

## Therapeutic processes and clinical outcomes of body psychotherapy in chronic schizophrenia – An open clinical trial

Frank Röhricht, MD, FRCPsych<sup>a,b,\*</sup>, Nina Papadopoulou, B.Soc. Sci. Hons (Psych.), P.G. Dip. DMT<sup>a</sup>, Sarah Holden, P.G. Dip. DMT<sup>c</sup>, Tom Clarke, RMN, MA<sup>d</sup>, Stefan Priebe, MD, FRCPsych<sup>e</sup>

<sup>a</sup> East London NHS Foundation Trust (ELFT), UK

<sup>b</sup> University of Essex, Centre for Psychoanalytic Studies, UK

<sup>c</sup> Consultant Movement Psychotherapist in Private Practice, UK

<sup>d</sup> South West London and St George's Mental Health NHS Trust, Honorary Research Fellow at Kingston University, UK

<sup>e</sup> Barts and the London School of Medicine, Queen Mary University of London, UK

### ARTICLE INFO

#### Keywords:

Body psychotherapy  
Dance/movement therapy  
Schizophrenia  
Negative symptoms  
Therapeutic processes

### ABSTRACT

Persistent negative symptoms are an ongoing challenge in the treatment of chronic schizophrenia. Evidence from randomised controlled trials suggests that arts/non-verbal therapies may be effective in treating negative symptoms of schizophrenia. These treatments have not yet been evaluated in open clinical settings.

The present uncontrolled clinical trial examines the therapeutic processes and clinical outcomes of group body psychotherapy (BPT) on marked negative symptoms in patients with chronic schizophrenia. Changes in symptom scores, subjective quality of life, social functioning and emotional processing between baseline and post-treatment were assessed. The ratings from clinical assessments of independent researchers were compared with the post-therapy summary assessment of the therapists.

A total of 39 eligible patients were referred, out of which 18 patients agreed to participate and received BPT in addition to treatment as usual within three therapy groups run by different therapists. Patients had high symptom levels and low psychosocial functioning at baseline. Negative symptoms and general psychopathology significantly reduced during treatment. Positive symptoms and other outcomes did not change. Researcher ratings of psychopathology were in line with the assessment of clinical outcome by therapists and qualitative observations on changes in movement behaviour during therapy.

The results of this study are consistent with findings from a RCT (Röhricht & Priebe, 2006), indicating that BPT is associated with reduced negative symptoms even when administered in routine clinical settings. Therapists' qualitative judgements may be considered as a valid source for assessing treatment outcomes. Future studies should explore effects of longer term treatments on other outcomes.

© 2011 Elsevier Inc. All rights reserved.

### Introduction

The most recent UK National Institute for Health and Clinical Excellence (NICE) guidelines for the treatment of schizophrenia (update, March 2009) recommended considering arts therapies for all patients with schizophrenia as part of the acute treatment with the aim of promoting recovery, particularly for patients with negative symptoms. Body psychotherapy (BPT) is one of the modalities described under the umbrella term “arts/non-verbal therapies” (art therapy, body psychotherapy and dance movement psychotherapy,

music therapy and drama therapy). The NICE guidelines included a total of six randomised controlled trials (RCTs) as evidence base for the effectiveness of arts therapies in reducing negative symptoms. One of them was a RCT of BPT in patients with chronic schizophrenia and marked negative symptoms (Röhricht & Priebe, 2006).

Psychomotor poverty, i.e. poverty of speech, blunted affect and decreased spontaneous movement (psychomotor retardation), have been described as the core negative symptoms of schizophrenia (Liddle, 2000) and as particularly relevant for the development of a rather chronic course of the illness with poorer overall outcomes (Leifker, Bowie, & Harvey, 2009). Schizophrenia patients are known to have difficulties in emotional information processing (e.g. Exner, Boucsein, Degner, Irle, & Weniger, 2004), and the link between affective blunting and psychomotor retardation within the syndrome of negative symptoms may open new ways to psychological treatments. Negative symptoms might improve best in

\* Corresponding author at: Newham Centre for Mental Health, Glen Road, London E13 8SP, UK. Tel.: +44 020 7540 6757; fax: +44 020 7540 2971.

E-mail address: Frank.Rohricht@eastlondon.nhs.uk (F. Röhricht).

URL: <http://www.frankrohricht.com> (F. Röhricht).

response to methods that directly address these core negative symptoms. Arts therapies – also referred to as non-verbal therapies – usually combine a range of interventions, aiming to foster self-expression through non-verbal communication, help patients to experience themselves differently and explore different ways of relating to others. This approach is underpinned by phenomenological findings (Maggini & Raballo, 2004; Röhricht & Priebe, 2004; Sass & Parnas, 2001, 2003) suggesting fundamental disturbances of the basic sense of selfhood (ipseity), which may require new intervention strategies targeting ego-consolidation (Pérez-Álvarez, García-Montes, Vallina-Fernández, Perona-Garcelán, & Cuevas-Yust, 2010; Röhricht, Papadopoulos, Suzuki, & Priebe, 2009; Stanghellini & Lysaker, 2007).

