

Sport and Exercise Psychology

Joanne Thatcher, Melissa Day and
Rachel Rahman

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LearningMatters

Chapter 3

Physical inactivity: the role of the self

Learning Objectives

This chapter is designed to help you be able to:

1. understand the definitions of and the difference between self-concept and self-worth;
2. understand the definition of physical self-worth and how this contributes to our global self-worth;
3. understand the reciprocal relationship between physical activity and self-perceptions;
4. understand what is meant by social physique anxiety (SPA) and the role that physical activity can play in improving SPA.

Introduction

Chapter 2 discussed the individual, social and cognitive determinants of physical activity. One individual difference factor is our perception of our self, or self-perception. This chapter examines in detail the link between self-perceptions and physical activity. The chapter discusses what psychologists refer to as 'the self', and how physical activity can be used to improve individuals' global and physical self-perceptions. This chapter considers how low self-worth is related to a fear of negative physical evaluation from others known as 'social physique anxiety'. The chapter concludes with an exploration of how physical activity contributes to improving social physique anxiety.

The self

How we perceive ourselves and how we believe we are perceived by others makes a significant contribution to our decisions to engage in different behaviours (see Chapter 4 for further discussion). Psychologists have therefore spent a considerable amount of time researching how we perceive ourselves, what impact this has on our behaviour and how we can modify our perceptions to improve our own self-image. However, before we can explore the relationship between our self-perceptions and physical activity behaviour we must first understand what psychologists refer to as 'the self'. The self is made up of a number of different components, including self-concept, self-worth and body image. In the sections below we discuss the different factors that contribute to these components.

The self-concept

Case Study 3.1

David and Sabrina were asked to write a brief description of themselves. These are shown below.

- David: My name is David and I am a Sport and Exercise Science student. I mainly enjoy the psychological aspect of the course and have interests in exercise motivation. In my spare time I enjoy swimming and am the captain of my university's swimming team. I have an older brother who I enjoy mountain walking with in my spare time.
- Sabrina: My name is Sabrina and I am originally from the United States, although I am currently studying Sport and Exercise Science in the UK. I would consider myself to be a sensitive and caring individual and I hope to use my degree to pursue a career in counselling. I think that I am relatively attractive and maintain a good figure by attending the gym on a regular basis.

How we choose to describe ourselves is referred to as the self-concept. According to Shavelson *et al.* (1976) our self-concept is multifaceted and hierarchical. That is, our self-concept is made up of a number of domains which feed into one another to form a pyramid of relationships (Figure 3.1). Self-concept at the peak of the pyramid is a relatively stable construct, but as we move down the hierarchical model through the domains, the sub-domains become more situation specific and are therefore more susceptible to change.

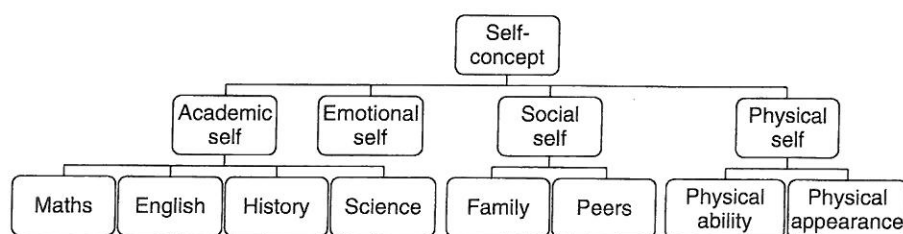


Figure 3.1 The hierarchical self-concept, based on Shavelson, RJ, Hubner, JJ and Stanton, GC. Review of Educational Research, 46(3): 407–441. Copyright 1976. Reprinted by permission of SAGE publications.

According to the model, in forming our self-concept we gather information about our abilities and key roles in four life domains. These are the:

- academic self;
- social self;
- emotional self;
- physical self.

How competent we are in each of these domains and the importance of our role within each domain will impact our overall self-concept. For example, an athlete is likely to be competent in physical activities and their role within this domain is significant within their daily lives. This is likely to contribute towards their description of themselves, or, their self-concept ('I am an athlete'). In a similar way to how the four domains make up the self-concept, the domains are hierarchical and are made up of perceptions of ourselves in more specific settings (Figure 3.1). For example, performance in specific academic subjects will contribute to the academic self, while relationships with friends, family and colleagues will all contribute to the social self (Figure 3.1). The self-descriptions by David and Sabrina in Case Study 3.1 illustrate how people will draw from the relevant sub-domains to form their self-concept.

Having a positive self-concept appears to be important for our psychological and physiological wellbeing and has been linked to affective outcomes. For example, Park (2003) demonstrated that a positive self-concept in adolescent boys and girls had a protective effect against depression and obesity, while a poor self-concept made these adolescents more susceptible to developing depression and becoming obese. Developing a positive self-concept is therefore important for enhancing an individual's physical and psychological health.

