PSYCHOMOTHOR THERAPY

Motivation and Physical Activity of Psychiatric Patient's Treatment

Běla Hátlová, Marit Sörensen, Tereza Louková et al.

UNIVERZITA J. E. PURKYNĚ V ÚSTÍ NAD LABEM
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MOTIVATION AND PHYSICAL ACTIVITY OF PSYCHIATRIC PATIENT'S TREATMENT THE "PSYCH PAT PROJECT"

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FOREWOR

Eva Chalupová a Barbora Lanková

Modern psychiatry is trying to find new approaches to treat and to act comprehensively on the personality of the patient in accordance with the concept of human in his bio-psycho-social unity. The current European changes in the care of psychiatric patients relate primarily to supporting non-pharmacological therapy and supporting and strengthening inpatients and outpatient treatment in the system of comprehensive care. Physical activities should be offered as a part of activation and rehabilitation programs because of their potential to simultaneously affect mental and physical health and fight the short life expectancy and high comorbidity.

Increasing physical activity of psychiatric patients can be reached by working with the motivation. We worked with the motivation of staff of psychiatric hospitals in the special courses (based on Self-determination theory of motivation and motivational interviewing) and then with psychiatric patients (motivational physical activity interventions), with the expectation that some changes in motivation towards physical activity would sustain and contribute to their quality of life.

Our hope is that most of the materials developed in the project will be used in further work in this field and psychiatric hospitals will continue to use the aspects of motivational movement programs and psychomotor therapy.

ABOUT THE PROJECT "PHYSICAL ACTIVITY AS A PART IN TREATMENT OF PSYCHIATRIC PATIENTS"

Marit Sorensen and Tereza Dvořáková Louková

The increasing number of individuals with mental illness is a phenomenon which represents a current issue in the sphere of health and social sciences. Physical Activity as a Part in Treatment of Psychiatric Patients, the "Psych Pat Project," was designed as an interdisciplinary research in cooperation of Czech and Norwegian research organisations, The University J E Purkyně at Ústí and Labem in the Czech Republic and The Norwegian School of Sport Sciences in Oslo. The research was carried out in several mental hospitals in both countries.

The main goal of the research was to explore the role of physical activity in the state of health of mentally ill individuals in mental hospitals through an intervention consisting of physical activity as health promotion or psychomotor therapy. Further goal was to describe and support motivational strategies to overcome obstacles to active participation in physical activity and to create sufficient facilities and background for the implementation of the movement programmes. The project should contribute to the development of capacities and building of competences in health care personnel and patients.

Differences in how psychiatric treatment is organised and regulated in the two countries made it necessary to apply different research designs and methods, so the projects are reported separately.

The research team in Norway consisted of Marit Sørensen, professor of sport and exercise psychology, Marte Bentzen, Ph.D, researcher, and Anders Farholm, Ph,D., researcher.

The research team in Czech Republic consisted of Bela Hatlova, ass. professor of psychology and kinanthropology, Iva Wedlichova, Ph.D, Tereza Dvořáková Louková, Ph.D. and Martin Dlabal, Ph,D., psychology and applied psychology assistants at the Univerzity J.E. Purkyně at Ústí nad Labem. Both teams collaborated with other experts.

INTRODUCTION OF THE LEADERS OF CZECH AND NORWEGIAN TEAM IN THE PSYCHPAT PROJECT

Běla Hátlová, Marit Sorensen and Tereza Dvořáková Louková

The Principal Investigator of the PsychPAT project is Běla Hátlová from the Department of Psychology Jan Evangelista Purkyně University in Ústí nad Labem. She has started to deal with implementation of physical exercises in the treatment of psychiatric patients in Czech Republic more than 30 years ago. She started research in this area under the leading of her father, psychiatrist Zdeněk Bašný and his colleague professor Véle and others. She created publications about the use of physical exercises in psychiatry called kinesiotherapy and later psychomotor therapy. She is still active in this field and continues to work with her students and colleagues, now especially in PsychPAT project.

The leader of the Norwegian team in PsychPAT project is Marit Sorensen from the Department of coaching and psychology at the Norwegian School of Sport Sciences. Similar to Běla Hátlová, she has been dealing with implementation of physical activity in the treatment of psychiatric patients in Norway most of her professional life. She started as a physical education teacher for psychiatric patients in 1974. She has taught adapted physical activity and sport and exercise psychology. Her research interests are motivation for exercise and sport and exercise and mental health. Marit has been active in international organisations for adapted physical activity and sport psychology for many years.

Běla and Marit have some similarities in their professional and also private life, their attitudes to the physical activity in psychiatry are connected in this project.

ABOUT THE AUTHORS

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MOTIVATIONAL MOTION PROGRAM FOR THE TREATMENT OF PSYCHIATRIC PATIENTS

Běla Hátlová

Modern psychiatry is trying to find new approaches to treat and to act comprehensively on the personality of the patient in accordance with the concept of man in his bio-psycho-social unity. The current european changes in the care of psychiatric patients relate primarily to support non-pharmacological therapy, support and strengthen inpatients and outpatient treatment in the system of comprehensive care. Part of activation and rehabilitation programs should become even offer physical activities. What distinguishes physical activity from other traditional therapies addressing mental health problems is the potential to simultaneously affect physical and mental health.

This study is information carried out the project „Physical Activity as a Part of Psychiatric Patient's Treatment", the Ministry of Education, Czech-Norwegian Research Programme (CZ09) 7F14500, 2014–2017**.**

PHYSICAL ACTIVITY IN PSYCHIATRIC TREATMENT IN NORWAY TODAY

Toril Moe, Marit Sørensen

Psychiatric treatment is regulated through a set of laws, and several "White papers" from the 1990'ies until today which tell the story about how it has developed. The Health Directory has also produced several "guides" giving advice in how to practice these laws and recommendations. In general the trend in the development has been to strengthen patient-and user rights, as well as giving local health authorities (at municipal level) extended responsibility in order to avoid long periods of hospitalisation and give people more help where they live. The most recent reform of the health care system was called "The collaboration reform" which resulted in a new Law of Public Health that was launched in 2012 (The Royal Ministry of Health and Care, 2009).

LAW OF PUBLIC HEALTH OF 2012

The aim with the reform was to delegate to the municipalities tasks and duties that formerly were performed by the hospitals. That raised a question of where the responsibility for physical activity should lie. A clear consensus has never been reached in the matter. Therefore physical

activity as part of treatment is still supposed to be offered both at the hospitals and by the municipalities. At the same time, there is an aim to shorten the hospital stays as much as possible. Therefore it is considered reasonable that the municipalities in the future should take over the main responsibility for offering physical activity for those who have mental illness.

In the collaboration reform there is a clear aim that the adaption of physical activity to the need of individuals with disabilities and illnesses should be a responsibility for all sectors, but it may be delegated. The challenge in this way of organisation may be that "everybody's responsibility" may end up as "nobody's responsibility".

The "perspective of the user" is getting more and more space and status within Norwegian Psychiatry. There are many good things in listening to the users/patients (Bruun & Svendsen, 2011). However it may also become a challenge for implementation of physical activity as treatment on the same level as other more established therapies (such as medication and psychotherapy). Self-determination is central and it entails increased autonomy. This makes it important to have sufficient knowledge and insight as background for decisions. It demands efforts and awareness within these areas, and many patients/users will at times not be able to make informed decisions. The staff will therefore always have a huge responsibility. In order to succeed with the implementation of physical activity there will be a need for professionals with background in sport science and mental health among the staff. Further physical activity must be anchored among the top leaders with the responsibility for treatment and rehabilitation, and it must become a integrated part of plans and budgets.

PUBLIC HEALTH PROFILES

All municipalities in Norway have to make health profiles. The health profile is meant to give information of the health status in the municipality, among other things the mental health status. Further, it shall represent a guideline for priorities to be made by the municipality, and will be of consequence for the investment in physical activity offers.(Norwegian Institute of Public Health, 2019)

ORGANISATION OF PHYSICAL ACTIVITY WITHIN MENTAL HEALTH CARE

As of January 1st 2019 what is known as "Packet pathways (fast tracks)" was implemented in Norwegian psychiatry for drug addiction, children and youth, suspected psychosis, eating disorders for children and youth, obsessive compulsive disorders and pregnant women with drug addiction. (Norwegian Health Directory, 2017). "Packet pathways (fast track)" are meant to give patients and their caretakers/families an increased safety and predictability, ensure a

coherent treatment process and follow-up without unnecessary waiting time. In addition it is stated that these processes shall contribute to better care for maintenance of somatic health and positive lifestyles. The background for this reform is the reduced life expectancy of 15 – 20 years among individuals with serious mental illness and drug addiction compared to the general population.

In all the "Packet pathways (fast track)" there are recommendations about physical activity!
It is stated in the recommendations: ***physical activity should be an integrated part of the ordinary treatment. Patients ought to get advice and offers about adapted physical activity.***

A manual for examining the situation of the patient states that the following should be included:

1. Mapping of number of days per week that the patient normally engages in physical activity resulting in sweating and shortness of breath.
2. Mapping of factors that may influence the possibilities for exercise (functional level, practical and social aspects).
3. Possibly estimate maximal oxsygen uptake/endurance.

There are also suggestions for concrete measures and activities, follow up, exercise inspiration and programs for physical activities.

The "Packet pathways (fast track)" demand registration and documentation of what happens. There may be a danger that increased demands of documentation may take away the focus and understanding of the physical activity so that it becomes a "stephchild" that therapists without a positive belief in physical activity will be reluctant to spend effort on. It is also a well known fact that it takes a long time to implement new knowledge, routines and demands in a treatment system (Munch- Jørgensen, 2015).

Guidelines for examination, treatment and follow up of persons with psychoses.

Under the heading "Treatment and follow-up" it is stated that the patients shall receive information about the importance of physical activity, motivation for and adapted activity and exercise, and that exercise ought to be an important part of a holistic treatment. It says ought to, and not shall or must, but the information is graded to A (highest importance).(Norwegian Health Directory, 2013)

Physical activity at psychiatric hospitals

Most of the psychiatric hospitals have listed physical activity as part of what they offer, but the practical way it is organised differ. A few hospitals have staff with sport science background, others rely on activities outside of their institution. One institution for treatment and rehabilitation of drug related psychiatry has a sport pedagogue as part of their ambulant team, offering physical activities outside of the institution, This has been described in an earlier publication in this series (Haakstad, 2016).

District Policlinical Senters (DPS)

It is usual that patients after discharge from a psychiatric unit or a hospital are being referred to policlinical – or daytreatment at a District Policlinical Senter (DPS). These are normally of a very varied size and with different possibilities for physical activities, but it is not very many of them that have physical activity personnell among the regular and permanent staff.

National sport events for patients within Norwegian psychiatry (Psykisk helsevern)

For more than 30 years, (starting with The Gaustad Run (Gaustadløpet) and The Ski Festival) sport events were arranged on an annual basis for patients in contact with Norwegian psychiatry (Psykisk helsevern). These have been described in a former publication (Sørensen, 2012). Unfortunately these have all ceased to exist today. The Gaustad Run has been replaced with an opportunity to take part in a specialised class within the Oslo Marathon event, and other regional events are arranging skiing-events. The trend is to try to develop opportunities for physical activity closer to where people spend the most of their time, namely in the municipality where they live. In the following we will present some of these initiatives.

ORGANISATION OF PHYSICAL ACTIVITY OUTSIDE OF MENTAL HEALTH

The culture Network

In one county (Oppland) 6 municipalities has gone together to create an organisation they call "The Culture Network" in collaboration with a major psychiatric hospital in the region. They arrange weekly physical activities of various kinds, and then some seasonal activity days (e.g. a water festival) or even trips lasting several days (e.g. skiing stays) for individuals who have been psychiatric patients. A survey among their members demonstrated a physical activity level on par with the general population (Farholm, Sørensen & Halvari, 2016).

Activity houses for mentally ill

In Oslo there are 18 activity houses for people with mentall illness. The activity houses offer a variety of activities such as computer activity, cafe, newspaper reading and occupational therapeutic activities.Some also offer physical activity – mostly going for walks in groups. It is meant as a rehabilitation/habilitation offer,and a possibility for meaningful daily activities for people that are not ready for working life.

Active during daytime

Active during daytime is a "low threshold- and low cost" possibility arranged in the community outside of the institutions for health care. Some institutions use these as part of their treatment with the aim of integration in society when a discharge is approaching. The idea is to teach the patients about activities they can continue or take up when at home. Some of the Active during daytime is arranged by the regional sports organisations.

Outdoor life

Outdoor life has strong traditions in Norway, and several institutions arrange activities that take place outdoors. Outdoor life may be demanding hikes in the mountains or woods, or simpler forms such as activities in parks or areas with paths and roads in all degrees of difficulty. In one county in mid.-Norway (Sogn og Fjordane), there are 26 daytrip cabins at central viewpoints that are meant as meeting points for everybody wanting to be out in nature.

Outdoor life therapy, and also outdoor life pedagogy, has been established in Norway. This is outdoor life activities of different kinds (e.g. mountain hikes, sailing etc.) that is used by professional therapists, sport science pedagogues or other professionals. They arrange their activities in order to provide good experiences, mastery and social relations for different groups, often youths with behavioral or drug problems.

Exercise contacts

An exercise contact is a support person for individuals with mental health problems who want to become more physically active. The exercise contacts will have undergone a course ranging from 12 – 40 hours. The content of such a course will consist of themes like mental health , effects of physical activity in general and on mental health, exercise physiology, and about the importance of social relations as well as practical exercises in physical activity and communication. The aim is to reduce isolation and loneliness and to improve or maintain the physical fitness of the person. The exercise contact are supposed to follow the needs and wishes

of the user, autonomy and the user perspective is in focus. The exercise contacts are paid by the social security system (NAV).

Healthy life centers

There are more than 200 Healthy life centers spread out all over the country. From the start, it was meant for those who received a prescription for physical activity from their doctor to selected diagnose groups. It has developed into a more open offer to anybody who needs physical activity as a preventive measure, as treatment or rehabilitation. The focus is on low threshold activities and will be given for a limited time. These days any health worker may refer people to the Healthy life centers.

National Competence Center for Mental Health Work (NAPHA)

NAPHA is a national center for competence within mental health work with its base in Trondheim. It has existed for more than 10 years. Employees are, among others, persons with own experience from mental illness, so called experience consultants. The center has several focus areas where information about physical activity and recovery is represented.

The world day of mental health

This day is 10th of October. In Norway this is a day where many different institutions and organisations offer some kind of activity together with recent information related to mental illness. Most of the activities are based on walking, but there are also local football matches, play- and outdoor life activities being arranged.

Cheer me (Heia meg)

Cheer me (Heia meg) is an app that has been developed by APT for The Health Directory. It addresses people who would like to start processes of change in their lives. It will give daily cheers as well as useful tips that may make the change process easier. It is a tool to be kept in a pocket so that you can carry it along and help to get started and sustain the changes long enough until the person can manage on his or her own.

This is not a complete list of all initiatives within or outside of the mental health care in Norway, it is meant as examples to illustrate the way physical activit y is organised in order to help individuals with mental illness keep physically active.

THE TRANSFORMATION OF MENTAL HEALTH CARE IN THE CZECH REPUBLIC

Běla Hátlová

The current European changes in the care of psychiatric patients relate primarily to support non-pharmacological therapy, support and strengthen outpatient treatment in the system of comprehensive care. Part of activation and rehabilitation programs should become even offer physical activities.