BPT for treating negative symptoms in chronic schizophrenia combines sensory awareness and focussing techniques, interventions from neo-Reichian therapies and dance movement psychotherapy, and techniques targeted at core body image disturbances such as boundary loss and desomatization. It is manualised and applied in addition to standard care. Röhricht and Priebe (2006) generated first findings on the feasibility and efficacy of BPT as compared with supportive counselling in the treatment of negative symptoms in patients with chronic schizophrenia. Both treatments were administered in groups. The trial was conducted at one centre and had a total sample of 45 patients. To our knowledge this was the first RCT specifically designed to test the effects of manualised BPT on negative symptoms in schizophrenia (see also Cochrane review on dance therapy for schizophrenia, Xia & Grant, 2009). Patients engaged well in the experimental treatment and accepted the research methodology. BPT was safely administered without worsening of positive psychotic symptoms, and it was more effective in improving persistent and drug-refractory negative symptoms than supportive counselling. Both groups showed similar treatment satisfaction and ratings of therapeutic relationships, and the effect of BPT was therefore not explained by non-specific effects on treatment satisfaction or the quality of the therapeutic relationship. The effect size achieved in the pilot trial on negative symptoms was large and compares favourably with improvements of negative symptoms in studies testing newer generation antipsychotics without additional psychological therapies (Chakos, Lieberman, Hoffman, Bradford, & Sheitman, 2001; Leucht, Pitschel-Walz, Abraham, & Kissling, 1999; Volavka et al., 2002).

The novel psychotherapeutic treatment of BPT for schizophrenia has not been tested yet in routine clinical settings in an open trial.

In routine clinical practice, there are no independent researchers to establish outcomes, and the assessment of therapists is an important source of information for evaluation. Yet, such reports of therapists are a type of self-evaluation, and there is little research on how accurate and reliable therapists' assessments of outcomes are. Only a few studies so far evaluated BPT with robustly designed clinical trials, the evidence base in BPT is still dominated by case studies written up by therapists (see reviews: Loew, Tritt, Lahmann, & Röhricht, 2006; Röhricht, 2009). However, according to Brosnan, Reynolds, and Moore (2008) "... the literature in many fields casts doubt on the accuracy of people's self-evaluations".

This observational study therefore aimed to assess therapeutic processes and clinical outcomes of BPT in clinical services at two different sites, and involving different therapists. It furthermore explored how therapists' accounts, particularly of affective processes and changes in movement behaviour, were related to changes in symptom scores as assessed by an independent researcher.

The research questions were:

1. Do patients, who are treated with BPT (in addition to standard care) at different sites and by different therapists in routine clinical settings, show improvements of negative symptoms similar

to those achieved in a RCT (Röhricht & Priebe, 2006), and are these changes associated with improvements of quality of life, social functioning and/or emotional processing?

2. How accurate are therapists' judgments about patient's response to treatment in BPT when compared with ratings obtained from independent researchers' clinical assessments?
3. What are the main therapeutic processes involved in change of symptom scores and other clinical outcomes?

## Method

We conducted an uncontrolled clinical trial at two different sites (East London NHS Foundation Trust and South West London and St George's Mental Health NHS Trust) with pre/post therapy comparison of a range of clinical measures. Suitable patients were identified by clinicians and referred for a screening interview by an independent researcher (psychiatrist in training) to establish whether they met all inclusion criteria. Written informed consent to participate in the study was obtained, and patients were offered to participate in the study following the assessment. A full baseline assessment was carried out on all included patients by the independent researcher (not involved in treatment). Follow-up assessments using the same methods and additional outcome measures were conducted three months after completion of treatment.

*Inclusion criteria:* aged between 18 and 65 inclusive, capable of giving informed consent, an established diagnosis of schizophrenia according to DSM IV, a history of at least two episodes with acute psychotic symptoms, presence of persistent symptoms of schizophrenia for at least 6 months with a significant level of negative symptoms at baseline (score of PANSS-negative subscale  $\geq 21$  or Score  $\geq 6$  (= severe) on one out of the three core items ("emotional withdrawal, motor retardation, blunted affect").

*Exclusion criteria:* current in-patient status or inpatient treatment within last three months, relevant physical health problems, evidence for substance abuse as the primary disorder, evidence of organic brain disease, no stable medication (change of antipsychotic drugs or antipsychotic dosage  $\geq 30\%$  within last 2 months), no sufficient command of English language.

*The following instruments were used for pre/post assessments*

*Main outcome criteria:* the sub-scale "negative" on the Positive and Negative Symptoms Scale (PANSS; Kay, Fiszbein, & Opler, 1987) "Negative" and the sub-scale "anergia" on Brief Psychiatric Rating Scale (BPRS). For quality assurance a random selection of videotaped assessments was also PANSS-rated by an independent expert (psychiatrist) with high agreement.

*Other outcome criteria:* general psychopathology and positive symptoms sub-scales on the PANSS; subjective quality of life as measured on the Manchester Short Assessment of Quality of Life (MANSA; Priebe, Huxley, Knight, & Evans, 1999); social functioning as measured on the Social Functioning Scale (SFS; Birchwood, Smith, Cochrane, Wetton, & Copestake, 1990); depth and range of emotional experiences on the Differential Emotions Scale (DES-IV; Izard, Libero, Putnam, & Haynes, 1993).

For the purpose of post-therapy qualitative evaluation of therapeutic processes and in order to compare the outcome reports of the therapists with the outcome ratings of the researchers, the therapists completed structured session protocols after each session and a summary on each participant at the end of therapy (with particular emphasis on observed movement behaviour). Both therapists and the researchers were blind to each others' assessments.

Medication at the beginning of BPT and changes during therapy were documented.

### The treatment (manualised BPT for chronic schizophrenia)

The main components of the treatment for this study were manualised for the pilot trial on the basis of the existent literature (Guimon, 1997; Röhrlich, 2000; Staunton, 2002; Totton, 2003) and the manual is described in more detail in Röhrlich and Priebe (2006). Based on the qualitative data obtained within the pilot trial, the manual was further developed/adjusted prior to the study period. The manual includes the following main elements: (1) overcoming communication thresholds through introduction of non-verbal communication techniques; (2) refocusing cognitive and emotional awareness towards the body (physical reality, coordination and orientation in space); (3) stimulating activity and emotional responsiveness; (4) promoting exploration of self-potentials, focussing on body strength and capability, experiencing the body as a source of creativity, reliability, pleasure and self-expression; (5) modifying dysfunctional self-perception; and (6) addressing common psychopathological features such as boundary loss, somatic depersonalisation, and body schema disturbances.

