depression. Although based on modest results, referring to the literature, Calfas and Taylor have nevertheless concluded that physical activity produces statistically significant effects on self-esteem, even if the amount is reduced. Furthermore, the study of Tardie [51] was aimed to determine the relationship between the subdomains of the concept of self and between the concept of physical self, physical condition and physical activity of children attending primary schools. Participants were 14 females and 11 males aged from 8-14 years. Have been used instruments for measuring heart rate during sleep and psychometric instruments to measure the global concept of self and its sub-domains and physical activity. The authors indicated that there was a subtle relationship between physical activity, fitness and self-concept in children involved in the survey, but given the methodological limitations, would require further study.

In general, a more recent meta-analysis by Miyahara e Piek [39] on the relationship between disability and self-esteem, conducted on 13 studies with a total sample of 1984 young people with mild and severe disabilities, examined the effects of minor and severe physical disabilities (for example, cerebral palsy, spina bifida) in general and specific self-esteem of children and adolescents. The study revealed that milder physical disabilities have affect more general on self-esteem than more severe. The evidence supported the conclusion that the incidence of disability in specific areas relating to the physical self-esteem and social acceptance was high, but also that disability would seem to affect general self-esteem only if the degree of severity of disability is mild. A possible explanation may be related to the connections between general self-esteem and other cognitive and emotional processes involved in choices and in reasons which support them. Expectations about the effectiveness of achieving certain goals, and especially the proximity between desires and perceived ability to access certain experiences, can make more frustrating the non-implementation of these. The self-perception of the impracticability of an experience, however, is connected with more chances and coherence to the surrender. A mild disability, compared with a more severe one, exposes the individual to more effective comparisons between expectations and results. Subsequent trials of successes or failures can threaten or enhance a positive self-perception of their value in more specific areas of self-esteem and can motivate or discourage subsequent behavior. In other words, it is more likely that a person with more severe disability, considering certain experiences unattainable, not even undertake a behavior that may threaten his self-esteem (general). A person with mild disabilities will experience more easily, adding the patterns of self and considering himself in more specific contexts.
Many other studies have shown, with more satisfactory results, the positive effects of physical self-esteem in children and adolescents. McAuley [35] argued that the development of self-esteem is one of the positive psychosocial outcomes related to participation in physical activities and sports and noted that 69% of the studies reviewed supported a positive relationship between physical activity and psychological well-being. Through a meta-analytic study, Gruber [17] considered 27 studies on self-esteem and physical education programs and games for children, noting that 61% of the studies did have a positive effect on self-esteem and obtained an effect size (ES) of 0.41. Even in the study of Crocker, Eklund, and Kowalski [11] results encourage us to consider the existence of a significant relationship between self-esteem and physical activity. The authors showed that although boys are more active and have higher scores in strength, competence in sports and in self than girls, the relationship between physical activity and physical self-perception are similar in both genders. Patterns of physical self-perception obtained, predicting the scores of 27-29% of the variance in physical activity in boys and girls, representing an ES acceptable when compared with the values reported by related psychosocial activities. Hein e Hagger [22], have also shown that self-determination theory and goal achievement theory facilitate the understanding of the processes underpinning the development of global self-esteem in physical context. Although the study used an approach based on latent variables, has limitations that may restrict the generalizability of the data, such as the specific target of the research participants and the nature of the correlational data that does not allow causal inferences.

Kirkaldy, Shepard e Siefen [26] have shown that a regular exercise was related to better self-image. Adolescents involved in regular physical activity were characterized by low scores on anxiety and depression and showed less inhibition in social relations compared to adolescents who did not practice physical activities. Finally, even Bowker [5] has shown that participation in sports has very strong positive effects on self-esteem, although these are stronger in physical self-esteem. Bowker supports a general model of self-esteem that is valid for both genders and linked to participation in sport through the body esteem's mediation, although there are some differences between males and females (on self-perception of physical skills in boys and on appearance in girls).

Specifically, various studies also have dealt more specifically with girls. Three studies of the Melpomene Institute examined the relationship between self-esteem and physical activity in female children [23] and adolescent girls [24][25] from different geographical areas and different economic and cultural background. All three studies have found strong relationships between physical activity and self-esteem. The results are similar even across different age groups (9-12 years and 12-17 years). In addition, girls who felt greater confidence in themselves and in their skills were more likely to participate in physical activity at high levels compared to girls who felt less confident. Also according to these studies, the main motivation for which girls engage in physical activity is the desire to have fun, followed by health benefits. Schmaltz et al. [48] involved a sample of 197 girls in a longitudinal evaluation conducted in three different periods of adolescence (9, 11 and 13 years). This study demonstrated the existence of a significant lagged effect of physical activity on self-esteem. In particular, higher self-esteem to 9 and 11 years predict a higher self-esteem, respectively to 11 and 13 years. The positive effects of physical self-esteem were more evident at 11 years for girls with a body mass index higher. Exercise, therefore, can support a positive self-esteem in adolescent girls, especially the younger ones, preventing the health risks derived from overweight. Finally, Boyer [7] wished to examine the effects of sport on
Simona Nicolosi and Mario Lipoma

physical self-concept and other psychological characteristics of adolescents engaged in sports activities, to verify the existence of relations with non-sport physical activities, particularly, for girls attending high school. The results indicated the existence of relations with the physical self-concept both for sport and for physical activity. In particular, both sport (S) participation and physical activity (PA) were positively related to physical self-concept (respectively $R^2 = .47$ and $R^2 = .61$); for both S and PA models, positive body image and higher levels of instrumentality contributed to greater psychological well-being ($R^2 = 66$).

