

The physical self-concept in patients with depressive and anxiety disorders

Jan Knapen, Joeri Vermeersch, Herman Van Coppenolle, Veerie Cuykx, Guido Pieters, Joseph Peuskens

Patients suffering from depressive and/or anxiety disorders are characterized by a low physical-concept. The objective of the present study was to investigate which variables are related to the physical self-concept in these patients.

One hundred and ninety-one patients (67 males and 124 females) hospitalized in a university psychiatric hospital in Belgium took part in the study. The severity of depression and anxiety, level of physical activity, physical self-concept, perceived benefits and barriers towards physical exercise, and motivation towards psychomotor therapy were assessed by means of questionnaires and a visual analogue scale. A stepwise multiple linear regression analysis was used to ascertain the explaining variables of the physical self-concept.

The explaining variables, in order of importance, were: severity of depression, barriers towards physical exercise, motivation towards psychomotor therapy, level of physical activity, age and gender. Patients with a low physical self-concept are characterized by a high severity of depression, a low level of physical activity and a low motivation towards psychomotor therapy. They also experience many barriers towards physical exercise.

Key words: Depression, anxiety, physical self-concept, psychomotor therapy

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Jan Knapen is scientific collaborator, Department Rehabilitation Sciences, Katholieke Universiteit Leuven, and psychomotor therapist, University Psychiatric Centre Katholieke Universiteit Leuven, Campus Kortenberg, Leuvensesteenweg 517, 3070, Kortenberg, Belgium

Joeri Vermeersch is psychomotor therapist, Psychiatrisch Centrum Sint-Amandus Reigerlostraat Beernem,

Herman Van Coppenolle is Professor, Faculty of Kinesiology and Rehabilitation Sciences, Katholieke Universiteit Leuven,

Veerle Cuykx and **Guido Pieters** are psychiatrists, University Psychiatric Centre Katholieke Universiteit Leuven, Campus Kortenberg, **Joseph Peuskens** is Professor, Faculty of Medicine and Chairman University Psychiatric Centre Katholieke Universiteit Leuven.

Correspondence to: J Knapen

Self-esteem is widely considered to be a key indicator of mental health. Positive self-esteem has been related to emotional stability, life satisfaction, social adjustment, independence, adaptability to difficult situations, resilience to stress, internal locus of control and adequate health behaviour (Fox, 2000). Low self-esteem is closely related to mental illness and diminished psychological well-being. It frequently accompanies psychiatric disorders such as clinical depression, anxiety disorders and personality disorders (American Psychiatric Association, 1994; Fox, 2000; Beck et al, 2001).

Most recently, Beck et al (2001), and Van de Vliet et al (2002) indicated an inverse relationship between the level of self-esteem and severity of depression and anxiety in sample groups of psychiatric outpatients and inpatients, respectively. An de Vliet et al (2002) also detected that Flemish depressed psychiatric inpatients had significantly lower self-esteem and physical self-concept when compared with healthy controls.

Improvement of self-esteem has therefore regularly been described as one of the main treatment

aims for psychiatric patients. Fox (2000) considers self-esteem to be the affective component of the self director, defining it as:

'A self-rating of how well the self is doing.'

Campbell (1984) defines self-esteem as:

'An awareness of good possessed by self.'

Self-concept is considered to be the cognitive component of the self director (Fox, 2000). It is a multi-dimensional self-description, which contains more specific perceptions in different domains. These domains are therefore regarded as components of the global self-concept.

Roles in several life domains may contribute to the global self-concept and include perceptions of the self at work or in school (academic self-concept), in social relationships (social self-concept), in emotional relationships (emotional self-concept), and also perceptions about the body and physical abilities (physical self-concept). Physical self-concept is dictated by qualities related to physical acceptance and physical competence (Fox, 2000).

During the last 20 years, much value has been attached to body attractiveness, health-related physical fitness, motor skills and sporting performances as these features of the physical domain are consistently tied to the global self-concept. As a result, the physical self-concept may be important for the development and the enhancement of global self-concept especially for individuals with low self-concept such as psychiatric patients.