Patients received 20 therapy sessions (each 90 min) over a period of 10 weeks. The group size was limited to eight patients. Therapists experienced in working with schizophrenia patients and in providing body oriented psychological therapies administered the given treatment; they were trained and accredited as dance movement psychotherapists (ADMP/UK) and received additional training to deliver interventions according to the integrated body psychotherapy manual. Adherence to the manual was checked through videotaping of sessions. Therapists received supervision through supervising therapists with experience in the given treatment mode and who developed the treatment manual (senior dance movement psychotherapist and body psychotherapist).

### Analysis

The statistical analysis regarding pre-post comparison of the negative symptom scores as well as other outcome measures was conducted in an intention-to-treat fashion (including all patients who participated;  $N=15$ , three were lost for follow-up), using paired samples  $t$ -tests.

For a group of those patients who attended at least 50% of the therapy ( $N=9$ ), the structured accounts of therapists were subjected to a content analysis. The analysis focused on patients' clinical characteristics at the beginning of therapy, and therapeutic processes and changes during treatment (with specific emphasis on changes in movement behaviour and emotional expression as well as body experiences). For triangulating the findings, the research team also assessed the video-recordings of the therapy sessions.

The study protocol was approved by the local Ethics Committees in North-East and South-West London.

### Results

#### Description of sample

A total of 53 patients were referred for inclusion in the study. Four patients did not present a degree of negative symptoms as defined in the inclusion criteria (PANSS-negative score for all these patients  $<15$ ), two patients did not fulfil criteria for DSM-IV schizophrenia (diagnosis of schizoaffective disorder established), and eight did not have a sufficient command of English. Out of the remaining 39 eligible patients, 21 refused to participate; 18 patients fulfilled the inclusion criteria and consented to participate.

16 of those included were male and 2 female. The mean age was 41.2 years (range 22–59, std. deviation/s.d. 11.4). With respect to ethnicity, 7 were white Caucasian, 2 black African, 4 Indian, 3 Pakistani, and 2 Arabian. The mean duration of illness was 18.5 years (range 6–31, s.d. 8.4), the mean number of previous hospitalisation

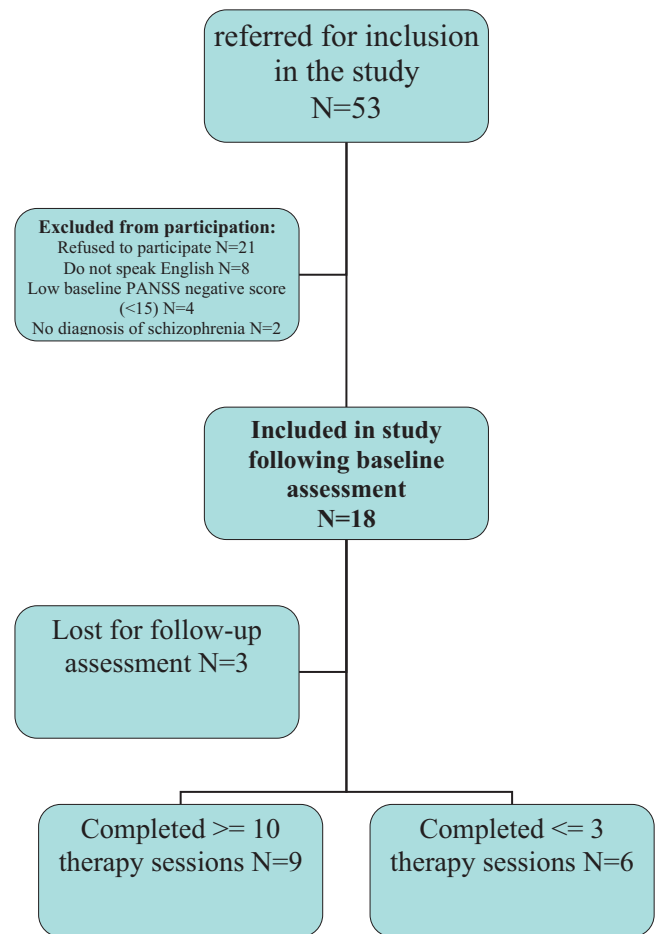


Fig. 1. Study flow diagram.

2.5 (s.d. 1.6). All patients were prescribed antipsychotic medication (exclusively atypical antipsychotics and with dosages at the upper recommended limit). Most patients were on Clozapine treatment and five were prescribed Clozapine in combination with another antipsychotic at the time of the study. Three groups of patients were treated at the two different sites. The detailed flow diagram is shown in Fig. 1.

Nine of the 18 patients attended 10 or more therapy sessions. During treatment, medication was changed for only one patient who however did not attend the therapy sessions. Medication remained unchanged for all other patients.

#### Changes in negative symptoms

The results show a significant reduction from pre- to post therapy of PANSS-negative and BPRS anergia subscale scores. This was particularly marked for the core negative symptom of affective blunting (Table 1). With comparatively high base line negative symptom scores, patients showed substantial pre/post therapy changes: mean PANSS-negative difference score 5.7, s.d. 4.4, range  $-2$  to 13. A separate analysis of those who attended more than 9 sessions showed a better treatment outcome: mean difference score 7.5, s.d. 2.9.