Self-worth

Case Study 3.2

Hena

Let's return to Hena who we met in Chapters 1 and 2.

We read in Chapter 2 that Hena achieved good GCSE grades at school and now has a responsible job as a branch manager of a shop. She is a busy mother of three children and lives near to her extended family in East London. She has a close circle of friends both in the local Bangladeshi community and at work, who consider Hena a loyal friend who is always available to listen to their problems and provide a shoulder to cry on. Given that she has little time outside her family and work commitments, Hena does no physical activity and is concerned about her increasing weight. She is now classed as obese and is self-conscious about her appearance.

Learning Activity 3.1

Consider the new information about Hena that is presented in Case Study 3.2 and identify whether she is likely to have high or low self-esteem. Think about what aspects of the case study have led you to your decision and compare your answers with the factors discussed in the section below.

How someone evaluates or sees themselves (self-perception) within each of the domains of the self-concept is a key factor in the development of self-worth or 'self-esteem'. Global self-worth relates to the overall evaluation of how positively or negatively an individual perceives themselves based on their achievements in the domains and sub-domains of the self-concept. Self-worth therefore has the same hierarchical

structure as the self-concept (Figure 3.1), being made up of an individual's self-perceptions in the four key life domains which in turn are made up of an individual's self-perceptions in situation-specific sub-domains.

However, not everybody who is good at maths or who is physically strong has high self-worth. This is because being good at maths or being physically strong is not important to everybody. For some people, being academically successful is more important than for others. For those who place high importance on academic achievement, being good at maths is likely to increase their self-worth, while being poor at maths is likely to have the opposite effect. For someone who places little importance on academic achievement, being good or bad at maths is less likely to have the same impact on their global self-worth. Therefore, the higher an individual's self-perceptions within the life domains that are important to them, the more likely they are to develop high global self-worth. Thus if physical ability is considered an important aspect of an individual's self-concept and they perceive themselves to be physically strong and a competent exerciser, this will lead to increased physical self-worth which will in turn contribute to increased global self-worth.

It is widely accepted that self-worth is a strong indicator of emotional stability and has been related to life satisfaction, independence, resilience to stress and high levels of achievement in education and work (Fox, 1997). As a result, self-worth emerges as one of the strongest predictors of subjective wellbeing (Diener, 1984). High self-worth is related to healthy behaviours such as not smoking, greater involvement in sport and exercise and healthier eating patterns (Torres and Fernandez, 1995) while low self-worth is associated with mental illness and lack of mental wellbeing and often accompanies depression and trait anxiety (Fox, 1997).

Box 3.1 Definitions: Self-concept and self-worth

As you can see, self-concept and self-worth are very similar constructs and some researchers believe that the terms are interchangeable because it is virtually impossible to describe ourselves without using a degree of evaluation. However, other researchers do distinguish between the two as we have done in this chapter. It is worth considering this when you read research papers on this topic as the authors may well use the terms interchangeably and so be sure that you are clear about what the paper is discussing. The definitions below highlight the differences between the two constructs discussed in this chapter.

- Self-concept: An overall description of the self based on abilities and key roles in different life domains. For example, 'I am an athlete'.
- Self-worth: An overall evaluation of how positively or negatively an individual perceives themselves. For example, 'I am a good person'.

The physical self

In the sections above we have discussed how self-perceptions and evaluations in the key life domains contribute to our overall self-concept and global self-worth. We also discussed how the importance placed on each of these domains contributes to the impact that our competence has on our global self-worth. One domain appears to have a more consistent impact on our global self-perceptions than other domains: perceptions of the body and aspects of appearance have been found to be the strongest predictors of global self-worth in adults (Harter, 1993; Fox, 1997). Researchers believe that this might be because we use our

physical selves as an interface between our inner private selves and other people (Fox, 2000; Thøgersen-Ntoumani *et al.*, 2005). We tend to use our appearance to illustrate our personality by the way we dress or the way we style our hair. Our facial expressions denote the mood we are in and our body language often conveys our opinions about something. Therefore, how people perceive their physical selves is believed to contribute more significantly to their self-concept and global self-worth than the other domains.

Physical self-worth has been found to relate to wellbeing outcomes such as positive affect and emotional adjustment even when global self-worth is statistically controlled for (Van de Vliet *et al.*, 2002). This suggests that how we perceive our physical selves might affect our wellbeing irrespective of how we see ourselves globally and thus demonstrates its importance.

As with the other domains, the physical self is believed to be made up of a number of situation specific sub-domains. The nature and number of these domains varies according to different researchers. For example, according to Fox's hierarchical multidimensional model of the physical self (Fox and Corbin, 1989; Figure 3.2), the sub-domains are sport competence, attractiveness, physical condition and strength.

