## Psychomotor Therapy and Psychiatry: What's in a Name?

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**Abstract:** In Belgium and the Netherlands, psychomotor therapy as a kind of physical activity and body-oriented therapy has been well integrated into mental health care since 1965. In contrast to its acceptance in most European countries, the term "psychomotor therapy" has not found its way into the Anglo-Saxon literature. Psychomotor therapy is defined as a method of treatment that uses body awareness and physical activities as cornerstones of its approach. In Flemish psychiatric hospitals, psychomotor therapy is imbedded in different treatment programmes for different diagnosis related patient settings. The purpose of this article is to summarize the history, the practical implementations, and the research concerning psychomotor therapy. Its relationship to other similar approaches is described. With this article, we hope to cross borders and build bridges between different international interventions with the same background.

**Keywords:** Psychomotor therapy, complementary therapy, physical activity, body awareness.

#### INTRODUCTION

Today, scientific and non-scientific literature is paying a lot of attention to the importance of movement and physical activities for people with mental illness. The relation between mental health and physical activity is underpinned by a growing number of articles concerning the obviousness of physical activity in regard to mental health and psychiatric rehabilitation. These efforts are, however, becoming very slowly integrated into clinical practice. Many mental health professionals do not appear to view physical activity as a worthwhile strategy. The discrepancy between theory and practice is an intriguing observation given that (a) approximately one-fourth of the world population is faced with a mental dysfunction and (b) physical activities and body health are "hot topics" in the western society.

Physical activity has also been shown to enhance the effectiveness of psychological therapies. It has a role in improving quality of life and symptom management for people with a wide range of mental health problems. Physical activity has a two-fold benefit, since people with mental health problems are also at increased risk of a range of physical health problems, including cardiovascular diseases, endocrine disorders, and obesity [1-10]. Today, little by little more psychiatrists become convinced that medication, counselling and physical activities are the basic standards for therapy in mental illness.

The purpose of this article is to describe psychomotor therapy (PMT) and the use of physical activities and body awareness exercises in people with mental illness in Belgium (Flanders), the Netherlands, and other European countries. Its history, relationship to other similar approaches, practical

#### **DEFINITION**

Psychomotor therapy is based on a holistic view of the human being. This view is drawn from the unity of body and mind. The notion integrates the cognitive, emotional, and physical aspects and the capacity of being and acting in a psychosocial context [11].

Physical activity in all its forms and corporeality are the central themes. Although physical activities have somatic effects (on morphological, muscular, cardiorespiratory, metabolic, and motor levels), psychomotor therapy is still mainly considered to be a psychological treatment. The relation between patient and psychomotor therapist is a central aspect. The experiences during PMT and the responses that arise through these experiences function as a dynamic power of change [12].

Psychomotor therapy is considered as a complementary therapy and can be embedded in several psychotherapeutic approaches (behaviour, cognitive, or psychodynamic therapy). It incorporates medical, psychological, agogic, kinesiological, and rehabilitative components.

#### **HISTORY**

The term "psychomotor" has its origin in Germany. Wilhelm Griesinger, one of the founders of neuropsychiatry, used the term for the first time in 1844 [13].

implementations, and research will be elaborated. The term "psychomotor therapy" has not found its way to the Anglo-Saxon literature, although it is common in most European countries. An international comparison is difficult because in European countries, the domain of physical activity in mental health is claimed by several health care providers with different names and educational backgrounds. With this article, we hope to cross borders and build bridges between different interventions with the same goal.

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The term "psychomotor" led, however, an independent life. Over the years, different concepts have been developed from it in various countries. As all those different concepts developed parallel to each other, there was not much contact between them. The (dis-)similarities must be understood in the light of the divergent cultural history of the different countries.

In France, Dupre rediscovered the term around 1905. He was followed by Wallon, De Ajuriaguerra, Berges, Stambak and others. They developed psychomotricity for children based on pedagogy, psychology, and psychiatry. The profession of psychomotor education, training, and therapy has arisen from these theories. The foundation for their ideas is the link between body and mind based on psychoanalytic perspective [14]. This specialisation is well developed in the roman speaking countries.

In Germany, the work of Griesinger influenced another German psychiatrist, Simon. With his book "Aktive Krankenbehandlung of the Irrenanstalt" [15], he was a trendsetter for a more active approach toward patients with mental illness. In contrast with the existing conception that patients with mental health illness had to be locked up, these forms of therapy aimed to address and to activate the healthy part of the personality that still is present in each psychiatric patient. Therefore, the application of movement activities for psychiatric patients has grown from the so-called active therapy in psychiatric hospitals. With the term "active" therapy, all kinds of activities were recommended to fill the day.

The conceptions of Simon were adopted by several Dutch and Belgian psychiatrists like Van de Scheer [16], Kraus [17], Van Andel [18], Vanderdrift [19] and Pierloot [20]. After the Second World War, these ideas had especially

widespread approval in the Netherlands, Belgium (Flanders), and Germany. In the beginning, physical education teachers in physical education developed a kind of movement therapy. The content of movement therapy existed in a therapeutic working method derived from physical education, dance, and sport for adults and later for children.

Asylum and restrain institutions were more and more questioned and they evolved to open psychiatric centres. Philosophers such Kierkegaard, Husserl, Heidegger, Merleau-Ponty and Sartre had certainly an influence on this new inversion. In psychiatry, the arsenal of therapy approaches increased and movement therapists found acceptance in psychiatric institutions. The work of Buytendijk (1948) "General theory of the human attitude and movement" [21] and Gordijn "Bewegingsonderwijs (Movement education)" (1961) [22] must also be placed within this context. Physical activity as a perspective for psychiatric patients is the result of a constant evolution in human thinking in general and in psychiatry and kinesiology in particular.