#### Other outcome measures

Apart from PANSS general subscale score no significant changes were observed in subjective quality of life and social functioning scale scores (Tables 1 and 2).

**Table 1**  
Main clinical and other outcome measures (paired samples *t*-test).

	At baseline			Post-treatment			Difference	
	<i>n</i>	Mean	s.d.	<i>N</i>	Mean	s.d.	<i>t</i>	<i>p</i>
Main outcome measures								
PANSS-negative	15	25.9	4.8	15	20.2	5.4	5.1	.000
BPRS anergia	15	12.8	2.7	15	11.4	3.1	2.3	.041
Blunted affect	15	4.8	1.4	15	3.5	1.5	3.8	.002
Motor retardation	15	2.3	1.2	15	2.1	1.4	1.0	n.s.
Other clinical outcome measures								
PANSS positive	15	15.1	5.2	15	12.7	4.3	2.0	n.s.
PANSS general	15	37.9	8.8	15	33.5	8.4	2.3	.036
MANSA	11	4.4	1.0	11	4.5	0.7	−0.5	n.s.
DES positive	15	22.7	4.0	15	22.9	4.5	−0.2	n.s.
DES negative	15	63.2	14.8	15	64.8	21.2	−0.6	n.s.

### Therapeutic processes and qualitative assessment of treatment outcomes

The therapists' accounts for those patients who attended more than 9 sessions is summarised in Table 3. Personal reflections from therapists on the therapeutic progress in general described the work as "challenging and exciting". Therapists were very engaged in the process, but struggled regularly in the initial stages of the group programme in relation to the high level of reduced motor expression, patient's lethargy and tiredness. "...As they began to move I could see and feel a disengagement, a cut off-ness from the body which manifested itself as either small, awkward and almost disjointed movements or large, random, unfinished movements, that seemed out of control and undirected. It was clear from this first session that each of them had difficulties with being-in-their-bodies... There was a distance between feeling and expression" (Therapist group 1, final summary).

The structured manualised approach was reported as helpful for the engagement process, and the movement interventions were described as "paramount" in terms of initiating (non-verbal) communication amongst participants (Therapist group 3, final summary). One therapist described this as follows: "There was something magical about the movement, it allowed the group to focus on themselves (rather than their delusions and fears) meaning that they were able to become more present and embodied. This in turn facilitated the possibility of connecting with others whilst maintaining personal ego boundaries" (Therapist group 1, final summary).

### Discussion

Following a successful RCT (Röhrlich & Priebe, 2006), the outcomes of BPT on chronic negative symptoms were investigated in an uncontrolled open trial, i.e. without the restrictions of a randomised controlled design and therefore closer to the conditions of routine treatment. All eligible patients who fulfilled the main inclusion criteria and agreed to participate were included. Quantitative outcomes were obtained by independent researchers (PANSS ratings on psychopathological symptoms), who were otherwise not

involved in treatment, and compared with therapists' qualitative assessment of treatment response. This design was chosen, because little data is available on the outcomes of psychological therapy for chronic schizophrenia in open clinical settings and the current evidence base for BPT is still predominantly based on clinical case studies reported by therapists.

The findings of this study provide further evidence for positive outcomes following BPT in the treatment of negative symptoms of patients suffering from chronic schizophrenia. Despite the fact that mean baseline symptom scores in this sample indicated comparatively severe conditions, negative symptoms of most patients improved greatly over the course of treatment, with mean difference scores well above those defined elsewhere as treatment response. The mean difference of 5.1 on PANSS-negative subscale exceeds the difference of 3 points, which has been defined as relevant improvement in the literature (Lapierre et al., 1999; Rector, Seeman, & Segal, 2003). The difference is 1.6 higher than in the previous RCT (Röhrlich & Priebe, 2006) and those patients who attended more than 50% had an improvement even twice as high. The patients had however on average a higher baseline score than those in the previous trial. These changes were not linked to changes of antipsychotic medication.

The analysis of the structured reports of therapists suggests that the treatment enabled individual patients to participate in a range of social and other therapeutic activities for the first time in years. The therapists reported significant improvements of expressive behaviours, flexibility of movement pattern and overall emotional expressiveness, which was consistent with ratings from researchers on reduced negative symptom scores.

Two different measures of emotional processing – clinical judgements on affect/emotional withdrawal and a patient rating of emotional experiences – were used in the study. The findings point towards a mismatch between patients' subjective assessments of their own changes and the assessments of researchers. At baseline the patients displayed flattened/blunted affect to the external observer but their own ratings did not differ from those described elsewhere for healthy controls (Youngstrom & Green, 2003). This is in line with other empirical research findings, showing that self-

**Table 2**  
Descriptive statistics and paired samples *t*-test results for SFS subscale scores.

SFS subscale	Possible range	Observed range baseline	Mean/s.d. baseline	Observed range past treatment	Mean/s.d. past treatment	Difference <i>t/p</i>
Social engagement/withdrawal	0–15	3–13	9.6/3.5	7–13	11.1/2.7	−2.0/n.s.
Interpersonal communication	0–9	1–8	5.6/2.3	0–9	5.2/2.7	1.1/n.s.
Independence/performance	0–39	6–34	24.4/8.9	7–32	24.6/8.0	−0.3/n.s.
Recreation	0–45	4–27	14.2/5.3	3–20	11.9/4.6	2.1/n.s.
Prosocial activities	0–66	0–26	9.2/7.4	2–26	9.8/7.6	−0.5/n.s.
Independence/competence	0–39	0–13	5.9/3.4	1–12	5.0/2.3	1.4/n.s.
Employment/occupation	0–10	0–7	1.6/2.3	0–7	1.4/2.3	0.8/n.s.

n.s., not significant.

