The feasibility of psychomotor therapy in acute mental health services for adults with intellectual disability

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Abstract

Background Psychomotor therapy enables people to reflect on the relationship between experiences and feelings by starting from awareness of bodily responses rather than from awareness of emotion. In this study we examine PsyMot (ID), an assessment that directs this psychological therapy.

Method Twelve suitable consecutive admissions were recruited from a specialist intellectual disability (ID) assessment and treatment unit for adults. Video-recordings of PsyMot (ID) allowed assessment of interrater reliability (IRR). Treatment goals indicated by PsyMot (ID) were addressed using psychomotor therapy as part of a comprehensive program of interventions.

Results Psychomotor therapy was both feasible and popular with patients who participated without any adverse effects. Nine patients completed PsyMot (ID). IRR of the treatment goals identified by all 3 raters was good to excellent in 81% cases, but there were discrepancies for individual items.

Conclusions PsyMot (ID) and psychomotor therapy is feasible within this context, and enriched the clinical team’s formulation. Further studies of reliability and efficacy should be undertaken.

Introduction

Psychomotor therapy uses body awareness exercises and physical activity as a therapeutic tool for stimulating reflection and improving mental health (Probst, Knappen, Poot, & Vancampfort, 2010). The study was conducted in England where psychomotor therapy is not a recognised term in either clinical practice or research (Probst et al., 2010). A variety of body-oriented therapies have been found beneficial for people experiencing mental health problems, but it requires research between clinicians and academics to advance the field (Röhricht, 2009). Psychomotor therapy is a specific technique practised widely in Continental Europe to treat a variety of mental health conditions, and also to address challenging behaviour in people with ID. Research related to psychomotor therapy has been published in both therapy-specific (Ekerholt, 2011; Emck, Plouvier, & van der Lee-Snel, 2012) and pathology-specific journals (van der Maas et al., 2015; Probst et al., 2013). These studies draw attention to the clumsiness, odd postures, hyperactivity, tics, and distorted body image that frequently accompany conditions such as neurodevelopmental disorders, eating disorders, and schizophrenia. They also show how movement-based interventions can support change in the emotional and behavioural problems experienced by individuals with these conditions.

This approach is well suited to assess and treat patients with ID and challenging behaviour, who struggle both to express themselves verbally and to interpret bodily arousal appropriately (McDonnell et al., 2015). However, there is no research base with this population. As a trusted assessment process is key both to therapy and to its evaluation, we examined the use of PsyMot (Emck & Bosscher, 2010), a diagnostic tool developed to direct psychomotor therapy with children and adolescents who have mental health problems. Since its inception, four small studies support interrater reliability, internal consistency, and concurrent validity of the cluster scores for PsyMot (Emck, 2014). The third author, who was the originator of PsyMot (Emck, 2014), translated it into English for this study, and the clinical team adapted it for ID to create PsyMot (ID) by modifying the procedure and excluding irrelevant items.

The PsyMot assessment consists of a battery of games and a reflective interview that in combination assess mental and bodily functioning (Emck, 2014). The assessment protocol can be completed in any order, but the simplified PsyMot (ID) assessment usually starts with the person being asked to identify equipment, describe
what it is for, and whether they have used it before. They are then asked to select a treadmill, static bike, or small trampoline, and are supported by the therapist to use it safely. Once they have become physically active, body awareness is assessed by asking the person what if anything they notice is changing. They are directed to attend to breathing, heart rate, sweating, or muscular warmth only if no relevant comment is forthcoming. During this activity, and a number of other exercises, their motivation to continue is also noted.

Mildly competitive games with the therapist are introduced to assess whether the person can understand and follow rules, and how they respond to winning and losing: these involve using soft balls to throw, catch so many times, or to kick so many goals. There are games such as "Take the Ball," a resistance game where patient and therapist kneel on a large padded mat: one partner aims to hold onto the treasure (a rugby ball) for 30 seconds while the other person tries to take it from them without causing pain, standing up, or lying down. They then reverse roles. This assesses how well the person can follow the rules, including being able to switch position, and whether they are able to persist at an appropriate level of competitiveness that avoids both excessive passivity and aggression. Additional body awareness activities involve lying face down with eyes shut and indicating where quoits had been placed onto their body. Activities are interspersed with reflective exercises such as inviting the person to look at their reflection in a mirror and then describe both what they see and how they feel about their body.

