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ORIGINAL ARTICLE/ARTICLE ORIGINAL

Body as subject, body as object: how treatment of the obese patient can be improved by dance therapy

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Abstract – Objectives: To give obese patints the motivation to take care of themselves. To help them focus on self perception rather than on their figure and BMI. This study aimed to analyze the impact of dance therapy on the body as subject as experienced by the patient. **Methodology:** After randomization, 27 female patients undertook a dance therapy program for 16 weeks and were compared against a control group of 19 female patients. The effects on conscious walking, posture, self-esteem and quality of life were measured using questionnaires on self-perception of posture, walk, self-esteem and quality of life. **Results:** The results after dance therapy showed significant improvement in the body as subject (posture $p < 0.02$; conscious walking $p < 0.001$; quality of life $p < 0.01$; body esteem $p < 0.003$; and sense of self-worth $p < 0.005$). The results for the control group had not changed after 16 weeks. **Conclusion:** after 4 months of dance therapy, obese patients developed a perception of a "body as subject they experience", which led them to significantly improve their self-esteem and quality of life. **Practice implications:** Dance therapy should be incorporated into therapeutic education programs to improve the perceptive dimension of our obese patients.

Keywords: obesity / dance therapy / body image

Résumé – Corps sujet, corps objet : comment améliorer une prise en charge du patient obèse par la danse thérapie. Introduction : Afin de motiver le patient obèse à prendre soin de lui, il est primordial de l'aider à se focaliser sur ses ressentis sensoriels perceptifs et affectifs et non pas sur sa silhouette et IMC. **Objectif :** Le but de cette étude est d'analyser l'impact de la danse thérapie sur le corps sujet, éprouvé du patient. **Méthodes :** Après randomisation, 27 patientes ont bénéficié d'un programme de danse thérapie pendant 16 semaines et ont été comparées à un groupe contrôle de 19 patientes. Les effets sur la marche consciente, la posture, l'estime de soi et la qualité de vie ont été mesurés par des questionnaires sur l'auto-perception de sa posture, de sa démarche, sur l'estime de soi et la qualité de vie. **Résultats** : Les résultats après la danse thérapie montrent une amélioration significative du corps sujet : la posture $p < 0{,}02$; la marche consciente $p < 0{,}000$; la qualité de vie $p < 0{,}01$; l'estime de soi corporelle $p < 0{,}003$, l'estime de soi valeur personnelle $p < 0{,}005$. Les résultats du groupe contrôle n'ont pas évolué après 16 semaines. **Conclusion :** après 4 mois de danse thérapie, les patients obèses développent une perception d'un corps sujet, éprouvé qui leur permet d'améliorer significativement leur estime de soi et leur qualité de vie. **Implications pratiques :** la danse-thérapie devrait être incorporée dans les programmes d'éducation thérapeutique pour améliorer la dimension perceptive des patients obèses.

Mots clés : obésité / danse-thérapie / image du corps

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1 Introduction

People with obesity have poor self-image and poor self-esteem [1]. For them, being thin forms a vital part of their sense of worth. The body as object, the body that people with obesity see, is disconnected from all sensation and the focus of their cognitive distortions: "If I lose weight, I'll be thinner and have better self-esteem" [2]. The body as object, or the figure (weight, height, volume), is difficult for the subject of the body to objectively perceive [3]. The body as object is the patients' image of themselves, which they look at with all their expectations and emotional projections. Although the patients are this body, this figure, it remains a subjective perception, as shown in the study by Stunkard on the image of the body as object [4]. Many authors approach the weight loss problem from a physical returns point of view. They mention various diets, physical activities and the biophysiological aspect of the metabolism [5]. They do not consider the body as a place to experience oneself on an emotional level. At this stage of our studies, it appeared important to experience one's body on a proprioceptive level as well as on an emotional level and to put the accent on the body as a place to find one's own resources, a body as subject. People with obesity have an undifferentiated body as subject, perceiving it as a disturbing mass. They avoid feeling it because they feel bad in it. They disassociate themselves in this way from their physical image [6]. They project this unhappiness on the body as object, and because they cannot relate to their image in the mirror, they refuse to accept it [7]. In these patients, it is important to develop protective factors such as identifying, owning and valuing their feelings [8]. How can these patients be helped to overcome their long-standing emotional relationship with their stomach? [9]. How can they be motivated to develop a new lifestyle that includes their body as they perceive and emotionally experience it? Over recent years, various studies have been devoted to the relationship between physical activity and the improvement of self-esteem [10]. Physical activities that are experienced as pleasant increase body satisfaction and reduce anxiety [11]. Hence, a certain level of self-confidence is required for people to maintain their commitment to physical activity [12]. That is why improving self-esteem has become a priority objective in several therapeutic education programs for patients.