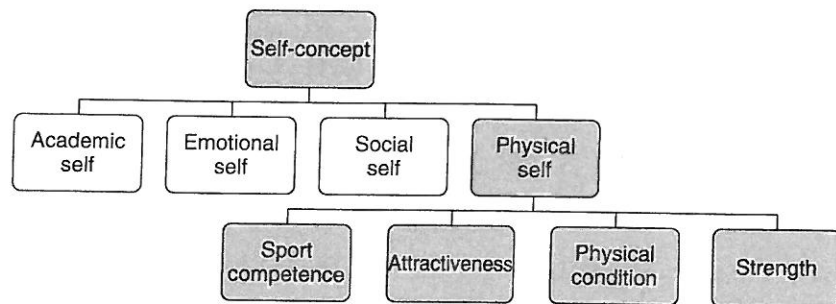


Figure 3.2 Structure of the physical self according to Fox and Corbin. Adapted, with permission, from K. R. Fox and C. B. Corbin (1989) *The physical self-perception profile: development and preliminary validation*. *Journal of Sport and Exercise Psychology*, 11(4): 408–430.

Box 3.2 Three scales

- The *Physical Self-Perception Profile* (PSPP; Fox and Corbin, 1989) is a questionnaire designed to measure physical self-perception based on Fox's model of the physical self. The profile consists of five subscales. Four of the subscales are designed to measure perceptions within specific sub-domains of the physical self and measure sport competence, attractiveness, physical condition and strength. The fifth subscale measures overall physical self-worth. The question format is a four-point forced choice scale in which two alternative statements are provided. Individuals are required to select which statement is most like them and then indicate how true the statement is for them (sort of true for me, or really true for me).
- The *Perceived Importance Profile* (PIP) was designed to be used in conjunction with the PSPP and is a measure of perceived importance to allow an assessment of if and how self-perceptions

Box 3.2 continued

in each domain will likely impact on physical self-worth. Earlier in the chapter we discussed the fact that the relative impact of each sub-domain had on a specific domain was based on the perceived importance of that domain by the individual. The PIP determines how important competence in each sub-domain of the physical self is to an individual so that this can be taken into account when determining an individual's physical self-perception and its impact on behaviour and self-worth.

- The *Physical Self-Description Questionnaire* (PSDQ) is based on Marsh and Shavelson's hierarchical model of self-concept (Marsh *et al.*, 1994). It is a 70-item questionnaire measuring 11 subscales: strength, body fat, endurance or fitness, sports competence, physical activity, coordination, health, appearance, flexibility, self-worth and general physical self-concept. Responses lie along a six-point scale ranging from true to false.

Body image

Close your eyes and picture an image of yourself. Now consider what aspects of your body you would change if you had the opportunity. Would you change your nose? Make yourself taller, thinner, more muscular? Most of us could name at least one area of our bodies that we are dissatisfied with.

The image that we hold of ourselves when we look in the mirror, or if we view ourselves in our mind's eye, is our 'body image' and reflects how we feel about our physical self. Body image incorporates perceptions of how attractive we are, how we estimate our body size and our emotions associated with body shape and size (Grogan, 1999). Our body image is often based on comparisons that we make between ourselves and other people, and, with the frequent bombardment of the 'body beautiful' depicted in adverts and magazines, maintaining a positive body image can be difficult. There is even evidence to suggest that we are subliminally fed the concept of what is attractive from a very young age in animated cartoons (Klein and Shiffman, 2006).

Opinion about whether body image is a uni-dimensional or multidimensional construct is mixed. Some believe that body image can be measured simply by evaluating body cathexis (Secord and Jourard, 1953). This is a measure of how satisfied an individual is with different parts of their body. However, the general opinion is that body image is a multidimensional construct made up of factors such as overall appearance, attractiveness, strength, height and weight (Rowe *et al.*, 1999). Understandably there appear to be gender differences in how body image is composed, with men focusing more on strength and women focusing more on weight (Franzoi and Shields, 1984).

Learning Activity 3.2

As a group, collect together a range of magazines. Try to collect a variation including magazines targeting teens, women and men. Compare the differences between the images that are portrayed in these magazines and consider how this might influence the body image of the audience that the magazine is targeting.

Perhaps not surprisingly a poor body image has been shown to be linked to low levels of self-worth. Clay *et al.* (2005) demonstrated that self-worth levels decreased with increasing age among a sample of adolescent girls. Their analysis showed that the decrease in self-worth was related to a decrease in body satisfaction that occurred as girls got older as a result of an increased awareness of sociocultural attitudes towards appearance and comparisons with media models. This demonstrates the important role that our society and media have in influencing young girls' perceptions of themselves and as a result their self-worth.

The self and physical activity

In the previous section we introduced the construct of the 'self', discussed the influence that society could have on our self-perceptions and the effect that our self-worth can have on our wellbeing, physical health and health-related behaviours. In a similar way the relationship between 'the self' and physical activity works in a reciprocal fashion. What we mean by this is that aspects of the 'self' impact on our physical activity behaviour but at the same time our physical activity behaviour can have an effect on our self-concept and self-perceptions. The next section discusses these relationships.