The definitions of items and associated scoring system are based on the International Classification of Functioning, Disability and Health (ICF; World Health Organization, 2001). For example, in the ICF, exploration is defined in terms of a disposition to initiate by moving towards persons or things rather than retreating or withdrawing. In PsyMot (ID) exploration is evaluated by observing if/how a participant explores the therapy room and its materials by moving towards objects, and by touching, testing, and trying them.

Each item score relates to at least one of seven possible treatment clusters: Body Acceptance, Participation and Enjoyment, Perceived Competence, Motor Performance, Self-Control, Self-Confidence, and Interaction with Others. Scores follow the ICF format of 0 for no problem, or from 1 to 4 according to whether the presence of difficulties has an effect upon functioning that ranges from light to very significant. Judgements are made relative to somebody without ID of the same age. One example of the way a score relates to a treatment cluster is that a person’s maladaptive response to looking at their reflection in a mirror loads onto Body Acceptance (Emck & Bosscher, 2010).²

Aims
The study examined the following:
(1) Can PsyMot (ID) be used in an ID acute assessment and treatment unit?
(2) Given high levels of psychological distress and challenging behaviour, does psychomotor assessment or therapy have any adverse effect on the day of intervention?
(3) Can PsyMot (ID) assessments be scored reliably?
(4) Does PsyMot (ID) identify treatment cluster(s) that are relevant to these patients?

Methods
Sample
Suitable consecutive admissions to an 11-bedded specialist acute assessment and treatment NHS unit for adults with ID over a 12-month period were invited to participate in this study, which had ethical approval from the UK’s National Research Ethics Service. The agreed ethics protocol included a procedure for approaching the next of kin when the responsible clinician considered the person to lack capacity to consent to research. The unit admitted adults in acute psychological or psychiatric distress whose unstable mental health or challenging behaviour had created increased risk to them or others. The average length of stay for these adults was under 6 months. Exclusion criteria were anticipated brief admission and any contraindication to psychomotor therapy identified by their responsible clinician from clinical history and electrocardiogram (ECG) screening. Patients all had pre-existing diagnoses of intellectual disability. The problems related to mental health and/or challenging behaviour that had resulted in them being admitted to the unit were formulated by the multidisciplinary team, combining diagnosis based on the International Statistical Classification of Diseases and Related Health Problems – Tenth Revision (ICD-10; World Health Organization, 2010) with relevant aspects of psychological functioning and/or family context.

Data and measures
Gender, age, and ratings on the Health of the Nation Outcome Scales for Learning Disability (HoNOS–LD; Roy, Matthews, Clifford, Fowler, & Martin, 2002) were recorded on admission. The Health of the Nation
Outcome Scales (HoNOS) were developed to measure the health and social functioning of people with severe mental illness in order to monitor improvements nationally (Wing, Curtis, & Beevor, 1996). Behaviour and mental health over the previous 4 weeks are reported by a knowledgeable informant. HoNOS–LD has good interrater reliability, can be used irrespective of the degree of ID (Roy et al., 2002), and has been used to evaluate the effectiveness of services provided by inpatient settings (Hillier, Wright, Stromd, & Hassiotis, 2010; Pearce, Skelly, & Baxter, 2011). HoNOS–LD scores have been analysed into four factors by Skelly and D’Antonio (2008): Cognitive and communicative competence; Disturbance in behaviour, mood, and relationships; Loss of adaptive functioning and physical illness; and Internal dysregulation.

Intelligence quotient (IQ) scores from recent assessment on the Wechsler Adult Intelligence Scale – Fourth Edition (WAIS-IV; Lichtenberger & Kaufman, 2009) were obtained for most patients from case records. Where WAIS-IV IQs were not available, IQ was estimated for the study using Raven’s Coloured Progressive Matrices (CPM; Raven, 1956). This was selected to provide good-enough descriptive data while minimising the assessment load placed on distressed individuals who are already asked to undertake a substantial range of physical, emotional, and cognitive assessments during a relatively short admission. One individual who had not previously agreed to cognitive testing turned out to have an IQ over 80 on the CPM, but socially disadvantaged individuals with chaotic lives and multiple needs who have been supported by ID services for much of their life sometimes do remain within the service for continuity.

It is of course undesirable to use two different measures, but an advantage to using Raven’s CPM is that patients who are fairly chaotic and/or whose cognitive abilities lie below the WAIS-IV floor can and are willing to complete it. As there is ongoing research and scrutiny of Raven’s Matrices (Raven, Raven, & Court, 2004), and scores were used solely for description rather than data analysis, use of Raven’s CPM provided a pragmatic way to describe the intellectual ability of participants.

