

# A pilot body image intervention programme for in-patients with eating disorders in an NHS setting

Patricia Caddy, Barbara Richardson

**Background:** Body image distortion, a distressing problem that precipitates eating disorders, remains a struggle for patients after other symptoms are controlled. Despite a strong physical aspect there is little recognition of physiotherapy intervention. This study aims to assess the effect of a tailored physiotherapy intervention programme for patients with eating disorders in an NHS in-patient unit.

**Methods:** The intervention programme, targeted at known, potentially modifiable factors relevant to body image distortion in 7 patients, used touch, massage, drawing exercises and listening skills. Patients received 8 to 38 sessions determined by length of stay on the unit. Self-drawings were completed at each session and a body shape questionnaire (BSQ-34) and a self-assessment silhouette scale in the first and last sessions.

**Findings:** Self-drawings showed improved comparative proportions of body areas. Initial silhouette scores of more than 5 out of 10 reduced to less than five. There was a reduction in BSQ-34 questionnaire scores for all patients, and to less than half for 3.

**Conclusions:** This pilot study suggests that a tailored programme based on principles of physiotherapy can help to improve body image perception and satisfaction. It draws attention to the potential of physiotherapy intervention programmes in the UK.

Key words: ■ eating disorders ■ physiotherapy interventions ■ touch massage ■ body image

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Body image distortion is a distressing problem that precipitates eating disorders and remains a major issue for the patient after other symptoms are controlled (Slade and Russell, 1973). A National Institute of Clinical Excellence (NICE) Guideline (NICE, 2004) proposes eating disorders comprise a range of syndromes encompassing physical, psychological, and social features. Anorexia nervosa and bulimia nervosa are frequently chronic conditions with substantial long-term physical and social sequelae, from which recovery is difficult. The NICE Guideline states that about 1 in 250 females and 1 in 2000 males will experience anorexia nervosa, generally in adolescence or young adulthood and about five times that number will suffer from bulimia nervosa. Males experience many concerns about their bodies similar to females. The concept of body image, often termed body dissatisfaction, has two components: first, body perception, the individual's estimate of their body size; and second, the individual's attitude towards their body (Slade and Russell, 1973; Rosen, 1996; Skrzypek et al, 2001). Not all patients with eating disorders overestimate their body size (Probst et al, 1998a; 1998b) and it is

argued that a narrow notion of body image should be replaced with the more complex construct of body experience, which encompasses cognitive responses (what they think they really look like), affective responses (what they feel they look like) and optative responses (what they want to look like) (Probst et al, 1995). Some studies combine reports of adolescent and adult case series without separate analysis (NICE, 2004, p. 34).

The NICE Guideline (NICE, 2004) includes physiotherapists in the list of health professionals who can be involved with patients with eating disorders (ibid. p.12), but despite a strong physical aspect related to body image, no reference is made to physiotherapy intervention programmes. A specifically adapted form of Cognitive Behavioural Therapy (CBT) is recommended as the treatment of choice for patients with bulimia nervosa (ibid. p.16) while therapies to be considered for the psychological treatment of anorexia nervosa also include cognitive analytical therapy (CAT), interpersonal psychotherapy (IPT), focal psychodynamic therapy, and family interventions focused explicitly on eating disorders (ibid. p.10). A limited improvement from massage in anorexia nervosa symptoms but not weight gain is noted

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(ibid. p. 103) and the lack of randomized controlled trials (RCTs) comparing exercise or massage with psychological interventions for treatment of people with bulimia nervosa (ibid. p. 147). The guidelines state that although physical therapies are used in some European countries e.g. Belgium and Norway (ibid. p. 101), with a long tradition of integrating physical therapies into psychological therapy, this is not the tradition in the UK.

The aim of this study was to assess the effect of a tailored physiotherapy programme. A literature search of relevant data bases: CINAHL, AMED, PsychINFO, EMBASE carried out for physiotherapy studies reported in English, using combinations of key words: Body image, interventions, Anorexia Nervosa, Bulimia Nervosa, Eating Disorder, and physiotherapy, substantiates the paucity of evidence of physiotherapy interventions in general and in UK health care in particular. Few relevant studies were identified. For example, in the United States the focus is on physiotherapy responsibility in recognizing, treating and preventing the female athlete triad, in relation to eating disorders. In this syndrome the low energy availability that leads to menstrual dysfunction and compromised bone health can result from an insufficient calorific intake (Pantano, 2009). Reporting in the Swedish language Berg et al, (2005) stress the role of communication in the therapeutic process, and Mattsson (1998) theorises body awareness to be a key element of physiotherapeutic practice in work with patients with eating disorders. Thornberg and Mattsson (2010) used assessment scales to look at the concordance of a physiotherapist's observation with 87 patients' own reports of bodily expression. Although the PT observations did not always concur, the study prompts further examination of appropriate methodology and physiotherapy research in this area of health. They suggest Basic Body Awareness Therapy (BBAT) (Roxendal, 1985 cited in Thornberg and Mattsson, 2010), a treatment modality within psychiatric and psychosomatic physiotherapy, developed for patients with longstanding complex illnesses including patients with eating disorder, is an established treatment in many countries, although this is not evidenced in this literature search. In the UK, Mandy and Broadbridge (1998) conducted a questionnaire survey of 159 members of Chartered Physiotherapists in Mental Health to ascertain their involvement in anorexia nervosa. Of the 115 responses, just under half had treated patients with anorexia nervosa. From the responses they conclude that physiotherapists are adopting holistic and individualistic approaches, using a range of techniques in the treatment of many aspects of the

condition, particularly body image disorder and inappropriate exercise behaviour. In a professional newsletter, Duckworth (2000) highlights the lack of medical and public appreciation of physiotherapists working in the recovery process of eating disorders and points to less than 50 units available for patient access in the NHS and the private sector, many of which with long waiting lists being without physiotherapy. She calls for wider access to outpatient departments to enable earlier intervention. Tonkin (2000) further argues that physiotherapists are well placed to help young people address body image and to play a key role in reinforcing healthier lifestyle messages.