The self influencing physical activity

At first thought we would perhaps expect somebody who is unhappy about their weight to be more likely to exercise in order to lose weight and achieve their ideal body. However, closer inspection suggests that this is not always the case. Annesi (2006) explored the relationship between physical self-concept, self-efficacy and physical activity among children between the ages of 10 and 12 years. The children were taking part in an after-school club which aimed to encourage self-improvement. Sessions included a range of physical activities such as cardiovascular and resistance training on three days of the week but also included sessions on cognitive strategies such as goal setting (see Chapter 6) and discussions surrounding general health and nutrition. The intervention resulted in improvements in physical activity, physical self-concept and self-efficacy, demonstrating that it was successful in encouraging self-improvement. In addition, regression analyses demonstrated that improvements in physical self-concept and self-efficacy predicted increases in physical activity. Therefore, it appears that enhancing an individual's physical self-perception and increasing their confidence in their ability to change their behaviour encourages them to become more physically active.

Using a similar age group, Trautwein *et al.* (2008) explored the relationship between physical self-concept, and the free time physical activity of pre-adolescents using a longitudinal study design. Being in a PE class of high athletic ability resulted in adolescents reporting lower physical self-concept and this was related to lower levels of free time physical activity. Thus it appears that our self-perceptions are based on comparison of ourselves with others and that low self-perceptions make it less likely that an individual will choose to be physically active, supporting the findings obtained by Annesi (2006).

It appears, therefore, that a low-self concept and low physical self-worth make it less likely that individuals will choose to be physically active. A number of factors could contribute to this decision such as the exercise environment. The different factors contributing to exercise behaviour are discussed in Chapter 4.

Physical activity influencing the self

Clearly, low self-perceptions can contribute to low levels of physical activity. However, given the role that physical activity can play in altering an individual's appearance and physical competence, researchers have explored the role that physical activity can play in increasing individuals' self-perceptions, such as self-concept and self-worth.

Physical activity and the self-concept

McDonald and Hodgdon (1991) conducted a meta-analysis to determine the effect of aerobic exercise on adults' self-concept and reported moderate effects, suggesting that participating in aerobic exercise could enhance self-concept. However, a recent review by Spence *et al.* (2005) suggested that the research by McDonald and Hodgdon may have overestimated the effects seen. Criticisms aimed at this meta-analysis included the fact that only aerobic exercise was examined, and only published studies with an increased likelihood of significant results. One of the biggest concerns was the way that self-concept was defined by McDonald and Hodgdon. They combined different aspects of the self such as global self-worth, physical self-perceptions and body cathexis in their definition of 'self-concept'. As we saw earlier in the chapter, these different aspects of the self all have slightly different definitions and as such it might not be appropriate to combine the results of studies measuring all of these and use them to accurately infer effects on global self-concept.

While McDonald and Hodgdon (1991) demonstrated a relationship between aerobic activity and improved self-concept, other researchers have explored whether it is necessary to see a change in physical fitness associated with aerobic activity to achieve improved self-concept. In girls between the ages of 14 and 17, both vigorous physical activity and physical fitness (peak oxygen uptake) correlated with physical self-concept (Dunton *et al.*, 2006). However, regression analysis indicated that physical fitness was a stronger predictor of physical self-concept than physical activity, suggesting that physical activity must be at a level to improve cardiovascular fitness in order to impact on the self-concept.

Physical activity and self-worth

A recent systematic review of randomised controlled trials exploring the effects of physical activity on children and adolescents' self-worth was conducted by Ekland *et al.* (2005). The review supported the suggestion that exercise can improve self-worth but found that the effect was only small. A criticism of the research reviewed by Ekland and colleagues was that none of the studies included in the review followed participants after the intervention. This meant that Ekland *et al.*'s review could only conclude that exercise has a small effect on global self-worth over the short term.

At the other end of the spectrum, McAuley *et al.* (2000) explored changes in self-worth in relation to participation in different types of activity in older adults. Sedentary older adults were recruited to participate in a six-month randomised trial and were assigned to either an aerobic activity programme (walking) or a stretching and toning programme. No control group was used in the trial. Results indicated little difference in the increase in self-worth as a function of exercise type and increases in self-worth were not related to increases in fitness. Overall physical self-worth, esteem related to an attractive body, physical conditioning and strength

perceptions all increased over the six-month trial. At six-month follow-up, modest but significant reductions occurred in all measures across the groups. The only difference found between the groups was for physical strength perceptions, where the toning and stretching group demonstrated significantly greater increases during the scheme and a smaller reduction at follow-up than the walking group. Given the nature of the exercise, this is to be expected, therefore overall the type of exercise appeared not to influence changes in self-worth. Without the inclusion of a control group, however, it cannot be concluded fully that the changes seen in self-perceptions were as a result of the intervention. For example, exercising with a group of like-minded people might have alleviated any physical concerns that the participants had and as such increased their self-perceptions, irrespective of the exercise per se.