**Procedure**

PsyMot (ID) is an assessment that deliberately poses challenges such as working with the person to set goals and targets they are encouraged to meet or surpass, and engaging in competitive games with the therapist. As many of these patients had been abused or were otherwise vulnerable or emotionally volatile, both assessment and therapy were carried out by the first author in consultation with the patient’s psychiatrist, and supported by clinical supervision from the unit’s clinical psychologist (second author).

Assessments were carried out in a quiet room on the unit and were video-recorded. The standardised assessment was completed in one session for most participants but could be spread over a number of sessions depending on each person’s needs.

PsyMot converts scores into treatment clusters by attributing and weighting the 60 item scores in light of previous research studies with children without disability (Emck & Bosscher, 2010). In this study we focused on assessment reliability, but also sought to pilot the feasibility and practical utility of psychomotor therapy with adults with ID. For patients likely to remain on the unit long enough, the first author identified the most relevant treatment cluster using the highest scores on PsyMot (ID); the appropriateness of working to improve the person’s abilities in that particular area was then negotiated with the clinical team and, wherever possible, the person. A program of psychomotor therapy was drawn up that elaborated some of the PsyMot games or activities. Interventions were designed to be completed within six to eight treatment sessions because of the short-term nature of these individuals’ placement on the unit.

Risk was managed by the therapist checking the patient’s state before each session and by having two members of nursing staff present during sessions, one of whom was the same gender as the participant. As a previous research study in this environment found that more incidents were recorded following any activity (Turner, 2014), records were also reviewed to check whether incidents increased on days when psychomotor assessment or treatment had occurred.

To determine interrater reliability (IRR), the first video of a PsyMot (ID) assessment was scored on the 0–4 scale for each of the 60 items. This was done jointly by the first and second authors watching the video together, discussing their interpretation of the item, and agreeing on implicit scoring criteria where there was room for interpretation. For example, one item assessed risk for children who are not highly disturbed. With the current sample, risk could not be scored from sessions because patients would not attend therapy if they were considered to be risky that day. The sample included people who could be violent or were actively suicidal. It was agreed that for those patients risk would be scored according to recent case history and incident data rather than from observation.

The remaining eight assessment videos were scored independently by the first and second authors. Three of these videos were also sent to the originator of PsyMot (third author) for a reliability calculation and quality
check. IRR calculations were conducted (fourth author) using the eight blind assessment ratings and the three videos that had been sent for independent scoring. The DOMENIC method (Cicchetti, Fontana, & Showalter, 2009) was used to determine IRR using kappa for each individual item from PsyMot and for each of the seven treatment clusters, which were automatically calculated by the Excel® scoring sheet. DOMENIC differentially weights presence, absence, and size of rating discrepancy. Values for kappa according to Fleiss (1981) are < 0.4 poor, 0.4 – 0.59 fair, 0.6 – 0.74 good, and > 0.74 excellent.

Results

Sample

From 15 consecutive referrals, one participant was unsuitable for PsyMot (ID) or psychomotor therapy following ECG screening and two did not engage. Of the 12 participants included in the study, nine PsyMot (ID) assessments were completed: the other three participants could neither understand the instructions for games nor engage in reflective interview. However, data from their referring clinician suggested that treatment derived from a specific psychomotor therapy cluster may be helpful for them and so therapy was undertaken on that basis. These three presented with significant movement pathologies and recurrent falls in addition to their psychiatric diagnoses. Sample details are given in Table 1.

Descriptive data about feasibility

PsyMot (ID)’s games and activities provided a useful starting point: results allowed identification of treatment clusters, and relevant games from PsyMot (ID) could be elaborated into a program of psychomotor therapy, as they provided opportunities to observe affect and movement behaviour. The combination of games and activities were suitable for most patients’ concentration span; for the majority, both practical and interview elements of PsyMot (ID) could be completed within an hour. Scoring, interpretation, and report writing took up to another three hours.

Adjustments were required to the PsyMot protocol to adapt the procedure for this particularly vulnerable client group. For example, items that request participants to lie with eyes closed to assess body awareness using touch required the therapist to be aware of any history of known or suspected abuse. He also needed to be sensitive to cues about the person feeling intruded upon. Similarly, for patients with a history of violence, competitive items that assess response to winning and losing had to be weighed against the risk of some people finding losing too challenging. Prioritising the wellbeing of each patient meant that the therapist abandoned the item or reduced the level of challenge whenever there were doubts about the wisdom of continuing. Most patients could participate and wished to do so.

Did assessment or therapy increase risk?