Moreno et al. [40] highlight that, during the adolescence, practising any sporting or physical activity predicts the self-esteem and physical self-concept. Furthermore, boys had a higher self-esteem, body-image, competence and physical condition. Concerning the evolution of self-esteem and physical self-concept from 9 up to 23 years old, relevant differences are only seen in the perceived competence and physical condition. This work showed the relevance of age, gender and out-schools sports and physical activities practice, to elaborate the physical self-concept.

It was noted even a lower involvement in physical activity and sport among girls during the period of preadolescence. Some studies [43] showed a decline in participation due to two main reasons, the changes due to puberty (onset of menarche, bodily changes), the fear of taking a body image "unfeminine" (posture, muscles developed) with the practice of certain sports, considered more suited to men or the desire to not steal time from other social activities deemed more important.

Other studies have sought to understand whether interventions based on physical activities could cause changes in self and self-perception of adolescents involved. McKenzie, Sallis, and Rosengard have found that “only a few evidence-based physical education (PE) programs exist, and little is known about effective approaches for overcoming barriers to their widespread adoption” [37, p.114].

Boyd e Hrycaiko studied the effects of physical activity intervention package on self-esteem in a sample of females of different age levels (from 9 to 16 years). Results showed that only the physical appearance self-concept of the pre-adolescent girls was significantly impacted. For the early- and middle-adolescents, the results did not support the hypothesis. Second, the strongest effects of the intervention were on the physical abilities self-concept of both the pre-adolescent and adolescent females. Third, the data provided some support for this hypothesis in that the pre-adolescents appeared to benefit the most from the intervention package, while the early adolescents showed somewhat mixed results, and the middle adolescents experienced no significant effects.

Data suggest that a physical activity intervention package is most likely to effect changes to the physical self-concepts of children during the pre-adolescent years. However, “a lack of significant findings in a study may also result if a powerful intervention has too few subjects for statistical analysis or if the intervention is weak” [6].

A research by Annesi [1] involved 105 children, aged 8 to 12 years old, in a physical activity intervention during afterschool care, based on social cognitive theory and incorporating instruction in self-management and self-regulatory skills, was associated with significant improvements in measures of exercise-related self-efficacy, perceived physical appearance, and physical self-concept over 12 weeks.

Nicolosi et al. [42] investigated the effects of a specific training, based on the physical activity practice, aimed to enhance of self concept, physical and social self-esteem, self-efficacy and interpersonal psychological adjustment. The intervention intended to link the
Self-Esteem, Physical Self-Perception and Physical Activities Programs …

physical self theoretical frameworks to the practice of teaching physical activities, to observe
the changes in the descriptive and evaluative aspects of self-perception and interpersonal
relationships in a sample of preadolescents. An experimental pre-test/post-test design was
used. It was analyzed the reprocessing of the self concept – especially of the social and
physical selves – in early adolescence, multi-level cognitive and metacognitive aspects of
learning motor skills. Over 200 pre-adolescents, aged 11 up to 14 years old, were divided in
an experimental group (EG) and control group (CG). EG’s participants were involved in
physical activities and educational itineraries. During pre-adolescence, the effects of pubertal
development include a focus on the subject's own body and to a deeper reflection on self-
schemas of the physical self [31]. Within the research, was made an educational intervention
based on group work and on the acquisition of motor skills and cognitive, motor and social
problem-solving. Results showed that specific educational programmes, physical activities-
related, may provide more positive social feedback and recognition from peer groups, and this
will subsequently lead to improvement in an individual’s self-image and self-esteem. Furthermore, EG’s participants have improved their self-perception in interpersonal
relationships, enhanced social skills, increased physical and general self-esteem, and a
positive global self-image. With regard to psychological regulation in interpersonal
relationships, there was a reduction in the factors hindering a balanced and positive adaptation
to school environment and family, and particularly in the pressure perceived in social settings,
control on externalism and a tendency to depression. At the end of the project, the global self-
image was enhanced, especially in girls, who initially had lower body self-esteem than boys.
Compared to the beginning of the project, the girls had a better sense of their body weight,
while boys perceived themselves as more coordinated, with more sports skills, stronger and
more resilient.