Until a more substantial evidence base is established it is unlikely that physiotherapy can form part of the routine practice of eating disorder services in the UK. However, as suggested by the NICE Guideline (2004) the absence of empirical evidence for the effectiveness of a particular intervention is not the same as evidence for ineffectiveness. Eating disorders present complex challenges and treatment tends to be long-term with the possibility of frequent relapses. The setting, finding the right person to work with who has expert knowledge and particular qualities, who will accept and understand the person as 'an individual with a unique experience' rather than as 'a case of pathology', is thought to be critical to treatment success (NICE, 2004 p. 39).

This paper is aimed at assessing the effect of a tailored physiotherapy programme. It proposes physiotherapy can play a unique and explicit role in the treatment of eating disorders within the multidisciplinary team, using physical strategies to help patients overcome their symptoms and to accept their changing body shape. The concept of a physiotherapy intervention programme was generated by the first author (PC), during many years of experience working with patients in this area. Patients reported positively to not only benefit from massage for the relief of muscle tension and anxiety, but also improvement in their body awareness.

## METHODS

Following advice from the local ethics committee in 2009 an opportunistic sample of seven patients with eating disorders post-discharge were invited in writing to allow their personal data to be analysed. They each signed a consent form. Six were female and one male. The intervention programme was targeted at known, potentially modifiable factors relevant to body image distortion in each of the 7 patients and used touch, massage, drawing exercises, and listening skills. Each programme was individually tailored. Patients received a max-

imum of 38 and a minimum of 8 treatment sessions determined by the patient's length of stay in the Eating Disorder Unit.

### Physiotherapy intervention

The aims of the programme were to provide the patients with relevant information on anatomy and the physiology of weight gain, to give them advice on healthy exercise levels (including types of exercise to help prevent loss of bone density, particularly in the lumbar spine), to provide a tailored exercise programme appropriate for the patient's current Body Mass Index (BMI), to encourage physical activity in a group setting and to teach relaxation techniques. An important focus, particularly with inpatients with a very low BMI, was to help them gain a more realistic body image, to raise body awareness and to re-educate their posture using a variety of techniques including shared discussion, massage, self-drawings and use of a mirror. The interaction continued as the patients' BMI increased to help them accept a changing body shape.

The work programme for each patient had six components and was provided on a one-to-one basis by a physiotherapist (PC) in the in-patient setting. Patients were referred by their primary nurses, or ward doctors, who had, during the admission consultations, identified that they had significant body image issues. The programme started as soon after admission as possible to ensure that a patient's body image distortion did not become entrenched and, therefore, more difficult to change. In a series of weekly sessions patients were introduced to basic, relevant information on anatomy and physiology, self-drawings, massage, mirror work, Pilates for postural awareness and strengthening of core stability muscles. It was also felt important to give patients time and psychological space to explore the feelings evoked by this work.

### Assessment process

At a first session, in order to establish baseline measures, the patient completed a validated body shape questionnaire BSQ-34 (Cooper et al, 1986) which gave an indication of the degree of body image distortion. This required them to respond to 34 questions using a Likert-type scale ranging from 1 (never) to 6 (always). They also completed a self-assessment silhouette scale, an adapted version of the BMI Silhouettes Survey (Canadian Dietetic Association, 1988 cited in Abbott et al, 2007) to assess body size perceptions. This asked them to score a series of body silhouettes of increasing size on a scale of 1–10

(where 0 is anorexic and 10 is obese) in relation to a) how they felt about their body, b) how they thought they looked, c) how they would like to have looked and d) how they believed others saw them. Finally they completed a set of self-drawings, a technique devised by the author (PC) to gain a personalized picture of how they saw themselves. The self-drawings were intended to facilitate a way for patients to communicate how they perceived themselves and for the physiotherapist to be able to give feedback on comparison between these images and her own observations. They also served as an on-going record of change in body perception which could be reassuring to patients. Each session followed a set format of self-drawings, body awareness, touch, massage, mirror work, and postural awareness.

#### 1. Self-drawings

At the beginning of each session the patient was asked to draw a front view outline of themselves that represented how they felt about their body. They were then asked to draw another one which represented how they thought they looked. They were asked to be as spontaneous as possible while drawing and not to agonize over it. Some patients found it helpful to also draw lateral (side) views of themselves. Following the whole body massage given later in the session, they were asked to repeat this drawing exercise. A final set of two or more drawings was then obtained during or after the mirror work if the patient felt that the image they saw had changed further. The drawings were kept as a record of the changing perception of the patient.

#### 2. Body awareness

Body awareness work began with the patient lying on a mat on the floor as a firm surface. It was intended that the contact their body made with the surface would start to give them clues about their size and shape. With eyes closed, working down from the back of the head, they were asked to describe where the different parts of their body were making firm contact with the surface and to describe the shape of that contact. They were then asked to identify if there were any concentrated areas of contact. This was followed by identifying the gaps where there was no contact. The patient then compared left and right contact and felt the position of arms and legs and whether their body was in a straight line. If they felt it was not, they were asked to indicate what alterations in position would achieve this and to compare the contact they felt with what they might have expected.