We know that the development of the "I", of which self-esteem forms part, takes place in the body as subject [13]. Idiosyncratic movements reflect the personality and its internal conflicts [14]. These gestures, which are marked by emotional and physical memory, develop in the person's body as subject.

Dance therapy gets obese patients to focus on being fully aware of their posture, their walk, the parts of their body, and their body in movement. They learn to observe their psychodynamics in relation to their movements and their behavior, and to analyze their body language.

With this approach, they can own and value their feelings, change them about their imagined body as subject, and begin to take care of themselves [15].

This study aimed to analyze the impact of dance therapy on the body as subject as experienced by the patient.

2 Subjects and methods

2.1 Subjects

In total, 60 female patients were recruited, of whom 46 were randomized, 27 to dance therapy and 19 to the control group. Of the others, 10 patients never participated after enrollment, and 4 left the group for health reasons before the study began.

We therefore had 46 female patients aged 46.91 ± 10.15 years with a body mass index (BMI) of 38.4 ± 6.6 kg/m^2. All these obese patients were participating in a weight loss program in the Service of Therapeutic Education for Chronic Diseases of the Community, Primary Care and Emergency Medicine Department of the University Hospitals of Geneva. All patients signed a consent form of a study protocol approved by the hospital's ethics committee.

The exclusion criteria were foot ulcers, neuropathy, and orthopedic or neurological conditions that might affect their movements in space. Only patients who were interested in dance therapy were included. All agreed to being randomly assigned to a control or dance therapy group. Patients randomized to the control group were able to take part in dance therapy after the protocol had ended and outside the framework of the study.

2.2 Protocol

All 46 patients took part in the same therapeutic education program for obese patients [16].

Before being randomized, all subjects underwent a careful clinical examination by a physician in order to check the inclusion and exclusion criteria. A randomization list was generated electronically by a person uninvolved in the recruitment, evaluation or treatment process for each starting date (concealed randomization). The intervention and control groups contain between 6 and 8 patients per starting point. Persons in the control group had the opportunity to join the dance therapy group at the nearest upcoming session and after having completed all post-treatment tests. For ethical reasons, every individual that expressed an interest in dancing was offered the possibility to join the program and therefore to be physically active. The person who assessed the outcomes was blind. For non-normally distributed data, we used the Friedman's two-way ANOVA.

Patients in the intervention group took 2 h of dance therapy classes weekly for 16 weeks. For 4 months, they learned to develop full awareness of their posture, their walk, their body in movement and the parts of their body.

They learned to observe and release their tension, to feel their muscle connections, to discover their body language, to improvise dances based on what they felt physically and emotionally about each part of the body, and to perceive the mental images associated with their body and their corporal expression. The participants drew their dances, the perception of the exercises during the classes, and put words to them to complete the meaning of their experience. They had small goals of self-perception to work on between each class.

Table 1. Change in body as subject/object before and after dance therapy.