**Table 3**  
Qualitative observational findings from patient's evaluation of treatment and therapist's reports.

	Clinical characteristics and observations pre-therapy	Therapeutic processes	Main changes/outcomes
Male: 32 years Black African	He moves within a small kinaesthetic sphere, he is usually observed to position himself close to someone or the wall. He would often refer to strange experiences of his body during exercises, e.g. feeling his arm is broken, absence of his left foot, an "empty" shoulder, and a hand which felt "like paper"	He often lingers after the sessions have ended and takes opportunities to extend contact with therapist/s. He would often talk about his experiences of his body. He has managed to form an attachment to the group and/or process	Subjectively: "unchanged"; Comment: "I'd like to go to gym now", expressed desire for the group to restart Therapeutic alliance: neutral PANSS-negative: pre 26, post 19 Therapists: "We feel that he may have found the consistency and regularity of the sessions psychologically containing"
Male: 28 years Pakistani	He is a tall and long-limbed man who tires quite easily and frequently needs to sit down to rest. We have observed qualities of quietness, reticence, complaining	His use of movement efforts seemed to parallel this process. Initially his use of passive weight was a significant theme of his movement. This later developed into stronger use of weight through development of vehemence pre-effort. He initiated more ideas towards the end of program	Subjectively: "unchanged"; Comment: None; Therapeutic alliance: positive PANSS-negative: pre 36, post 23 Therapists: As his confidence and trust in the group grew, he was able to ask for help with certain exercises. He was also able to share his level of despair about his illness and poor quality of life. He was very expressive about his feelings about the group ending. We felt that he formed a positive attachment to the group. He seemed the one to be most impacted by the end of the program and who could have benefited from further therapy.
Male: 59 years Pakistani	He is a man who seems physically fragile and is not very mobile. He tires easily and often sits down to rest. During movement mirroring exercises, he tends to move his hands with direct, bound flow, and light weight. He moves within a small kinaesthetic sphere and does not appear to have very developed sense of spatial awareness	He often enters and leaves the space during sessions, but always returning just in time for the relaxation and end. We noticed that he tried to regulate his entry into the group by trying to come once a week at first. However, halfway through the program he made an effort to attend twice a week	Subjectively: "better"; Comment: None Therapeutic alliance: positive PANSS-negative: pre 27, post 24 Therapists: Little improvement. We suspect that he might have language difficulties because he struggled to follow instructions and to complete the questionnaire. His understanding seems related to visual demonstrations
Male: 36 years Arab	He is of large build and has a lot of tension in his shoulders. His preferred movement efforts are bound flow, direct attention to space, and strong weight. He has a rigid gait, with almost no twist in his torso as he walks, not much control over his limbs, a lowered and fixed gaze, and slightly hunched shoulders	He initiates ideas/movements easily during group exercises and demonstrated a keen willingness to try new exercises. He seems to enjoy the mirroring exercise in pairs. He often takes the lead in follow-leader exercises and in finding a partner. It is significant to note that he always made an enormous body shape with no arms during the body size perception exercise using the ropes. His shape remained constant whenever exercise was repeated	Subjectively: "better"; Comment: "I am planning to do more groups" Therapeutic alliance: positive PANSS-negative: pre 23, post 18 Therapists: There was significant change in his gait later in the program as we noticed more flexibility in his torso and middle spine, more controlled limb movement, and a more open and lifted gaze. We also noticed that this seemed to parallel the process of improved eye coordination and reaction time during group exercises
Male: 45 years White caucas	In the early stages, he needed the attention of the therapist in order to sustain engagement and when the therapist's attention turned away from him towards another, he seemed to lose interest, look bored and disengaged. He kept his shoulder bag on during the sessions and he was very sensitive and aware of time often checking his watch, looking at the clock	As the work progressed we noticed that he was able to sustain engagement with the group without our constant attention. He was eager to play, could be quite impatient and moved quickly. He expressed his anger about the 'forms', saying they were all the same and it was a pointless exercise. There was a real sense of ownership with him, he was committed to the group and even gave one of the exercises a special name	Subjectively: "better"; Comment: "It was fun, it got me out" Therapeutic alliance: positive PANSS-negative: pre 24, post 16 Therapists: As the work progressed we noticed that he was able to sustain engagement with the group without constant attention from therapists. He was the first to bring in the theme of endings in relation to the end of the programme. He felt this had "gone quick" and looked quite sad about it
Male: 55 years White caucas	He was a tall, shy man who also kept his coat on. He was hesitant and low in confidence and he was concerned not to "impose" and we thought he was fairly compliant. He was always polite and spoke quietly	A significant movement was that of 'flying' with his arms. He was quite taken by the work we did using ropes to surround body shapes and on the first occasion he posed in a certain way naming the shape he had created as 'dead man silhouette', rather like one sees in the movies he explained. This was a significant moment and later in the programme he referred back to this. He made a connection with a feeling gesture he had drawn	Subjectively: "better"; Comment: "I enjoyed it and felt a bit better"; Therapeutic alliance: positive PANSS-negative: pre 23, post 17 Therapists: Towards the end of the programme, he expressed regret that he had not attended all the sessions and felt that he had not gained the full benefit as a result of this
Male: 49 years Indian	He had distinct mobility difficulties; in the beginning his walk was a series of tiny shuffles no larger than the length of his foot	There was an increased ability to identify likes and dislikes. We noticed that he learnt by imitation and responded very positively to attunement and mirroring. His body concept began with an egg-like shape and developed to a body with a head and limbs. The quality of his gaze changed during this programme from being 'lost' and 'latched on' in the beginning to one of increased connection, with less need to hold on and with a softer and more present quality. He made quite an attachment to another participant	Subjectively: "better"; Comment: "I like going to the group, it helped"; Therapeutic alliance: positive PANSS-negative: pre 36, post 27 He seemed to have benefited a lot from this work and we observed significant changes in body concept. There was a strong sense of developmental work witnessed in the way he responded so positively to the mirroring work. His movement profile expanded a lot during the programme. In the beginning we noticed he could not reach/touch his head. Later he developed movements that had self-holding and self-organising functions. His movements became larger and more expanded. We witnessed an increased spatial awareness of self and in relation to the environment