### 3. Touch

The third stage of the session involved using touch. The patient was asked to remain lying down with eyes closed. Using their hands, they were asked to estimate the width and depth of different areas of their body, and then, for a moment, to open their eyes and look at where they had placed them. The physiotherapist (PC) then placed her own hands on the corresponding parts of the patient's body, and asked them to describe what information they got from this contact.

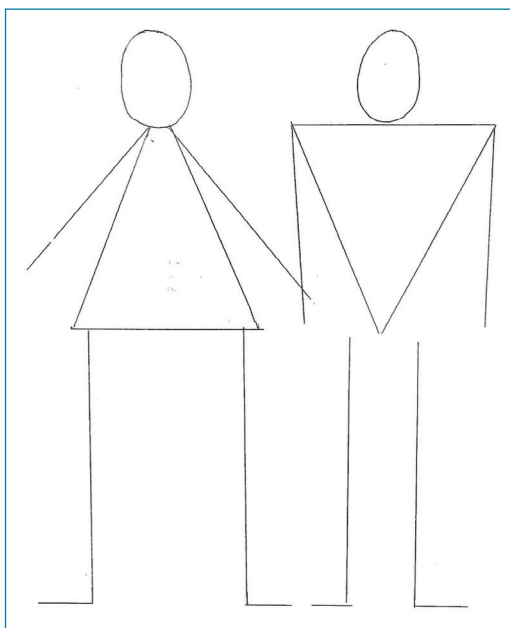
### 4. Massage

Having focused on different parts of their body through touching, it was important for each patient to get a sense of their body as a whole from a whole body massage. The massage was a particularly important aspect of the treatment, during which the physiotherapist (PC) aimed to build a trusting relationship so that each patient could accept massage and the guidance and advice given to them. It was performed through light clothing, using firm, continuous strokes, so that the patient was fully able to feel the contours of their body. In addition to giving information and a way of re-connecting with their body shape, touch and massage used the therapeutic effect of helping each patient to connect with another human being (Leder and Krucoff, 2008). Following the massage they were immediately asked to do the second self-drawing, representing what they actually felt at that moment and not what they imagined they might feel. This drawing was used for them to compare with the first drawing, completed at the beginning of the session.

### 5. Mirror work

In the mirror work part of the session, following the massage, it was first explained to the patient that when they looked in the mirror they would be asked to do so in a particular way. It is usual for many of these patients to see what they expect to see and to focus on the parts of their bodies they consistently overestimate in size (Slade and Russell, 1973). Hence, the patient was first positioned in front of a blank wall to make it easier to see the body shape. Then, before looking in the mirror, they were asked to compare the width of their hips and shoulders. Typically, they will say that their hips are wider than their shoulders, so emphasis was put on asking them to check this in the mirror and to encourage them to see a reversed triangle, in which they noted that their shoulders were wider than their hips and not vice versa (*Figure 1*).

Each patient was then asked to focus on the shapes around their body rather than to look



*Figure 1. Reversing the triangle*

directly at themselves to help give more clues as to their real shape. Particular areas drawn to their attention were their neck and the angle and width of their shoulders, and the elongated triangles formed by their arms resting at her sides with the apex at either side their waist (typically, these patients often say that they do not have a waist). This facilitates them to see the shapes around the outside of their legs that taper towards their feet and the colour of the wall between their legs, which can further emphasise that their legs are not 'fat and round'. They were also asked to compare the length of their upper and lower body, which is normally roughly half and half. Next they were encouraged to focus on looking directly at their body, to describe what they now saw and to compare this with the drawings that they did earlier in the session. This was followed by asking them to make a last drawing which reflected the changes they saw.

### 6. Postural awareness/re-education

The last part of the session was given over to postural awareness. Affective states, anxiety, in particular, have been shown to negatively influence postural control (Galeazzi et al, 2006). Patients with eating disorders tend to be anxious and depressed and frequently display poor posture, the resulting image, when viewed in a mirror, adds to the distortion of how they perceive themselves. Postural re-education, therefore, included use of the mirror. Helping them to be more aware of how they stand and move was an important aspect of body image work. It was noted that most low weight patients demonstrate poor core stability



