

# Psychomotor Therapy

**and Motivation for Physical Activity**

**Běla Hátlová, Marit Sørensen (Eds.)**

JAN EVANGELISTA PURKYNĚ UNIVERSITY IN ÚSTÍ NAD LABEM

Faculty of Education





# PSYCHOMOTOR THERAPY AND MOTIVATION FOR PHYSICAL ACTIVITY

JAN EVANGELISTA PURKYNĚ UNIVERSITY IN ÚSTÍ NAD LABEM

Faculty of Education



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**PART I.**

**THEORETICAL BASE**



# THEORY OF MOTIVATION IN THE CONTEXT OF PHYSICAL ACTIVITY

*Tereza Louková*

Human life is composed of a continuous flow of activity. Besides the infinite variety of overt actions and expressions that impact the social and physical environment, which we can see and observe easily, it also has a more covert side in the mental activities of experiencing, perceiving, thinking, feeling, and imagining. These mental activities are also important part of the flow, although they cannot be observed directly by others and have no direct impact on the environment (Heckhausen & Heckhausen, 2010). Studium of outer and inner actions and activities, which are leading to a certain goal, is the main part of the psychology of motivation.

Motivation is a key concept of the whole psychology of human behaviour. Questions regarding motivation have been asked ever since and humans have always been interested in the causes of their own behaviour or the behaviour of the others. Many researchers and psychologists have tried to understand why people act and think the way they do. „Why“ questions and related „how“ questions usually imply causes and underlying mechanisms or processes (Gross, 2010).

Heckhausen (1980) argues, that motivation in general terms is an intrapsychic process resulting in an intrapsychic condition – a motive. The word “motive” comes from the Latin “move” (movere) and is included in Miller’s (1962) definition: “The study of motivation is the study of all those pushes and prods – biological, social and psychological – that defeat our laziness and move us, either eagerly or reluctantly, to action”. It is essential, nevertheless, to distinguish between a final motive – again a kind of intrapsychic condition generally called satisfaction – and the means to reach such a condition. The terms motivation and motive describe postulated inner processes and conditions (structural features) that explain the direction of behaviour towards reaching a given goal. Outer objects are never motives but rather serve as means to implement them. That is why motives are never derived from objects or activities towards which behaviour is directed but instead from so called “completing reactions” (Heckhausen, 1980). In this regard, the motive to eat is not food as such but rather satiation or eating experience; food serves here merely as a means of achieving a “completing reaction”.



Rubin and McNeil (1983) define motive as a special kind of cause that energize, direct and sustain a person's behaviour (including hunger, thirst, sex and curiosity). Therefore, motives are the psychological causes of behaviour whereas motivation refers to the coming into existence and maintenance of a certain activity. In this regard, each reaction of an organism is thus motivated.

In general sense, how Geen (1995) understands, motivation is a process involving initiation, direction and energisation of individual behaviour. Gross (2010) says, that motivated behaviour is goal-directed, purposeful behaviour. Heckhausen and Heckhausen (2010) states that motivation aims at maintaining and renewing an optimum state of inner satisfaction which is expressed interindividually by different potential needs (sex, aggression, performance) and their addressed subjectivization (e.g. by different circumstances under which people seek impressions, contact with other people, etc.).

How the underlying motives are conceptualised and investigated depends on the theoretical approach, it arises from (Gross, 2010).

In the 17th century Hobbes (1651/1914) proposed the theory of hedonism. He presented that all behaviour is determined by the seeking of pleasure and the avoidance of pain. It is natural. Every human being wants to be happy and does not want to suffer. These motives he regarded as the "real" motives. This idea is also central to Freud's psychoanalysis, captured in the concept of the pleasure principle.

Freud (1936) with his psychodynamic theory speaks about different conditions to human action. The term "psychodynamic" denotes the active forces within the personality that motivate behaviour. Freud's psychoanalytic theory says that much of our behaviour is determined by inner causes - unconscious thoughts, wishes, and memories. Memories that are likely to induce guilt, embarrassment, shame or anxiety are actively, but unconsciously, pushed out of consciousness as a form of ego-defence (Freud, 1936).

Motives as a seeking of pleasure and avoidance of pain we can see also in the positive and negative reinforcement, which are the basic principles from the behavioural approaches - for example Skinner's operant conditioning (Skinner, 1974). These principles we can see in common education process. All people were children and went through this process and it is natural to go for praise and try to avoid punishment.