To address the criticisms aimed at McDonald and Hodgdon's meta-analysis (discussed above), Spence *et al.* (2005) reviewed the effects of exercise on global self-worth. Their review included both published and unpublished studies (e.g. dissertations and theses) and explored the effects of different forms of exercise such as skills training and cardiovascular-based exercise. A significant but small effect of exercise was found on self-worth but, in contrast to the findings by McAuley *et al.* (2000), improvement in physical fitness was necessary for the improvement in self-worth to occur. Thus exercise programmes focusing on improving physical fitness resulted in small to moderate effect sizes for self-worth, whereas skills training was found to have no effect on self-worth. However, Spence *et al.*'s review has been criticised for conceptualising self-worth as a global concept when research has demonstrated that self-worth is a multidimensional construct made up of various sub-domains as discussed earlier in the chapter (Schneider *et al.*, 2008).

Although the studies discussed here have identified positive relationships between exercise and self-worth, the question of causality remains. By this we mean that the studies do not provide conclusive evidence that an increase in physical activity causes an increase in self-worth. Using an adolescent sample, Schmalz *et al.* (2007) aimed to rectify this problem. The study used a longitudinal design to follow young girls through the adolescent period, taking measures of physical activity and self-worth at the ages of 9, 11 and 13 years. The study used a statistical analysis technique which allows the researcher to explore lagged effects, which means that they can explore how change in one variable influences the change in another variable over time. In this case, they examined how changes in physical activity influenced changes in self-worth over time. Their results demonstrated an effect of physical activity on self-worth, where higher levels of physical activity at 9–11 years predicted increased self-worth at 11–13 years. This relationship was stronger for younger girls (i.e. activity at 9 predicted self-worth at 11 more than activity at 11 predicted self-worth at 13). In contrast to discussions earlier in the chapter, there was no effect of self-worth on physical activity, suggesting that self-worth at an earlier age did not predict physical activity later on.

It appears, therefore, that physical activity can have an effect on an individual's global self-worth. However, given the hierarchical structure of self-worth it is likely that physical activity is more likely to have a direct influence on the physical self than on the global self and therefore affect global self-worth indirectly via modified physical self-perceptions.

Physical activity and the physical self

Schneider *et al.* (2008) felt that the small effect of physical activity on global self-worth seen in Spence *et al.*'s review was because these authors did not account for its multidimensional nature. They believed instead that physical activity was most likely to impact on physical self-worth (one of the sub-domains of

global self-worth). To explore the impact of physical activity on the physical self-concept of high school children who were not regular exercisers, Schneider *et al.* (2008) conducted a controlled trial using one school as a control group and another school as the intervention group. Children attended a PE class five days a week for 60 minutes. In the intervention PE classes, activities such as yoga and dance were offered and a proportion of the time was spent discussing the health benefits of physical activity. The control group, in comparison, attended usual PE classes with no discussion of these health benefits. Results demonstrated that in the intervention group, those children who increased in cardiovascular fitness reported significant increases in physical self-concept. However, there was no significant difference in global or physical self-concept between children in the intervention and control conditions. This suggests that the determining factor contributing towards the increase in physical self-concept was the increase in cardiovascular fitness and not the intervention per se.

In a similar study, Burgess *et al.* (2006) examined the effect of a six-week aerobic dance intervention on the physical self-worth of adolescents (13–14 years old) who took part in an aerobic dance class twice a week (intervention group) and a swimming class twice a week (control group). An aerobic activity was deliberately chosen as the control group to test the effects of dance on physical self-worth rather than the effects of aerobic versus non-aerobic exercise. The study used a cross-over design and counterbalanced the conditions so that each individual took part in both conditions (within subject design) and as such acted as their own control (see Box 3.3). Measures of physical self-worth were taken prior to the start of the intervention, at the mid point (when participants swapped groups) and again at the end of the intervention. Significant improvements in 'feeling fat,' strength and fitness, body attractiveness and overall physical self-worth were identified in the aerobic dance group while significant decreases were seen in all the named variables in the swimming class. It appears therefore that despite both activities involving aerobic exercise, aerobic dance was more successful at improving the body image and self-perceptions of these adolescents. The authors proposed that the non-competitive nature of dance might reduce the anxieties that can be caused by sport and exercise (see sections on social physique anxiety in this chapter and in Chapter 6) and as such provide a more supportive environment for individuals with low body image and self-perceptions to exercise.