	Dance therapy group		Control group	
The body as subject	Before	After	Before	After
Posture (Laban)	19.7 ± 2.9	21 ± 3.1*	19.3 ± 3.4	20.2 ± 3.1*
Walk (Laban)	10.5 ± 1.8	11.7 ± 1.5***	10.6 ± 1.3	10.1 ± 1.7
Self-esteem (Vallière and Vallerand)	28.5 ± 6.2	30.8 ± 6.2***	28.7 ± 5.4	29.4 ± 6.0
Quality of life IWQOL (Kolotkin self-esteem)	41.1 ± 3.3	50 ± 3.4**	50 ± 3.5	48.2 ± 3.5
Quality of life IWQOL (Kolotkin total score)	64.9 ± 6.3	70.1 ± 6.4**	62.1 ± 6.1	65.7 ± 6
The body as object	Before	After	Before	After
Measured weight	38.4 ± 6.6 kg/m²	38.9 ± 7.4 kg/m²	39.8 ± 5.9 kg/m²	39.7 ± 5.9 kg/m²
Body as perceived by the patient (Stunkard)	29.9 ± 3.8 kg/m²	30 ± 4.5 kg/m²	29.9 ± 3.4 kg/m²	30 ± 3.6 kg/m²
Body desired by the patient (Stunkard)	22.8 ± 2.0 kg/m²	22.3 ± 2.0 kg/m²	22.9 ± 1.6 kg/m²	23.5 ± 2.1 kg/m²
Believes seen by others as (Stunkard)	30.1 ± 3.5 kg/m²	30.1 ± 3.9	31.0 ± 4.0	30.1 ± 3.6

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ before and after dance therapy
Significant difference before and after dance therapy.

The reason we decided to treat the patients on a 16 weeks program was to check the impact of dance therapy on such duration. In the past, we first tested obese patients on a 36 and 72 weeks program [6,15].

2.2.1 The questionnaires for assessing the body as subject

Posture and walk were assessed using questionnaires based on Laban's method for self-perception of walk and posture [17].

Self-esteem scale, RSES, was measured by M. Rosenberg [18], which indicates acceptance, tolerance and personal satisfaction with oneself.

Maximum score is 40.

Quality of life was assessed using R.L. Kolotkin's questionnaire on the impact of weight quality of life assessment tools (IWQUOL-lite) [19]. This questionnaire highlights how patients' weight affects them in terms of their *social life*, *work*, *self-esteem*, *sexual life* and *mobility*. Maximum total score is 155, and is an indicator of poor quality of life. The lowest score is 31 and it indicates that the patients' weight no longer bothers them and that their quality of life is better. The raw scores are then converted to a more familiar 0 (worst) to 100 (best scoring). The IWQOL-lite has strong psychometric properties.

2.2.2 The questionnaires assessing the body as object

Distortion of body image was assessed using Stunkard's figure rating scale. This self-assessment questionnaire asks patients to choose their figure from among nine others. Patients circle the figure that best indicates them, the figure they would like to have, and the figure they believe they are perceived as having.

Assessment: all patients were assessed twice, before the program and 16 weeks after.

3 Results

3.1 The body as subject

There was a significant improvement in body as subject in the dance therapy group, with walking and posture perception significantly improving in those patients. The patients were able to consciously take a full step instead of dropping their feet like blocks disconnected from them. They perceived the transfer of weight from one leg to the other in their hips. The arms were still not swinging forwards and backwards because they rubbed against the rib cage. They felt that there was a movement along their spine. They loosened up by following the movement communicated by their feet.

Their perception of their posture improved. The patients were able to feel when their pelvis was no longer excessively anteverted or retroverted. They felt their abdominal muscles contracting. They saw the impact a reinforced abdominal belt had for supporting the lumbar spine. Consequently, they felt their dorsal spine straighten and their head sit better on top of the cervical spine.

In the Vallières and Vallerand self-esteem questionnaire, 50% of the intervention group went from very low to low, while the other 50% were between good and high. The control group's score remained very low.