Initially, the term "movement therapy" was current. Gradually, the attention changed from physical activity (mens sana in corpore sano) to how people move in relation to their environment and how they use physical activity in their tasks, activities, and responsibilities. The main idea behind psychomotor therapy was the interaction between physical activity and the mind. Methods derived from bodyoriented approaches such as relaxation, sensory and body awareness also were included. With these developments, movement therapy became a movement- and body-oriented kind of psychotherapy [23]. Therefore, the term "psychomotor therapy" was preferred (PMT). This change of name indicated a concern with more than "movement" only.

Table 1. International Organisations in Regard to Physical Activities and Body Awareness in Mental Health

Name	Website	Journal
Adapted Physical Activity	www.alberta.ca (IFAPA)	Adapted physical activity quarterly European bulletin in adapted physical activity
Sport psychology	www.fepsac.com	Psychology of Sport and Exercise
Dance (Movement) Therapy Creative arts therapy	www.admt.org.uk www.adta.org www.nccata.org	American journal of dance therapy American journal of dance movement therapy Australian journal of dance/movement therapy
Gestalttherapy	www.gestalt.org	
Occupational Therapy	www.aota.org www.cot.co.uk www.wfot.org.au	Occupational therapy journal of research American journal of occupational therapy
Psychomotor interventions	www.psychomot.org	See journals: http://www.psychomot.org (See documents.)
Therapeutic recreation & Adventure & wilderness therapy	www.recreationtherapy.com www.wilderdom.com (search adventure therapy)	International journal of therapeutic recreation American Journal of Recreation Therapy
Body ego therapy	www.ismeta.org	Body, Movement and Dance in Psychotherapy An International Journal for Theory, Research and Practice
International Council of Physiotherapy in Psychiatry and Mental Health	www.ic-ppmh.org	

Since 1962, in Flanders the domain of PMT was included in the graduate studies (master) of kinesiology, rehabilitation, and physiotherapy. Since 1965, psychomotor therapy has been systematically integrated in the different residential programs for psychiatric patients in the Netherlands, Germany, and Belgium (Flanders).

#### PSYCHOMOTOR THERAPY: A CONVENTIONAL, A COMPLEMENTARY, OR AN **ALTERNATIVE** APPROACH?

### **Psychomotor Therapy: A Complementary Therapy?**

Depending on the treatment philosophy, the goals and the techniques used by the psychomotor therapist expose themselves to the level of the complementary treatments.

In Flanders, psychomotor therapy can be seen as a supplement to biomedical treatment, in accordance with internationally accepted standard models. It is integrated in the dominant health care system. Psychomotor therapy is theoretically well underpinned and taught at the university level. Research in this field is increasing, and there is now clinical and scientific evidence. There are no real sideeffects, and the rules of safety are transparent.

### Psychomotor Therapy in Regard to International **Associations**

A literature analysis and an Internet search show a large number of specialities or therapies using 'body' and 'physical activity' as cornerstones in their approach. Internationally, psychomotor therapy can be linked to greater international identities such as Adapted Physical Activity in Mental Health (APA), the European Federation of Psychomotricity (EFP), and other (see Table 1). Psychomotor therapy in Flanders and the Netherlands can be seen as an eclectic approach with elements from exercise psychology, dance movement therapy, occupational therapy, body psychotherapy and physiotherapy.

## Psychomotor Therapy in Regard to Similar Therapies in other European Countries

Table 2 is composed of different forms of therapy/healing approaches that are centred around physical activities and body awareness exercises in order to improve psychic functioning, and such is the case in many countries. All these different forms show similarities to psychomotor therapy.

Following the idea of Hölter [24], those therapies could be put on a continuum with one end referring to physical activities and physiotherapy and the other end referring to psychotherapy. Different therapies found their origin in physiotherapy, or physical education (e.g., breathing therapy, massage, relaxation, etc). Among the various types of psychotherapy, a distinction is made between two general orientations: a symptom-oriented approach and a personality-oriented approach. Because there are so many approaches, it is difficult to situate all these approaches within this framework. Most of the different treatments are usually connected to existing psychotherapeutic schools of thought (behaviour, cognitive, or psychodynamic therapy). These therapies are not always clearly distinguishable from each other. They often overlap in their goals and techniques, and they are usually considered as a supplement to verbal psychotherapy. They often make use of physical activities, relaxation techniques, and bodily exploration and expression. Each system has its own theory, its own approach, its own objective, and its own techniques concerning movement and corporeality. The one therapy is more well considered, more well founded, better defined, less vague, and more limited than the other. The one therapy has a theoretically founded approach, while the other a more pragmatic approach. Few or no results shed light on the effectiveness of these therapies. Several of these therapies border or lie in the alternative circuit.

An external form of quality control is lacking in this complex world of therapeutic techniques and therapies. As a result, professions resemble each other very closely while forms of therapy are showing more similarities.

Psychomotor Therapy and Similar Country-Specific Therapies or Techniques Related Therapies Table 2.