Box 3.3

In the study by Burgess *et al.* (2006) students were allocated to either an aerobic dance condition or a normal PE condition (swimming). At the mid point of the study participants swapped so that the dance group took part in the swimming condition and vice versa. This changing of conditions is known as a cross-over design. This means that every participant provided measures in both the intervention and the control conditions and therefore this overcomes many of the limitations of between-subject designs where participants will only take part in one or other of the conditions. However, one problem with within-subject designs (where the same people take part in all conditions) is that the order of the conditions might have an impact on the outcome measures. For example, participants who took part in the dance condition first might have had elevated body image scores following this intervention. This positive effect on body image might have carried over when they then took part in the swimming condition, thus masking the beneficial effect of the intervention. For this reason, counterbalancing is used.

Box 3.3 continued

Counterbalancing involves altering the order in which participants take part in the conditions. In this example, this meant that some participants took part in the dance condition first and then swapped to the swimming condition while the other half of the group started in the swimming class but then swapped to the dance intervention. That way any order effects can be minimised and a more reliable picture of the results can be achieved.

Using a different type of sample, Taylor and Fox (2005) examined the effects of a ten-week exercise referral intervention on adults' physical self-perceptions. Participants, who were between 40 and 70 years old, were randomly allocated to either a control or intervention condition. Both groups attended an initial assessment and received information leaflets on reducing the risks of coronary heart disease. The control group received no further contact or support while the intervention group attended unsupervised exercise sessions twice a week for up to an hour. Participants were encouraged to gradually increase their activity during the ten weeks to aim to participate in 30–40 minutes of aerobic activity during their twice weekly sessions. All study participants completed the Physical Self-Perception Profile (PSPP; Fox and Corbin, 1989) at baseline, 16 weeks and 36 weeks from baseline, thus providing information about the longer term impact of exercise on self-perceptions. At both follow-up points, people in the intervention group were significantly more positive about their physical self-worth, physical condition and physical health than people in the control group. This suggests that participation in the programme resulted in increased physical self-perceptions and that as time progressed participation continued to impact on self-perceptions after the intervention.

Further analysis was conducted to examine any differences in self-perceptions between controls and those who were classed as high (15–20 sessions) or low (0–14 sessions) adherers to the programme. Results indicated that control participants and low adherers both demonstrated significant differences in physical condition from baseline to 16 weeks and in physical health from baseline to 36 weeks. High adherers demonstrated greater improvements in perceived physical appearance than did low adherers between baseline and 36 weeks. This indicates that even small increases in physical activity can impact significantly on some aspects of physical self-perception, while more long-term regular activity is required for improvements in the whole range of physical self-perceptions. The results also demonstrated changes in physical self-perception irrespective of cardiovascular fitness; however, a link was identified between anthropometric changes (changes in weight and body fat) and all subscales of the PSPP. This suggests that the changes in physical self-perceptions may have been linked to the improved body composition as a result of the activity.

Learning Activity 3.3

You might have noticed that a number of the studies discussed so far (e.g. Burgess *et al.*, 2006; Schneider *et al.*, 2008) have focused on the self-perceptions of adolescents. Give some thought to why research might target this group of individuals and how you might expect results to differ between this age group and other ages. Compare your answers with the discussion provided at the end of the book.

The relationship between physical activity, the self and wellbeing

In Chapter 2 we discussed the positive impact that physical activity has on mental health. Earlier in this chapter we also mentioned the benefits that a positive self-concept and self-worth can have on our psychological health. Researchers have therefore considered whether physical self-worth can act as a mediator between exercise involvement and global self-worth and wellbeing.

The self as a mediator of the relationship between physical activity and mental health

Dishman *et al.* (2006) were interested in whether the relationship between physical activity and positive mental health is linked to improvements in physical self-concept. Female adolescents provided measures of depressive symptoms, self-worth and physical self-concept (using the Physical Self-Description Questionnaire; Marsh *et al.*, 1994, see Box 3.2), physical activity and sport participation as well as being assessed for cardiorespiratory fitness and body mass index (BMI). The results demonstrated that girls with higher self-worth reported less depressive symptoms. In addition, physical self-concept mediated the relationship between physical activity and self-worth. This means that those who were more physically active were more likely to have a more positive physical self-concept and as a result higher global self-worth. Given that self-worth was negatively related to depressive symptoms the results suggest that the positive impact of physical activity on mental health might be mediated by improvements in physical self-concept and self-worth. These relationships were observed irrespective of anthropometric measures or BMI, again suggesting that the relationships between physical activity and self-concept are not necessarily linked to bodily changes provided by physical activity as proposed by Taylor and Fox (2005).

Social physique anxiety

Case Study 3.3

Let's return to Hena.