The transformation of mental health care in the Czech Republic is based on the conceptual document Strategy for the Reform of Psychiatric Care, approved by the Ministry of Health of the Czech Republic, version 1.0, issued on 8 October 2013. It is a supporting, initial and binding basis for the transformation of psychiatric care in the Czech Republic in the period from 2014 to 2023. The intent of the strategy of reform of psychiatric care is to fulfill the human rights of the mentally ill in the widest possible interpretation. The aim of the strategy is to increase the quality of life of people with mental illness. Specific objectives include the need to increase the success of the full integration of the mentally ill into society (especially by improving conditions for employment, education, etc.).

The Ministry of Health is the implementer of the project to support the Reform of Psychiatric Care. Its aim is to pilot test the services of multidisciplinary teams in the field of psychiatry, protective treatment in out-of-hospital settings and outpatient clinics with extended care. The project to support the establishment of Mental Health Centers is one of the basic pillars of psychiatric care reform (press release of the Ministry of Health of the Czech Republic on 15 January 2019). It is a completely new service in the system of care for people with mental illness, which is based mainly on the field work of a multidisciplinary health and social team. The goal of the Ministry of Health is to create a network of up to 100 Mental Health Centers in the coming years, which will be distributed evenly throughout the country. Project implementation: February 2018 to May 2021.

Maladaptive health consequences of an inactive lifestyle highlights the need for interventions that are effective in changing and maintaining physical activity behaviours. The problem is to induce and maintain motivation for physical activity that is ill perceived as an additional burden (Hátlová et al. 2016).

The relation between physical exercise and psychological health has increasingly come under the spotlight over recent years. While the message emanating from physiological research has

highlighted the general advantages of exercise in terms of physical health, the equivalent psychological literature has revealed a more complex relationship. Scientific literature shows that physical activity (PA) may be effective in promoting quality of life and mental health (Zamani et al., 2016*).*

Mentally ill treatment at the beginning of the twentieth century in Central Europe.
Psychiatric care of the first half of the twentieth century has been mainly composed of physical and activity treatment. Illness attack had more or less inevitably resulted in hospitalization of the patient. It was usually the only socially acceptable solution for the mentally ill people struggling to be integrated into the mainstream society. Sadly, hospitalization has lasted for many years, not exceptionally till the client deceased. Psychiatric care has been inspired by the recent civic society, and the thriving activities. Work and activity therapies came a long way.

PARADIGMS OF PSYCHOMOTRICITY

Our identity is composed of inter-related, relatively stable emotional and cognitive structures of our personality. Motor skills are realized via body. Our body is a basic and a primary source of information about ourselves / the inner I. Our self-judgments and self-perception influence our behaviour and experience.
Development of this issue can be found in the following works: James (1890), Schilder (1950), Piaget (1952), Gendlin (1962, 1981, 1996), Feldenkrais (1978), Steiner (1993), Fox (1989, 1990, 1997) in Hátlová (2003),. The contribution of Czech neurology is presented mainly by doctors publishing in Czech and German.

Václav Vojta (1917-2000)
Václav Vojta, children neurologist, has worked in Cologne since 1968, and lately in Munchen where he died. He has focused on examination of motor stereotypes between 1961 and 1972. He came to realize that the complexes are interconnected, and its groundings are inherited. Upon these findings, he has built a diagnostic and therapeutic method – later on called Vojta's method. The method of reflex locomotion was mainly used for cerebral palsy treatment. Vojta has proven that timely diagnostic and therapy in the first weeks of age may greatly influence a prospective motor development of a kid. His method comprises of neuro-kinesiological examination, reactions on various positions, and reflex checking. It is structured to uncover disorders in early motor development. If the results indicate a disorder, the therapy can start

early in new-born age or in infancy, even though clinical manifestations are not apparent yet. Thus, the neuron network, rapidly evolving in this age, can be influenced for good of a child. Vojta has published in the Czechoslovakia and Germany, where he emigrated from in 1968, more than 100 scientific papers. His text book 'Brain Motor Disorders in Infancy', firstly published in Germany in 1974, was translated into many languages, and its 6th revised edition was released in 2000. The book summarized the diagnostic, the therapeutic system and the results of his scientific work. One of his students and collaborators was František Véle.

František Véle (1921-2016)

He recently taught at the Department of Physiology of Faculty of Physical Education and Sport of Charles University. He postulates that:

Evolutionary neuroplasticity mechanisms are involved in motor learning, and in reparatory processes. Ontogenetic development is genetically determined by pre-formed motor programs in primary neuron networks. Movement development runs automatically and is a continuation of intrauterine development. Therefore, motor skills are also genetically pre-coded, and shaped afterwards by external stimuli and motivation factors. Evolutionary neuroplasticity mechanisms are involved in motor learning, and in reparatory processes. Motor plasticity is still significant after the 6th year of age, and thereafter. Reparatory ability of motor skills is considerable if at least elementary spinal functions remain intact. So, even ostensibly lost movements can be rebuilt (Véle 1997). This assumption was examined by Véle in neurological adult patients, and also in psychiatric disorders. He suggests that stimulus for a reaction does not have to necessarily be tactile but can also be visual, auditory or even emotional. Its only determinant is an ability to bring change.

Motivation drives motor ontogenesis of a child. A child wishes to express himself through movement, so muscles interplay is triggered in order to fulfil the wish 'to touch something'. The progress is determined by the level of development. Each and every new movement has its groundings in a developmentally earlier movement. Therefore, quality of basic movements influences all further stages of development (Véle, 2012).

The motor system operates as a whole. Both, Central Nervous System and psyche greatly influence motor skills. Simultaneously, external and internal sensor stimuli play its part. Further, motivation must be taken into account. Motivation initiates and drives motor behavior; it regulates intensity and nature of motor actions. New motor patterns must be created, learned, and prioritized in order to amend particular motor behavior. Both, cortical

(rational) and subcortical (emotional, limbic system) areas must be activated for successful fixation of motor behavior (Véle 1997).

Zdeněk Bašný (1920-2015)

Bašný was an ergotherapist-oriented psychiatrist. In his departments he introduced physical exercises with activating or relaxing effects. He included simple yoga exercises into relaxation (Bašný 2000). The exercise was designed with regard to the diagnosis and current psychosomatic condition of the patient.

Based on the empirical experience of Bašný and Véle and the Czech gymnastics system the foundations of psychomotor therapy by Hátlová were created in the Czech Republic

Běla Hátlová (*1948)

Hátlová (2003), drawing upon the works of Pribram, Piaget, Schilder, Bašný, Véle, assumes that the changes induced by conscious movement directly affect mental functioning. Musculoskeletal system works as a whole. The influence of the CNS, as well as the impact of psyche on motor skills, is crucial evenly dependent on the both internal and external sensory stimuli.

Deliberate movement directly impacts psychological functioning. Both, central nervous system and psyche simultaneously, external and internal sensor stimuli play its part. Further, motivation must be taken into account. Motivation initiates and drives motor behavior; it regulates intensity and nature of motor actions. New motor patterns must be created, learned, and prioritized in order to amend particular motor behavior. Both, cortical (rational) and subcortical (emotional, limbic system) areas must be activated for successful fixation of motor behavior. Nevertheless, it also works other way round. Deliberate movements can influence psyche.

In the Czech Republic, various studies were published on physical programs

Although, we are aware of a strong interconnection among the disciplines, we pledge, to some extent, for independency and uniqueness of psychomotor therapy ideas, that, therefore, should be consolidated. That is why monographic publications of the Czech authors inspired by their foreign counterparts were made to illuminate the theoretical and practical concept of the psychomotor therapy.

These were published either in Czech language or in English, to be accessible to a wider audience:

- Adámková Ségard, M., Hátlová, B.(Ed.) (2011): Psychomotor therapy in mental health care. Ústí nad Labem, University of. J. E. Purkyně in Ústí nad Labem.
- Adámková Ségárd, M. & Hátlová, B. (eds.)(2013). Psychomotor Therapy in schizophrenia treatment. Universita J. E. Purkyně v Ústí nad Labem Pedagogická fakulta ISBN 978-80-7414-558-2
- Louková, T., Hátlová, B. & Adámková Ségárd, M. (Eds.) (2015). Psychomotor Therapy and Physical Self-Concept. UJEP Ústí nad Labem. Počet stran celek pp. 178.
- Hátlová, B. &, Sorensen M. et al. (2016). Psychomotor Therapy and Motivation for Physical Activity. Česká republika, Universita J. E. Purkyně v Ústí nad Labem pp.180 ISBN 978-80-7561-043-0

PROBLEM "LONG-TERM MENTALLY ILL" PEOPLE

Běla Hátlová, Hana Kynštová

The classical definition of people with long-term mental illness is described by three "D" (disease, duration, disability). It is characterized by the length of the disease, which is more than two years, and the presence of disability. Long-term mental illnesses include mainly the following: Schizophrenia, depression, bipolar affective disorder formerly referred to as manic depressive psychosis, characterized by pathological mood swings neurotic disorders ("anxiety").

Nowadays the terms "chronically" or "long-term mentally ill" are perceived as stigmatizing and are being abandoned and the term "serious, long-lasting mental illness" is used, which describes that the illness requires a lifetime support. Persons with severe and long-lasting mental illnesses are becoming long-term users of not only health care but mainly social care. Its aim is to enable the patient to obtain confidence about himself/herself. Emphasis is placed on respecting the patient as an ill but also an authentically experiencing person.

The social inclusion of the person in the social structure is an important determinant of his/her well-being and health. People with a mental illness often find themselves in social isolation. Their handicap does not allow them to naturally build interpersonal relationships and thus

limits their social competences. The sociability of an individual is related to his/her physical activity (PA).

In advanced societies, it is integrated into mental health care. Overall, the current literature supports clearly the dose-response relationship between physical activity and the chronic conditions identified. Moreover, higher levels of physical activity reduce the risk for premature all-cause mortality. It also has a positive effect on individuals with schizophrenia (Warburton et al. 2010).

What is the quantity and intensity of physical activity necessary to restore or maintain mental health? This question has generated a general interest in the scientific community.
Behere (Behere et al., 2011) states that the physical fitness (PF) to promote mental health can be lower than the norms developed with regard to physical health state. Research studies have shown that psychological factors are also favourably influenced by short-term physical activity of low intensity, which does not meet the WHO recommended aerobic load requirements (Faulkner & Duncan 2012). The Sjösten and Kivela studies (2006) found a significant improvement in psychopathology of patients despite the fact that the recommended WHO physical activity criterion (2013) was not met. Physical exercise may be effective in reducing clinical depression and depressive symptoms in a short period of time, or in a high number of different depressive symptoms.

Hölter writes in “Bewegungstherapie bei psychischen Erkrankungen”: psychomotor therapy, i.e. specially adapted physical exercises for people with mental disorders, can have a positive impact on their mental health. Patients are pulled out of the dive into their inner world while concentrating on a physical activity (Hölter, 2011). Physical activity has a significant impact on positive mental experience. This makes it possible to find a suitable starting point for physical activity even in long-term patients such as patients with schizophrenia (Harvey, et al, 2010; Holley et al, 2011; Rosenbaum et al. 2014). In Europe, many similar movement therapies are used in psychiatry for medical purposes. They are listed in Probst (Probst, 2010).

PROJECT "PHYSICAL ACTIVITY AS A PART OF TREATMENT OF PSYCHIATRIC PATIENTS"

Tereza Dvořáková Louková

The project "Physical Activity as a Part of Treatment of Psychiatric Patients" was conceived as interdisciplinary research at the interface of health, social and human sciences within the Czech – Norwegian research programme CZ09, Norwegian financial mechanism 2009–2014 with the identification No. 7F14500. Its aim was to extend the scientific, research and innovation cooperation between the Czech and Norwegian research organizations in basic and applied research - represented in the Czech Republic by the University of Jan Evangelista Purkyně in Ústí nad Labem and in Norway by the Norwegian School of Sport Sciences in Oslo. The project was based on the results of Czech and foreign studies that investigated the impact of physical activity on the health of people with long-term mental illnesses in psychiatric hospitals. The aim of the project was to build on existing research in this field in the Czech Republic and Norway and to contribute with new knowledge based on scientific research to the development of the use of physical activities within the treatment. The practical objectives included the aim to contribute to the improvement of the quality of life of mentally ill patients in psychiatric hospitals through the inclusion of selected physical activities in the regular daily treatment programme and to propose further research projects resulting from the research results.

The research goal of the project was to verify the importance of movement for the health of mentally ill individuals in psychiatric hospitals, to characterize and support motivational strategies that help them to overcome barriers in active involvement in physical activities.

In order to meet this goal, we specify the appropriate research design that best suits the environment and conditions. More time than originally planned was devoted to the specification of research design, especially at the request of the Norwegian side. After the agreement of both partners, the research focused on the problem of subjective point of view in relation of the respondent and the physical activity. This is a relatively new area of research. Project groups in both countries have expanded their understanding of the ideas and theoretical foundations for using physical activity as a part of psychiatric treatment, as well as understanding the contextual factors that make this type of work difficult. We examined appropriate research methods that would respect the ethics and rights of respondents and different approaches to supportive care given by historically different conditions and intercultural differences between countries. The research methods of both teams were set and partly, with regard to differences in the management of treatment and the overall concept of psychiatric hospitals, unified.

ETHICS

Within the project we cooperated with selected psychiatric hospitals in the Czech Republic and Norway. Before starting the research part of the project and considering the sensitivity of the topic, as we worked with patients from selected psychiatric hospitals, we established certain ethical principles. A code of ethics has been developed, based on the ethical recommendations of the EFPA - European Federation of Professional Psychologists' Association of 1995 (Meta-Code of Ethics). The Code respects the rights and dignity of clients with regard to competence, responsibility and integrity. In the Czech Republic, the Code of Ethics of the project was approved by the Ethics Committee of the Psychiatric Hospital Bohnice on 16 April 2016 (16/4/2016) and subsequently the Ethics Committee of the Psychiatric Hospital in Šternberk on 24. May 2016 (24/5/2016).

THEORETICAL BASIS

One of the first steps of the Czech-Norwegian cooperation on clarifying the basic theoretical starting points of the project was the question of defining physical activity. Both teams agreed that by physical activity they mean: **"various physical activities with the potential to strengthen the physical, emotional, cognitive and social resources of an individual."** In the Czech Republic, these were mainly physical activities based on the principles of psychomotorics (non-performance oriented physical activities aimed at the individual's bio-psycho-social-spiritual well-being). In Norway, the term "**health promotion**" was used for physical activities used for the project, which describes movement for the health of an individual on a general scale. It is based on the principles of sport-oriented activities adapted to the environment of psychiatry.

Furthermore, in the project we focused mainly on motivation for physical activity. We accepted the Self-Determination Theory (Deci & Ryan, 2002) as default. This theory is based on three basic needs: the need for autonomy, competence and sense of belonging. The more these needs are met, the more the so-called intrinsic (internal) motivation increases. The theory of self-determination divides several kinds of motivation on the continuum of self-determination, with respect to whether the motivation comes from outside (one side of the continuum) or whether it includes internal motives (the other side of the continuum). A special category is amotivation, when the individual is not motivated for physical activity. The aim of our intervention program was to increase the intrinsic motivation and thus the frequency of physical activity overall.

The pillar method was Motivational Interviewing (Miller & Rollnick, 2002). Training in motivational interview was held for Norwegian and Czech team members in Norway as a part of a several-day seminar. It was necessary to clarify and unify the methods to be further taught in both countries. Subsequently, physiotherapists and physical therapists were trained in each country and were involved in research. Motivation strategies were some of the important monitored variables of the whole research.

IDENTIFICATION OF PROJECT RISKS

The implementation of this project involved a number of risks that had to be identified before the beginning of the research and against that measures had to be taken in case they actually occurred.

The risks associated with this project proposal included the following:

- lack of interest of therapists in psychiatric hospitals,
- lack of interest of psychiatric patients,
- communication problems with the partner
- ehtical issues.