Countries	Name of the therapy	
Therapies in English speaking countries	Pesso psychomotor therapy; Body and sensory awareness (Therapy); Playtherapy; Adventure therapy & Wilderness therapy & Outdoor therapy; Body oriented therapy & Body centred therapy	
Therapies in German speaking countries	Bewegungpsychotherapie; Functionele Entspannungstherapie; Integratieve Bewegungstherapie; Konzentrative Bewegungstherapie; Köperpsychotherapie Körperzentrierte psychotherapie; Sporttherapie; Mototherapie	
Therapies in French speaking countries	Thèrapie à médiation corporelle; Somatothérapie; Psychomotricité	
Therapies in other countries	Psychomotorische therapie (The Netherlands & Belgium); Basic body awareness therapy (Scandinavian countries); Kineziotherapy (Czech Republic); Haptonomie & haptotherapy (The Netherlands)	
International Technique related therapies	Breathing therapies; Relaxation therapies: Sofrology, Progressive Relaxation, Autogenous Training; Mindfullness; Yoga; Massage therapy; Tai Chi and similar forms; Running therapy; Hydrotherapy; Hippotherapy; Feldenkrais; Eutonie; Postural Integration; Rolfing,	

Some therapy forms claim, with or without a scientific background, all these interventions. Consequently, different therapists find themselves competing with an array of variously qualified and unqualified health practitioners. This explains why preserving or acquiring a place in the world of therapy is becoming more difficult. To survive in the long run and to present a distinct profile of ourselves regarding the policymakers, we need to prove that what we do is well founded and represents a significant surplus value for the person who requests aid. This is an intriguing observation given that physical activities and the attention paid to the body are currently hot topics in our society. It seems, however, that these are not sufficient reasons to award both a full place in mental health care. Some important reasons why these kinds of therapies are not commonly available are highlighted by Faulkner and Biddle [2]. Their explanations included (1) lag time between reporting research results and translation of new knowledge into practice, (2) a complex and fragmented mental health service delivery system that can create barriers to a full range of appropriate services, (3) practitioners' lack of knowledge about research results, (4) inconsistent positions on the evidential criteria used to evaluate the role of exercise, which masked themes regarding the perceived 'simplicity' of exercise interventions, (5) a practical adherence to a mind-body dichotomy, and (6) the incompatibility of exercise with traditional models of understanding and treating clinical conditions. Lack of interest by qualified mental health professionals means that a market is created that is filled in by other alternative health providers who use several techniques without any scientific quality control.

# OBSERVATION, EVALUATION AND OBJECTIVES IN THE PSYCHOMOTOR THERAPY

Admission to a psychiatric hospital is not due to physical or motor defects but to psychological defects. Psychomotor therapy must therefore try to achieve relevant goals. This requires an observation method that can point out psychological objectives. The Louvain observation scale for objectives in psychomotor therapy [25-26] consists of nine clusters: emotional relations, self-confidence activity, relaxation, movement control, focusing attention on the situation, movement expressivity, verbal communication, and social regulation ability. This observation offers direct and relevant information and an indication for psychomotor therapy because the goals were derived from psychological therapeutic objectives. This way, the form of therapy is closely related to the reasons why the patients were admitted to the psychiatric centre. Recently, Hammink [27] developed another PsychoMotor diagnostic construct for child and adolescent psychiatry.

## THERAPEUTIC INTERVENTIONS WITHIN PSYCHOMOTOR THERAPY

Depending on the request for assistance, the patient's competence or therapeutic possibilities and goals, and the psychological frame of reference in which one operates, the psychomotor therapist will be able to choose either a more action-oriented or a more experience-oriented intervention.

#### **Action-Oriented Psychomotor Therapy**

In action-oriented psychomotor therapy, the emphasis lies mainly on the development of mental and physical proficiencies and on supporting personal development. The activities are aimed at learning, developing, training and/or practising psychomotor, sensorimotor, perceptual, cognitive, social, and emotional proficiencies. More concretely, this means that attention is paid to fine and gross motor abilities, eye-hand coordination, balance, time and space, perception, attention, interaction with materials, recognition of stimuli, suppression of passivity, altering of behaviour, goal-oriented working, enhancing the attention to others, improving social proficiency, learning to collaborate, learning to cope with emotionality, learning to accept responsibilities and being able to put oneself in someone else's place. Other elementary proficiencies such as learning how to relax, acquiring a good physical condition, and learning the basic rules of communication are also integrated. Through exercises, the patients acquire a larger perception and experience ability. The situations proposed will be mainly action- and resultoriented.

This level of intervention is based on research in the field of exercise and sport psychology and psychomotor therapy. Many investigations report the beneficial effects on mental health as a consequence of participation in physical activities. Physical activity is said to have a positive influence on mental well-being, self-esteem, mood and executive functioning. This way, a downward spiral leading to dejection could be stopped. Well-balanced and regularly executed endurance activities (walking, biking, jogging, swimming) and power training (fitness training) augment physical and mental resilience, improve the quality of sleep. and augment self-confidence, energy level, endurance level and relaxation, and, on the whole, they diminish physical complaints. At the very least, physical activity seems be no worse than the classic approach with medication and supporting contact.

## Clinical Interventions: Psychomotor Therapy for Patients with Depression

The psychomotor therapy intervention can provide the framework in which individualised therapeutic objectives can be achieved. Different behaviour-change strategies such as contracting, behavioural contingencies, self-recording, cost-benefit analysis, stimulus cuing, goal setting, relapse-prevention training and social reinforcement are incorporated to enhance both the patients' motivations and their long-term adherence to physical activities, taking into account emotional, cognitive, and physiological components of the mental illness. Strategies include:

- The promotion of regular success experiences through setting realistic and individualised short-term and long-term goals, and through mastery experiences. Self-monitoring and regular success achievements can lead to positive internal attributions [28].
- The provision of group dynamism as a means to develop adequate coping strategies through indirect success experiences. This group dynamism can be obtained through considering the depressed individual as a 'partner' in the therapeutic process (e.g., though

having a voice in the choice of activities) and through reporting therapeutic achievements by patients in the later stages of their therapy plan (so-called 'open groups').

- An initial warm and positive therapeutic attitude, taking psychosomatic complaints seriously.
- Enabling the patient to put into words his/her experiences and feelings in the end of each therapy

Because an increase in physical fitness is not necessary for an improvement in physical self-concept, the therapist needs to focus not only on training effects but also on strategies for improving physical self-concept [29-30].