Further investigation should be reserved to the program SPARK (Sports, Play, and Active
Recreation for Kids) started in 1989. Initially targeted at children attending the elementary
school, the program was subsequently extended to middle and high school. The SPARK
programs “were designed in response to a societal need to combat low levels of children’s
physical activity and physical fitness” [37, p.114]. Were conducted several research, inside
programs designed to promote an active lifestyle and self-regulation of behavior (named
Lifelong Wellness), especially to evaluate the effectiveness of the activities in terms of
perceived psychological well-being and to further strengthen the programs. These include the
research of Kolody and Sallis [27], that analyzed body image perception, self-concept, and
psychological variables in children. The study evaluated the association between changes in
body mass index (BMI) and psychological dimensions in over 500 childrens, whose the
average age was 9 years. Increases in BMI were significantly associated with negatives
changes in physical activity attitudes, perceived physical activity competence, self-concept,
and body image. Evidence suggests that psychological consequences associated with
increases in BMI indicate that children may be overconcerned with body weight and shape.

CONCLUSION

Evidence reported by Whitehead and Corbin [53] suggests that, when used properly,
exercise can provide benefits to physical self-esteem and, at the same time, can facilitate
Simona Nicolosi and Mario Lipoma

desirable forms of reasoning. The findings of Gruber [17], the most recent study by Llewellyn [30] and other studies reviewed, paint a mixed picture from which may not emerge a final confirmation of the effects of interventions based on physical activities. Furthermore, Gruber noted that children emotionally disturbed, mentally disabled, or economically disadvantaged achieved the greatest benefits for the self-esteem as a result of physical activity.

Numerous researchers have reported that interventions are most effective on low self-esteem subjects [3][4], particularly, early and middle adolescent girls and pre-adolescents, both boys and girls.

This leads us to argue that the most significant results are reported, especially when the individuals present at the beginning of the intervention, low self-esteem and a low assessment of his physical self, while in other subjects whose levels of self-esteem are already good, effects are somehow "absorbed" by other subdomains of the self, such as physical fitness [50][6].

So, without considering the relationship self-esteem/physical activity governed by a causal necessity, we can say that exercise can improve self-esteem and this is probably due to changes in self-perception.

However, it is necessary to consider some limitations identified during the analysis of the literature.

One of the problems of investigation of this issue is methodological. In reviewed research, the heterogeneity of the variables related to or associated with the relationship between physical activity and self-esteem does not always allow comparisons. The constantly changing composition of the variables considered in the operational definition of the relationship between physical activity / self-esteem and the mix (always different) of qualitative and quantitative variables leads to consider separately the studies and, in the case of meta-analytic reviews, to build a mixed picture with an unsatisfactory effect size.

A second point to be treated has a statistical nature and includes a twofold problem. The consistency of the samples not always justifies a generalization of the results. Kres [28] warns that to find an effect produced by an intervention based on participation in physical activities, the minimum sample size should include at least 132 subjects for each age group. This first issue is also linked to a further difficulty to include more participants in the interventions. The difficulty depends on the application context and concerns, in general, all the learning processes. Because of its educational nature, the realization of the physical activity interventions must always take different adaptations, sometimes personalized, because the participants have different ways of learning, understanding and response. The target audience is primarily "individual" and therefore, the intervention should be designed around each individual.

A third aspect derives from the definition of physical activities. The analysis of the literature shows the breadth and diverse composition of assets that are included equally in the macro-class "physical activity": the activities of physical education, fitness, unstructured activities (such as walking), sports practiced with and without competitive purposes. Add to all this the independent variables such as age and contexts of application, which further specify the same physical activities. Perhaps the inconsistency in results depends precisely from the aspects that form the basis of these studies. For studying the relationship between self-esteem and physical activity, it is necessary split the different application contexts, target groups and content of the activities. In addition, it would take much more research on the content and methods used in the interventions which involve physical activity or sports. In
terms of practical recommendations arising from this chapter, physical education teachers and experts in physical activities, aiming to foster high self-esteem among adolescents, should design, in their lessons, fun activities that promote the autonomy of the participants. To achieve these objectives, activities should be consistent with the needs and interests of individuals who practice and with levels of expertise possessed by them. In the case of the curricular activities in physical education should be more interdisciplinary design teaching units, considering physical activity as a cohesive educational content of one or more disciplines and as an educational activity which may make the contents more interesting, more engaging and motivating for those who participate [41]. As sustained also by the research reviewed, this may increase the likelihood that physical activities are searched and also practiced after the school. Finally, including in planning education a healthy lifestyle, it may build the basis for the establishment of good practices that include not only exercise, but also diet and the overall self-care. Should there be a follow-up phases, assuming that the effects of participation in activities may also be delayed in time [48] and, as in any other activity of learning experience, that the results do not follow a linear course and need prolonged and constant practice. The psychological well-being derived by the physical activity or sport can be considered an achieved result both in the scientific literature and in the common perception, but not all activities and sports affect deeply and effectively the education of individuals. So we need a joint effort of research and educational processes in the remodeling of interventions by incorporating resources and avoid the limitations of many studies that have been conducted in recent decades of research on the relationship between self-esteem and physical activity.

REFERENCES