Table 3 (Continued)

	Clinical characteristics and observations pre-therapy	Therapeutic processes	Main changes/outcomes
Male: 47 years White caucas	He would always check in with the same words: “depressed, anxious, nervous”. His posture was initially incredibly stooped and his torso collapsed	He began to straighten up over the weeks as his body awareness and self-confidence grew. He moved from a position of embodying a very closed and ‘restricted access’ personal space, to become aware that he wanted to be in contact with others, saying “I crave that which I most fear”. He discovered how to play in the group as he spoke of his lonely childhood in which he had never learnt to play	Subjectively: “better”; Comment: None; therapeutic alliance: positive PANSS-negative: pre 24, post 17 Therapists: Out of all the patients he made the most progress both in his physical self and in terms of insight and self-reflection. He found the therapy “interesting, energising and stimulating”. He began to practice yoga again after a break of 20 years and was thinking of taking up swimming again to fill the void of the project once ended. As the group progressed his emotional vocabulary increased. There was a real sense that he began to look after himself, he started to take piano lessons
Male: 49 years White caucas	When we turned our attention to this participant one of the first memories that came to mind was the level of anxiety regarding transport to and from the centre. He always kept his coat and hat on he was quietly spoken, hunched shoulders over a collapsed torso with head dropped forward and he would occasionally make eye contact by raising his eyes rather than his head. He moved his arms, very close to his body. There was no significant change in his movement repertoire although he did make an effort to work with others in mirroring exercises	Overall, his high levels of anxiety lessened as the programme progressed. He remained on the periphery, walking around the edges of the room. He was able to acknowledge this verbally and had some insight into this difficulty. As he became more engaged with the group he was able to enter the central space. Some examples of this shift included being at the centre of a group sculpt that he initiated, joining others in their group sculpts and going under the parachute	Subjectively: “better”; Comment: “It was not easy, I got through, I definitely recommend it” Therapeutic alliance: positive PANSS-negative: pre 25, post 15 Therapists: We received positive feedback from his key-worker who accompanied him to the sessions and he told us that he was enjoying the sessions and getting a lot of benefit from the work we were doing. By the end, he was able to take a walk in the park and use the bus (with support), something he has not been able to do on his own for some time.

reported measures actually report an intense emotional reactivity that contradicts the lack of overt affective expression in negative syndromes (Berenbaum & Oltmanns, 1992; Bouricius, 1989; Kring & Neale, 1996).

Whilst patient’s self-ratings on emotional experiences did not change during treatment, the researcher’s ratings revealed a significant improvement of “blunted affect”. This may be interpreted as an improved ability to communicate feelings to others (hence accessible to clinical judgement) rather than an increase in depth and range of emotions. The other core negative symptom “motor retardation” did not significantly change over the course of treatment and patients’ own accounts of their subjective quality of life and indicators for social functioning did not improve either. However, the therapists noted a remarkable change in respect of patient’s communicative behaviour. One might therefore argue that these findings indicate a positive effect on the transition processes between emotional and motor functioning, supporting or enabling patients’ ability to enact (embody) their internal states within social contexts, resulting in an increase in expression of non-verbal behaviour. Using a phenomenological perspective, Stanghellini and Lysaker (2007) described this process similarly: ‘Psychotherapy may serve as a “dialogical prosthesis” to help re-establish the lost connection between bodily feelings (emotions) and interpersonal situations’ (p. 174). This approach adds to the growing number of new psychotherapeutic intervention strategies “focusing on self-experience and recovery of personal identity” as summarised in a comprehensive review by Pérez-Álvarez et al. (2010).

Relating to each other in a facilitated group setting without having to necessarily say something, allows exploring and expressing inner experiences in relation and response to others. Elements of creative and play therapy enable breaking down boundaries and foster self-confidence, hereby lowering anxiety levels. One patient summarised his inability to communicate at an early stage of treatment, saying “I so much want to be with people but fear it like death”.

Discussing those findings in the wider context of the literature on dysfunctional social interaction in schizophrenia (e.g.

Addington & Addington, 2008), two areas of neuropsychological functioning may be worth exploring as potentially relevant for reduced interpersonal, communicative behaviours in future studies: affect perception and empathy/affective theory of mind (ability to correctly perceive, attribute and interpret social and one’s own internal emotional cues). Particular attention should be paid to the question as to how difficulties of recognising and interpreting emotional cues impact upon corresponding non-verbal, communication and behaviour styles (e.g. gestures and postures, movement qualities, prosocial behaviour, speech). Ethological research (e.g. Dimic et al., 2010; Troisi, Spalletta, & Pasini, 1998) identified a pattern of avoidant non-verbal behaviour, a global reduction in expression of non-verbal behaviour in schizophrenia as compared to healthy controls (particularly the expression of pro-social behaviour and gestures). Those findings were associated with affective blunting and poor social functioning/poor prognosis (Troisi, Pompili, Binello, & Sterpone, 2007).