## Clinical Interventions: Psychomotor Therapy for Patients with Schizophrenia

Psychomotor therapy for schizophrenia may consist of (a) a stress reduction programme, (b) a movement activation programme and (c) a psychosocial therapy programme [31].

As worsening of psychotic symptoms is related to stress [32] while at the same time patients with schizophrenia are experiencing a lot of difficulties in coping with these feelings [33-36], a stress reduction programme should take a central role in the multidisciplinary treatment. Within a stress reduction programme, different modules can be followed: (1) progressive muscle relaxation, (2) yoga therapy, (3) aquatherapy and (4) stress management training. The first three modules are expected to provide a transient elevation of positive well-being and a transient reduction in psychological distress, while in stress management training, different concrete coping mechanisms can be explored. There is, however, still limited evidence for the positive effects of these therapy forms in patients with schizophrenia [37-41].

In a movement activation programme, metabolic abnormalities that are consequences of atypical antipsychotics [6,42-45] and the observed sedentary lifestyle [46-49] should be two topics of special interest. Within a movement activation programme, patients can be invited to participate in 'start to walk' sessions, psycho-education sessions about lifestyle physical activity, and fitness sessions.

Focusing on a specific situation and involvement in a group should be two of the main goals of a psychosocial therapy programme. Means of facilitating involvement in these sessions should include identification of shared goals, participation in the group while experiencing group processes of co-operation, compromise, confrontation and conformity. Within the same sessions, awareness about the possible effectiveness of focusing on a movement-related situation in order to reduce positive symptoms could be raised. The conclusion of Faulkner and Biddle [50] that exercise can be a coping mechanism for positive symptoms such as auditory hallucinations can also be observed in our clinical practice.

### **Experience-Oriented Psychomotor Therapy**

Besides action-oriented interventions, psychomotor therapists are educated in using experience-oriented interventions. Within experience-oriented psychomotor therapy, patients are invited to participate actively in a wide range of physical activities and movement tasks. In participating actively, patients experience many emotions (depressive feelings, fear, guilt, anger, stress, feelings of unease, estrangement, and dissatisfaction) and negative thoughts (intrusion, obsession, morbid preoccupations, worrying). They are confronted with their behaviour (impulses, lack of abilities) or cognitive symptoms (derealisation, lack of concentration). In some cases, however, patients do not experience these emotions or symptoms at all.

Throughout the psychomotor therapy process, an alternative frame of experiences can be made available. Experiencing that an alternative may exist will trigger new emotions and experiences, and a discrepancy between reality and the way a patient sees reality will arise. What is important is not the physical activity itself but the patient's experience and inner perception.

The following themes are taken into consideration: expressing and regulating emotions, augmenting the tolerance for frustration, refraining from impulsive behaviour, improving the reality orientation, improving social interaction, learning to draw limits, strengthening self-confidence, improving body perception and self perception, dealing with fear of failure, developing self-reflection, exploring actual emotional and social life, and providing better insight into conscious inter- and intra-psychic conflicts.

The careful guidance and encouragement of the psychomotor therapist and the possibility to experience feelings in a safe environment allow the patient to develop behaviour that he or she would not have developed otherwise. The underlying problems are not necessarily resolved, but the therapist tries improving his/her handling of problems. The patient shares his behaviour, his feelings, and thoughts with the therapist and with his peers. It can be concluded that experienced-oriented psychomotor therapy offers a more reflective approach than the action-oriented psychomotor therapy. More emphasis is put on experiences and how reactions to these experiences function as a dynamic power.

## Clinical Interventions: Psychomotor Therapy in a Clinical Psychotherapy Setting for Patients with Personality Disorders

Twemlow and Fonagy [51] suggest movement in physically oriented therapies (as yoga and martial arts) combined with psychodynamic psychotherapy for violent non-mentalising individuals who act out aggression and who do not usually respond to verbal therapeutic approaches alone. In our psychomotor therapy, those ideas are extended to all strong emotions in individuals with personality and behaviour disorders. Furthermore, movement activities are not limited to yoga and martial arts but are extended to a wide range of movement activities. Physical work in psychomotor therapy and psychological work in psychotherapy are combined. Psychomotor therapy is seen as an important adjunct to psychodynamic therapies. Individuals are allowed to re-tool their experiences under the guidance of a healthy role model. The corrective emotional experience in a safe, containing, healing and non-coercive social context through attachment to a predictable role model is an important therapeutic leverage to psychodynamic therapies. In this

sense, psychomotor therapy is not just 'doing exercise' or 'performing recreation activities'. Movement is used as a therapeutic tool for stimulating the embodiment of the mind needing specific training and skills. The process of mentalisation during movement sessions is a crucial therapeutic force. The approach of psychomotor therapy aims at perceiving and interpreting behaviour of the patients and this in terms of intentional mental states such as needs, desires, feelings, beliefs, goals, purposes, and reasons [53].

The sports hall functions as a laboratory for experimenting and a territory of learning how to deal with emotions. At the same time, the process of consciousness and verbalising can be stimulated.

## Clinical Interventions: Psychomotor Therapy in a Cognitive Behavioural Setting for Patients with Eating Disorders

Psychomotor therapy in eating disorders developed from three starting points (i.e., the distorted body experience, the observed hyperactivity, and the fear to lose self-control) deduced from the specific conduct pattern of eating disorders [54-56]. The distorted self-image or the weak and negative self-concept is frequently described as an aspect of the eating disorders syndrome. At the same time, there is a frequent denial, repression or avoidance of feelings. Another striking and frequently observed feature of eating disorders is the paradoxical constant restlessness or urge to move. Rather than using movement in a functional way as a means of leisure and enjoyment, anorexics become prey to a kind of impersonal, ego-dystonic urge to move. Physical activity is simply an effective method of caloric expenditure and appetite suppression fulfilling the desire to lose weight. Obsessive-compulsive behaviour and the role of activity in affect regulation play an important role in hyperactivity. In bulimia nervosa and binge eating disorder, passivity and a lack of exercise are described [54, 57-63].