Since her last visit to the GP, Hena has failed to increase her physical activity. Her GP has now advised her to start an exercise referral programme which involves attending a gym twice a week with a trained instructor. Although Hena desperately wants to lose the weight, the thought of attending the sessions terrifies her and brings her out in a cold sweat. She cannot bear the thought of having to wear exercise clothes and attend a gym. She believes that the type of people who attend a gym will be attractive and healthy and will look at her physique and see her as lazy and unattractive. She also cannot bear the thought of exercising in an environment where she will be surrounded by mirrors, forcing her to look at her body while she exercises.

We can see from some of the models of the 'self' that the way others view us is an important factor in how we perceive ourselves and our level of self-worth. For this reason people tend to want to represent

themselves in the best possible light so that they are thought of favourably. One way in which people try to maintain a positive image of themselves is by using something called 'self-preservation'. Self-preservation involves people hiding the aspects of themselves that they believe will be viewed unfavourably while promoting the positive aspects of themselves. For example, on meeting a stranger early in the morning, we might aim to override our desire to be our usual grumpy self and put on a cheery smile so that they perceive us to be a likeable individual, rather than the grumpy morning person that we really are! In a similar way, we might not want to place ourselves in situations where we could look foolish or incompetent. For example, an overweight and unfit individual might avoid exercising in the gym because they wish to preserve their self-image rather than have people view them as unfit or unhealthy as they become out of breath.

There are certain situations in which it is extremely difficult to maintain our positive self-image and the more negative aspects of our self are likely to become apparent for all to see. These situations cause the individual to feel anxious and uncomfortable in this environment and to experience social anxiety. Social anxiety can occur as a result of being unable to preserve a positive image of the self and can relate to any of the domains of competence. For example, if we are asked a question in class to which we do not know the answer this is likely to influence our academic self-image. We previously discussed how important the physical self-image is to our global image. It is understandable therefore that in situations which undermine our physical self-image and others' perception of our physical selves we are likely to experience anxiety about our physical self. This is termed social physique anxiety and stems from the fear that others may negatively evaluate our physique. This in turn is likely to have a significant impact on our global self-worth.

Social physique anxiety can have a number of behaviours and cognitions such as whether people choose to exercise, their motives to exercise, where they choose to exercise, what they choose to wear to exercise and how they feel during exercise. Case Study 3.3 describes an individual suffering from social physique anxiety and shows how much of a barrier to exercise social physique anxiety can be. The negative effect of social physique anxiety on exercise behaviour is discussed in more detail in Chapter 6. In this chapter, we focus on whether exercise can be used to improve social physique anxiety.

Exercise and social physique anxiety

So far in this chapter we have discussed how exercise can improve individuals' physical self-perceptions and body image. Exercise also helps people to lose weight and improve the overall condition of the physique (Edmunds *et al.*, 2007). Research has therefore explored whether exercise can in turn reduce individuals' social physique anxiety. Aşçi *et al.* (2006) suggested that university students with higher levels of physical activity had higher levels of social physique anxiety. On first glance this might suggest that exercise is detrimental to our self-perception and anxieties about our physical selves. This might well be the case since research has demonstrated that certain exercise environments can exacerbate social physique anxiety (see Chapter 6), however, there may be an alternative explanation for this result. It may be that individuals with higher levels of social physique anxiety exercise more in an attempt to change their bodies. It is difficult to say, using cross-sectional research such as this, whether individuals who exercise tend to have more anxieties about their physical selves or whether people who have anxieties about their physical selves tend to exercise more. For this reason, research has begun to employ longitudinal designs, where a repeated measures approach can be used (see Box 3.4). This way, causal relationships between variables, social physique anxiety and exercise in this case, can be explored.

Box 3.4 Definition: Repeated measures

A repeated measures design is a form of research design where the same measures are taken over a period of time during the research. Often research using this method tests the efficacy of an intervention. Participants provide baseline measures of the variables of interest which can then be compared to the same measures taken at the end of the intervention. Any changes seen in the measures from baseline to the end of the intervention can then be attributed to the intervention (if no confounding variables need to be considered and a control group is included that does not receive the intervention).

McAuley *et al.* (1995) invited middle-aged sedentary adults to participate in a five-month exercise programme. The intervention involved participants meeting with an exerciser leader three times a week for one hour of exercise designed to increase their levels of aerobic activity. Measures of social physique anxiety, self-efficacy and outcome expectations (see Chapter 5) and anthropometric variables (e.g. weight, skinfold measures, etc.) were obtained at the start of the programme (baseline) and then again following the five-month programme. The programme was successful at increasing participants' self-efficacy and outcome expectancies. Interestingly, the increases in self-efficacy and positive outcome expectancies predicted decreases in social physique anxiety even when controlling for gender, weight loss and body fat. This demonstrates that the reductions seen in social physique anxiety occurred irrespective of changes in participants' physique and resulted from increased self-efficacy in the exercise environment.