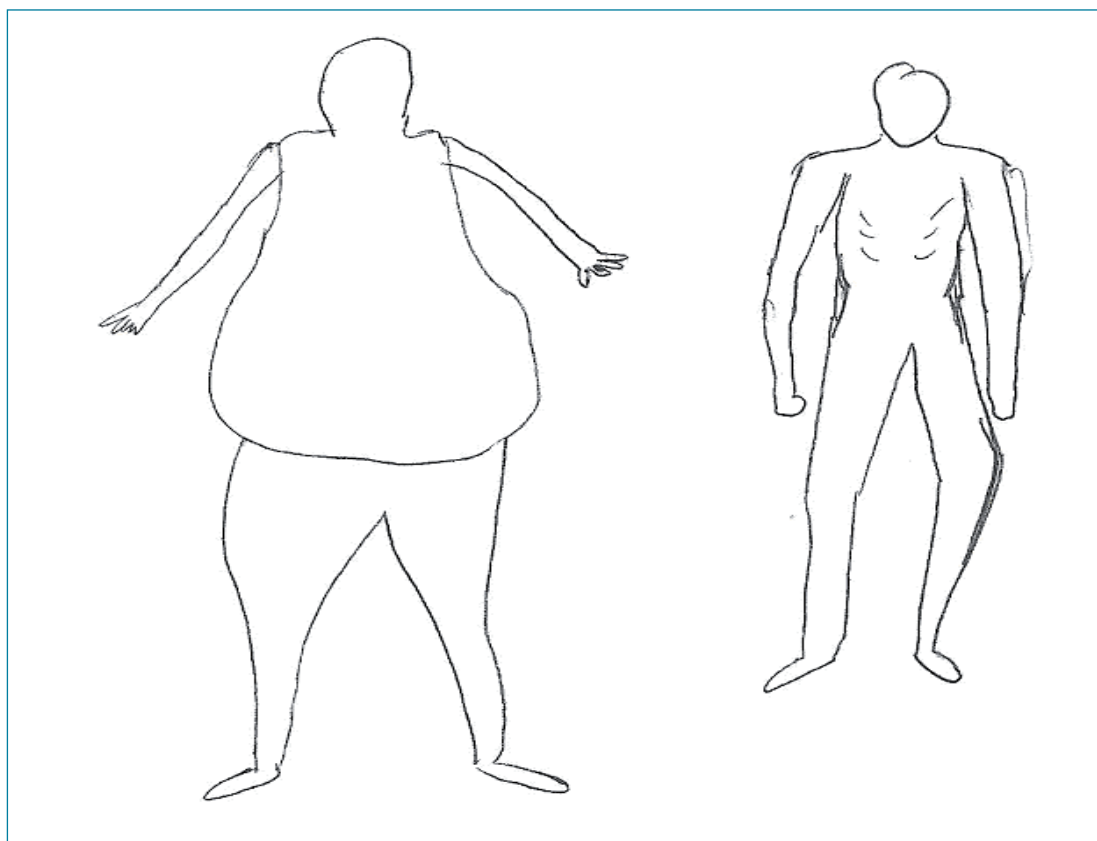


Figure 2. Patient 2 first treatment, BMI 15.8 End of treatment, BMI 22.8

from weakened postural muscles. The effect of this is to increase the lumbar curve, which gives the appearance of having a protruding abdomen which can be interpreted by them as fat. A carefully tailored exercise programme, including yoga and Pilates, was provided by the physiotherapist (PC) in collaboration with others in the physiotherapy team who were involved in these interventions. Pilates was used as an exercise method to elongate, strengthen, and restore the body to balance. It is considered to be one of the safest forms of strengthening exercise (La Touche et al, 2008) and therefore relevant to working with patients at a low body weight. In addition to improving posture, these techniques also aimed to improve mood and body perception through an increase in self-confidence and for patients to be able to observe their dynamic as well as static posture. This part of the session was then sometimes finished with completion of a third set of two self-drawings if they were now seeing a very different image.

Sessions lasted approximately 45 minutes and were carried out on a weekly basis. The number of sessions depended on the patient's willingness to engage, whether they could see evidence of improvement in their symptoms and their length of stay in the Eating Disorder Unit. Three patients were discharged and re-admitted during the study.

Before any patient was discharged they were asked to complete a final self-assessment scale and a questionnaire which asked for their views on all of the techniques they had received.

### Process of analysis

The self-assessment silhouette scores of each patient were scrutinised for changes in body size, shape and proportions from before and after the intervention. Dissatisfaction with body shape was identified through responses to the BSQ-34 questionnaire which focused on particular areas of the body, most commonly, abdomen, hips and thighs. Each set of patient self-drawings were compared for changes in body dimensions and whether patients tended to represent themselves as having a large body, with short, fat legs. Responses to the evaluative questionnaire at the end of the programme were examined to identify whether the programme was considered helpful, if there was any pattern in preferred approaches at different stages of the programme and for any commonalities in responses to open questions.

### RESULTS

The self-assessment silhouette scores at the beginning and end of the programme showed that