During the project implementation, cooperation with both involved hospitals (Bohnice, Šternberk) was established and deepened. As a part of the project, physical therapists and physiotherapists were trained in the area of motivational intervention. We subsequently researched these application strategies. For psychiatric hospitals, feedback is currently being prepared, based both on the research results and the experience gained through the implementation of project activities. Another goal is to extend cooperation in application and educational areas.

In the scientific journal "Journal of the Czech Psychiatric Society ČLS JEP and Psychiatric Society SLS" we presented the research results in the article:

Motivational Movement Programme in Hospitalized Psychiatric Patients.
Běla Hátlová, Martin Dlabal, Tereza Louková, Iva Wedlichová
Čes a slov Psychiatr 2018;114(6): 253 -259
http://www.cspsychiatr.cz/cislo_akt.php?cis=99
http://www.cspsychiatr.cz/detail.php?stat=1239

Further information and practical workshops can be obtained at the two-day "International Conference of Psychomotorics" organized by the Department of Psychology, PF UJEP, Hoření 13, 400 96 Ústí nad Labem, every year. Detailed information is available at: https://psychomot.cz/. The conference presents professional lectures and practical experiential workshops from domestic and foreign experts in the field of psychiatry, education and personal development.

In 2015 - 2017, the conference became a part of the research project **"Physical Activity as a Part of the Treatment of Psychiatric Patients**". The theoretical background of the research, the experience of the Czech and Norwegian teams in the area of physical activities in psychiatric patients and suggestions and planned concepts were presented. In 2018 partial results of the research were presented at the conference, which we plan to continue with in the following years.

2015 – 6. International Conference of Psychomotorics: *Movement and Physical Self-Conception*
2016 – 7. International Conference of Psychomotorics: *Motivation for Physical Activity*
2017 – 8. International Conference of Psychomotorics: *Movement and Mental Health*
2018 – 9. International Conference of Psychomotorics: *Movement in the Development of an Individual*

2019 – 10. International Conference of Psychomotorics: *Movement and Psychosocial Development*
Generating knowledge on how to use physical activity in psychiatric treatment and how to motivate to it can potentially lead to a significant improvement in psychiatric care, an improvement in the quality of life of people suffering from psychiatric illnesses and a reduction in the costs on their physical co-morbidity. The project has the potential to raise awareness of the physical health aspects of mental illness and spread the awareness to the professional public.

Part II.

Exercise efficiency

PHYSICAL ACTIVITY AS PART OF PSYCHIATRIC TREATMENT: CONSTRUCTION OF A MOTIVATIONAL PHYSICAL ACTIVITY INTERVENTION

Marit Sørensen, Anders Farholm, Marte Bentzen

The aims of Psych Pat Norway was to investigate whether there was an association between the implementation of a motivational physical activity intervention as part of treatment for psychiatric patients - and : a change in physical activity participation, a change in motivational variables related to physical activity, and a change in affect, health, functional status, and symptoms.

In order to be able to answer such research questions, we needed first of all to develop the motivational physical activity intervention. This was done in two steps: 1) Development of an activity manual, and 2) development of a manual for delivering the activities in a way that would develop motivation for physical activity. The intervention itself consisted of the instructors using these two manuals when planning and carrying out activity prorams.

DEVELOPMENT OF AN ACTIVITY MANUAL

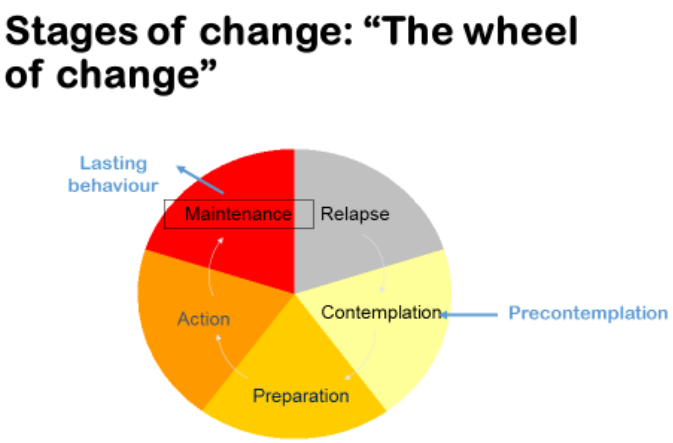
The manual was developed by Fredrik Sørhaug Kristiansen, Magne Hem Stenersen and Hans Olav Østerbrød, and consisted of 12 parts. Part one is an introduction to physical activity with definitions, the difference between physical activity and exercise and information about effects of physical activity, the recommendations about physical activity for health benefits. Further some ways to become more active are introduced before 7 principles for training are explained. At the end there are also some ideas and reflections about the role of the activity instructor. Part two explains how to organise and plan a physical activity session, and how to use the manual. The parts from three to ten consist of an "activity idea bank", organised after type of activities. These are: Warm – up activities, strength training, endurance training, ball games, games without a ball, relay activities, stationwise activities, and games and play activities. Part eleven give ideas about how to end an activity session with stretching and/or relaxation. The last chapter consists of literature references and useful links to more information and activity suggestions. The different chapters are coloured in bright colours that makes it easy to use.

DEVELOPMENT OF A MANUAL TO DELIVER THE PHYSICAL ACTIVITIES IN A WAY THAT WOULD ENHANCE MOTIVATION FOR PA

There are several theories of motivation for health behaviors, and different frameworks that these theories are useful within. We chose the framework of "Stages of change" (Prochaska & Di Clemente, 1983) and used the motivational theories of "Self- determination theory"(Deci & Ryan, 2000) and " Social Cognitive Theory (Bandura, 1986) as basis for the development of a course for physical activity personnell in how to deliver the physical activities in order to stimulate motivation. The practical design of the manual was made by Anders Farholm.

The Stages of change framework.

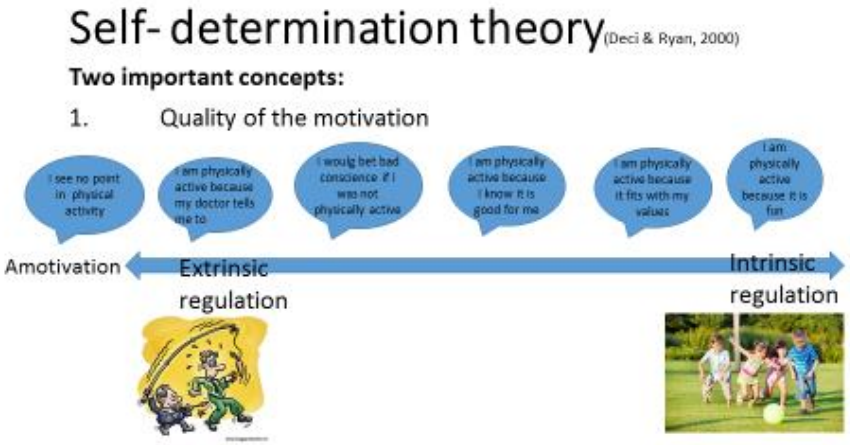
This framework (also called the Transtheoretical Theory) is based on the experience of two experienced psychotherapists (Prochaska & Di Clemente, 1983) who observed that independent of what theoretical basis they used in their therapeutical approaches to behaviour change, their patients seemed to go through similar stages on their way to change their behaviour. These stages were: 1. *Precontemplation*, where the person was not interested in changing the behaviour in question, did not even think about it, and did not consider it as relevant for him or herself. The next stage was *2.Contemplation,* where the individual had started thinking that a change in the particular behaviour might be good, but had not acted on it or tried the behaviour in question. The *preparation stage (3*) is when the individual is willing to make a change, and has actually made some sporadic attempts of the wanted behaviour. The *action stage (4)* is when the new behaviour is set into action, but it has not lasted for as much as 6 months yet. If the behaviour has been kept up for 6 months or more, it is considered to be a *stage 5: Maintenance.*



The main point of knowing about these stages, is that at each stage, different motivational strategies are required. In the first two stages, where no experience of the behaviour in question, for instance physical activity as part of treatment, exists, the only way to work on the motivation for physical activity is through cognitive approaches. Attempts to encourage practical behaviour will often create resistance among precontemplators. As soon as there has been any experience of some physical activity as part of treatment, strategies related to the behaviour, such as feedback and stimulating mastery experiences, and affective responses, such as how the individual feels when trying the behaviour, can be used. Later in this chapter we will present suggestions for motivational work at each stage of change.

SELF-DETERMINATION THEORY

In self- determination theory there are two important concepts: 1. Motivation for a behaviour is not a only question if motivation exsists, but also of what quality the motivation is. The quality of the motivation can range from amotivation, which means no motivation for the behaviour exists, to intrinsically regulated motivation where the behaviour is regulated by an inner feeling of enjoyment and satisfaction. In between these there is a continuum of behaviour regulations starting with an external regulation, meaning that the motivation is controlled by external factors, for instance being told by others. Further there are several degrees of less and less external control and more and more inner and personal (autonomous) control of the motivation, see the illustration below.



In addition, the second important concept is that the quality of the motivation is influenced by how three basic, psychological needs are satisfied through the activity. The three needs are: Need for autonomy (being in charge of own life decisions), need for competence (mastery of tasks and skills of importance), and need for relatedness (sense of belonging and being

connected to others). The more these three needs are satisfied through a behaviour, the more intrinsically regulated (or autonomous) the motivation for the behaviour will be (Deci & Ryan, 2000).

How to stimulate autonomous motivation for physical activity based on SDT in practice?

Try to satisfy the need for autonomy by:

- Letting the participants take part in planning and choice of activities so that they feel some degree of free choice and influence
- Give good explanations for why you do something in a certain way
- Listen to comments and opinions of the participants
- Help in developing realistc goals
- For health personell in particular: do not focus too much on the health benefits, it may turn into an external motivation regulation!

Try to satisfy the need for competence by:

- Adapting the activities and their challenges to the individual participants, choose activities without exact standard solutions
- Advice the participants to focus on their own development in staed of competing with what the others do (create a mastery climate)
- Emphasise enjoyment, confort and fun activities
- Give positive feedback (NB! Not indiscriminantly)

Try to satisfy the need for relatedness by:

- Show understanding for the situation of the individual, empathy!
- Give support and accept suggestions for planning and activities
- Encourage the participants to encourage each others
- Encourage to seek social support – and provide it
- Use positive common identity markers (T shirts, caps)
- Give positive feedback to the group when they function well as a group
- Mastery climate is important also here- no social comparison

Social cognitive theory, or "self-efficacy theory":

The third theoretical base is social-cognitive theory, or "self-efficacy- theory" (Bandura, 1997). It has been demonstrated that self-efficacy is an important factor on all stages of change (apart from the precontemplation stage), in that it is a clear association between degree of physical activity self-efficacy in the different stages of change (increasing towards the maintenance stage) (Biddle? Ref)

Self-efficacy is a belief that one has the ability carry out a specific behaviour, e. g. " I can walk fast for one kilometer without a break". Important here is also the belief about the outcome of the activity in question: for instance that if I walk 1 km fast without a break regularly, it will increase my fitness and mood". In order to achieve a change in a behaviour, it is important to focus on a change in both self-efficacy and the expected outcome (Bandura, 1997). The main sources for influencing self efficacy are mastery experiences, social role models, social support and an understanding of physiological activation in a given situation with the behaviour (Bandura, 1986).

How to increase a person's self-efficacy related to physical activity?

- Try to increase the outcome expectations of the physical activity through information about what is realistic to obtain, and adjust unrealistic outcome expectations, e. g. to weight loss.
- Try to increase self-efficacy related to activities planned (by using role models, by demonstrating that you think it is realistic that they can do it, by encouragement).
- Suggest and accept individual solutions for solving a task
- Create a trust in the fact that signs of physiologic activation (increased heart beat, heavy breathing etc.) is healthy and will make you stronger, through concrete knowledge and gentle testing out.

How to work with motivation at the different stages of change?

Precontemplation stage.

Characteristics of a person in this stage:

- Physically inactive, and not much awareness around own inactivity and possible consequences thereof (low risk perception)
- No plans or ideas about becoming more active
- Negative associations related to physical activity (attitudes, feelings, opinions)
- Low self-efficacy, but sometimes unrealistically high due to lack of experience
- Not much knowledge about physical activity

The aim for this stage is to arouse a positive interest and curiosity, so that the individual at least will be willing to contemplate physical activity. The strategies to use at this stage is first and foremost cognitive approaches such as providing knowledge about different types of physical activity, downplay the exercise/training aspect and create nuances about pleasant activities. It may also be concrete information about possible benefits in a personalised way. Another angle is to provide knowledge about benefits of simply reduced sitting time. At this stage encouragement and trying to make the person active may be premature, do not buy running shoes yet, it may create resistance.

Contemplation stage

Characteristics of a person in this stage:

- Physically inactive, but has thoughts about changing
- Still mainly cognitive processes
- May lack knowledge, but may also have barriers for getting started
- More positive attitude and perception
- Often not much social support
- May be uncertain about social norms and demands in activities
- Low or unrealistic self efficacy
- Barriers may be: No time, never liked it, cannot afford, equipment is costly, anxiety, have no energy, it is unpleasant, it is just not me....

The aim for this stage is to help the person to make a decision about becoming more physically active. The strategies are still mainly focused on cognitive processes. In order to help making a decision, it may be good to make a list of pros and cons, and discuss. In such a discussion it is important to keep in mind the need for autonomy, do not try to convince, but to understand and find solutions. Another approach is to scale down expectations to how much effort it takes: all activity is better than none, there are great benefits in going from nothing to just a little, everyday activities are underrated, start by reducing sitting. It may also be helpful to find activities that the individual would consider, and what possibilities there are in the neighbourhood, and also thinking out where to find some social support in starting physical activity. Give praise for interest and motivation to talk about it, and emphasise the benefits of any activity.

The preparation stage

Characteristics of a person in this stage:

- Have tried some physical activity, but are nor regularly active
- Most are interested in becoming more active and on a more regular basis
- Self- efficacy is higher as to physical activity, but still vulnerable
- Positive attitude, see the benefits of being physically active
- Uncertain about own possibilities for making it
- May experience barriers

The aim for this stage is to increase the activity level and regularity. Because the person now has some experience with activity, we can use a mix of cognitive, affective and social strategies. It is important that all attempts give positive experiences of mastery, competence and social relations. It may also be important to work with realistic goal setting, and strengthen the identity as a physically active person. Think through how to handle situations that may prevent activity, and make sure that there is some social support (group activities, or with friends). Here it may also be possible to make "agreement or contract" with the family, the doctor etc.

The action and the maintenance stages

Characteristics of a person in the action or maintenance stage:

- Is or has been regularly physically active in a shorter (less than 6 months) or longer period.
- Positive attitudesKan ha opplevd brudd & stopp i trening & mosjon
- Likely to experience social support
- May still be externally motivated – try to increase more autonomous motivation
- Self-efficacy is higher, but may still be vulnerable if relapse, keep up or increase
- Prepare for relapse – how to handle it

The aim for these stages is to help the individual to keep up physical activity because they want it themselves (autonomous motivation). All types of strategies can be used; cognitive, behavioural , affective and social. Work on keeping or developing autonomous motivation. Is there a need to broaden the experience by trying out new forms of activities (increase self-efficacy)? Stimulate the person to try to motivate others by sharing their experiences. Prepare for relapse by discussing what to do if you have to change routines (for instance when coming

home after a hospital stay). Downplay the danger of a relapse or a period with less activity (stimulate self-efficacy in handling a relapse).

INTERVENTIONS AT THREE DIFFERENT PSYCHIATRIC INSTITUTIONS

In the Norwegian arm of the Psych Pat project, we made three intervention studies with a common basic model:

1) Educational component for health personnell/instructors
2) Physical activity intervention for patients

We used a longitudinal multiple single cases design with multiple baseline measures and multiple measurements during the intervention period, which lasted from 8 to 12 weeks, depending on the possibilities in the institution. The three different institutions had varying degrees of own resources for physical activity.