Psychomotor therapy focuses on the multidimensional aspect of the body experience (perception, cognition, attitude, behaviour) with three specific objectives: (1) rebuilding a realistic self-image, (2) curbing hyperactivity, impulses, and tensions and (3) developing social skills [56-57].

Although it may sound contradictory, especially in a group of patients who are underweight, physical activities are part of the multidisciplinary treatment programme for patients with eating disorders. In terms of learning theory, appropriate physical activity indeed may be a good reinforcer. It is desirable to curb hyperactivity and restlessness into a more controlled form of movement. Learning how to limit physical activity through rest and relaxation is important. Sustaining a good physical condition can be an extra goal.

Today, well-supervised and controlled progressive movement programmes (fitness training, aerobics, callanetics, and sports including swimming, volleyball, wrestling, horseback riding and gymnastics) [57-62] have been commonly accepted in supportive surroundings. Beumont *et al.* [57] suggest the following activities for the fitness training of patients with anorexia nervosa: non-aerobic activities, stretching, flexibility exercises, posture improvement, weight training, and exercises requesting social support. Thiem *et al.* [61]

found that the incorporation of a graded exercise programme may increase compliance with treatment, but it did not reduce the short-term rate of gain of body fat or body mass index (BMI).

Movement restriction is imposed. A BMI less than 16 restricts physical activity. High-performance sport is discouraged, and recreational sport in group is encouraged.

Relaxation techniques, breathing exercises, tai chi-based programmes and massage forms can be helpful to promote the feelings of well-being, postural awareness, and an increase of energy at the stage of movement restriction.

The changes in body fat during the therapy can also be a reason to include some psychomotor therapy, especially in the latter part of the treatment and in addition to the refeeding programme. The aim then is to educate the patients about their bad physical condition and to help them to accept the physical and psychological changes that result from increasing weight. It is possible that a fitness training programme during the refeeding supervised by a therapist who is familiar with the physical consequences of undernutrition could increase fat free mass and redirect the patients' hyperactivity in a healthy way, allay their fears of weight gain, and improve their sense of self control.

In binge eating disorders and bulimia nervosa, the goal is to motivate patients to participate in progressive exercises in order to experience health benefits for physical, psychic, and social functioning.

#### RESEARCH IN PSYCHOMOTOR THERAPY

Psychomotor therapists in The Netherlands and Belgium obtain in-depth training regarding the body as well as exercise, and they are trained in acquiring therapeutic and research competency.

This starting point is necessary as it is the foundation on which the quality of therapy is ensured. In our appraoch, we are at an advantage compared to some more exotic therapy forms or therapy forms whose quality is subject to questioning. What we do represents a significant surplus value for the person who requests aid. Our task is to safeguard this position and to prevent ourselves from being bullied. Therefore, research is very important and even vital. Table 3 gives a review of the general objectives of psychomotor therapy and the existing research in psychomotor therapy in regard to the different mental disorders.

#### CONCLUSION

Psychomotor therapy is well established in different parts of Europe, but it is not well known in Anglo-Saxon countries. Psychomotor therapy uses body awareness exercise and physical activities in a systematic way as its medium. Physical activities in all their aspects are the main feature in this therapeutic approach, which can be situated in between physical activity and psychological therapy. Psychomotor therapy (PMT) interfaces with other approaches as exercise and dance movement therapy. It can also be integrated into different psychological approaches. Psychomotor therapy is mostly used as a supplement and support to psychiatric treatment.

Table 3. Review of the General Objectives and the Research in Psychomotor Therapy for the Different Mental Disorders

Mental Disorder	General objectives in psychomotor therapy	Research and literature
Delirium, dementia, and amnesia and other cognitive disorders	Reactivation Resocialisation Stimulation of the cognitive and affective functioning	Droes, 1997 [64,65] Veleta & Holmerova, 2004 [66] Van de Winkel, 2004 [67]
Substance-related disorders	Improving bad physical condition Social functioning Reducing craving	De Vroede, 2001 [68]
Schizophrenia and other psychotic disorders	Psychosocial objectives Stress reduction Movement activation	Deimel, 1983 [69] Emck, 1998 [33] Hatlova, 2003 [70] Probst, 2001 [60] Vancampfort, 2008, 2009, 2010 [31, 71, 72]
Mood and anxiety disorders	Movement activation Improving physical fitness Depression, self esteem en well-being	Bosscher, 1991 [73] Van de Vliet, 2002 [74] Knapen, 2003 [75,76] Raepsaet, 2010 [77] Remans, 2010 [78]
Somatoform disorders	Improving quality of life	Meijden van der Kolk & Jol, 2000 [79] Meyden van der Kolk & Bosscher, 2007 [80] Neerinckx, 1999, 2001 [81,82]
Eating disorders	Body image Hyperactivity Social contacts	Probst, 1995, 1997, 2006 [55-56, 83]
Personality disorders	To re-tool experiences and feelings	Poot, 2001 [52] Rutten, 2001 [84]

Depending on the patient's request for assistance, competence or therapeutic possibilities, goals and psychological frame of reference, the psychomotor therapist can choose either a more action-oriented or a more experience-oriented intervention. In action-oriented PMT, the emphasis lies on the action, the development of mental and physical proficiencies and the supporting of a person's development. In present day, the approach in depressive and schizophrenic patients is mainly focused on a more action-oriented manner. Experience-oriented PMT is another approach. Through a wide variety of physical activities, everyday experiences and emotions are explored. Patients can experience that an alternative exists, which may trigger new emotions and experiences. Psychomotor therapy in a clinical psychotherapy setting for patients with personality disorders and psychomotor therapy in a cognitive behavioural setting for patients with eating disorders is considered to be primarily experience-oriented.