Leith (1994) indicated that clinical populations, in particular, (for example, depressed adults, people with mental retardation, rehabilitation patients) have problems with self-concept. The author (Leith, 1994) also reported that exercise programs lead to a significant improvement in self-concept in 77% of the conducted investigations within the above populations.

Four meta-analytic reviews have investigated the effectiveness of physical exercise on physical self-concept (Landers and Arent, 2001). In all of these reviews, exercise was determined to bring about small to moderate (effect size varying from 0.23–0.41) increases in physical self-concept.

Fox (2000) inferred from a narrative review of 36 randomized controlled trials in the domain of exercise and physical self-concept that 78% of these trials yielded improvements in physical self-concept. It was also indicated that positive changes are likely to be greater for people with a low physical self-concept such as psychiatric patients.

In psychiatric patients, a low physical self-concept and poor physical health and fitness, in interaction with other barriers to participation in exercise, such as psychosomatic complaints and hypochondria, lack of energy, and general fatigue

may lead to a vicious cycle of loss of self-confidence, an increased avoidance of physical activity and decreased levels of physical health and fitness (Knapen et al, 2003a) (*Figure 1*). For that reason, the integration of exercise therapy into the comprehensive treatment programs for psychiatric patients is highly recommended.

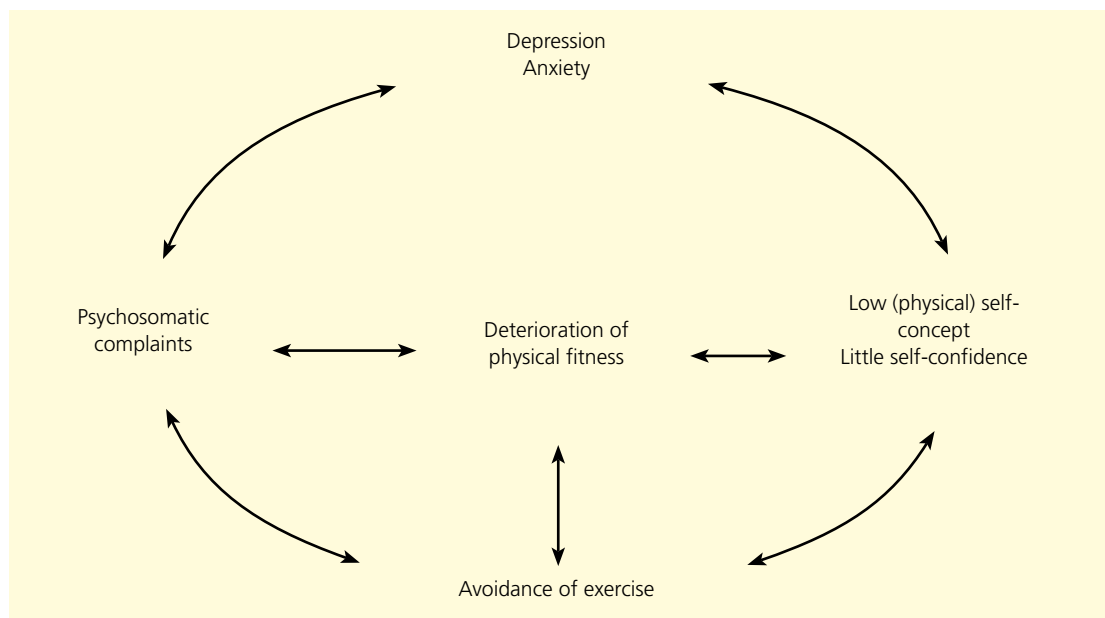
During the last three decades, both clinical experience of psychomotor therapists and research findings in the area of physical activity and mental and physical health have, in most psychiatric hospitals, led to an ‘evidence-based’ implementation of exercise and body awareness techniques as psychomotor therapy (Knapen et al, 2003b).

The general objectives of psychomotor therapy are the improvement of both psychological and physical well-being and the maintenance or enhancement of physical fitness in patients suffering from various mental illnesses such as psychotic eating, personality, depressive and anxiety disorders.