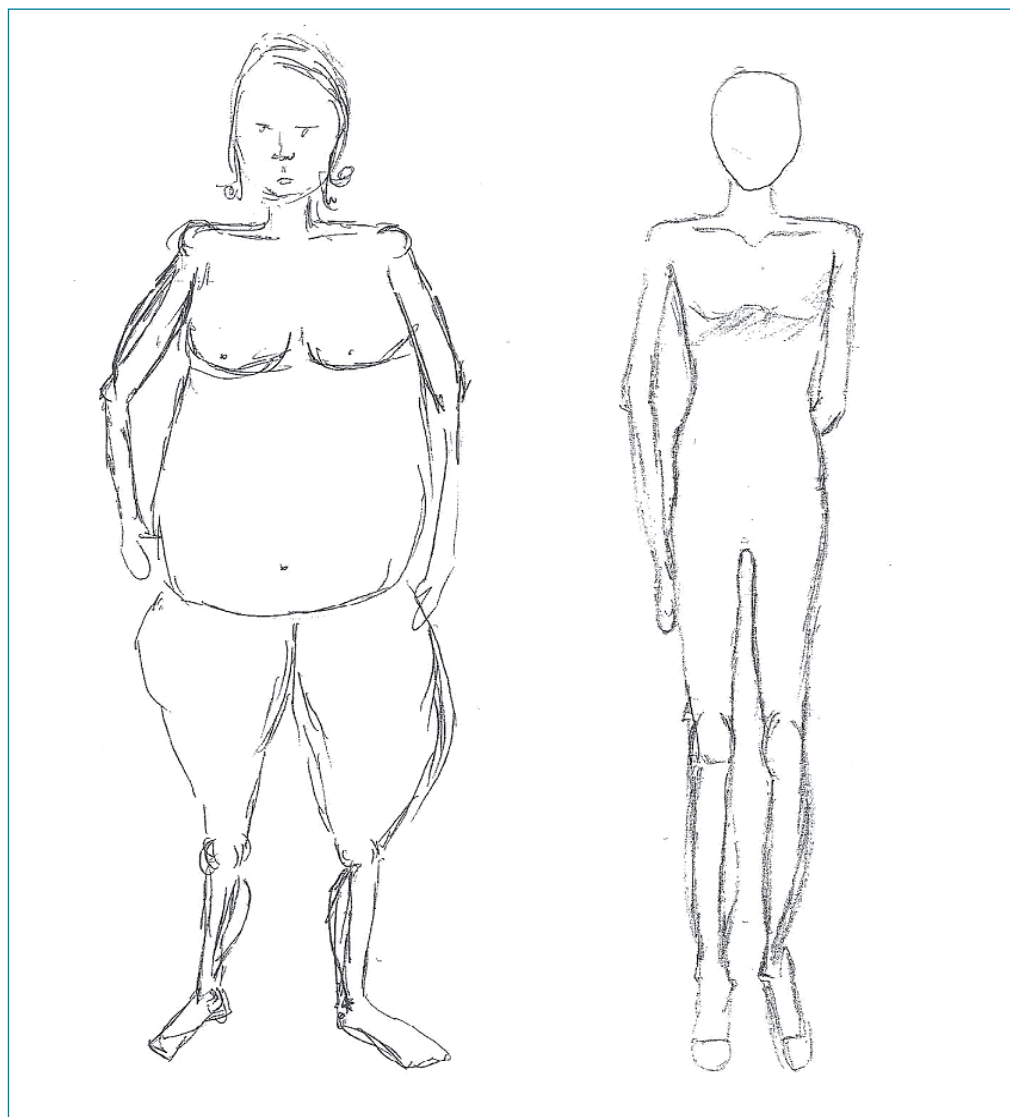


Figure 3. Patient 6 First treatment, BMI 14.1 End of treatment, BMI 16.0

initial scores of more than 5 out of 10 moved to scores of less than five (Table 1).

Scrutiny of the patient self-drawings identified changes in the comparative proportions of body areas to be more accurately represented (see for example Figure 2). Body image tended to be more grossly distorted when their BMIs were at their lowest (see for example Figure 3).

The scores of the BSQ-34 questionnaire (Table 2) at the beginning and end of the programme indicated an overall reduction in score for all patients, with 3 patients showing scores of less than half.

Collation of responses to the discharge evaluation questionnaire indicated that all found the programme helpful. In the early to middle stages of intervention the seven participants valued the treatment strategies equally, but towards the end of the intervention some preferred a focus on

their drawings whilst similar numbers a focus on the massage, mirror work or postural strategies. Positive comments on the programme and the personal guidance and interaction with the physiotherapist were typical (Box 1).

Table 1. Self- Assessment silhouette scores before and after (in bold) the programme

| Patient | Question a  | Question b  | Question c | Question d  |
|---------|-------------|-------------|------------|-------------|
| PT1     | 9 <b>4</b>  | 9 <b>2</b>  | 2 <b>2</b> | 9 <b>2</b>  |
| PT2     | 7 <b>4</b>  | 6 <b>2</b>  | 2 <b>2</b> | 4 <b>2</b>  |
| PT3     | 8 <b>3</b>  | 6 <b>3</b>  | 3 <b>3</b> | 2 <b>3</b>  |
| PT4     | 8 <b>4</b>  | 6 <b>9</b>  | 3 <b>2</b> | 6 <b>3</b>  |
| PT5     | 10 <b>6</b> | 9 <b>5</b>  | 2 <b>3</b> | 9 <b>5</b>  |
| PT6     | 10 <b>5</b> | 10 <b>4</b> | 1 <b>1</b> | 10 <b>3</b> |
| PT7     | 8 <b>3</b>  | 7 <b>2</b>  | 1 <b>2</b> | 2 <b>2</b>  |



**Table 2. BSQ-34 scores before and after programme**

| Patient | Before | After |
|---------|--------|-------|
| PT1     | 144    | 80    |
| PT2     | 159    | 74    |
| PT3     | 128    | 56    |
| PT4     | 159    | 97    |
| PT5     | 171    | 117   |
| PT6     | 161    | 95    |
| PT7     | 150    | 67    |

## DISCUSSION

The findings of this pilot study endorsed the observations made during work experience over several years with this patient group and with findings of Slade and Russell (1973). The self-drawing technique introduced by the author (PC) showed that at a low body weight, patients' body image distortion is at its greatest, but by the end of treatment/point of discharge, with higher body weight, it was represented more accurately. This reflected the scores of those with a severe body image distortion, who tended to choose only one image from the silhouettes in the body silhouette self-assessment to represent how their body felt and how they thought it looked.

During the body awareness and massage components of the programme, typically, the patient expected to feel more contact with the mat than they actually experienced during the body awareness and massage components of the programme. Others were able to distinguish between these different perspectives, although feelings of being big and fat predominated. Similarly, patients who avoid making contact with their bodies and avoid being touched by others, were able to feel the true boundaries of their bodies in contrast to their misperceptions about size and shape. From patient responses and physiotherapy observation it was