Institution 1 was a district psychiatric center with 3 day and night wards. This institution did not have own physical activity personnell resources, and physical activity was not an established part of treatment, even if they had tried to implement physical activity as part of treatment. They received full support from the project, meaning that specially trained instructors with sport science background at master level, planned and ran the activities, and did the main part of the data collection. Selected members of the ward personnell participated and were expected to gradually take over when the project period ended.

At this institution the educational component consisted of : 1) A one hour lecture for all personnell, explaining the intent and purpose of the project. 2) A 40 hours course for master level students of sport sciences about adapting physical activities for psychiatric patients, as well as how to use the motivational manual in practice, and 3) a full day seminar for selected ward staff together with the instructors about how to use both manuals developed.

Institution 2 was a relatively small, private institution in the countryside. The institution focused on physical activity as part of treatment, and had employed two physical activity instructors with sport science background at a master level. They also had good physical activity facilities and fantastic outdoor-life possibilities. The patients were allowed to stay there from 3- 6 months, but also here it was difficult to make the project period last longer than 12 weeks. The educational component consisted of a day's course in motivation theory and application of the motivation manual for the instructors. With their sport science background they did not need to be educated in how to use the activity manual. The instructors collected the data for the research project.

Institution 3 was a relatively large institution with an own department for physical activity and stables with horses. At a regular basis around 16 patients do work with horses during a week. The staff working at the stables wanted documentation on the contribution of physical activity with horses to the therapy, so in this project the intervention focused on the activities with horses. It was carried out after the same model as the other institutions. The stable staff were already trained in the physical activity with horses, so the educational part consisted of a one day course in motivational work. A former sport science student (master's level) familiar with the theoretical basis for the intervention, was hired to collect the data.

At all three institutions, the intervention for the patients started with one and a half weeks motivational baseline phase, with no physical activity, but the participants were given a Polar watch to wear in order to register their physical activity level before the activity intervention started. They received information that if they wore the POLAR watch regularly during the project, they would get the watch as a token of reward for their contribution in their project. Three individual motivational sessions were arranged with a member of the staff or an instructor. The topics for the sessions was information about physical activities, discussions about the participant's experience with former physical activity, a motivational interview and about goal setting. As these were patients who had already decided to take part in the activities offered, we could use motivational techniques suited to the preparation stage and onwards. The sessions were ended by answering the questionnaires and registration of the activity level. Once the baseline phase was over, activities were offered twice a week, and data were collected in relation the last PA session scheduled of the week. This way the individual participant could serve as their own control because we could compare the measurements before and after the intervention activities were offered. All in all we obtained complete data sets from 23 participants, 7 at institution 1, 10 at institution 2, and 6 at institution three. The individual profiles demonstrated a great variation in what the participants got out of their participation, some improved both their physical activity level, their motivation for physical activity, and their illness symptoms, some improved only one of these outcomes, but all but one had improvement in some variable.

MOTIVATIONAL MOVEMENT PROGRAM INTERVENTION TO PERCEIVED PHYSICAL FITNESS AND PSYCHOMOTOR PACE IN HOSPITALIZED PSYCHIATRIC PATIENTS

Běla Hátlová

PROBLEM DEFINITION

There is a radical change in the treatment of mentally ill people going on during the last ten years. This change means increasing the ratio of the out-patients and increasing the intensity of the support therapies for in-patients with the aim to support their transition to the out-patient care.
Our research repeated our proven motivational movement therapy program with the aim to check whether its structure meets contemporary needs and requirements.

Mental health directly affects physical health and quality of life. According to the World Health Organisation (WHO, 2002) mental health is a condition of satisfaction under which man recognises their own capabilities, is able to cope with normal life stress, work productively and contribute to the activities of their community.

An important value of life is perceived personal wellbeing. Experience of wellbeing may acquire two dimensions: subjective perception and objectively observable signs. The concept of subjective personal wellbeing is dominated by emotional and cognitive dimensions: a feeling of balance, problem management and place in the society. Objective personal wellbeing is supported by socioeconomic status and perceived health condition (Hošek, 2013).
The relationship between physical exercise and psychic health has been more and more often in the centre of attention recently. Knowledge obtained by physiological research emphasizes benefits of physical exercise for body health since the latter half of 20th century. However, research studies dealing with the relationship between physical exercise and mental health have revealed more complex relations (Taylor, 1985). Since 1990s the role of physical exercise in improvement of psychic wellbeing in general population as well in mental hospital patients has been increasingly studied (Scully et al., 1989;.Martinsen, 1990; LaFontaine et al., 1992; Hátlová, 1992; Taylor, 2000; Biddle et al., 2000). Research statements based on evidence focus on the relationship between physical exercise and psychotic disease, bringing evidence on the existence of a relationship between physical exercise and anxiety, depression, psychotic disease, response to stress, mood, self-respect and body image (Taylor, 2000; Biddle et al., 2000; Faulkner, & Biddle, 2001; Biddle & Faulkner, 2003; Faulkner, 2005 et al.; Louková, et al 2015).

What makes physical activity different from traditional therapies focusing on mental health issues is the potential to affect physical and mental health simultaneously. This is based on the fact of vital importance of physical activity. Movement is vital for man. Its instrumental nature

makes it one of the basic conditions of quality of life. Movement reflects the whole intention of human being. Movements are targeted, based on an idea, intention, which controls the movement as an accomplishing stimulus. This is enhanced by movement experience of man and his feelings. The kinetic anthropological essence of movement points out the relationship between physical activity and personality of man. Man moves according to their mature, meaning both their current psychic condition and their structural aspect (Hošek, 2013).

A patient with a mental disorder may subjectively perceive quality of their life on a high level and on the other hand a relatively healthy individual may feel their quality of life to be on a low level. The term of wellbeing is used as the evaluation criterion for assessment of the outcomes of medical procedures. This criterion mainly studies how the patients perceive their condition, how they manage an ordinary day and their social relations (Bullinger, 2002; Gimmler, et al., 2002; Džuka, et al., 2013). Beginning of The width of the effect of physical activity on human well-being was presented by K. R. Fox (Fox, 1999) in his study summarising available research outcomes concerning the effect of physical activity on well-being. The author´s data in his opinion confirm the effect of physical activity on physical self-perceptions a self-esteem. Zamani (Zamani et al 2016) in a study of adult population (N =264, M =38.10 years) focused on the relationship between physical activity (PA) and self esteem (SE) followed perceived physical fitness (PPF) as one of the factors. His findings revealed that PPF (perceived physical fitness) was directly related to self esteem (SE). It was documented that PA and PPF performed a significant role especially in adults reporting lower SE. Also the group of adolescents with a psychiatric disorder was found to have their self-conscience closely related to physical self-esteem and the role of self-conscience appeared to be very important especially in adolescents with mental issues, regardless the diagnosis (Simons ,et al. 2017). According to Fox (Fox, 1999), physical activity also positively affects cognitive functions, especially the speed of reactions.

Physical activity (PA) and exercise is increasingly being recognised as an efficacious component of treatment for various mental disorders (Rosenbaum et al. 2016). Epidemiological studies have shown that physical activity exercise (PA) has therapeutic benefits when used as adjunct treatment in mental disorders (Zschucke_et al. 2013). The effectiveness of this intervention has not yet been adequately compared with other established therapies (Hovland et al. 2013)

Rosenbaum published in 2016 the narrative synthesis of systematic reviews and clinical trials was conducted. He gave evidence supporting the inclusion of physical activity programs as an

adjunct to treatment psychiatric patients. In light of the available evidence, the inclusion of clinical physical activity programs within mental health treatment is an effective and acceptable adjunct to usual care for a variety of mental disorders (Rosenbaum et al. 2016).

OBJECTIVES AND HYPOTHESES - AIM OF RESEARCH

The objectives of this research focus on two areas. First the research tries to find whether attendance of MMP affects the expressed individual components of PF, namely endurance, muscle strength an dexterity in exercise. And second the research studied the assumed effect of MMP on psychomotor tempo of performance of visual-motor activity.

H1: MMP attendance significantly affects the expressed level of physical fitness of hospitalised psychiatric patients.

H2: MMP attendance significantly affects the measured psychomotor tempo of hospitalised psychiatric patients.

METHOD

The research was conducted as an experiment focusing on a check of the correlation between the selected variables. In particular between the physical activity programme applied to the hospitalised patients with MI support and PF and psychomotor tempo of performed visual-motor activity.

STUDY POPULATION

The study population included 140 hospitalised patients from two mental hospitals, 81 from facility A and 50 from facility B. The patients suffered from *mental and behavioural disorders due to psychoactive substance use, schizophrenia*, *mood disorders and anxiety disorders*.

The patients were randomised to an experimental and a control group. The experimental group underwent a six-week motivational movement programme (MMP) and the control group was subjected to a standard movement programme (SMP) in the course of the patients´ hospitalisation.

The total number of collected and processed patient questionnaires was 131 (including 83 male and 48 female patients). The mean age of the respondents was 40.5 ranging from 21 to 74 years.
Tab. 1.: Demographic data

Diagnoses	MMP attendants	SMP attendants	Total
	male/female	*male/female*	*male/female*
Addicted	18/16 (34)	13/5 (18)	31/21 (52)
Schizophrenia	19/9 (28)	21/4 (25)	40/13 (53)
Mood or anxiety disorders	5/9 (14)	7/5 (12)	12/14 (26)
Total	42/34 (76)	41/14 (55)	83/48 (131)

APPLIED METHODOLOGY

The values showing the levels of physical fitness of the patients were obtained by administration of a ten-point scale where 0 represented the lowest and 10 the highest possible level of the expressed physical fitness. The measured components of PF included endurance, muscle strength and dexterity in exercise.

The values showing the levels of psychomotor tempo were obtained by administration of the Path Test. This test measures the level of psychomotor tempo in performance of a visual-motor activity.

For the nature and type of data the individual hypotheses were evaluated by non-parametrical methods. The effect of MMP on the expressed levels of PF and the measured psychomotor tempo was evaluated by the Wilcoxon´s pair value test.

PROCEDURE

Before the research commencement the selected exercise instructors were trained in MI conducting. After that all patients randomised for MMP were provided with a short questionnaire and the Path Test. Some of the patients could not be enrolled in the research for their current psychic condition (acute psychosis), physical condition (decided by their attending physician) or unwillingness to be involved in the activity. The enrolled patients were randomised to MMP and SMP groups.

The patients taking part in the MMP in the context of their therapy attended 45-minute PA sessions held twice a week by instructors trained in MI conducting. The patients enrolled in the

SMP group were guided in their PA by MI untrained instructors. After six weeks the experimental and the control group patients were tested again.

RESULTS

1) Effect of MMP on the expressed levels of PF and its individual components, namely
2) endurance, muscle strength and dexterity in exercise.

Tab. 2: Basic descriptive analysis – experimental group

	First measurement				Second measurement			
	Endurance	Dexterity	Strength	Sum	Endurance	Dexterity	Strength	Sum
Mean	4.276	4.736	4.907	13.92	5.065	5.276	5.407	15.75
SD	2.726	2.749	2.649	7.454	2.368	2.491	2.362	6.680

Tab. 3: Basic descriptive analysis – control group

	First measurement				Second measurement			
	Endurance	Dexterity	Strength	Sum	Endurance	Dexterity	Strength	Sum
Mean	4.527	4.581	4.872	13.981	4.618	5.054	4.981	14.654
SD	2.379	2.529	2.365	6.668	2.305	2.830	2.520	6.878

Tab. 4: P-values for PF

	MMP attendees	SMP attendees
Physical fitness	p< .000	p< .000
Endurance	p< .000	p< .145
Dexterity	p< .000	p< .002
Muscle strength	p< .001	p< .077

2) Effect of MMP and SMP on measured psychomotor tempo in visual-motor activity

Tab. 5: Basic descriptive analysis

Psychomotor tempo	MMP attendees		SMP attendees	
	Before	After	Before	After

Mean	46.158	33.307	47.815	40.844
SD	25.719	17.118	25.184	20.607

Tab. 6: P-values for psychomotor tempo

	MMP attendees	SMP attendees
Total	p< .000	p< .000
Addicted	p< .000	p< .145
Schizophrenia	p< .00	p< .002
Mood or anxiety disorders	p< .001	p< .077

DISCUSSION

The research studied the effect of a movement programme supported by MI on hospitalised psychiatric patients and their expressed levels of PF and measured psychomotor tempo. The work in particular focused on the effect of a movement programme supported by MI on the individual components of PF including endurance, muscle strength and dexterity in exercise and on psychomotor tempo in performance of a visual-motor activity of hospitalised psychiatric patients. The patients selected for the experiment suffered from *mental and behavioural disorders due to psychoactive substance use, schizophrenia*, *mood disorders and anxiety disorders*.

The obtained data confirmed a significant effect of MMP on the expressed PF (Tab. 4). This result was significant for all measured components including endurance, muscle strength and dexterity in movement. The patients attending the SMP in the course of heir hospitalisation did not show any significant improvement, neither in PF as a whole not in its individual measured components (Tab. 4).

The results suggest that a MI-supported movement programme can positively affect perceived PF in general. The results were mainly supported by data obtained from patients suffering from *schizophrenia, mood disorders, and anxiety disorders.* The MI and PA combination significantly affects perceived PF of these patients. In the case of patients suffering from *mental and behavioural disorders due to psychoactive substance use* this result was statistically insignificant. The reason may be that these patients commence their therapy usually after a certain period of abstinence, already perceiving their PF much more positively.

The obtained data allow for the conclusion that MMP may be used as an effective therapeutic method affecting perceived PF in psychiatric patients in general. This effect is the strongest in patients suffering from *schizophrenia, mood disorders, and anxiety disorders*. Our outcomes generally confirm and extend knowledge obtained by the study performed by Zamani (Zamani et al 2016) and focusing in the relationship between PA and self-esteem (SE) where perceived PF was one of the studied factors.

The results further confirmed that the measured psychomotor tempo was much improved in all patients after the MMP completion in comparison to the baseline before the programme start (Tab. 6). This result was statistically significant also for the individual diagnoses (Tab. 6). Reduced psychomotor tempo was noted in the patients of the control group as a whole. The results for the control group were mainly supported by data from *schizophrenic* patients. In the case of patients suffering from *mental and behavioural disorders due to psychoactive substance use*, *mood disorders and anxiety disorders* any significant reduction of the reaction time was not found, though.

In this case too a conclusion may be drawn that MMP in comparison to SMP may be considered an effective therapeutic method of improvement of psychomotor tempo in visual-motor activity of patients suffering from *mental and behavioural disorders due to psychoactive substance use*, *mood disorders and anxiety disorders*. Our results this to a certain extent confirm and specify in more detail the outcomes achieved by Fox (Fox, 1999) in connection with a positive effect of PA on cognitive functions, especially in measurement of the speed of reaction.

Overall, the combination of MI and PA may be used as an effective therapeutic method affecting PF of hospitalised psychiatric patients. MMP in comparison to SMP also appears to be an effective method of improvement of psychomotor tempo in performance of visual-motor activity by patients suffering from *mental and behavioural disorders due to psychoactive substance use*, *mood disorders and anxiety disorders*.

CONCLUSIONS

The research studied the effect of MMP on the individual components of PF, including expressed endurance, muscle strength and dexterity of movement as well as on psychomotor tempo in performance of visual-motor activity of hospitalised psychiatric patients. They were

patients suffering from *mental and behavioural disorders due to psychoactive substance use, schizophrenia*, *mood disorders and anxiety disorders*.