In order to offer patients an evidence-based actionoriented or experience-oriented PMT, therapists in Belgium (Flanders) and the Netherlands are well trained in acquiring therapeutic and research competency. This starting point is the base of our warranty of quality.

Nevertheless, psychomotor therapy in mental health is a relatively recent and evolving domain. In order to evaluate the effectiveness of psychomotor interventions in different populations and settings and to develop more evidence-based treatment programmes, much research still needs to be done. This paper, reaches out to other mental health caregivers who use physical activity as a main part of their approach. By doing so, we hope to open the door to a more intensive interchange of ideas for the future.

#### REFERENCES

- Daley AJ. Exercise therapy and mental health in clinical [1] populations: is exercise therapy a worthwhile intervention? Adv Psychiatr Treat 2002; 8: 262-70.
- [2] Faulkner G, Biddle SJH. Exercise and mental health: It's just not psychology! J Sports Sci 2001; 19: 433-44.
- Faulkner G, Carless D. Physical activity and the process of [3] psychiatric rehabilitation: Theoretical and methodological issues. Psychiatr Rehabil J 2006; 29: 258-66.
- [4] Faulkner G, Taylor A, Munro S, Selby P, Gee C. The acceptability of physical activity programming within a smoking cessation service for individuals with severe mental illness. Patient Educ Couns 2006; 66: 123-26.
- [6] Meyer T, Broocks A. Therapeutic impact of exercise on psychiatric diseases. Guidelines for exercise testing and prescription. Sports Med 2000; 30: 269-79.
- [7] Paluska SA, Schwenk TL. Physical activity and mental health: current concepts. Sports Med 2000; 29: 167-8.
- [8] Swarbrick M. A wellness approach. Psychiatr Rehabil 2006; 29: 311-14.
- U.S. Department of Health and Human Services. Mental Health: A Report of the Surgeon General-Executive Summary. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institute of Mental Health 1999.

- [10] Roman M. Physical exercise as psychotherapeutic strategy: how long? What will it take. Issues Ment Health Nurs 2010; 31: 153-4.
- [11] European Forum Psychomotricity. Statuten [Mission]. Marburg: EFP 1995. Available from: http://www.psychomot.org [accessed at 17 June 2010].
- [12] Probst M, Simons J. Psychomotorische therapie in Vlaanderen: voorstel tot beroepsprofiel en functieomschrijving [Psychomotor therapy in Flanders: proposition of a function description]. In: Simons J, Ed. Actuele themata uit de psychomotorische therapie. Leuven: Acco 2008: pp. 11-46.
- [13] Greisinger W. Mental pathology and therapeutics 2<sup>nd</sup> ed. [T.C. Lockart Robertson & J. Rutherford. London: New Sydenham Society, originally 1845, 1867].
- [14] Sivadon P, Gantheret F La rééducation corporelle des fonctions mentales. Paris: Editions Sociales Francaises 1965.
- [15] Simon H. Aktivere Krankenbehandlung in der Irrenanstalt. [Active treatment in a residential center] Berlin: W. de Gruyter 1929.
- [16] Van der Scheer WM. Nieuwere inzichten in de behandeling van geesteszieken. Groningen: Wolters 1933.
- [17] Kraus G. Lichamelijke opvoeding van geesteszieken. Bewegen en Hulpverlening 1985 (originally 1939); 2: 147-57.
- [18] Van Andel JC. Heropvoeding door arbeid. Utrecht: Erven/Bijleveld 1956.
- [19] Van der Drift H. Beknopte leidraad bij de toepassing van speltherapie, culturele therapie en bewegingstherapie in de psychiatrische inrichting. Utrecht: Erven Bijleveld 1957.
- [20] Pierloot R. Algemene grondslagen van de bewegingstherapie in de psychiatrie. Leuven: Fonteyn 1968.
- [21] Buytendijk FJJ. Algemene theorie der menselijke houding en beweging. Utrecht: Spectrum (original 1948) 1974.
- [22] Gordijn CCF. Bewegingsonderwijs. Baarn: Bosch & Keuning 1961.
- [23] Vermeer A, Boscher R, Broadhead GD, Eds. Movement therapy across lifespan. Amsterdam: VU University Press 1997.
- [24] Hölter G. Mototherapie mit Erwachsenen. Schondorf: Hofmann
- [25] Simons J. De Leuvense observatieschalen voor doelstellingen in de psychomotorische therapie [The Louvain observation scales for objectives in psychomotor therapy] [dissertation]. Leuven: K.U. Leuven 1987.
- [26] Van Copppenolle H, Simons J, Pierloot R, Probst M, Knapen J. The Louvain observation scales for objectives in psychomotor therapy. Adapt Phys Activ Q 1989; 6: 145-53.
- [27] Hammink M. Psychomotorische diagnostiek binnen het kinder- en jeugdpsychiatrisch zorgveld [dissertation]. Rotterdam: Erasmus Universiteit 2004.
- [28] Bandura A. Self-efficacy: towards an unifying theory of behavioral change. Psychol Rev 1977; 84: 191-215.
- [29] Fox KR. Self-esteem, self-perceptions and exercise. Int J Sport Psychol 2000; 31: 228-40.
- [30] Knapen J, Van de Vliet P, Van Coppenolle H, et al. Improvements in physical fitness of non-psychotic psychiatric patients following psychomotor therapy programs. J Sports Med Phys Fitness 2003; 43: 513-22
- [31] Vancampfort D, Knapen J, Probst M. Demunter H. Psychomotor Therapy in sub-acute psychotic patients, a Flemish approach. Paper presented at the Second International Conference of Physiotherapy in Psychiatry and Mental Health, Bergen (Norway) February 4, 2008
- [32] Ayuso-Gutierrez JL, Del Rio Vega JM. Factors influencing relapse in the long-term course of schizophrenia. Schizophr Res 1997; 28: 199-206.
- [33] Corrigan PW, Toomey R. Interpersonal problem solving and information processing in schizophrenia. Schizophr Bull 1995; 21: 395-403.
- [34] Mueser KT, Drake RE, Ackerson TH, Alterman AI, Miles KM, Noordsy DL. Antisocial personality disorder, conduct disorder, and substance abuse in schizophrenia. J Abnorm Psychol 1997; 106: 473-77
- [35] Mueser KT, Valentiner DP, Agresta J. Coping with negative symptoms of schizophrenia: Patient and family perspectives. Schizophr Bull 1997; 23: 329-39.
- [36] Rollins AL, Bond GR, Lysaker PH. Characteristics of coping with the symptoms of schizophrenia. Schizophr Res 1999; 36: 30.