recognized that touch was a powerful experience that helped patients connect with their bodies and make a trusting relationship with another person. Participating patients accepted physical contact from the physiotherapist, seeing it as part of her professional role. Mirror work, considered an important component in bringing about changes in body image and results in reduction of body dissatisfaction (Key et al, 2002) was purposefully introduced to enable patients to make corrections to their postures while static, and also to maintain the changes while moving. Posture can reflect how people feel about themselves (Delinsky and Wilson, 2006) and can add to a distorted perception of body image, because it changes physical appearance. Pilates was an important aspect of body image work because the re-education of posture helped patients to see how this altered their appearance and for them to become more aware of how they stand and move. It is not yet understood whether the patients who experience the greatest distress about their bodies during weight restoration also have the highest ratio of central fat to extremity fat, however, assertions by some patients that the weight is 'all going to my stomach' may for them be a reality and not a body image distortion (Mayer, 2001). Although it is not known how long this persists, work on muscle strengthening and posture to change appearance, may help patients to tolerate this phenomenon. Analysis of the evaluative questionnaire highlighted the need to be flexible in the use and emphasis placed on the six component strategies in an individual programme. The intervention programme allowed a physiotherapist to establish a close rapport with patients who often have great difficulty trusting themselves or anyone who tries to get physically close to them. Time was given for patients to explore their feelings and encouragement given to express them in the therapeutic alliance which developed. The use of touch particularly helped patients express the feelings that the work evoked which was a crucial first step. Whole body massage can be a particularly powerful medium of communication with patients who avoid making physical contact and avoid looking in mirrors. It is a very immediate way for patients to recognize that their body is not as they imagine it to be, although it may take further time for this to be believed consistently.

These findings suggest that as weight is slowly restored, cognitive ability improves and perception of bodily dimensions becomes more accurate. Rosen (1996) also proposes that as BMI increases, patients' perception of their bodies becomes more realistic, although notes that a focus on body size estimation alone is not suf-

### Box 1. Typical comments from patient evaluation of the intervention

"I have benefited greatly and this continues as I am now quite proud of my body, which previously, I loathed."

"They were one of the most important and helpful meetings during my treatment. I slowly started enjoying all the changes to get a woman's body. Even though it was hard and painful sometimes, I could talk about everything to try to sort out my problems."

"I wish I could have seen her [sic the physiotherapist] every day. I could scarcely believe by how much I overestimated my size."

"... has opened my eyes to a new perspective on the world and also myself. When I look in the mirror I can see what is there. I have learnt how to see a realistic, rather than dysmorphic, picture of myself. My recovery is based upon this fundamental change of view."

ficient to change body image.

In this unit the primary nurses, psychologists, occupational therapists, dieticians, doctors, and other Allied Health Professionals (AHPs), worked individually and in groups simultaneously to challenge each patient's eating disorder. The philosophy of the unit was that perceptual and attitudinal elements of body image could together reframe the patients' beliefs during the work with the physiotherapist and key members of the multi-disciplinary team. It was therefore, important for the physiotherapist (PC) to advise colleagues on the physical dimensions of eating disorders including information on associated problems of osteoporosis and stress fractures, peripheral neuropathies, and physical activity levels appropriate to BMI levels. There is a strongly held view by some clinicians that confronting patients with their own distorted self-perception has little therapeutic impact (Garner, 2002).

While it cannot be claimed that this intervention programme alone achieved the successful outcomes, the findings suggest it does endorse a holistic approach, where feelings as well as perceptions are addressed to improve body image and psychological health. Body image is only one symptom of an eating disorder but it is proposed that the more realistic the body image is on discharge, the less likelihood there is of relapse (Slade and Russell, 1973; Slade, 1985). Patients with a chronic eating disorder are unlikely to restore much weight during hospitalization, but, as these findings suggest, this type of physiotherapy intervention programme can help patients become more satisfied with their body image which can lead to maintenance of a slightly higher weight, which may allow them to lead a fuller life than was previously possible. Future research needs to evaluate physiotherapy intervention programmes and further work could look more closely at the use and value of self-drawings in personalized treatment programmes.

## CONCLUSION

This pilot study indicates that a physiotherapy intervention programme can contribute to patients with eating disorders successfully improving their body image and acceptance of their body size and shape. The major implication of this work is that it highlights an important contribution of work on body image in a physical way, which is started as soon as possible after the patient is diagnosed with an eating disorder. It draws attention to the potential of physiotherapy intervention programmes in the UK.

## KEY POINTS

- Despite a strong physical aspect related to body image in eating disorders, there is little acknowledgement of physiotherapy intervention programmes.
- Until a more substantial evidence base is established it is unlikely that physiotherapy can form part of the routine practice of eating disorder services in the UK.
- A physiotherapy intervention programme to address body image distortion can be individually tailored to use touch, massage, drawing exercises, and listening skills.
- Self-assessment scales and body drawings can be used as an integral part of the intervention and to evaluate progress.
- A physiotherapy intervention programme can make an important contribution to the work on body image in a physical way.