The obtained data confirmed a significant effect of MMP on the expressed PF. This result was significant for al measured components, endurance, muscle strength as well as dexterity of movement. The patients attending SMP in the course of their hospitalisation did not show any statistically significant improvement in their expressed PF as a whole nor in its individual measured components.

The obtained data further confirmed that the measured psychomotor tempo of performance of a visual-motor activity was much quicker after MMP completion than before. This improvement was also shown by the patients in the control group as a whole.

The resulting data allow for the conclusion that MMP may be used as an effective therapeutic method with effect on perceived PF. MMP in comparison to SMP also appears more effective in connection with effect on the psychomotor tempo of performance of visual-motor activity by patients suffering from *mental and behavioural disorders due to psychoactive substance use*, *mood disorders and anxiety disorders*.

INFLUENCE OF THE MOTIVATIONAL MOVEMENT PROGRAMME ON THE MOTIVATION OF PSYCHYATRIC PATIENTS TO PHYSICAL ACTIVITIES

*Martin Dlaba*l

DEFINITION OF THE ISSUE

Research shows that instructing others to be more physically active is not enough. Cohn (2011) and colleagues found from an analysis of 358 research projects that the overall shift in physical activity (PA) performance was low among participants.

Recent research, which focuses on effective ways of motivating to physical activities (PA), usually mentions the positive impact of available, and from the perspective of users, attractive sports facilities, on the amount and form of (PA) (Sallis, 1997; Sallis, 2001; Rozita, 2010) and generally positive influence of motivational interview (MI) in increasing the motivation to

realize and maintain the desired change. Our intervention tool is therefore based on the management of MI before and during the actual implementation of PA.

The aim of this research is to verify whether or to what extent Motivational Movement Programme (MMP) affects the motivation for physical activities in form of Standard Movement Programme (SMP).

H1: Participation in MMP - significantly affects the motivation to be physically active during hospitalization.

H2: Participation in SPP - the motivation of the respondents of the control group to be physically active will be the same in the input and output survey.

METHOD

The research is designed as an experiment aimed at verifying the relationships between the studied variables. Specifically, the impact of MMP and SMP on the motivation to physical activities in psychiatric patients during hospitalization.

EXAMINED SAMPLE

The examined sample included psychiatric patients from two psychiatric institutions, 48 from Institution A, and 31 from Institution B. These were patients with schizophrenic diseases, mood disorders, or one of the neurotic disorders. In total, questionnaires from 79 patients (including 31 men and 48 women) were processed.

Tab. 1.: Demographic data

Diagnostic categories	Participants of MMP	Participants of SMP	Total
	men/women	men/women	men/women
Schizophrenic diseases	19/9 (28)	21/4 (25)	40/13 (53)
Mood disorders and neurotic disorders	5/9 (14)	7/5 (12)	12/14 (26)
Total	24/18 (42)	28/9 (37)	52/27 (79)

APPLIED METHODOLOGY AND VARIABLES

Values describing the motivation were obtained by administering the shortened version of the BREQ-2 questionnaire. The questionnaire determines the degree of motivation for physical activities in the direction of increasing internal regulation of behaviour on a scale from

amotivation, through external motivation to internal motivation to be physically active. The questionnaire was shortened for the needs of psychiatric patients by questions 8, 9, 16, and 18. Due to the nature and type of data, the Wilcoxon sign order test was used to verify each hypothesis.

Procedures

Before the start of the research part of the project, selected movement instructors were trained in MI leading. The instructors underwent 32-hour training in MI leading, which was spread over four days. There were always at least two weeks between each training day to test the acquired knowledge and skills. The instructors then brought their experience back to training and supervision. In the subsequent training sessions, this feedback was already used.

All patients who were hospitalized at that time could be included in the project. The limiting restrictions for participation were the current mental state (acute psychosis, negative attitude), physical state (determined by the physician). By random group selection, one group of patients was assigned to MMP and the other group to SMP. The next step was to administer the BREQ, 2 questionnaire for all patients selected for the project. Both groups underwent a treatment programme.

Patients who participated in MMP participated in physical activities twice a week for 45 minutes with trained movement instructors in MI leading. Patients in the control group participated in physical activities with “traditional” movement instructors. After a six-week period, both the experimental and control groups were retested.

MOTIVATIONAL MOVEMENT PROGRAMME

MMP is based on the MI during SMP. MMP took place twice a week and lasted for about 45 minutes. The meeting place was mostly in the gym and in good weather on outdoor sports grounds in the hospital. The groups were purely male or female with an average of 8 patients.

The content of SMP was a group exercise containing gymnastic exercises supplemented with elements of sports games (passing, shooting, preparatory exercises), or sports games. In the gym, the instructors preferred non-contact games (volleyball, netball, catch, table tennis, badminton) and games on the outdoor sports grounds in the hospital area (croquet, kubb, mölkky or petanque).

The content of meetings and interventions is formed in the interaction with patients. Initially, the instructor usually briefly detects and reflects the patient's condition (mental and physical

condition): "You say you do not have the power to do something difficult today". Instructors express their empathetic interest in patients. The instructor also asks at the beginning open questions whether patients come with the intention to participate in some specific physical activities. In this case, he/she accepts their suggestions as a part of the movement programme. The instructor also offers several pre-prepared variants of physical activities, with information about the potential benefits of the activity for participants: “This activity increases the ability of the body…”. If one of the patients has different needs, there is effort to meet them at least partially: "Today, we will focus on another game first, but we will shoot on the basket later during the activity." If one of the patients is worried that he/she will not manage the activity, he/she is offered some training to strengthen his/her skill and confidence: "Okay, first look at what it looks like and then try it with me on the mat". During the activities, the instructor supports self-confidence and positively appreciates activities that are not directly related to the physical activities. For example, the instructor appreciates creative thinking, helping a team-mate, trying to work for a team despite unfavourable game development, fair play gestures. At the end of the meeting he/she allows to express impressions of the activities. He/she then reflects or re-frames, provides objective feedback and expresses support to patients.

Tab. 2. Schedule of selected movement meeting - group exercise

Part	activity	Potential statement of the patient	Potential use of MI
Introductory part (organizational) up to 5 minutes	- arrival/handover of patients by the department staff	"They made me come here."	- active listening, refining, reflection, acceptance
	- finding out the current condition of patients (emotionally, physically)	"I'm very tired."	- open questions, reflection, acceptance
	- identification of patients' expectations or suggestions	"Can we go play football?" "I'd like to lose weight/ strengthen my body." "But I was at school when I did sports the last time."	- open questions, reflection, provision of information
	- acquaintance of patients with possibilities and outline of the content of the lesson	"Will it hurt me?"	- summary, reflection, support of self-confidence, information provision
Introductory part	- warming up and stretching the major muscle	“I have a backache.”	- reflection, acceptance, support, provision of

(warm-up) 10 minutes	groups - warming up the range of joint movement	 “I think I won't make it.” “I don't like it.”	information - reflection, re-framing, provision of information - refining, re-framing, provision of information
Main part about 25 minutes	- compensatory exercises using mats - exercise on balls or combination thereof - inclusion of exercises according to the requirements of patients at the beginning of the lesson	“Do I do it well?” “I know it differently.”… "Mr. trainer, I am attacked by some outrageous thoughts." "Can I go back to the ward?"	- support of self-confidence - receipt, provision of information - reflection, re-framing - reflection, provision of information
Conclusion up to 5 minutes	- communication of impressions of the activity - providing feedback on the exercise - assignment of tasks on demand - proposal for the next meeting	"It hurts less / equally / more." "Can you advise me some exercises on ...?"	- reflection, acceptance, provision of information - summarizing, support of self-confidence - providing information, support of self-confidence - providing information, support of self-confidence

RESULTS

1) The impact of participation in MMP on the motivation for physical activities

Tab. 3: Basic descriptive analysis - experimental group

MMP	Before						After					
	A	E	I	D	N	RAI	A	E	I	D	N	RAI
Average	1.65	2.47	2.51	3.72	3.63	5.92	1.44	2.20	2.54	3.58	3.99	8.59
SD	0.90	1.05	1.13	1.02	1.27	5.43	0.65	1.02	1.20	0.83	1.17	5.86

Tab. 4: Basic descriptive analysis - control group

SMP	Before						After					
	A	E	I	D	N	RAI	A	E	I	D	N	RAI
Average	1.79	2.18	2.42	3.62	3.64	6.02	1.92	2.31	2.30	3.61	3.59	5.28
SD	0.90	1.22	1.15	1.02	1.30	6.90	1.08	1.11	1.12	0.98	1.19	7.35

Tab. 5: Values of p-level

	A	E	I	D	N	RAI
Participants of MMP	, p< .09	p< .18	p< .86	p< .17	p< .04	p< .00
Participants of SMP	p< .68	p< .42	p< .54	p< .88	p< .30	p< .55

Note: A - Amotivation scale, E - External regulation, I - Introjective regulation, D - Identified regulation, N - Internal regulation, RAI - Relative autonomy index

CONCLUSIONS

The research work verified the impact of MMP on the motivation of hospitalized patients to physical activities. MMP is based on a combination of MI and SMP during hospitalization. The research group consisted of patients suffering from schizophrenic diseases, mood disorders or one of neurotic disorders.

The data confirmed a significant impact of MMP on the motivation to physical activities in hospitalized psychiatric patients. The overall shift of motivation in the direction of increasing internal regulation of behaviour was found (Tab. 5). The component of autonomous motivation contributed significantly to the overall shift.

The data did not confirm the significant influence of SMP during hospitalization on the shift of motivation in the direction of internal regulation. The shift was not recorded even in the individual measured components of motivation to physical activities (Tab. 5).

In conclusion, MMP is an effective therapeutic method for influencing the motivation to physical activities in hospitalized psychiatric patients.

THE EFFECT OF AN EXERCISE PROGRAMME FOR HOSPITALIZED PSYCHIATRIC PATIENTS DIAGNOSED WITH SCHIZOPHRENIA

Běla Hátlová, Milena Adamkova Segard, Michel Probst, Vlastimil Chytrý

INTRODUCTION

Physical activity has a significant impact on mental well-being. Currently, physical activity is well accepted in our society, and this fact creates suitable situations for many clinical populations, such as patients with schizophrenia (Richardson et al. 2005; Harvey, Hotopf, Overland & Mykletun, 2010; Rosenbaum et al. 2016; Mutrie & Faulkner, 2003). Hölter (2011) mentioned that psychomotor therapy, a specific adapted physical activity for persons with mental health problems, can have a positive effect on their mental health. Patients are removed from their immersion in their own world by focusing on physical activities.

Schizophrenic disorders are generally characterized by a significant breakdown in thinking, misperception and blunted or flat affect and a lack of emotional reactivity. The senses of individuality, unity and autonomy, which are the essential functions of the personality, are affected. Most patients show impairment in the areas of concentration, attention, psychomotor learning, intentionality and motivation (Gaebel & Falkai, 1998). Loss of the boundaries of "oneself" is a typical characteristic. A clear consciousness and intellectual skills tend to be retained, even though specific cognitive deficiencies may develop over time. Social skills are also affected. All these complications also have a physical response; impairment of physical perception and motor activity, with a loss of automatic movement, is apparent. Patients find it difficult to be aware of the coherent structure of their personality, and they frequently have poor perception of their own body. The body anchors us in this world, and in patients with this disorder, that mainstay has become unanchored (Spurkova & Hátlová, 2001; Hátlová, Adámková Ségard & Kynštová, 2015).

The benefits of sports were summed up in a systematic review by Soundy, Roskell, Stubbs, Probst and Vancampfort (2015). Marzolini, Jensen, & Melville (2009) and Beebe et al., (2005) investigated aerobic exercise programme.

Unfortunately, the effectiveness of physical activity and exercise has not yet been adequately compared with other established therapies (Hovland et al. 2013).

In their review of exercise therapy for schizophrenia, Gorczynski and Faulkner (2010) underlined the need for larger randomized studies.

The aim of this study was to verify the impact on mental health of exercise/psychomotor programmes regularly applied 3 times a week, over a period of at least 14 weeks, on a large sample of patients with long-term schizophrenia in an inpatient treatment.

METHODS

Subjects

The study included 151 patients diagnosed with schizophrenia according to the DSM 5 who were admitted to a psychiatric hospital in Prague for inpatient treatment. Seven patients were excluded from the study due to somatic illness and early drop-out from the intervention. Finally, 144 patients (76 males and 68 females) with a history of psychiatric treatment of schizophrenia for more than 3 years and with relatively stable mental health, pharmacotherapy and environment were included. In addition, patients needed to follow a scheduled therapy programme. Patients who did not finish the experiment were excluded from the study.

PROCEDURE

The long-term monitoring of the effects of therapeutic active physical exercise was conducted on patients hospitalized at the psychiatric hospital between 2014 and 2016.

Patients were randomly assigned into the experimental group (44 males and 38 females) and the control group (32 males and 30 females).

The control group underwent a routine programme. The routine programme consisted of pharmacotherapy, memory training (twice a week) and free time (daily).

The experimental group followed the routine programme and received an exercise programme (psychomotor therapy programme). The content of the exercise programme was based on previous studies (Hátlová, 1992; 2003). The programme had a defined structure that allowed adaptation to the individual level of physical fitness, abilities and current psychosomatic condition. The exercise programme was offered 3 times a week continuously over a period of 14 weeks (a total of 42 sessions). The exercise programme was led by two therapists during morning hours and took approximately 45 minutes.

INSTRUMENT

The Brief Psychiatric Rating Scale (BPRS; Overall & Gorham, 1962) is a frequently used rating scale for evaluating psychiatric symptoms (depression, schizophrenia, etc.). The BPRS contains 18 symptoms, rated on a 7-point scale (0 = not present–6 = extremely severe). Scores are based

on a clinician's interview and observation of the patient's behaviour. The scores can be transformed into a factor score: factor 1: anxiety/depression (ANDP); factor 2: anergy (ANER); factor 3: thought disturbance (THOT); factor 4: activation (ACTV); factor 5: hostility/suspiciousness (HOST).

The BPRS is useful in evaluating the efficacy of treatment, particularly in patients with moderate psychoses. The Czech standardized version (Filip, Sikora & Maršálek, 1997) was used to verify the diagnostics and to assess the effects of the psychomotor programme.

The BPRS was administered twice, once before the intervention programme and after 14 weeks as a post-application, by three psychiatric doctors.

STATISTICAL ANALYSIS

Inter-reliability, intra-class correlation and internal consistency were calculated. To assess for outliers, a comparison of the mean with the median was evaluated. IBM SPSS Statistics was used for data processing.

The consistency of the evaluation data between the evaluators was tested by ICC statistical testing.

The obtained data were analysed by Dixon's Q test. Internal consistency was tested by the Cronbach coefficient. For inductive analysis, non-parametric statistical methods were used. The reasoning was that the data did not meet the criterion of normality for transformation. To test statistical significance, a Wilcoxon signed-rank test ($p < .01$) was used.

The r effect size (Cohen, 1998) was used to calculate the effect sizes for non-parametric data. In our calculation, the effect size (r), is obtained by dividing the Wilcoxon Z score by the square root of the sample size (Rosenthal formula); $r = Z / \sqrt{N}$ (Rosenthal, 1994). Cohen's guidelines for r are as follows: small effect $\geq .1$, medium effect $\geq .3$ or large effect $\geq .5$ (Cohen, 1998; Fritz, Morris & Richler, 2012; Rosenthal, Rosnow & Rubin, 2000).

RESULTS

The coefficient consistency of the evaluation data between the evaluators for all the monitored BPRS factors (ICC values) exceeded the value of 0.90. There was good consensus between the evaluators. All the evaluators' assessments before and after application of the programme were highly reliable.

In Table 1, descriptive results of the BPRS factors are described for sex and both groups. The outliers were analysed by Dixon's Q test. Comparison of the mean with the median could not detected outliers.