In a previous study the authors compared the physical self-concept of a sample group of patients suffering from depressive and anxiety disorders with a matched healthy control group (Van de Vliet et al, 2002). The patient group had significantly lower physical self-concept than the healthy control group. It was also noted that female patients showed a lower physical self-concept than male patients.

The objective of the present cross sectional study was to examine which psychological and physical variables could explain the low level of physical self-concept in a sample group of inpatients with depressive and anxiety disorders.

Figure 1. Vicious cycle of loss of self-confidence, avoidance of exercise and decreased levels of physical health and fitness



METHODS

Subjects

Subjects included 67 male patients (age $M = 35,8$ years, $SD = 9,5$) and 124 female (age $M = 32,4$ years, $SD = 10,3$). The chosen subjects were hospitalized in three cognitive-behavioural treatment units in a university psychiatric hospital in Belgium. They suffered from anxiety disorders, such as generalized anxiety disorder, panic disorder, post traumatic stress disorder, and/or depressive disorders, for example, major depressive disorder, dysthymic disorder, with underlying personality disorders (American Psychiatric Association, 1994).

Patients followed a multi-disciplinary cognitive-behavioural therapy program. It included:

- Psychopharmacotherapy
- Psychiatric consultation
- Individual cognitive-behavioural therapy
- Different forms of group psychotherapy and social skill training
- Occupational therapy
- Leisure time supervision
- Psychomotor therapy (three or four times a week).

In the first week of admission, patients were asked to take part in the study. Patients were excluded if they suffered from psychosis. The study was approved by the Ethical Committee of the Faculty of Medicine of the Katholieke Universiteit Leuven. Written informed consent was obtained from all patients.

Measures

The physical self-perception profile: Physical self-concept was assessed using the domain scale of physical self-worth (PSW) in the Dutch version of the physical self-perception profile (PSPP) (Van de Vliet et al, 2002). This version of the PSPP consists of the domain scale of PSW (six items including; general feelings of happiness, satisfaction, self-respect and self-confidence in the body appearance and physical abilities). Each item is scored on a scale from 1–4, with higher scores indicating more positive self-perceptions.

The range of possible total scores for the PSW is 0–24. Van de Vliet et al (2002) demonstrated an adequate reliability and validity of The Dutch version of the PSPP in a sample group of Flemish psychiatric inpatients.

The Beck Depression Inventory: The Beck Depression Inventory (BDI) (Bosscher et al, 1986) is a 21-item self-reporting questionnaire consisting of symptoms and attitudes relating to depression. The range of possible total scores is 0–63, with higher scores indicating a greater level of depression. The Dutch version of the BDI has been shown

to be a valid and reliable measure of depression severity (Bosscher et al, 1986).

Experienced benefits and barriers for habitual physical activity: Reported benefits and barriers of regular physical activity were assessed by means of the Dutch version of the ‘Experienced benefits and barriers for habitual physical activity’ questionnaire of Steinhardt and Dishman (1989) (De Bourdeaudhuij and Van Oost, 1994).

This questionnaire consists of 22 items about reported benefits (4 subscales: psychological benefits, physical attractiveness and health benefits, pleasure and social advantages and competition advantages), and of 23 items about reported barriers (5 subscales: psychical difficulties and health problems, fear to be laughed at, lack of interest, lack of time, and external obstacles). All items are scored in a 5-point Likert format, ranging from ‘not relevant’ (1) to ‘always’ (5). De Bourdeaudhuij and Van Oost (1994) reported an adequate reliability and validity of the Dutch version of this questionnaire.

Motivation towards psychomotor therapy:

Motivation was assessed by the patients themselves by means of a visual analogue scale, ranging from 0 (not at all motivated) to 10 (extremely motivated).

The Baecke Questionnaire: The Baecke Questionnaire evaluates the level of habitual physical activity (Baecke et al, 1982). It consists of 3 subscales: physical activity at work (8 items), sport activities (2 items), and physical activity during leisure time (7 items). Each subscale is scored on a 5-point Likert scale except the subscale ‘sport activities’, which has a separate scoring system. Philippaerts and Lefevre (1998) showed the Baecke questionnaire to be a reliable and valid instrument in the assessment of habitual physical activity in a Belgian sample group.