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- Abbott J, Morton AM, Musson H et al (2007) Nutritional status, perceived body image and eating behaviours in adults with cystic fibrosis *Clin Nutr* 26(1): 91–9
- Berg AL, Boise F, Svensson K, Clinton D (2005) An intersubjective approach to physiotherapy in patients with eating disorders (English abstract) *Nordisk Fysioterapi* 9(2): 64–73
- Cooper PJ, Taylor MJ, Cooper Z, Fairburn CG (1986) The Development of the Body Shape Questionnaire *Int J Eat Disord* 6(4): 485–94
- Canadian Dietetic Association (1988) *The Body Test* Canadian Dietetic Association Toronto Ontario Canada.
- Delinsky SS, Wilson GT (2006) Mirror exposure for the treatment of body image disturbance *Int J Eat Disord* 39(2):108–16
- Duckworth N (2000) Tackling the twin faces of Anorexia nervosa and the physiotherapists role in helping sufferers to correct distorted body image. *Physiotherapy Frontline* 6(6):10–1
- Galeazzi GM, Monzani D, Gherpelli C, Covezzi, Guaraldi GP (2006) Posturographic stabilization of healthy subjects exposed to a full-length mirror image is inversely related to body-image preoccupations. *Neurosci Lett* 410(1): 71–5
- Garner DM (2002) Body Image in Anorexia Nervosa. In: Cash TF, Pruzinsky T (eds) *Body Image, A Handbook of Theory, Research, and Clinical Practice*. Guilford Publications, New York: 295–303
- Key A, George CL, Beattie D, Stammers K, Lacey H, Waller G (2002) Body image treatment within an inpatient program for anorexia nervosa: the role of mirror exposure in the desensitization process. *Int J Eat Disord* 31(2): 185–90
- La Touche R, Escalante K, Linares MT (2008) Treating non-specific chronic low back pain through the Pilates Method *J Bodyw Mov Ther* 12(4): 364–70
- Leder D, Krucoff MW (2008) The touch that heals: the uses and meanings of touch in the clinical encounter. *J Altern Complement Med* 14(3): 321–7
- Mandy A and Broadbridge H (1998) The role of physiotherapy in anorexia nervosa management *Br J Ther Rehabil* 5(6): 284–90
- National Institute for Clinical Excellence (2004) *National Clinical Practice Guideline Number CG9 Eating Disorders Core interventions in the treatment and management of ano-*



- rexia nervosa, bulimia nervosa, and related eating disorders. [www.nice.org.uk/nicemedia/pdf/CG9FullGuideline.pdf](http://www.nice.org.uk/nicemedia/pdf/CG9FullGuideline.pdf) (accessed 20 March 2012)
- Mattsson M (1998) *Body awareness, applications in physiotherapy* [dissertation]. University of Umeå, Umeå
- Mayer L (2001) Body composition and anorexia nervosa: does physiology explain psychology? *Am J Clin Nutr* **73** (5): 851–2
- Pantano KJ (2009) Strategies used by physical therapists in the U.S. for treatment and prevention of the female athlete triad. *Phys Ther Sport* **10**(1) 3–11
- Probst M, Vandereycken W, Van Coppenolle H, Pieters G (1995) Body size estimation in eating disorder patients: testing the video distortion method on a life-size screen. *Behav Res Ther* **33**(8): 985–90
- Probst M, Vandereycken W, Coppenolle HV, Pieters G (1998a) Body size estimation in anorexia nervosa patients: the significance of overestimation. *Psychosom Res* **44**(3): 451–6
- Probst M, Vandereycken W, Vanderlinden J, Van Coppenolle H (1998b) The significance of body size estimation in eating disorders: its relationship with clinical and psychological variables. *Int J Eat Disord* **24**(2):167–74
- Rosen JC (1996) Body image assessment and treatment in controlled studies of eating disorders. *Int J Eat Disord* **20**(4): 331–43
- Roxendal G (1985) Body awareness therapy and the body awareness scale, treatment and evaluation in psychiatric physiotherapy (dissertation) University of Gothenburg, Gothenburg
- Skrpek S, Wehmeier PM, Remschmidt H (2001) Body image assessment using body size estimation in recent studies on anorexia nervosa, a brief review. *Eur Child Adolesc Psychiatry* **10**(4): 215–21
- Slade PD, Russell GFM (1973) Awareness of body image dimension in anorexia nervosa. *Psychol Med* **3**(2): 188–99
- Slade P (1985) A review of body-image studies in Anorexia Nervosa and Bulimia Nervosa. *J Psychiatr Res* **19**(2–3): 255–65
- Thornberg U, Mattson M (2010) Rating body awareness in persons suffering from eating disorders – A cross-sectional study. *Adv Physiother* **12**(1): 24–34
- Tonkin J (2000) Physiotherapists are well placed to help young people address the two extremes of body image. *Physiotherapy Frontline* **6**(14): 16

## COMMENTARIES

**B**ody image is a multidimensional construct that involves perceptual and attitudinal (subjective/affective, cognitive, and behavioural) factors whose alteration is considered a major diagnostic criteria in eating disorders (ED).

### This study

The role of physiotherapy has been generally limited to functional recovery of motor impairments and disabilities in the field of ED. In the present research, the authors pursue the reconstruction of a body image accepted by the patient with anorexia nervosa (AN) through an adequate psychomotor experience that brings the patient to reality. As it happens with innovative protocols, the study has a small sample size and some methodological flaws that do not allow a quantitative analysis but a qualitative evaluation of the data. However, the intervention used by the researchers involved many techniques to increase patients' self image and body awareness through a practical and direct method: self-drawing, body awareness, touch, massage, mirror work, postural awareness, and re-education. This type of intervention has shown that perceptual and sensomotor learning may contribute to the improvement of the attitudinal component

**“This type of intervention has shown that perceptual and sensomotor learning may contribute to the improvement of the attitudinal component of body image distortion in ED”**

of body image distortion in ED.

The AN patient thinks, 'My mind is stronger than my body', but he/she actually has a limited knowledge of his/her own body as well as a low interoceptive awareness. AN patients usually overestimate their weight and shape when compared to other people. The proprioceptive experience of one's body (touching, being touched, mirroring...) seems to have improved the affective and perceptual experience of the AN patients in this study.

### Conclusions

So it can be concluded that this work is a useful contribution and a promising field of research to expand the therapeutic strategies for ED. New components to those that are currently advised (APA, 2006; Halmi, 2009) or are marginally mentioned (NICE, 2004), like physiotherapists, could be properly involved in the multidisciplinary team of a comprehensive service for ED.