#### *Methodological considerations and limitations*

The sample for this study was small; due to the recruitment approach of the study (i.e. with clinicians referring and no assertive recruitment strategy) relatively few patients were identified as suitable by clinicians and many patients did not want to participate. Considering the better recruitment and lower drop-out rates in a previous RCT (Röhricht & Priebe, 2006), the systematic involvement of researchers with dedicated time, who provide information and emphasise potential benefits of participation in treatment trials, may be important to recruit more patients to such studies. At the same time, the less proactive recruitment strategy in this study as compared to a RCT may not have impacted treatment outcomes, since patients in both studies showed similar improvements. Yet, for a group of patients with chronic schizophrenia, whose illness is characterised by active and passive social withdrawal, lacking motivation and energy, specific and active input to promote participation in such treatment may be important for engagement and treatment attendance.

Interpreting the findings of this study with a small sample must be done with caution. Some authors emphasize the need for both RCT and observational studies conducted in parallel (e.g. Slade & Priebe, 2001) with a view of testing the outcomes of new treatments in real life clinical settings. Most schizophrenia patients with chronic negative symptoms have been suffering from treatment resistant conditions for many years and with very little change in their psychopathological symptoms, and the observational nature of this open trial allowed offering treatment to all eligible patients who chose to participate.

Findings of observational studies can be skewed due to rating bias; in this study the three researchers involved in the assessments had been trained in PANSS ratings. More importantly pre/post interviews were video recorded, hereby allowing for independent ratings of PANSS scores for purposes of quality control. In addition, PANSS ratings were repeated pre-treatment for those patients, where a delay of more than 12 weeks between baseline assessment and commencement of therapy occurred ( $N=11$ ). Comparing the two pre-therapy scores, no differences were identified, which can be regarded as further evidence for the validity of the ratings on psychopathological symptoms.

## Conclusions

This study adds to the encouraging evidence for positive outcomes of BPT in the treatment of negative symptoms of chronic schizophrenia. BPT fosters non-verbal communication, and the improvement of motor expressiveness (movement behaviour) provides new ways of working with patients in social interactions, therefore potentially impacting on otherwise relatively treatment resistant negative symptoms and corresponding poor prognosis.

Comparing the therapists' clinical judgements of change during therapy with those obtained by researchers on psychopathological symptom scores, a high degree of consistency can be observed. Despite the potential bias of therapists to judge the outcomes of their own work in an inappropriately positive manner, one may argue that therapists' judgements should not be dismissed and do have a role in the evaluation of such treatments. This is important for all further developments and evaluations as well as routine care, where researcher interviewers are not available for independent assessments.

## Acknowledgements

We would like to particularly thank the therapists – Aleka Loutsis, Jenni Davies, Fiona Hoo, Shirley Mawer – for their extraordinary commitment, effort and dedication in providing the treatment; their detailed observations and comments helped to further develop the manualised intervention strategy. The research was conducted as “own account” research and we are grateful for the input from clinician researchers: Dr. Shachi Pradhan, Dr. Melissa Willis, Dr. Tulha Aga.

## References

Addington, J., & Addington, D. (2008). Social and cognitive functioning in psychosis. *Schizophrenia Research*, 99, 176–181 (Epub 2007 August 2).

Berenbaum, H., & Oltmanns, T. F. (1992). Emotional experience and expression in schizophrenia and depression. *Journal of Abnormal Psychology*, 101, 37–44.

Birchwood, M., Smith, J., Cochrane, R., Wetton, S., & Copestake, S. (1990). The Social Functioning Scale. The development and validation of a new scale of social adjustment for use in family intervention programmes with schizophrenic patients. *British Journal of Psychiatry*, 157, 853–859.

Bouricius, J. (1989). Negative symptoms and emotions in schizophrenia. *Schizophrenia Bulletin*, 15, 201–208.

Brosan, L., Reynolds, S., & Moore, R. G. (2008). Self-evaluation of cognitive therapy performance: Do therapists know how competent they are? *Behavioural and Cognitive Psychotherapy*, 36, 581–587.

Chakos, M., Lieberman, J., Hoffman, E., Bradford, D., & Sheitman, B. (2001). Effectiveness of second-generation antipsychotics in patients with treatment-resistant schizophrenia: A review and meta-analysis of randomized trials. *American Journal of Psychiatry*, 158, 518–526.

Dimic, S., Wildgrube, C., McCabe, R., Hassan, I., Barnes, T. R., & Priebe, S. (2010). Non-verbal behaviour of patients with schizophrenia in medical consultations – A comparison with depressed patients and association with symptom levels. *Psychopathology*, 43, 216–222 (Epub 2010 April 28).

Exner, C., Boucsein, K., Degner, D., Irle, E., & Weniger, G. (2004). Impaired emotional learning and reduced amygdala size in schizophrenia: A 3-month follow-up. *Schizophrenia Research*, 71, 493–503.

Guimon, J. (1997). *The body in psychotherapy*. Basel: Karger.

Izard, C. E., Libero, D. Z., Putnam, P., & Haynes, O. M. (1993). Stability of emotion experiences and their relations to traits of personality. *Journal of Personality and Social Psychology*, 64, 847–860.

Kay, S. R., Fiszbein, A., & Opler, L. A. (1987). The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophrenia Bulletin*, 13, 261–276.

Kring, A. M., & Neale, J. (1996). Do schizophrenic patients show a disjunctive relationship among expressive, experiential, and psychophysiological components of emotion? *Journal of Abnormal Psychology*, 105, 249–257.

Lapierre, Y. D., Angus, C., Awad, A. G., Saxena, B. M., Jones, B., Williamson, P., et al. (1999). The treatment of negative symptoms: A clinical and methodological study. *International Journal of Clinical Psychopharmacology*, 14, 101–112.