- [37] Lukoff D, Wallace CJ, Liberman RP, Burke K. A holistic program for chronic schizophrenic patients. Schizophr Bull 1986; 12: 274-82
- [38] Emck C. Stress management training voor jongeren met psychotische stoornissen [Stress management training for young people with psychotic disorders]. Leuven: Acco 1998.
- [39] Norman RM, Malla AK, Mclean TS, McIntosh EM, Neufeld RW, Voruganti LP, Cortese L. An evaluation of a stress management program for individuals with schizophrenia. Schizophr Res 2002; 58: 293-303
- [40] Duraiswamy G, Thirthalli J, Nagendra HR, Gangadhar BN. Yoga therapy as an add-on treatment in the management of patients with schizophrenia - a randomized controlled trial. Acta Psychiatr Scand 2007; 116: 226-32.
- [41] Davis LW, Strasburger AM, Brown LF. Mindfulness. An Intervention for anxiety in schizophrenia. J Psychosoc Nurs 2007; 45: 23-29
- [42] Allison DB, Mentore JL, Heo M, Chandler LP, Cappelleri JC, Infante MC, Weiden MD. Antipsychotic-induced weight gain: a comprehensive research synthesis. Am J Psychiatr 1999; 156: 1686-96.
- [43] Allison DB, Casey DE. Antipsychotic-induced weight gain: a review of literature. J Clin Psychiatr 2001; 62: 22-31.
- [44] De Hert M, Van Eyck D, De Nayer A. Metabolic abnormalities associated with second generation antipsychotics: fact or fiction? Development of guidelines for screening and monitoring. Int Clin Psychopharmacol 2006; 21: 11-15.
- [45] De Hert M, van Winkel R, Van Eyck D, Hanssens L, Wampers M, Scheen A, Peuskens J. Prevalence of the metabolic syndrome in patients with schizophrenia treated with antipsychotic medication. Schizophr Res 2006; 83: 87-93.
- [46] Faulkner G, Cohn T, Remington G. Validation of a physical activity assessment tool for individuals with schizophrenia. Schizophr Res 2005; 82: 225-31.
- [47] Faulkner G, Cohn T, Remington G. Interventions to reduce weight gain in schizophrenia. Schizophr Bull 2007; 33: 654-56.
- [48] Sharpe JK, Stedman TJ, Byrne NM, Hills AP. Energy expenditure and physical activity in clozapine use: implications for weight management. Aust N Z J Psychiatry 2006; 40: 810-14.
- [49] Roick C, Fritz-Wieacker A, Matschinger Heider D, Schindler J, Riedel-Heller S, Angermeyer MC. Health habits of patients with schizophrenia. Soc Psychiatry Psychiatr Epidemiol 2007; 42: 268-76
- [50] Faulkner G, Biddle S. Exercise as an adjunct treatment for schizophrenia: A review of the literature. J Ment Health 1999; 8: 441-57.
- [51] Twemlow SW, Sacco FC, Fonagy P. Embodying the mind: movement as a container of destructive aggression. Am J Psychother 2008; 62: 1-34.
- [52] Poot G. Psychomotorische therapie op een psychoanalytisch georiënteerde afdeling[ Psychomotor therapy in an psychoanalytical oriented unit]. In: Probst M, Bosscher RJ Eds. Ontwikkelingen in de Psychomotorische Therapie [Developments in psychomotor therapy]. Zeist: Cure & Care Publishers 2001: pp. 37-50.
- [53] Fonagy P, Gergely G, Jurist EL. Affect regulation, mentalisation and the development of the self. New York: Other Press 2002.
- [54] Vandereycken W, Depreitere L, Probst M. Body oriented therapy for anorexia nervosa patients. Am J Psychother 1987; 41: 252-59.
- [55] Probst M, Van Coppenolle H, Vandereycken W. Body experience in anorexia nervosa patients: an overview of therapeutic approaches. Eat Disord 1995; 3: 186-98.
- [56] Probst M. Body experience in eating disorders: research and therapy. Eur Bull Adapt Phys Activ [on-line] 2006; 5: 1. Available from: http://www.eufapa.upol.cz [accessed at 17 June 2010].
- [57] Beumont PJV, Arthur B, Russell JD, Touyz SW. Excessive physical activity in dieting disorder patients: Proposals for a supervised exercise program. Int J Eat Disord 1994; 15: 21-36.
- [58] Probst M, Vandereycken W, Van Coppenolle H, Pieters G. Body experience in eating disorders before and after treatment: a follow up study. Eur Psychiatry 1999; 14: 333-40.
- [59] Probst M. Hyperactivity the unkown enemy in exercise therapy. Proceedings of the XI the European Congress of sport psychology; Copenhagen: Fepsac 2003 July 5-7.
- [60] Probst M, Goris M, Vandereycken W, Van Coppenolle H. Body composition of anorexia nervosa patients assessed by underwater