The Kolotkin questionnaire indicated that their body esteem significantly improved. The weight, notably the experience of it, was no longer perceived in the same way. Dancing showed that they could feel other sensations which changed their relationship with their body as subject. The Kolotkin questionnaire also indicated that the patients significantly improved their general quality of life (Tab. 1).

3.2 The body as object

We observed no improvement in the body as object in the intervention and control groups. Measured BMI, the intervention group's objective, was 38.4 ± 6.6 kg/m^2 at baseline. In the Stunkard questionnaire, the intervention group's BMI at baseline was 29.9 ± 3.8 kg/m^2, and at the end of the study it was 30 ± 4.5 kg/m^2. The same problem was seen in the control group and remained unchanged.

We noted that both groups were very strongly in denial about their weight.

All patients chose figures below their weight. A third of the intervention group chose figures between 65 and 91 kg below

their weight (those patients had a BMI above the mean for the group). Two-thirds chose a figure between 30 and 40 kg below their BMI. The desired figure they chose was not within the realms of possibility. With a BMI of 39 they chose a BMI of 25. They all believed that they were perceived by others as they perceived themselves: namely, as thinner than their BMI.

4 Discussion and conclusion

4.1 The body as subject

After 4 months of dance therapy, the patients increased their ability to connect with their mental and physical sensations.

As their perception of their walk and posture improved, they had a better relationship with themselves and their environment. They walked more easily and with greater pleasure. The exercises to reshape their movements strengthened their sense of their own worth. Awareness of each part of the body, and the dances for each one, gave them a differentiated, living body.

Before the treatment, learned body language and the range and style of movement were blocked in idiosyncrasies burdened by negative emotional memory that prevented them from changing their psychological and psychosocial behavior. When the patients learned to describe how their bodies moved, they were able to value the perception they had of themselves and to respect the perception of others. They learned to evaluate what they did not as a judgmental, negative critic but as a kind observer. The improvisation put them in touch with their creativity and their resources, which gave them the motivation to find strategies to solve their weight problem.

The Rosenberg (Vallière and Vallerand) self-esteem questionnaires revealed that by developing mental and physical perception they had greater acceptance of themselves, who they are and what their qualities are. The quality-of-life questionnaires showed that improving sensorimotor perception restored their relationship with their personal and general environment.

Through self-assessment and phenomenological learning of the mental and physical perceptions of their environment, the patients developed a sense of self-esteem that gave meaning to their experiences. That led them to better understand themselves and to embrace the many facets of who they are. The “I”, the subject of the body, made sense again. The patients had the feeling and sensation of regaining control of themselves. The “me”, although better grounded and better represented in the patients’ imagined body, still could not relate to its image in the mirror.

4.2 The body as object

For the reasons mentioned above, projections and cognitive distortions are very strong in people with obesity. In our study, the Stunkard questionnaires about the body as object revealed that the patients were in denial about their BMI, their measured body. They were not in touch with their proprioceptive, kinesthetic perceptions but only with their visual, emotional ones. That is why we speak of a body as object disconnected from the body as subject. The patients could not accept their image or identify with it because it represented their failures on the pathway to constructing their identity [20].

Their selection of an ideal figure very far beyond the realms of possibility may show the extent to which these patients are looking for a long-gone ideal self.

4.3 Conclusion

Dance therapy could form part of a therapeutic education program. Indeed, it encompasses the five dimensions of therapeutic education, which are cognitive (analysis of behavior and symbolic content); affective/emotional (connection with the physical and emotional body); subcognitive (transformation of mental images); metacognitive (observation of one’s ways of learning); and perceptive (feeling of sensations). Dance therapy should be incorporated into therapeutic education programs, particularly to improve the perceptive dimension of our obese patients. Improving the body as subject seems to come before weight loss (the body as object).

4.4 Practice implications

Dance therapy should be incorporated into therapeutic education programs, particularly to improve the perceptive dimension of our obese patients. Improving the body as subject seems to come before weight loss

Conflicts of interest. The authors declare that they have no conflicts of interest in relation to this article.

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