Leifker, F. R., Bowie, C. R., & Harvey, P. D. (2009). The determinants of everyday outcomes in schizophrenia: Influences of cognitive impairment, clinical symptoms, and functional capacity. *Schizophrenia Research*, 115, 82–87.

Leucht, S., Pitschel-Walz, G., Abraham, D., & Kissling, W. (1999). Efficacy and extrapyramidal side-effects of the new antipsychotics olanzapine, quetiapine, risperidone, and sertindole compared to conventional antipsychotics and placebo. A meta-analysis of randomized controlled trials. *Schizophrenia Research*, 35, 51–68.

Liddle, P. F. (2000). Descriptive clinical features of schizophrenia. In M. G. Gelder, J. J. Lopez-Ibor, & N. C. Andreasen (Eds.), *New Oxford Textbook of Psychiatry* (pp. 571–576). New York: Oxford University Press.

Loew, T., Tritt, K., Lahmann, C., & Röhricht, F. (2006). Körperpsychotherapien – wissenschaftlich begründet? Eine Übersicht über empirisch evaluierte Körperpsychotherapieverfahren. *Psychodynamische Psychotherapie*, 5, 6–19.

Maggini, C., & Raballo, A. (2004). Self-centrality, basic symptoms model and psychopathology in schizophrenia. *Psychopathology*, 37, 69–75.

National Institute for Health and Clinical Excellence (NICE) (2009). *Guidelines for the treatment of schizophrenia* (update, March 2009). <http://www.nice.org.uk/nicemedia/live/11786/43608/43608.pdf>.

Pérez-Álvarez, M., García-Montes, J. M., Vallina-Fernández, O., Perona-Garcelán, S., & Cuevas-Yust, C. (2010). New life for schizophrenia psychotherapy in the light of phenomenology. *Clinical Psychology & Psychotherapy*, July 30 (Epub ahead of print).

Priebe, S., Huxley, P., Knight, S., & Evans, S. (1999). Application and results of the Manchester Short Assessment of Quality of Life (MANSA). *International Journal of Social Psychiatry*, 45, 7–12.

Rector, N. A., Seeman, M. V., & Segal, Z. V. (2003). Cognitive therapy for schizophrenia: A preliminary randomized controlled trial. *Schizophrenia Research*, 63, 1–11.

Röhricht, F. (2000). *Körperorientierte Psychotherapie psychischer Störungen – Ein Leitfaden für Forschung und Praxis*. Göttingen-Bern-Toronto-Seattle: Hogrefe.

Röhricht, F. (2009). Body oriented psychotherapy – The state of the art in empirical research and evidence based practice: A clinical perspective. *An International Journal for Theory, Research and Practice – Body, Movement and Dance in Psychotherapy*, 4, 135–156.

Röhricht, F., & Priebe, S. (2004). Ego-pathology and common symptom factors in schizophrenia. *Journal of Nervous and Mental Disease*, 192, 446–449.

Röhricht, F., & Priebe, S. (2006). Effect of body-oriented psychological therapy on negative symptoms in schizophrenia: A randomised controlled trial. *Psychological Medicine*, 36, 669–678.

Röhricht, F., Papadopoulos, N., Suzuki, I., & Priebe, S. (2009). Ego-pathology, body experience, and body psychotherapy in chronic schizophrenia. *Psychology & Psychotherapy: Theory, Research, and Practice*, 82, 19–30.

Sass, L. A., & Parnas, J. (2001). Phenomenology of self-disturbances in schizophrenia: Some research findings and directions. *Philosophy, Psychiatry, and Psychology*, 8, 347–356.

Sass, L. A., & Parnas, J. (2003). Schizophrenia, consciousness, and the self. *Schizophrenia Bulletin*, 29, 427–444.

Slade, M., & Priebe, S. (2001). Are randomised controlled trials the only gold that glitters? *British Journal of Psychiatry*, 179, 286–287.

Stanghellini, G., & Lysaker, P. H. (2007). The psychotherapy of schizophrenia through the lens of phenomenology: Intersubjectivity and the search for the recovery of first- and second-person awareness. *American Journal of Psychotherapy*, 61, 163–179.

Staunton, T. (Ed.). (2002). *Body psychotherapy*. New York: Brunner-Routledge.

Totton, N. (2003). *Body psychotherapy: An introduction*. Maidenhead, Philadelphia: Open University Press.

Troisi, A., Spalletta, G., & Pasini, A. (1998). Non-verbal behaviour deficits in schizophrenia: An ethological study of drug-free patients. *Acta Psychiatrica Scandinavica*, 97, 109–115.

Troisi, A., Pompili, E., Binello, L., & Sterpone, A. (2007). Facial expressivity during the clinical interviews as a predictor of functional disability in

- schizophrenia. *Progress in Neuropsychopharmacology and Biological Psychiatry*, 31, 475–481.
- Volavka, J., Czobor, P., Sheitman, B., Lindenmayer, J. P., Citrome, L., McEvoy, J. P., et al. (2002). Clozapine, olanzapine, risperidone, and haloperidol in the treatment of patients with chronic schizophrenia and schizoaffective disorder. *American Journal of Psychiatry*, 159, 255–262.
- Xia, J., & Grant, T. J. (2009). *Dance therapy for schizophrenia*. Cochrane Database of Systematic Reviews 2009, Issue 1. Art. No.: CD006868, doi:10.1002/14651858.CD006868.pub2
- Youngstrom, E. A., & Green, K. W. (2003). Reliability generalization of self-report of emotions when using the Differential Emotions Scale. *Educational and Psychological Measurement*, 63, 279–295.