No. The average number of incidents during the treatment period was 0.21 per day (SD = 0.26). The average of reported incidents on the days of intervention involving psychomotor assessment and therapy was marginally lower (−0.01 per person) than on days without intervention; this difference was not significant.

Interrater reliability (IRR)

IRRs for the PsyMot (ID) items showed that 16 of the 60 ratings had kappas in the good or excellent range when comparing two raters, but kappas for all three raters were rated good or excellent for only nine items. The main source of difference was that 0 was the most frequent score given by the two new raters (first and second authors), whereas the originator (third author) rated

| Table 1. The sample. |
|----------------------|
| No. | Formulation in addition to intellectual disability | Gender | Age | IQ | HoNOS–LD | PsyMot (ID) sessions | PMT sessions | Incidents |
|-----|-------------------------------------------------|--------|-----|-----|----------|---------------------|-----------|-----------|
| 1   | Autism                                          | M      | 33  | >80 | 11       | 1                   | 6         | 0         |
| 2   | Personality disorder (PD), epilepsy              | M      | 26  | 61  | 25       | 1                   | 3 (D)     | −0.2      |
| 3   | Abusive childhood, attachment disorder           | F      | 19  | 61  | 23       | 1                   | 1 (D)     | −0.08     |
| 4   | Autism                                          | F      | 39  | 50  | 30       | 2                   | 6         | 0.12      |
| 5   | Emotionally unstable PD                          | F      | 23  | 51  | 26       | N/A                 | 2         | −0.12     |
| 6   | Attachment disorder, tardive dyskinesia          | F      | 43  | <40 | 34       | 2                   | 1 (d/o)   | −0.02     |
| 7   | Manic episode, sensory & neurodevelopmental disorder | F   | 19  | 62  | 21       | 2                   | 8         | 0.015     |
| 8   | Autism                                          | M      | 21  | 51  | 45       | 1                   | 0 (D)     | 0         |
| 9   | Childhood abuse, emotionally unstable PD         | F      | 21  | 44  | 31       | 1                   | 1 (D)     | 0.15      |
| 10  | Autism, childhood abuse                         | F      | 19  | 48  | 22       | 1                   | 7         | −0.15     |
| 11  | Dementia                                        | M      | 44  | <40 | 47       | N/A                 | 3         | 0.2       |
| 12  | Psychosis, deteriorating autosomal genetic condition | M   | 20  | <40 | 30       | N/A                 | 7         | 0         |

Note. PsyMot (ID) sessions = sessions to complete PsyMot (ID); PMT = psychomotor therapy; N/A = not attempted; D = discharge; d/o = dropped out; Incidents = incidents on PMT days compared with other days (i.e., average reported incidents on intervention day minus average reported incidents on other days).
more items 1–4; where items were scored by all parties, the originator rated them as having a more significant impact on functioning.

For the seven PsyMot (ID) treatment clusters, the IRR between two raters was excellent or good (range: .71–1) for all kappas. For the seven treatment clusters where there were three raters, all but four of the 21 kappas were excellent or good (range: .43–.91).

Clinical relevance of clusters identified

Table 2 details the PsyMot (ID) treatment clusters identified for participants. The most commonly allocated treatment clusters were Participation and Enjoyment (n = 6) and Self-Control (n = 6), with Body Acceptance (n = 5) third. Body Acceptance was an identified cluster for three of the four patients with a diagnosis of autism.

Discussion

The results of the PsyMot (ID) assessments provided a useful guide for the development of directed psychomotor therapy, and reports received positive comments from services to which patients were discharged. There was a good level of compliance with therapy, which lends itself to achieving goals identified by patients. Aspects of the assessment often revealed important information about a person’s relationship with themself that had not previously been known. For example, one woman had such a negative body/self-image that she ran away from the mirror when invited to look at herself, and reported having avoided looking in a mirror for years. Another young woman who had been physically abused as a child, and allowed herself to be sexually misused by strangers as an adult, was unable to enter into playful tussle during the “Take the Ball” game. When it was her turn to hang onto the ball while the therapist attempted to wrestle it from her, she gave it up to him quite passively. Associated psychomotor therapy provided opportunities to rehearse new ways of responding, and to attend to old and new experiences in ways that have the potential to support repair.