Table 1: Descriptive characteristics of the factor scores of the Brief Psychiatric Rating Scale, pre- and post-intervention, for the experimental and control group (females and males)

	Male – pre			Male – post			Female – pre			Female – post		
	mean	median	SD	mean	median	SD	mean	median	SD	mean	median	SD
Experimental group (N = 82)												
ANDP	10.46	11.17	4.04	7.09	6.33	3.99	9.48	9.50	3.50	6.26	6.33	2.90
ANER	11.89	11.00	4.71	9.48	8.33	4.71	8.95	8.33	3.24	6.67	6.83	2.99
THOT	11.21	11.50	5.09	9.22	10.00	4.85	9.33	8.67	5.69	6.95	5.50	5.67
ACTV	8.01	8.83	3.76	6.02	6.00	3.08	7.06	6.67	3.26	4.69	4.50	3.01
HOST	6.68	6.61	3.82	4.95	5.00	2.95	7.50	7.83	3.62	5.55	5.33	3.55
Control group (N = 62)												
ANDP	7.98	9.67	4.83	7.67	8.83	4.89	8.80	9.00	3.98	8.56	8.83	3.94
ANER	11.86	11.00	4.36	11.52	11.00	4.33	9.30	9.67	4.04	9.31	9.33	4.01
THOT	12.57	12.00	5.25	12.11	12.00	5.53	9.44	8.83	5.54	8.77	8.67	5.64
ACTV	7.04	7.00	2.17	6.77	6.50	1.88	6.86	6.67	2.57	6.68	7.00	2.40
HOST	7.23	8.06	3.45	7.33	7.33	2.63	7.14	7.44	3.61	7.40	7.33	3.48

ANDP = Anxiety Depression; ANER = Anergy; THOT = Thought Disturbance; ACTV = Activation

INDUCTIVE ANALYSIS DETECTED NO DATA DISTORTION

The **internal consistency** of the BPRS was **α = .81**, which is an acceptable value of the internal consistency. (Cronbach, 1921; Tavakol & Dennick, 2011).

A comparison of the data from the BPRS before the intervention programme and 14 weeks after first evaluation is presented in Table 2.

Table 2: Inductive analysis of the factor scores of the BPRS pre- and post-intervention, separately for females and males

Comparison BPRS Pre- and post-intervention		**ANDP**		**ANER**		**THOT**		**ACTV**		**HOST**	
		p	*r*	*p*	*r*	*p*	*r*	*p*	*r*	*p*	*r*
Experimental Group	Male	***p*<.01**	**.59****	***p*<.01**	**.56****	***p*<.01**	**.56****	***p*<.01**	**.60****	***p*<.01**	.42*
	Female	***p*<.01**	**.61****	***p*<.01**	**.57****	***p*<.01**	**.59****	***p*<.01**	**.61****	***p*<.01**	.48*

Control	Male	.27	.23	.15	.20	**.03**	.30*	.11	.23	.61	.06
group	Female	.11	.24	.92	.02	**.02**	.33*	.11	.22	.32	.13

ANDP = Anxiety Depression; ANER = Anergy; THOT = Thought Disturbance; ACTV = Activation

HOST: hostility. Non-parametric statistics, *p* = significance of the Wilcoxon test, error probability after H_0 rejection; r = effect size following the Rosenthal formula; * = p < .05, .3>r< .5; ** = p < .01, .5>r< .8

For the experimental group, the comparison between scores of the BPRS before intervention (pre) and after intervention (post) revealed significant differences for all factors, with a significance $p< .01$.

For the experimental group, a large effect size was found for the factors ANDP (Anxiety Depression), ANER (Anergy), THOT (Thought Disturbance) and ACTV (Activation) between pre- and post- condition. The factor HOST (Hostility – Suspiciousness) showed a medium effect size (Table 2).

For the control group, the comparison between scores of the BPRS before intervention (pre) and after intervention (post) did not show any significant differences for any factors, with a significance $p< .01$ (Table 2).

A medium effect size was found for THOT (Thought Disturbance) in a case in the control group (Table 2).

The impact of sex on changes was found to be insignificant.

DISCUSSION

The current study aimed to explore the impact of exercise/psychomotor programmes on the mental health of long-term patients with schizophrenia. While some studies (Faulkner & Taylor, 2005, Hölter, 2011; Probst, Knapen, Poot, & Vancampfort, 2010; Vancampfort et al. 2012) have demonstrated that mental changes may also be achieved through psychomotor therapy as a result of removing patients from their immersion in their own world by focusing their attention on physical activity, the causes that may underlie this link are not yet thoroughly studied. The results confirmed the existence of a positive impact of exercise/psychomotor programmes on mental health. These results are in line with an extensive literature documenting a positive impact of physical activity on self-perceptions, self-esteem and cognitive functions and on the

relation between exercise, anxiety, depression, psychotic illness, reaction upon stress, self-esteem and body image (Biddle, Fox & Boutcher, 2000; Biddle & Faulkner, 2003; Ellis, Crone, Davey & Grogan, 2007; Faulkner, 2005; Faulkner & Biddle, 2001; Faulkner & Taylor, 2005, Fox, 1999; Gorczynski & Faulkner, 2010; Hátlová, 1992; Holley, Crone, Tyson & Lovell, 2011; LaFontaine et al., 1992; Martinsen, 1990; Scully, Kremer, Meade, Graham & Dudgeon, 1989; Soundy et al. 2014; Taylor, Fox, Boutcher, Faulkner & Biddle, 2000; Vancampfort & Faulkner, 2014; Vancampfort et al. 2012; Vancampfort et al. 2009).

An exercise/psychomotor programme applied 3 times a week over 14 weeks showed positive changes in the patients´ behaviour in all symptoms of schizophrenia.
Furthermore, the effect size highlighted the relationship between the exercise/psychomotor programme and symptoms of anxiety, depression, anergy, thought disturbance and activation (measured by the BPRS). The results achieve a high level of importance, and they support the inclusion of an exercise/psychomotor programme in a therapy routine for the treatment of schizophrenia, especially for the treatment of patients whose range of problems is difficult to treat using other therapies.

Nonetheless, it is necessary that programme is tailored and that the patients find these programmes acceptable and interesting.
As in all therapies, the relationship between the patient and the therapist and between patients mutually has an important curative potential. This is also the case in an exercise programme, where it is easy to create a positive relationship. This plausible effect can be caused by the fact that those participants can move according to their needs and their focus is moved to the exercise.

During the exercise programme patients can talk only as much as they like, but they can also exercise quietly. Therefore, verbal communication (thought processes and speech), which is impaired in patients with schizophrenia, is not causing them problems.
It is obvious that when using physically oriented therapeutic methods, it is generally easier to establish contact with mentally ill patients, making this kind of therapy more suitable than most other kinds of therapy. In other words, when using physical therapy, communication on a non-verbal level may be more understandable and less difficult for the patient (Hátlová, 2003; Hátlová, Adámková Ségard & Kynštová, 2015).

Based on previous studies (Rosenbaum et al. 2016 and Zschucke, Gaudlitz, Ströhle, 2013) we can conclude that physical activity and exercise are an effective component of treatment for various mental disorders including schizophrenia.

To sum up, the present study verified the causal relationship between the applied exercise/psychomotor programme incorporated into routine therapy for patients, on the one hand, and the degree of change to their mental health, on the other hand, as evaluated using the BPRS scale.

The positive effect on their mental health was observable as changes in their behaviour. The statistical outcomes, between pre- and post-condition, were significant for all factors. Using a large number of patients, this study confirmed the positive outcomes of previous studies. It is plausible that exercise/psychomotor therapy programmes may be a safe and economically effective treatment for patients with schizophrenia, particularly for those whose range of problems is difficult to treat using standard therapies.

In addition to the satisfying outcomes, some limitations of this study need to be underlined. All participants came from a single psychiatric hospital (however, they were not present simultaneously.). The exercise programme was run by two therapists. The influence of the therapists was not assessed.

Acknowledgement

The study was created with the kind support of the MŠMT ČR, Czech-Norwegian Research Program (CZ09) 7F14500, 2014-2017.

The work has been approved by the appropriate ethical committee related to the psychiatric hospital in Prague, Bohnice, in which it was performed, and the subjects gave informed consent to the work.

INFLUENCE OF THE MOTIVATIONAL MOVEMENT PROGRAMME ON THE MOTIVATION FOR PHYSICAL ACTIVITY IN OUTPATIENTS

The benefits of sport activities as supportive treatment for mental illnesses have been summarized in a review of authors (Soundy, et al 2014; Soundy, et al 2015). The benefits of physical exercise for people with schizophrenia have been described in a review by Vancampfort (Vancampfort et al., 2017). Motivation is an important factor for carrying out the activity. In a randomized study, Gellert (Gellert et al., 2012) states that the expectation of shared experiences during doing exercise is a greater motivation than the expected health effect.

We found inspiration in the study by Vancampfort et al., (2013). The study investigating the association between motivation and PA using a BREQ-2 questionnaire involved 129 patients, including 44 with schizophrenia (Vancampfort et al., 2013). An exploratory factor analysis of the association between motivation and PA showed sufficient convergence with external and introjected regulation. Positive correlations were found between scores of total physical activity and external regulation (r¼0.27, Po0.001) and autonomous regulation (r¼0.57, Po0.001). Outpatients reported more external (Po0.05) and introjected (internal - Po0.05) regulations than hospitalized patients.

In our study, we worked with outpatients with a diagnosis of schizophrenia.

Internal motivation for a change is one of the important factors of treatment. We base our study on the concept of self-determination theory (Deci and Ryan, 2000), which describes the motivation for a change in perception and assumes intrinsic behaviour activity. This research combines positive experience with the use of motivational interview (MI) during physical activity (PA).

Through personal experiences, the psyche of people with mental illness is influenced in the sense of awareness of their own psychosomatic 'self'. The aim is to get the individuals to work on their own self, to help them discover ways to approach their problems, to allow them to discover these ways by themselves (Hátlová 2003). The importance of psychomotor therapy lies in the coherence of this programme, which currently responds to the needs of the client, whether it is a period of his/her hospitalization or subsequent care and rehabilitation (Kynštová, 2019).

PROBLEM AND HYPOTHESES

In 2016, with the consent of the attending physicians, we conducted a 6-day movement programme supplemented with motivational interviews. For all persons interviewed, the condition for examination was their informed consent and the consent of the attending physicians. The research examined how motivational factors in individual and social contexts influence experience and behaviour, achievement of success in the activity and mental well-being. It works through a movement programme supported by a motivational interview.

Our monitoring focused on:

- the total amount of time spent by a physical activity: *frequency and intensity*
- body fitness perception: *physical endurance, skilfulness, strength*
- reported psychomotor pace
- social competence

The sample included psychiatric patients from ZB Sanima s.r.o. (psychiatric outpatient clinic); BONA foundation (sheltered housing)., FOKUS s.r.o. (sheltered workshops).
In total, questionnaires from 21 patients diagnosed with schizophrenia (including 11 men and 10 women) were completed. The patients underwent 3 measurements. 9 patients who did not complete the yearly research were not included in the sample group.

OBJECTIVES AND HYPOTHESES

- H1: Participation in a movement programme significantly affects the frequency and intensity of performing a physical activity.
- H2: Participation in a movement programme supplemented with motivational interviews (MPP) significantly affects the expressed physical condition.
- H2a-c: Participation in MPPs significantly affects the individual components of physical condition.
- H3: Participation in MPPs significantly affects the recorded psychomotor pace.
- H4: Participation in MPPs significantly affects behaviour and competence of outpatients.
-

Methods:

Motivational interviewing (Miller & Rollnick, 2013)

MOVEMENT PROGRAMME

- a) 6-day programme with various physical activities in the range of 6 hours a day. Motivational interviews were conducted as a part of the 6-day movement programme.

The programme was applied by physical therapists with education in psychiatry. Another movement programme was provided by licensed movement experts.

- b) Possibility of independent active physical activity of one's own choice, in facilities for the general public (sports or wellness, twice a week during 6 months). Possibility to check only using codes in visit electronic cards. Throughout the project, the clients were under the care of their personal physician.

MEASURING TOOLS

- Values indicating the frequency of PA of the examined patients were obtained by the administration of the Path Test (TP). The test verifies the speed of psychomotor pace while performing visual-motor activities.
- A short questionnaire that determines the frequency and amount of time spent by performing physical activity was used (Graff-Iversenet et al., 2008). Patients indicated the frequency they had given to lighter and heavier PA over the past week. Lighter PA was defined as any physical activity that does not accelerate breath unpleasantly and does not cause sweating. Heavier PA was defined as any physical activity that accelerates breath and causes sweating.
- (a) the length of time during the day recorded for each day of the week. PA is on a four-point scale from zero to three or more hours.
- (b) the intensity of light and heavy exercises evaluated on a nine point scale

Perceived physical activity (PA) was evaluated:

- Ten-digit scales that measure the level of physical fitness (stamina, skilfulness, strength). 3 ten-digit scales to determine the experienced level of physical endurance, muscular strength and skilfulness, where the figure 0 denotes the lowest and the figure 10 denotes the highest possible level of expressed component of physical fitness (PF).

GAF (Global Assessment of Functioning)
of psychiatric patients. It was developed on the basis of the Social and Occupational Functioning Assessment Scale (SOFAS). DSM-IV.

Due to the nature and type of data, the Wilcoxon test for paired samples was used to verify each hypothesis.

RESULTS:

The statistical quantities mentioned in this section of the text are used in accordance with the literature on statistics (Hendl, 2012):

N frequency,
Ø average value,
Me median,
Mod modus,
Min minimum,
Max maximum,
SD standard deviation

Tab.1: measurement before the application of the motivational-movement programme

2nd measurement	Age	TP	TIME l	V	O	S	GAF
N	26	26	26	26	26	26	26
Ø	45	52	4.8	4.9	4.6	5.1	69.2
Me	43	47	5	5	5	5	70
Mod	52	54	4	4	5	5	70
Min	26	19	1	1	1	1	40
Max	70	210	9	8	7	9	80
SD	11	38	2	1.7	1.8	2.1	10.38

ab. 2 measurement 6 months after the application of the motivational-movement programme

1st measurement	Age	TP	TIME l	V	O	S	GAF
N	28	28	28	28	28	28	28
Ø	44	71	4.3	3.7	4	4	59
Me	41	63	3	4	4	3.5	60
Mod	39	69	3	1	1	2	60
Min	26	28	1	1	1	1	40
Max	70	171	9	8	10	9	80
SD	11	33	2.4	2.4	2.6	2.4	13

Due to the abnormality of data, non-parametric statistical methods were used. The p-level values are shown in the following table. Due to the fact that the calculation was performed on the basis of the Wilcoxon pair test, the T and Z values are also added.
Note: The values in bold are statistically significant.

Tab. 3 values of p-level

	TP (n=26)	TIME l (N=21)	V (N=21)	O (N=17)	S (N=22)	GAF (N=20)
Value of p-level	***p*=0,000** **T=30,50** **Z=3,683**	*p*=0,169 T=76,00 Z=1,37	***p*=0,007** **T=38,0** **Z=2,693**	*p*=0,093 T=41,00 Z=1,680	***p*=0,013** **Z=50,00** **Z=2,483**	***p*=0,002** **T=21,0** **Z=3,13**

Summary of the results:

- The data confirmed a significant effect of MPP on the **reported psychomotor pace.**
- The duration does not significantly change the performance of physical activity. he intensity of performed movement activity is increased statistically insignificantly.
- The data confirmed a significant influence of motivation on **perceived physical condition**, namely **physical endurance, strength**. It did not confirm a significant influence of motivation on perceived movement skilfulness.
- The participation in MPP significantly influences the behaviour and **social competence** of outpatients.