More recently, Lindwall and Lindgren (2005) conducted a controlled trial to determine the effects of exercise on social physique anxiety and self-perceptions in Swedish female adolescents. Schools were randomly allocated to an intervention or control group, and all participants completed measures of the PSPP (Fox and Corbin, 1989) and the Social Physique Anxiety Scale (Hart *et al.*, 1989), were measured for BMI and took part in a submaximal fitness test. The intervention programme involved twice weekly exercise sessions over a six-month period. Participants could choose from a range of activities such as dance, yoga, climbing and karate. The female-only sessions included 45 minutes of the chosen activity as well as a 15-minute discussion on healthy living. Results demonstrated that participants in the intervention group reported more improvements in social physique anxiety and self-perceptions than did those in the control group. In fact the control group demonstrated increases in social physique anxiety during the six-month research period.

Despite these encouraging results, however, when an intent-to-treat analysis (see Box 3.5) was used, the improvements in self-perception were no longer significant. The effect of the intervention on social physique anxiety did remain significant, but social physique anxiety and physical self-perceptions were only weakly related to the physiological measures. This suggests that the beneficial effect of the intervention might not necessarily be attributable to changes in body shape or physical fitness but to a psychosocial effect.

Box 3.5 Definition: Intent-to-treat analysis

Clinical research and research using interventions must account for many influencing factors when analysing the results. For example, people often drop out of interventions before they are completed and so do not provide the measures needed to analyse changes seen during the intervention. This provides the researcher with a dilemma about how to analyse the results. One option is to only use data from people who completed the research. The benefit of this is that there is no missing data. However, a limitation of this is that people who were not doing very well on the intervention or who were not seeing any improvements are likely to be the people who choose to drop out while the people who are doing well will complete the programme. Therefore by only including these people in the analysis, the intervention will look very successful, when in fact this may not be the case. Intent-to-treat analysis aims to overcome this problem by using the data from everybody who intended to take part in the study. Although this is likely to mean that the researcher has to deal with missing data (because some people will only have contributed baseline data), it provides a more accurate representation of all participants. This is therefore a far more rigorous way of analysing the data.

Chapter Review

This chapter began by discussing the factors that make up the self. We discussed how the construct we use to describe ourselves is referred to as our self-concept. This is a multifaceted construct made up of sub-domains which in turn are made up of a number of situation-specific domains. Our roles and competencies within these domains allow us to evaluate ourselves and this contributes to our self-worth (Learning Objective 1). Four main sub-domains are believed to make up the structure of the self-concept and self-worth: social, emotional, academic and physical. The physical self-worth sub-domain is believed to be the most significant predictor of our overall self-worth (Learning Objective 2).

The second part of this chapter discussed the reciprocal relationship between physical activity and the self. Physical activity impacts on aspects of the self and this relationship and an individual's self-concept and self-worth influence their physical activity behaviour (Learning Objective 3). Research has demonstrated that individuals with low-self worth are less likely to participate in physical activity. However, participation in physical activity has been shown to improve an individual's self-worth. Aspects of the self have also been shown to mediate the relationship between physical activity and improved wellbeing.

Finally, this chapter discussed social physique anxiety, which is anxiety stemming from the fear that others might evaluate our bodies negatively. Research has demonstrated that exercise interventions can help to alleviate social physique anxiety; however, some studies suggest that this improvement may be attributable as much to psychosocial variables, such as improved self-efficacy, as it is to the exercise component of the intervention (Learning Objective 4).

Learning Activity 3.4

Test your understanding

1. Compare and contrast the difference between the self-concept and self-worth and describe the relationship between physical self-worth and global self-worth.
2. What is meant by a reciprocal relationship between physical activity and the self and what effect does this have on exercise behaviour?
3. Should an exercise intervention aimed at tackling the obesity epidemic be concerned about improving participants' self-worth. If so, why?
4. What does research suggest about the benefits of different types of exercise on self-worth?

Further Reading

- For more information on the relationship between physical activity and the self:

Goldfield, GS, Mallory, R, Parker, T, Cunningham, T, Legg, C and Lumb, A *et al.* (2007) Effects of modifying physical activity and sedentary behavior on psychosocial adjustment in overweight/obese children. *Journal of Pediatric Psychology*, 32: 783–93.

This study employed a randomised controlled design to test the effects of increasing physical activity and reducing sedentary behaviour in the form of watching TV on obese children's physical and global self-worth. Despite the perceived similarity of increasing physical activity and reducing sedentary behaviour, it is interesting to see the different effects that these behaviours have on aspects of the self.

- For more information on social physique anxiety and its impact on physical activity:

Lindwall, M and Lindgren, E (2006) The effects of a 6-month exercise intervention programme on physical self-perceptions and social physique anxiety in non-physically active adolescent Swedish girls. *Psychology of Sport and Exercise*, 6: 643–58.

Although we briefly discussed this paper in this chapter it is worth reading in full as it provides a good overview of research surrounding physical activity and social physique anxiety and is a study that has used a randomised controlled design.