In terms of feasibility, both psychomotor assessment and therapy were attractive activities that engaged most people. For the minority that were difficult to engage in PsyMot (ID), low IQ was coupled with reduced physical ability. Treatment clusters could still be allocated following assessment informed by psychomotor principles, but therapy decisions were less reliable without the standardised assessment battery. One person who continued to be actively suicidal despite the unit being designed to minimise such risks was moved to a low-secure setting mid therapy because he could not be managed safely within this service. Decisions about levels of challenge during competitive elements of the assessment, particularly for individuals like this person, and adapting assessment and therapy according to each person’s level of vulnerability, appear to have been reasonable as neither psychomotor assessment nor therapy were associated with any increase in reported incidents.

With regard to PsyMot (ID) itself, further streamlining of the 60 items could be undertaken to maximise clinical usability. The activities within the standardised assessment were appropriate for this population. A crucial part of the assessment process involved touch, a powerful therapeutic tool in the treatment of challenging behaviour related to attachment insecurity (Sterkenburg, Table 2. PsyMot (ID) treatment clusters identified for participants.

| No. | Formulation in addition to intellectual disability | Treatment cluster(s) |
|-----|--------------------------------------------------|----------------------|
| 1   | Autism                                           | F: Self-Confidence and Self-Expression |
|     |                                                  | A: Body Acceptance   |
|     |                                                  | E: Self-Control      |
| 2   | Personality disorder (PD), epilepsy             | E: Self-Control      |
| 3   | Abusive childhood, attachment disorder          | E: Self-Control      |
| 4   | Autism                                           | D: Motor Performance |
| 5   | Emotionally unstable PD                         | B: Participation and Enjoyment |
| 6   | Attachment disorder, tardive dyskinesia         | G: Interacting with Peers |
| 7   | Manic episode, sensory & neurodevelopmental disorder | E: Self-Control    |
| 8   | Autism                                           | E: Self-Control      |
| 9   | Childhood abuse, emotionally unstable PD        | A: Body Acceptance   |
| 10  | Autism, childhood abuse                         | E: Self-Control      |
| 11  | Dementia                                         | B: Participation and Enjoyment |
| 12  | Psychosis, autosomal genetic condition          | D: Motor Performance |
|     |                                                  | B: Participation and Enjoyment |
2008), requiring appropriate observation by others and boundaries to safeguard the relationship between the individual and their therapist.

PsyMot (ID) ratings showed acceptable reliability for the treatment clusters identified by the assessment, but reliability was low for individual item scores. The main source of difference concerned what behavioural intensity was required to trigger a PsyMot (ID) rating, rather than that the items were not meaningful or understood differently by different raters. Further specification of criteria is required to guide ratings about people with ID by professionals trained to be relatively “blind” to dysmorphias and minor impairments.

The clinical relevance of assessment results and treatment clusters was demonstrated by the unit’s multi-disciplinary team readily incorporating them into overarching formulations. The results show that allocated treatment clusters for three of the four people diagnosed with autism from PsyMot (ID) include body acceptance, which finds external validation from Dosen’s (2007) identification of poor body acceptance as a significant problem for people with autism. This also fits well with Eigsti’s (2013) recommendation of embodied therapies for autism spectrum disorder.

One example of a therapeutic intervention involved supporting an individual whose reported pains were considered to be psychosomatic after investigation of possible organic causes proved negative. His body awareness on assessment was very limited. Therapy enabled him to become more alert to changes in his body during and after exercise, and to persist in physical activity despite mild discomfort. Two years post-discharge there has been no recurrence of the serious self-harm towards the affected parts of his body that had resulted in admission, and he remains settled in the home to which he was discharged. Another example of successful psychomotor therapy concerned a woman with intermittent hypomania, who became better able to notice early stages of bodily arousal and act to reduce it, while care staff continued to intervene when arousal moved beyond her control.

Conclusions
This study is a collaborative project between clinicians and academics, as recommended to advance the field of body-orientated therapies for mental health problems. It is the first step in demonstrating the potential utility of psychomotor assessment and therapy within a specialist ID acute assessment and treatment service. Patients required brief health checks before taking part in psychomotor assessment, but most were suitable and keen to participate. PsyMot (ID) introduced new and varied activities without any increase in challenging behaviour incidents: we attribute this in part to a therapist who was sensitive to patient feedback and who worked in close collaboration with other members of the treating team, as was provided here. IRR was good enough to support further investigation of PsyMot (ID), but two key developments are required in order to formally evaluate therapy: increasing usability by developing an expert group to refine the item list of 60, and improving the definitions for scoring thresholds.

Notes
1. English-language copies of PsyMot (ID) are available from josh.kay@nottshc.nhs.uk
2. Details are available from c.emck@vu.nl
3. Details are available from c.emck@vu.nl

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Conflicts of interest
None.

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