American Psychiatric Association (2006) *Practice Guideline for the Treatment of Patients with Eating Disorders (3rd edn)*. American Psychiatric Association, Washington DC. [http://psychiatryonline.org/data/Books/prac/EatingDisorders3ePG\\_04-28-06.pdf](http://psychiatryonline.org/data/Books/prac/EatingDisorders3ePG_04-28-06.pdf) (accessed 15 March 2012)

Halmi KA (2009) Salient components of a comprehensive service for eating disorders. *World Psychiatry* **8**(3):150–5

National Institute for Clinical Excellence (2004) *Eating Disorders Core Interventions in the treatment and management of anorexia nervosa, bulimia nervosa and related eating disorders*. [www.nice.org.uk/nicemedia/pdf/CG9FullGuideline.pdf](http://www.nice.org.uk/nicemedia/pdf/CG9FullGuideline.pdf) (accessed 15 March 2012)

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**B**ody image distortion is a common phenomenon among patients with eating disorders. The literature that addresses this issue is quite complex and frequently questionnaires and other tools are used inappropriately with these patients. Therefore the multidisciplinary team must be a mingling group where each professional

plays a specific and complementary role. Equally important is the clinical use of tools that can identify eating disorders among healthy patients. The most involved professionals on body image distortion cases are usually the dietitian, doctor, and psychologist. Physiotherapeutic intervention, on the other hand, has been shown to improve

psychosocial wellbeing, individual body image, and physical fitness in patients with eating disorders.

### Applying the tools properly

Because many of the tools used with body image distortion are subjective measures, it would be interesting if the technique



suggested by the authors in this study was applied to a larger sample, even in the case of a pilot study. It would give more reliability for the technique which is very interesting. Despite knowing that eating disorders affect more women than men it would be interesting to have a larger group with male individuals as this population has been increasingly involved with eating disorders.

Another possible development of this study is that patients could do the drawing test more than was proposed, for example, they would draw themselves at baseline, after 2–3 weeks of treatment, and at the end of the treatment. This would help to identify which phase of treatment the patient begins to progress in, which would in turn help to define and set a minimum

period of treatment.

It might also be advantageous to cross reference information from the questionnaires used by the physiotherapist with those used by the others professionals involving different yet complementary aspects such as Eating Disorder Inventory, Eating Attitude Test, Body Attitude Test and Quality of Life Scale SF-36. This is an important aspect, as from this information, it could be elucidated if the progression of body image is being followed by the progression of the food behaviour, for example.

### Conclusions

It is crucial that methods such as those proposed by the authors are developed and validated so body image distortion will be bet-

ter treated and evaluated. Like many other methods it needs some amendments but it is certainly an interesting, simple, and practical method. Moreover, the authors pointed to the real need for a physiotherapist in the multidisciplinary team, who would play a key role, taking the lead directly on body issues contributing to the rehabilitation of these patients.

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**B**ody image disturbance has long been recognized as a key element in eating disorders (ED). Previous studies provide evidence about the important role that disturbances such as body shape and weight overestimation and body image dissatisfaction, play in the development, maintenance, and prognosis of ED. Actually, body image disturbances form part of the criteria for the diagnosis of both anorexia and bulimia nervosa according to the DSM-IV-TR (APA, 2000).

Despite this, body image has often been neglected or ascribed a secondary role in ED treatment programmes. This is probably due to the fact that body image is a construct difficult to express and highly resistant to reasoning-based interventions. There are effective and well-established treatments for ED patients, such the cognitive behavioural therapy. However, there is a percentage of patients who do not progress or suffer relapse. It is necessary to explore possibilities of improvement of these treatments with the incorporation of components which specifically address body image disturbances.

Body oriented therapy and psychotherapy (BOP) encompass a wide range of techniques, including those involving touch, movement, and breathing, specifically addressed to the treatment of the disturbed body. BOP is based on the premise that reciprocal relationships within the body and mind exist, and that both body and mind contribute equally to the organization and functioning of the whole person. The main purpose of these interventions is helping people to be more aware of their bodily sen-

**“ This type of intervention has shown that perceptual and sensomotor learning may contribute to the improvement of the attitudinal component of body image distortion in ED ”**

sations and perceptions as well as their emotions and behaviours. According to Röhrich (2009), BOP offers promising additional psychotherapeutic tools in psychopathologies such as ED, where traditional talking therapies seem to fail. However, there is a lack of systematic research evaluating the effectiveness of these therapies.

### This study

The present study provides information about a body image intervention programme for in-patients with ED, based on body oriented therapy. The programme includes six components: self-drawing, body awareness, touch, massage, mirror work, and postural awareness/re-education. Data suggest that a programme based on principles of physiotherapy can contribute to help ED patients to improve their body image. At the end of treatment, all participants showed a more accurate representation of their own body and a reduction of both body distortion and body dissatisfac-

tion. Moreover, the study highlights the need to be flexible in the use of the several components of the programme depending on the specific needs of each patient.

### Conclusions

Body oriented psychotherapy seems to have generally good effects on a wide range of mental disorders and is specially suitable for those pathologies that involves a disturbed body image, such as ED. Practice-based clinical evidence provides support to this statement but more empirical research is needed. This study by Caddy and Richardson is one more step in the right direction but there is still much work to do. More randomized clinical trial studies on the effectiveness of different body oriented therapies are needed. Likewise, future research should focus on which individuals benefit from which specific body oriented techniques.

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental Disorders*. 4th edn, text revision. Washington, DC

Röhrich F (2009) Body oriented psychotherapy. The state of the art in empirical research and evidence-based practice: A clinical perspective. *Body, Movement and Dance in Psychotherapy* 4(2): 135–56

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