- weighing and skinfold-tickness measurements before and after weight gain. Am J Clin Nutr 2001; 73: 190-97.
- [61] Thien V, Thomas A, Markin D, Birmingham CL. Pilot study of a graded exercise program for the treatment of anorexia nervosa. Int J Eat Disord 2000; 28: 101-6.
- Tokumura M, Yoshiba S, Tanaka T, Nanri S, Watanabe H. [62] Prescribed exercise training improves exercise capacity of convalescent children and adolescents with anorexia nervosa. Eur J Pediatr 2003; 162: 430-1.
- Vansteelandt K, Pieters G, Claes, L, Vandereycken W, Probst M, [63] Van Mechelen I Hyperactivity in AN: A case study using experience sampling methodology. Eat Behav 2004; 5: 67-74.
- [64] Dröes RM. In beweging. Over psychosociale hulpverlening aan demente ouderen [dissertation]. Nijkerk: Intro 1991.
- [65] Dröes R.M. movement therapy for demented elderly: exploring psychosocial problems. In: Vermeer A, Boscher R, Broadhead GD. Movement therapy across lifespan. Amsterdam: VU University Press 1997: pp. 337-80.
- Van de Winckel A, Feys H, De Weerdt W, Dom R. Cognitive and [66] behavioural effects of music-based exercises in patients with dementia. Clin Rehabil 2004; 18: 253-60.
- Veleta P, Holmerova I. Introduction to dance therapy for seniors. [67] Prague: The Czech Alzheimer Society 2004.
- De Vroede L. Psychomotorische therapie bij patiënten met het [68] syndroom van Wernicke-Korsakoff [Psychomotor therapy with patients of Wernicke-Korsakoff syndrome]. In: Probst M, Bosscher RJ Eds. Ontwikkelingen in de Psychomotorische Therapie [Developments in psychomotor therapy]. Zeist: Cure & Care Publishers 2001: pp. 51-61.
- [69] Deimel H. Sporttherapie bei psychotischen Erkrankungen. Berlin: Marhold 1983.
- [70] Hatlova B. Kinesiotherapy. Praag: Ucebin Texty Univerzity Karlovy Praze 2003.
- [71] Vancampfort D, Knapen J, De Hert M, van Winkel R, Deckx S, Maurissen K, Peuskens J, Simons J, Probst M. Cardiometabolic effects of physical activity interventions for people with schizophrenia. Physical Ther Rev 2009; 14: 388-98.
- Vancampfort D, Knapen J, Probst M, et al. Considering a frame of [72] reference for physical activity research related to the cardiometabolic risk profile in schizophrenia. Psychiatr Res 2010; 177: 271-79
- [73] Bosscher RJ. Runningtherapie bij depressie [dissertation]. Amsterdam: Thesis Publishers 1991.

- [74] Van de Vliet P. The physical self in clinically depressed patients: Assessment of the exercise and self-esteem model in clinical settings. [dissertation]. Leuven: K.U.Leuven 2002.
- [75] Knapen J. Physical fitness and physical self-concept in nonpsychotic psychiatric patients. Comparison of the improvements following two different psychomotor therapy programs [dissertation]. Leuven: K.U.Leuven. 2003.
- [76] Knapen J, Van de Vliet P, Van Coppenolle H, David A, Peuskens J, Knapen K, Pieters G. The effectiveness of two psychomotor therapy programs on physical fitness and physical self-concept in non-psychotic psychiatric patients: a randomised controlled trial. Clin Rehabil 2003; 17: 637-47.
- [77] Raepsaet J, Knapen J, Vancampfort D, Probst M. Onderzoek naar de motivatie tot bewegen bij psychiatrische patiënten [Motivation to physical activity in non-psychotic psychiatric inpatients]. In: Simons J, Ed. Actuele themata uit de psychomotorische therapie. Leuven: Acco, 2010: pp. 119--32.
- [78] Remans S, Knapen J, Probst M. Onderzoek naar het effect van een eenmalige aerobe inspanning op de toestandsangst en het subjectief welbevinden bij patiënten met angst en depressie. In: Simons J, Ed. Actuele themata uit de psychomotorische therapie. Leuven: Acco,
- [79] Meijden van der Kolk H van, Jol D. Producten psychomotorische therapie voor de behandeling van mensen met somatoforme stoornissen. In: van Hattum M, Hutschemaekers G., Eds. In beweging. De ontwikkeling van producten voor psychomotorische therapie. Utrecht: Trimbos Instituut 2000: pp. 105-117.
- Meijden van der Kolk H van, Bosscher R. Psychomotorische [80] therapie voor mensen met chronische pijn, een methodisch raamwerk [Psychomotor therapy for patients with chronic pain]. Zwolle: Windesheim 2007.
- [81] Neerinckx E. A multidimensional chronic fatigue and fibromyalgia syndrome [dissertation]. Leuven: K.U.Leuven 1999.
- [82] Neerinckx 2001. Psychomotorische therapie bij psychosomatische klachten [Psychomotor therapy in somatoform disorders]. In: Probst M, Bosscher RJ, Eds. Ontwikkelingen in de Psychomotorische Therapie [Developments in psychomotor therapy]. Zeist: Cure & Care Publishers 2001: pp. 51-61.
- [83] Probst M. Body experience in eating disorders [dissertation]. Leuven: K.U.Leuven 1997.
- Rutten L. Psychomotorische therapie bij adolescenten [84] [Psychomotor therapy in adolescents] In: Probst M, Bosscher RJ, Eds. Ontwikkelingen in de Psychomotorische Therapie [Developments in psychomotor therapy]. Zeist: Cure & Care Publishers 2001: pp. 51-61.

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