DISCUSSION:

Our results, in correspondence to Vancampfort et al., (2013), suggest that patients' self-awareness can play an important role in the acceptance and maintenance of health-promoting behaviour in outpatients with schizophrenic disease.
The participation in movement programmes significantly affects the perceived physical condition and individual components of body fitness: endurance, skilfulness, strength. It also significantly affects the psychomotor pace. Experience from the psychomotor therapy and responses of the clients to this therapy confirm the power of psychosomatic changes. It is important for patients' lives that participation in MPP has the potential to significantly influence their behaviour and social competences. Based on the interviews, we can state that there was a significant improvement in patients who had a positive experience with their own physical activity in their previous lives.

Conclusions: The project found a common topic with the possibility of strengthening non-pharmacological outpatient treatment in the comprehensive care system.

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Part III.

Practical applications

CONSIDERATIONS WHEN FACILITATING PHYSICAL ACTIVITY FOR PEOPLE WITH PSYCHOSIS

Toril Moe

When facilitating physical activity for people with psychosis, some considerations should be taken both before and during the activity. People in a state of psychosis may behave in unpredictable ways, and the characteristics of symptoms vary from one individual to another. In this chapter, I will share some precautions I have found to be useful in my work as a physical activity facilitator and milieu therapist at an acute psychiatric ward. In short, know the persons previous and current state, and use framework of motivation theories to secure a pleasant experience. In addition, always bring your phone to ensure safety for the patient and yourself. Note that the following considerations are targeting particularly severe cases of psychosis. It is important that participation is approved by the person's physician before implementing activities.

BEFORE THE FIRST MEETING

Firstly, know the details about the current situation the person is in. Read their journal or talk to a well-informed health care practitioner. Aspects you would want to explore are the characteristics of the symptoms; whether the person have a repetitive reaction pattern, the person's use of medications, as well as their side effects. These are all essential facts that should be taken into account when deciding upon an appropriate physical activity with the person. At an acute ward, many are held and treated against their will, and have had traumatic experiences earlier in life. When communicating, it is particularly important to recognize how vulnerable they are. Knowing if the person has a history of being physically abused or violated may be highly relevant. These people may have difficulties with physical contact, especially in sensitive areas such as the head, the neck and stomach.

FIRST MEETING

When first meeting the person, be sure to present yourself in a polite way, and be clear about your intentions as well as your area of expertise. Communicate to them that you do not have any involvement in their medical treatment or use of coercive measures. This can make it easier to build trust and a friendly relationship. Furthermore, ask about their previous experience with physical activity and what they enjoyed spending time doing when they were a child. Do they

have a passion for å specific type of physical activity? Is there a specific arena they enjoy? Explore whether there are some activities they have a bad experience with or do not enjoy doing. Some people associate physical activity with training and workout only, so make sure to remind them of other forms of activity if they have this perception. At the end of the conversation, narrow your options down to what you can do together within the given framework of surrounding and their individual treatment plan. When you agree upon what activities you can try out together, remember to take into account the details you obtained about the person before the first meeting.

DURING THE ACTIVITY

Before you meet up with the person for your activity bout, do some safety considerations given what you know about the person as well as what challenges you may have during the activity. Make sure to bring your phone for the safety of both yourself and the patient. Have other practitioners' number available so that you can call for their assistance if a difficult situation arises. Tell the managing health practitioner where you are going for the activity and how long you plan to be out. When you meet up, agree on the terms of the activity bout before heading outside. Repeat the rules and encourage the person to keep you updated on his or her thoughts if things get difficult. Do not be afraid to confront the person with previous challenges you or others have had with their behaviour, but make sure to do it in a polite way. Agree on a strategy that you can use to get out of potential complications you may run into.

During the activity, building and maintaining motivation is key. Self Determination Theory by Deci and Ryan (2000) is a model defining what basic needs that should be fulfilled in order to experience both motivation and well-being. The needs of feeling autonomous, experiencing relatedness and showing competence have proven to be essential. Facilitating a feeling of being autonomous can be done with codetermination during the activity. However, it can also be provided in the first meeting when deciding the activity together with the facilitator. This need may be of special value, especially for the ones being held and treated against their own will, and therefore lack a feeling of codetermination in general. Fulfilling the need for relatedness also begins during the first conversation when you start building a relationship. However, it is important to further work on this throughout the activities. Be patient and communicate with a calm and positive tone no matter how the other person may act. You have an opportunity to set the tone and body language, which may be reflected back from the other person by

subconsciously mirroring your behaviour. For providing a feeling of being competent, make sure the activity is tailored for the person's current abilities. Some people tend to forget that they are not in a normal state and expect to perform the same way as they have in the past. Your job is to adjust the activity to an appropriate level and secure that they have a feeling of mastery.

In addition to working on their motivation, you have an important job with making the person feel safe during the activity. Make sure that you are predictable, also during the activity. For example, avoid body contact from behind and keep the person updated on your actions verbally at all times. To meet up on time, provide the activity you previously planned together and keep the time schedule are also ways of being predictable and showing respect for the persons time and wishes.

ACTIVITIES USED WITH PSYCHIATRIC PATIENTS

Sigrid Strøm Olsen

I have worked as a special advisor for Oslo University Hospital for more than 40 years. Oslo University Hospital is Norway's largest hospital with the largest clinic for the treatment of mentally ill. My duties have been to facilitate physical activity for people with mental disorders. In recent years, I have especially taught and disseminated theoretical and practical knowledge to health professionals within the field of mental health.
I have chosen to make this a practical session in order to show you my idea of exercises that over the years I have adapted for patients with different diagnoses and disease history, different age and gender, different level of mobility and different interests, wishes, needs and experience with physical activity.

I not so concerned about the diagnoses of patients – and I have never paid much attention to medical records. In regards to facilitating physical activity I have a more patient centred approach, I base it on the individual patient, their functional level, interests and wishes. I ask the patients about their experiences with physical activity, what they have done before and what have they found that works for them for example. I also try to obtain information about what opportunities the patient has to engage in physical activity in their neighbourhood and what budget they have to facilitate these. I mainly work with patients who are hospitalized. I am keen to make contact as soon as possible after admission. An important goal for me is for the patient to regain their function and return to society in one way or another. I focus on recovery - a thinking, philosophy and attitude that promotes opportunities that mean that people can live meaningful and satisfying lives, despite mental health challenges. Self-determination and self-management are central to the recovery process. The person must find their own way. Important personal elements in the recovery process have been shown to be empowerment, belonging, hope and optimism, identity, meaning and goals. In English you often talk about "being in recovery" instead of "being recovered".

I prefer to arrange group activities, as it offers more varied exercises while challenging the participants to interact and talk to each other. They get the opportunity to get to know one and another and respect each other. Group activities are also a useful tool in motivational work. Individuals with mental illness are often described as lacking in motivation. This is not only in relation to physical activity, but towards much of what is offered in relation to treatment.

Common features of many who struggle mentally, are loneliness, seclusion, lack of initiative, isolation, lack of faith in their own skills and hope for the future. These distinctive features diminish the motivation to do anything. This lack of motivation must be taken seriously and actions to improve this problem must be taken - both by patients and health personnel.

A variety of physical activities have over the years been shown to be a valuable tool in doing something about this lack of motivation. Moreover, it is known that many who struggle mentally have poor quality of life and live shorter than the normal healthy population. With the knowledge we have about the effect of physical activity both physically, mentally and socially, I therefore think that all patients should be offered and/or have physical activity implemented in their treatment program. A "package-treatment" have now been introduced in Norway for patients in need of individually adapted treatment plans. This package course confirms and acknowledges the need for all patients to be offered adapted physical activity as part of their treatment plan. However, this places a demand on both management and health personnel in relation to knowledge, will and opportunities for facilitating physical activity at hospitals that treat mentally ill in Norway. With this as background I will now demonstrate some low intensity exercises (some will may be a little harder) that can be relevant for people with mental challenges who are to have adapted physical activity.

NAME ACTIVITY

Stand in a ring. A ball is sent around in the ring in different directions. Say your own name and the name of the person next to you .... The leader provides a variety of tasks and challenges for the participants.

OBJECTIVE: Challenge participants to learn names, embrace and solve tasks, and become safe, seen and acknowledged by other participants. Challenge coordination and concentration.

Pattern Ball

Stand in a ring. A ball is thrown randomly to a person in the ring and must be touched by everyone before it comes back to start (leader). When participants remember the pattern, several effects are included - all the time according to the same previous pattern. The activity continues for several rounds.

OBJECTIVE: Challenge and train attention, collaboration, coping and dealing with different tools (tactile challenges). Challenge coordination and concentration.

Ballrelay in a ring

Standing in a ring. Participants are divided into ones and twos (one, two, one, two). All the ones are in the same team (called team one) and all the twos are in the same team (called team two). Team one has a blue ball and team two has a read ball. The balls start at each side of the ring and are thrown the same direction in the ring. Team one throw only to people in their own team and team two do the same. The target is that the ball overtakes the ball of the other team – the ball of team one gets past the ball of team two or opposite - the ball of team two gets past the ball of team one.

OBJECTIVE: attention training, collaboration, engagement, communication, coping, coordination and concentration.

Catch variants

- **”Catch with three-groups”**

Everyone stands in a ring - three in a row make up a group. One person is a catcher and one person is “free” and can be touched by the catcher and then becomes the new catcher. To avoid being the new catcher, the “free-person” can associate with another group. When he/she associates with any three group in the ring, the person standing on the other side of the group of three, becomes the new “free person” who has to move and associate with another group in order not to become the catcher. The catcher will always try to touch the person who is "free" before she/he gets attached to another group. If the catcher manages to touch the “free-person”, the catcher will be the “free-person” and can freely associate with any group of three. This is how the activity continues.

- **”Catch w/collaboration”**

One is the catcher. The others are free and can be caught if the catcher touches them. To become free, another free person must partner up with them. This is done by holding their hands and sit down next to each other. Sitting down, they can not be caught, but they must get up quickly ready to be touched again.

OBJECTIVES: Attention training, collaboration, coping, endurance / interval training, initiative, coordination and concentration.

Exercises to music

The leader starts some music. Two and two are allowed two minutes to work together in order to invent an exercise to show and teach the other participants. - Everyone gather in a ring, one couple will start to show their exercise. When everyone follows the exercise, the couple next to them will start their exercise. Continues until everyone has demonstrated their exercise.

OBJECTIVE: Cognitive collaboration, communication, mastery, initiative / leadership, engagement.

Card-game

4 teams stand in each corner of the room. A stack of cards is placed in the middle of the room. Each team is given a "card suit" (hearts, squares, clover and spades) which they will have to collect during the game. One by one (possibly two and two) from each team runs to the centre, turns one card - if it is a right card – the person takes the card to their corner. If it is a wrong suit the card has to be returned and the person must run back to the corner without a card, and an other person in team runs up to the cards. Each team continues until all 13 cards of the same suit are collected.

OBJECTIVE: Attention training, collaboration, interval training, coping and concentration.

Balloons

w/music if possible

Everyone has been given a balloon to blow up/inflate. The leader makes various exercises / tasks that must be followed / performed individually, in pairs and groups.

Objectives: Challenge and train attention, collaboration, coping, engagement.

Puzzle-game

Participants are divided into teams. Each team will collect pieces and put a puzzle together. One and one participant runs up to the place where the puzzle-pieces are located, retrieves two pieces and run back to the place where the puzzle is put together. The others on the team gradually begin to add the puzzle. Participants continue to run until all the pieces are retrieved. The team signals when the puzzle is finished.

OBJECTIVE: Attention training, collaboration / (interaction), coping, engagement, concentration and coordination.

Games with cones

- **Cones and dice**

Cones which have been numbered from 1- 40 are placed around the room. Participants join together in pairs. Each pair gets a dice to throw. The pair will have to find the cone with the same number as the number on the dice plus the sum they accumulated. Once the pair have found the correct cone, they throw the dice again, add the number on the dice with the previous one and find the cone with this new number. Continues until 40. When reaching 40 the pair say "done" and the game stop.

When reaching 40, the number on the dice is subtracted from the number they are on, down to 1. When reaching 1 the pair say "done" and the game stop again.

- **Turn cones**

Two teams - each team is told which way/direction the cone should stand. Each teams must turn as many cones as possible in the specified way/direction. After a time the leader stop the game and count which of the teams have turn most cones the right way.

- **Pick up cones**

At last all the cones must be picked up. Which team have gathered the most cones?

SUMMARY

This monograph presents the results of the international project "Physical Activity as a Part of Treatment of Psychiatric Patients."

The goal and theoretical basis of the project are described in the first part, which includes description of the position of physical activity in the treatment of psychiatric patients in Norway and Czech Republic and discusses the problem of “long term mentally ill people” and the benefits of increasing their physical activity.

Second part of the publication presents the process of preparation and results of 5 intervention studies:

First study describes construction of a Motivational physical activity intervention based on Stages of change framework and Self-determination theory which included development of an activity manual and manual for personnel and using this material with patients in three psychiatric institutions.

Second study confirmed positive effects of psychomotor therapy on perceived physical fitness level and psychomotor tempo in performance of a visual-motor activity in hospitalized psychiatric patients.

Third study confirmed the positive influence of the Motivational movement programme on the motivation of psychiatric patients to physical activities – the overall shift of motivation in the direction of increasing internal regulation of behaviour was found.

Fourth study describes the effect of an exercise programme for hospitalized psychiatric patients with schizophrenia. An exercise/psychomotor programme applied 3 times a week over 14 weeks showed positive changes in the patients´ behaviour in all symptoms of schizophrenia.

Fifth study describes the effect of 6-day long movement programme for outpatients with schizophrenia. The effect of movement intervention on psychomotor pace, perceived physical condition and behaviour and social competence of outpatients in 6 months post intervention period was confirmed.

Last part of the monograph presents practical applications coming from the experienced movement therapists. Authors present recommendations for facilitating physical activity for patients with psychosis and introduce activities used with psychiatric patients.

REFERENCES

A

1. Adámková Ségárd, M., & Hátlová, B. (eds.)(2013). *Psychomotor Therapy in schizophrenia treatment.* Universita J. E. Purkyně v Ústí nad Labem Pedagogická fakulta.
2. Adámková Ségard, M., & Hátlová, B.(Ed.) (2011): Psychomotor therapy in mental health care. Ústí nad Labem, University of. J. E. Purkyně in Ústí nad Labem.

B

3. Bašný, Z. (2000). Jóga a schizofrenie. In *Jóga v minulosti a přítomnosti: soubor přednášek z konference 20. 11. 1999.* Praha: Sdružení přátel Indie a Český svaz jógy.
4. Beebe, L.H., Tian, L., Morris, N., Goodwin, A., Allen, S.S., & Kuldau, J. (2005). Effects of exercise on mental and physical health parameters of persons with schizophrenia. *Issues Ment Health Nurs., 26*(6), 661-76.
5. Behere, R.V., Arasappa, R., Jagannathan, A. S., Varambally, S., Venkatasubramanian, G., Thirthalli, J., Subbakrishna, D. K., Nagendra, H.R., & Gangadhar, B. N. (2011). Effect of yoga therapy on facial emotion recognition deficits, symptoms and functioning in patients with schizophrenia. *Acta Psychiatrica Scandina*vica*, 123*(2), 91–164.
6. Biddle, S. J. H., & Faulkner, G. (2003). Psychological and social benefits of physical activity. In K. Chan, W. Chodzko-Zajko, W. Frontera, & A. Parker (Eds.), *Active aging* (pp.89-164). Hong Kong: Williams & Wilkins.
7. Biddle, S. J. H., Fox, K.R., & Boutcher, S.H. (2000). *Physical Activity and Psychological Well-Being.* London: Routledge.
8. Bruun, H. og Svendsen, E. (2011). Før og etter opptrappingsplanen: sett fra mennesker med erfaring fra psykisk helsevern. Tidsskrift for psykisk helsearbeid, 8(3), 237-242.
9. Bullinger, M. (2002). „Und wie geht es Ihnen?“ Die Lebensqualität der Patienten als psychologisches Forschungsthema in der Medizin. In Brähler, E. & Strauss B. (Hrsg.), *Handlungsfelder in der Psychosozialen Medizin*, 308 – 329.