TABLE 1. Regression coefficients (B), standardized regression coefficients (beta weights) and the significance of the regression coefficients (p-level) for each variable

Variables	B	Beta	p-level
BDI	-0.107	-0.371	< 0.001
Barriers	-0.040	-0.173	0.017
Motivation	0.009	0.116	0.064
Baecke	0.217	0.102	0.099
Age	0.002	0.090	0.155
Gender	0.635	0.093	0.161

Note: BDI = Beck Depression Inventory; Baecke = level of physical activity; $n = 191$; intercept = 12.937

Trait Anxiety Inventory: The Trait Anxiety Inventory (TAI) subscale of the State-Trait Anxiety Inventories (STAI) (Hermans, 1994) was used to assess trait anxiety. This self-rating scale that consists of 20 items, with response scores on a scale from 1–4. The range of possible total scores is 20–80, with higher scores indicating higher levels of anxiety. The TAI represents one of the most reliable and valid instruments for assessing trait anxiety in psychiatric settings, and has been validated for use in Dutch by Hermans (1994).

Statistics

The data were modelled by a stepwise multiple regression analysis. The effect selection was performed based on entry and stay significance levels of 0.05.

The candidate effects available to the selection method were:

- Severity of depression and anxiety
- Perceived benefits and barriers towards physical exercise
- Motivation towards psychomotor therapy
- Level of physical activity
- Age
- Gender.

The analysis was done using Statistica 5.5 (statsoft, 1995).

For the multiple regression analysis, eight subjects were not used because of missing values.

RESULTS

In this study a stepwise multiple regression analysis was used. This operation took up six variables: depression, barriers towards physical activity, motivation, level of physical activity, age, and gender. This model resulted in 32.50% explanation of variance in the physical self-concept and is significant ($p < 0.001$). Only two of the six variables; 'depression' and 'barriers' were found to be significant ($p < 0.05$).

From the results (*Table 1*) the regression coefficients appeared to differ from zero implying that every variable contributes to the level of physical self-concept.

DISCUSSION

Main findings

Previous studies showed that exercise programs are effective in improving physical self-concept in depressed and anxious psychiatric patients (Blumenthal et al, 1999; Knapen et al, 2005). The purpose of this study was to examine which psychological and physical variables explain the level of physical self-concept. The results indicated that

only depression and barriers towards physical activity have a significant influence on the physical self-concept and that the additional variables only had a minimum effect on the physical self-concept.

There is a clarification for the contribution of every variable in the physical self-concept.

The first variable that was partially determining in the physical self is the severity of depression. It was formerly quoted that several symptoms of depression result in lower self-concept (American Psychiatric Association, 1994). It is plausible that the self-concept is always lower as the severity of depression rises. Van de Vliet et al (2002) reported an inverse relationship between level of physical self-concept and severity of depression and anxiety in a sample group of psychiatric inpatients.

The second important variable that influences the physical self-concept was the barriers that patients feel towards physical activity. Several barriers were identified:

- Deficient self-motivation and self-enhancement strategies
- Psychosomatic complaints
- Lack of any internal locus of control concerning health
- Deficit of energy
- General fatigue.

All of which may result in a vicious cycle of loss of self-confidence, an increased avoidance of physical activity and a deterioration of physical fitness (Knapen et al, 2003a). These barriers were measured by the 'Expected barriers for habitual physical activity' questionnaire.

The third important variable was the motivation towards psychomotor therapy. People who are motivated to take part in physical exercise show a higher physical self-concept than less motivated individuals (Fox, 2000). In most cases, those with a high motivation for physical activity increase their physical self-concept by exercise participation. The inverse could also be assumed; that individuals with high physical self-concept are motivated to take part in physical activities.

The level of physical activity also explained the level of the physical self-concept. Taking part in regular exercise is moderately associated with more positive physical self-perceptions (Fox, 2000).

The next variable in this study was age. Older people have a higher physical self concept than younger people. Older people succeed to accept their body and their physical fitness with all the possible limitations (Fox, 2000).

The last variable of this study that explains the physical self-concept was gender. Men have a higher physical self-concept than women. This corresponds to the postulated expectations (Lindwall

and Hassemén, 1994). The authors previous study (Van de Vliet et al, 2002) indicated these gender differences in Flemish psychiatric inpatients and healthy controls (Van de Vliet et al, 2002).