C

10. Cohen, J. (1988*). Statistical Power Analysis for the Behavioral Sciences (2nd ed.), New Jersey: Lawrence Erlbaum Associates.*

11. Cohn, V.S., Hafdahl, A.R. & Mehr, D.M. (2011). Interventions to Increase Physical Activity Among Healthy Adults: Meta-Analysis of Outcomes. *American Journal of Public Health. 101*(4), 751–758.
12. Cronbach, L.J. (1921). Coefficient Alpha and the Internal Structure of Tests. *Psychometric, 16*, 297-334.

D

13. Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227-268.
14. Džuka, J., Dalbert, C., & Schmitt, M. (2013). Belief in a just world and its protective function in relation to subjective well-being: study of specific copingreactions. *Československá psychologie*, *57*(1), 64-72.

E

15. Ellis, N., Crone, D., Davey, R., & Grogan, S. (2007). Exercise interventions as an adjunct therapy for psychosis: a critical review. *Br J Clin Psychol*, *46*, 95-111.

F

16. Farholm, A., Sørensen, M., & Halvari, H. (2016). Motivational factors associated with physical activity and quality of life in people with severe mental illness. Scandinavian Journal of Caring Sciences, 31 (4), 914-921.
17. Faulkner G. (2005). Exercise as an adjunct treatment for schizophrenia. In: G. Faulkner, A. Taylor (Ed.), *Exercise, Health, and Mental Health: Emerging Relationships*. (pp. 27–47). London, UK: Routledge.
18. Faulkner, G., & Duncan , M.J. (2012). Exercise as Therapy: A Systematic Review of Randomized Controlled Trials. In Adámková, Ségard, M., & Hátlová, B., (eds *Psychomotor therapy in the treatment of schizophrenia.*.) (pp. 21-36). UJEP Ústí nad Labem.
19. Faulkner, G., & Biddle, S. (2001). Exercise and Mental Health: It's Just Not Psychology! *Journal of Sports Science*, *19*, 433–444.
20. Faulkner, G., & Taylor, A. (2005). *Exercise, Health and Mental Health: Emerging Relationships*. London: Routledge.
21. Filip, V., Sikora, J., & Marsalek, J. (1997). Praktický manuál psychiatrických posuzovacích stupnic. *Zprávy - Psychiatricke centrum, Praha, 130*.

22. Fox, K.R. (1999). The Influence of Physical Activity on Mental Well-Being. *Public Health Nutrition, 2*(3A), 411–418.
23. Fritz, C., Morris, E., & Richler, J. (2012). Effect size estimates: Current use, calculations, and interpretation. *J Exp Psychol Gene*., *41*(1), 2–18.

G

24. Gaebel, W., & Falkai, P. (1998). *Praxisleitlinien in Psychiatrie und Psychotherapie*. Darmstadt: Steinkopff, Deutsche Gesellschaft für Psychiatrie.
25. Gellert ,P., Ziegelmann, J.P., & Schwarzer, R. (2012). Affective and health-related outcome expectancies for physical activity in older adults. *Psychology & Health*, 27(7), 816-828.
26. Gimmler, A., Lenk, Ch. & Aumueller. G. (Eds.) (2002). *Health and quality of life. Philosophical, medical, and cultural aspects*. Muenster: LIT- Verlag.
27. Gorczynski, P., & Faulkner, G. (2010). Exercise therapy for schizophrenia. *Schizophr Bull.*, *36*, 665-66.
28. Graff-Iversen, S., Anderssen, S. A., Holme, I. M., Jenum, A. K., & Raastad, T. (2008). Two short questionnaires on leisure-time physical activity compared with serum lipids, anthropometric measurements and aerobic power in a suburban population from Oslo, Norway. *European Journal of Epidemiology, 23*, 167-174.

H

29. Haakstad, G. (2016). Experiences from offering physical activity as part of the treatment for psychiatric outpatients. In Loukova, Hatlova & Adamkova Segard (Eds.), Psychomotor therapy and self-concept. Ústi nad Labem: J.E. Purkyne University.
30. Harvey, S.B., Hotopf, M., Overland, S., & Mykletun, A. (2010). Physical activity and common mental disorders. *Br J Psychiatry*, *197*(5), 357–364.
31. Hátlová, B. (1992). Movement therapy for schizophrenics. In: Pacini (Ed.). International Revue of the history and methodology in psychiatry (pp. 74-76). Paris: Psychosis Schizophrenia.
32. Hátlová, B. (1992). Thérapie des schizophrénes par la gymnastique. In: PACINI (editore). Les psychoses Schizophrenigues. Paris. Revue Internationale d historie et methodologie de la psychiatrie, 3, 74-76.
33. Hátlová, B. (2003). *Kinesiotherapy Movement Therapy in Psychiatric Treatment.* I. vyd. Praha, Karolinum.

34. Hátlová, B., & Sørensen, M. et al. (2016). *Psychomotor Therapy and Motivation for Physical Activity.* Česká republika, Universita J. E. Purkyně v Ústí nad Labem.
35. Hátlová, B., Adámková Ségard, M., & Kynštová, H. (2015). Psychomotor programs in the treatment of schizophrenic[online]. In *The European Health Psychologist EHPS2015*: *Principles of behaviour, chase in health and illness*, *Book of Conference abstract* (pp.528) [cit. 2019-10-05]. Retrieved from: http://www.ehps2015.org/files/EHPS2015_Conference_Abstracts_27082015.pdf
36. Haugland, K. K., & Sjølie, H. (2018). Pakkeforløp i psykisk helse- og rusfeltet. Journal for mental health work [online]. 15 [cit. 2019-11-05]. Retrieved from: https://www.idunn.no/tph/2018/01/pakkeforloep_i_psykisk_helse-_og_rusfeltet
37. Holley, J., Crone, D., Tyson, P., & Lovell, G. (2011). The effects of physical activity on psychological well-being for those with schizophrenia: a systematic review. *Br J Clin Psychol*., *50*, 84-105.
38. Hölter, G. (2011). Bewegungstherapie bei psychischen Erkrankungen - Grundlagen und Anwendung. In G. Hölter (Ed.), *Lehrbuch für Theorie und Praxis.* Köln: Deutscher Ärzte-Verlag.
39. Hošek, V. (2013). Wellness, Well-being and Physical Activity. In M. Krejčí, M. Šauerová (Eds.), Acta Salus Vitae (pp. 24-35). Retrieved from: http://vstvs.palestra.cz/data/Finaln%C3%AD%20verze%20%C4%8Dasopisu1.pdf
40. Hovland, A., Nordhus, I.H., Sjøbø, T., Gjestad, B.A., Birknes, B,. Martinsen, E.W., Torsheim, T., & Pallesen, S .(2013). Comparing physical exercise in groups to group cognitive behaviour therapy for the treatment of panic disorder in a randomized controlled trial. *Behav Cogn Psychother.* 41(4):408-432.

K

41. Kynštová, H., Vostrý, M. Hátlová, B. (2019). *Psychomotorická terapie jako součást sociálně aktivizačních služeb u klientů se schizofrenním onemocněním* (Psychomotor therapy as a part of social activation services for clients with schizophrenic disease). Ústí nad Labem: UJEP.

L

42. LaFontaine T.P., DiLorenzo T.M., Frensch P.A., Stucky-Ropp R.C., Bargman E.P. & McDonald, D.G. .(1992). Aerobic exercise and mood a brief review, 1985-1990. *Sports Med*, *13*(3), 160–170.
43. Louková, T., Hátlová, B. , & Adámková Ségárd, M. (Eds.) (2015). *Psychomotor Therapy and Physical Self-Concept*. UJEP Ústí nad Labem.

M

44. Markland, D. (2014). Exercise Motivation Measurement: The Behavioural Regulation in Exercise Questionnaire. [Webpage]. Retrieved from: pages.bangor.ac.uk/~pes004/exercise_motivation/breq/breq.htm
45. Martinsen, E.W. (1990). Benefits of exercise for the treatment of depression. *Sports Med*., *9*(6), 380–389.
46. Miller, W. R. & Rollnick, S. (2013) *Motivational interviewing: helping people change*. 3rd ed. New York: Guilford Press.
47. Munk-Jørgensen, P., Blanner Kristiansen C., Uwawke R., Larsen JI., Okkels N, Christiansen B., & Hjorth P. (2015). The gap between available knowledge and its use in clinical psychiatry. Acta Psychiatr Scand, 132, 441–450.
48. Mutrie, N., & Faulkner, G. (2003). Physical activity and mental health. In M. Donaghy (Ed.), *Mental health issues for physiotherapists.* Taylor Francis.

N

49. Norwegian Directory of Health (2013). Nasjonal faglig retningslinje for utredning, behandling og oppfølging av personer med psykoselidelser (National guideline for working with individuals with psychoses) (IS.1957). Oslo, The Norwegian Directory of Health.

O

50. Overall, J.E., & Gorham, D.R. (1962). Brief Psychiatric Rating Scale. *Psychological Report, 10*, 799–812.

P

51. Probst, M., Knapen, J., Poot, G., & Vacampfort, D. (2010). Psychomotor therapy and psychiatry: What s in Name? *Medicine Journal*, *2*, 105-113.

R

52. Richardson, C.R., Faulkner, G., McDevitt, J., Skirinar, G.S., Hutchinson, D.S., & Piette, J.D. (2005). Integrating Physical Activity into Mental Health Services for Persons with Serious Mental Illness. *Psychiatric Services***,** *56*(3), 324–331.
53. Rosenbaum, S., Tiedemann, A., Sherrington, C., Curtis, J., & Ward, P. B. (2014). Physical activity interventions for people with mental illness: A systematic review and metaanalysis. *Journal of Clinical Psychiatry, 75*, 964-974.
54. Rosenbaum, S., Tiedemann, A., Stanton, R., Parker, A., Waterreus, A., Curtis, J., & Ward, P.B.(2016). Implementing evidence-based physical activity interventions for

people with mental illness: an Australian perspective. *Australas Psychiatry*, *24*(1), 49-54.

55. Rosenthal R., Rosnow R.L., & Rubin D.B. (2000). *Contrasts and effect sizes in behavioral research: A correlational approach.* New York: Cambridge University Press.
56. Rosenthal, R. (1994). Parametric measures of effect size. In H. Cooper, L. V. Hedges (Ed.), *The handbook of research synthesis.* (pp. 231-244). New York: Russell Sage Foundation.
57. Rozita, A., L., Maizan, M., N., Mohd Sofian, O., F., Abdul, R., A. & Faridah, K. (2010). Influence of Physical Environment towards Leisure Time Physical Activity (LTPA) among Adolescents, *Procedia - Social and Behavioral Sciences*, *38*, 234-242.

S

58. Salmon, P. (2000). Effects of Physical Exercise on Anxiety, Depression, and Sensitivity to Stress: A Unifying Theory. *Clinical Psychology Review*, *21*(1), 33–61.
59. Scully, D., Kremer, J., Meade, M. M., Graham, R.,K. & Dudgeon. K. (1989). Physical exercise and psychological well being: a critical review. *Br J Sports Med*., *32*(2), 111–120.
60. Simons, J., Van Damme, T., Delbroek, H. & Probst, M. (2017). Impact of Mental Health Problems on Physical Self-Esteem. *European Psychomotricity Journal***,** 9(1), 3-32.
61. Sjösten, N., & Kivela, S.L. (2006). The effects of physical exercise on depressive symptoms among the aged: a systematic review. *Int. Journal Geriatr. Psychiatry*, *21*, 410-418.
62. Soundy, A., Freeman, P., Stubbs, B., Probst, M., Coffee, P., & Vancampfort, D. (2014). The transcending benefits of physical activity for individuals with schizophrenia: a systematic review and meta-ethnography. *Psychiatry Res., 220*,11-9.
63. Soundy, A., Roskell, C., Stubbs, B., Probst, M., & Vancampfort, D. (2015). Investigating the benefits of sport participation for individuals with schizophrenia: a systematic review. *Psychiatria Danubina*, *27*(1), 2-13.
64. Spurkova, A ., & Hátlová, B. (2001). Kinesiotherapeutical programs in treatment of longterm hospitalized schizophrenics. (pp. 43-45). In Papaoiannou et al. (Eds.), *10th* World Congress of Sport Psychology. International Society of Sport Psychology, Skiathos, Hellas.

T

65. Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education, 2011*(2), 53-55.
66. Taylor, A.H. (2000). Physical Activity, Anxiety, and Stress. In Biddle,S.J., Fox, K.R, & Boutcher,S.H., *Physical Activity and Psychological Well-Being* (pp. 10–45). London, UK: Routledge.
67. Taylor, A.H., Fox, K.R., Boutcher, S.H., Faulkner ,G.E., & Biddle, S.J.H. (2000). The case for exercise in the promotion of mental health and psychological well-being. In S.J.H. Biddle, K.R. Fox, S.H. Boutcher (Ed.), *Physical activity and psychological well-being* (pp.1-9). London, UK: Routledge.
68. Taylor, CB., Sallis, JF., Needle, R. (1985): The relation of physical activity and exercise to mental health. *Public Health Reports*, 100(2), 195–202.

V

69. Vancampfort, D., & Faulkner, G. (2014). Physical activity and serious mental illness: A multidisciplinary call to action. *Ment Health Phys Act, 7*, 153-4.
70. Vancampfort, D., et al. (2013). The importance of self-determined motivation towards physical activity in patients with schizophrenia. *Psychiatry Research*.
71. Vancampfort, D., Firth, J., Schuch, F. B., Rosenbaum, S., Mugisha, J., Hallgren, & Stubbs B. (2017). Sedentary behavior and physical activity levels in people with schizophrenia, bipolar disorder and major depressive disorder: a global systematic review and meta-analysis. *World Psychiatry,16*(3), 308–315.
72. Vancampfort, D., Knapen, J., De Hert, M., van Winkel, R., Deckx, S., Maurissen, K., Peuskens, J., Simons, J., & Probst, M. (2009). Cardiometabolic effects of physical activity interventions for people with schizophrenia. *Physical Therapy Reviews, 14*, 388-98.
73. Vancampfort, D., Probst, M., Helvik Skjaerven, L., Catalán Matamoros, D., Lundvik-Gyllensten, A., Gómez-Conesa, A., Ijntema, R., & De Hert, M. (2012). Systematic Review of the Benefits of Physical Therapy within a Multidisciplinary Care Approach for People with Schizophrenia. *Physical Therapy,* 92,11-23.
74. Véle, F. (1997) *Kineziologie pro klinickou praxi*. Praha: Grada.
75. Véle, F. (2012). *Vyšetření hybných funkcí z pohledu neurofyziologie*. Praha: Triton.

W

76. WHO (2013). The European health report 2012. Copenhagen: World Health Organization, Regional Office for Europe.

77. WHO. (2000). The world health report 2000: health systems: improving performance. Geneva: World Health Organizatio

Z

78. Zamani Sani SH., Fathirezaie Z., Brand S., et al. (2016). Physical activity and self-esteem: testing direct and indirect relationships associated with psychological and physical mechanisms. *Neuropsychiatr Dis Treat., 12*, 2617-2625.
79. Zschucke, E., Gaudlitz, K., & Ströhle, A. (2013). Exercise and physical activity in mental disorders: clinical and experimental evidence. J Prev Med Public Health., 46(1), 12-21.

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