Limitations of the study

The results only explained 32.5 % of the variance in the physical self-concept, thus 67.5% of the variance was unexplained. The major limitation of the present study was that there may be other possible explaining variables which were not included in this investigation. For example, the level of physical fitness is highly related to the physical self-concept. This variable was not included this study because of great age ranges in both genders.

The level of physical fitness cannot be compared between different gender and age categories. Separation into subgroups would lead to too small groups and would not be representative of a population group of patients. Other potential explaining variables which were not included were the body mass index and health behaviours (for example, smoking, exercise avoidance).

The second limitation of the study was that social desirability, self-presentation strategies, expectancy effects and demand characteristics might influence the scores on self-reporting questionnaires (Landers and Arent, 2001).

A third limitation was the adverse effects of psychotropic medication (dizziness, fatigue, drowsily, concentration disturbance etc...) which influence the physical self-concept in a negative way.

Depressed and anxious patients may also have suffered from underlying personality disorders. There are three categories of personality disorders with typical characteristics (American Psychiatric Association, 1994). The first group (paranoid, schizoid and schizotypal personality disorder) is characterized by strange and eccentric behaviour, the second group (antisocial, borderline, narcissistic and histrionic personality disorder) is characterized by dramatically emotional, unbalanced behaviour, and the third (dependent, obsessive-compulsive, passive-aggressive and avoidant personality disorder) is characterized by anxiety. It could be expected that the type of personality disorder may directly influence the physical self-concept. Narcissistic and antisocial personalities are inclined to overestimate their global and physical self-concept, whereas dependent and avoidant persons rather will underestimate themselves.

A last limitation was the use of a less specific measurement for the level of anxiety. The TAI measures the anxiety disposition in different situations, not exclusively in exercise conditions. More specific instruments assessing fear for physical activity, such as the Dutch version of the Tampa Scale

for Kinesiphobia (Vlaeyen et al, 1995) or the Body Sensation Questionnaire (Bouman, 1998), would be recommended for this research topic.

Because of the limitations of this study, further research will be needed for both the application of more specific instruments and to test for other factors relating to the physical self-concept in these patients.

Implications for clinical practice

Psychiatric patients accumulate a lot of barriers for participation in psychomotor therapy such as:

- A low self-concept
- Loss of energy, interest and motivation
- Generalized fatigue
- Weak physical fitness and health condition
- Fear to move (movement phobia)
- Social fear
- Being overweight
- A low feeling of personal control concerning own fitness and health
- Psychosomatic complaints.

The psychomotor therapist tries to anticipate these barriers during, for example, an acquaintance conversation (Knapen et al, 2005).

Furthermore, the therapist will draw up an individual plan with the patient and should take into account emotional, cognitive and physiological components of mental illness. It is important to formulate good objectives increasing the chances of therapy success. The moderate exercise stimulus should be adapted to the individual's physical abilities, training status, expectations and goals, side effects of psychotropic medication, exercise tolerance and perceived exertion.

KEY POINTS

- Patients suffering from depression and/or anxiety disorders are characterized by a low physical self-concept.
- Self-esteem is a crucial aspect of the quality of life and mental health.
- The severity of depression and barriers towards physical activity are important variables to explain the level of physical self-concept.
- Possible barriers towards physical activity include: low self-confidence, loss of energy, loss of interest and motivation, generalized fatigue, weak physical fitness and health condition.
- It is necessary, in psychomotor therapy, to make an individual plan for each patient as a result of the various barriers towards physical activity.

CONCLUSION

Self-determined motivation towards exercise is very important and results in adaptive exercise-related behaviours, cognitions and physical self-evaluations (Thøgersen-Ntoumani and Ntoumanis, 2006). Therefore, it is a worthwhile act to make physical activity as self-determined as possible by focussing on the positive experiences of the activity itself, as well as helping to develop an identity of a physical active person. Intrinsic motives lead to the experience of a decrease in symptoms during physical activity (Sørensen, 2005).

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Conflict of interest: none.

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