Different point of view to motivation brings humanistic approach. Maslow (1987b) as a humanistic psychologist presents his famous hierarchy of needs and two quite different sets of motivational states of forces. First group, which ensures survival by satisfying basic physical and psychological needs (physiological, safety, love and belongingness, and esteem). Second group that promote the person's self-actualisation, which means realising one's full potential in his life especially in the intellectual and creative domains. They are engaged for their own sake, they are intrinsically satisfying (growth, being, so called B-motives). It is the main aim of human life to satisfy those needs, where at the top is self-realization. Humanistic approach is connected with models of psychological regulation of behaviour, where ego-related motivations are of constantly increasing importance. The concept of ego plays an important part in theories of motivation (and the importance is growing) and has made it possible for us to offer better alternatives to the simplifying conceptions that were based on experiments with animals in laboratories by behaviourists. Nuttin (1969) comes to the conclusion that, in terms of development, the highest form of motivation is the dynamic function of ego, that is, the tendency to maintain and confirm a sense of self which is usually interconnected with a desire for a high value of one's self. One may encounter a number of ways of expressing the same concept. Examples include "self-esteem," "self-monitoring" or "self-regulation" and these terms usually come from a humanistic conception of needs and motivation. It stresses the importance of human activities and their relative independence of external situations (Nuttin, 1969).

This approach emphasizes importance of intrinsic motivation as stronger than the extrinsic incentives. Intrinsic motivation refers to an innate natural tendency to serve one's best interests and achieve one's potential. It prompts one to strive to successfully face adequate challenges. Such a motivation originates spontaneously as a result of inner stimuli and may motivate behaviour even in the cases where there are no inner rewards involved or where there is no regulation from the outside. Intrinsic motivation is a significant motivating factor in learning, adaptation, and competence growth, all of which are characteristic of the evolution of man. This theory's underlying principle is that organisms are active, stressing that human beings act upon themselves as well as the environment in order to secure efficiency and the fulfilment of a large number of their needs (Deci & Ryan, 1985).

Butler (1954) and Harlow, Harlow and Meyer (1950) present a curiosity drive and manipulative drive. In this sense also play can be thought of in terms of the drives for curiosity, exploration and manipulation. Child's purpose of play is enjoyment. It is fun and intrinsically satisfying. Also Piaget (1951) consider play as a preformation for its own sake without an external purpose. Play in this context means an adaptive activity. It helps to consolidate recently acquired abilities to development cognitive and social skills. Also in physical activities play is very important motivation part. In Czech Republic we speak about psychomotricity, which means, physical activity focused on enjoyment, personal growth and health and basic concepts arise from the child's play. Those kinds of physical activities have strong influence on development of human's potential.

Humanistic and also cognitive approaches come from an idea of freedom and responsibility, which present rationalists. They see human beings as free to choose between different courses of action – it is our reason that determines our behaviour. If we have a choice, then we could behave differently given the same circumstances. If someone puts a loaded gun to your head and tells you to do something, for sure your behaviour is not free. You have been forced to act this way (James, 1890). In this context we can speak about the need to be free from others' controls and not be dictated to. In situations, when we feel that our freedom is being threatened, there is usually the attempt to regain or reassert it (Brehm & Brehm, 1981). Related to this need to feel free from others' control is intrinsic motivation or self-determination (Deci & Ryan, 1985). In general sense, mental disorders can be seen as the partial or complete breakdown of the control, which people normally have over their thoughts, emotions and behaviours. People can be attacked by panic, obsessed by thoughts, or become the victims of thoughts that are inserted into their mind from outside and are under external influence (Gross, 2010). When people initially expect to have control over the outcomes of their actions, the first experience of not doing so is likely to produce reactance, but further bad experiences are likely to result in learned helplessness (Seligman, 1975). Learned helplessness creates strong barrier to personal growth and development of one's potential. It is important to help those people to "stand on their feet" as much as possible and support their intrinsic motivation.

Important part of the motivation to an action is the influence of society. Social motives refer to the activation of processes in the situations in which other people are in close contact with the individual. Geen (1995) speaks about social facilitation, social presentation and social loafing. Each of these may be thought of as a manifestation of the more general influence of social anxiety. It arises when someone wants to make a good impression on the others, but have also doubts if it is possible to achieve it. In social motives we can also observe the need for affiliation, the company of other people (especially family) and the need to be accepted. Fiske (2004) identifies five core social motives: belonging, understanding, controlling, self-enhancing and trusting. Many kinds of physical activities are realized in groups and social context is basic background and inseparable part.

From this brief overview it is evident that motivation is an incredibly complex phenomenon in every individual. We are rarely motivated by one motive only but instead by a plethora of motives which are mutually connected and affect one another. It is nevertheless difficult to determine the scope of each of the motives and the same applies to their classification. There can be different manifestations of the same motive in different people and the same motives may be expressed by different behavioural patterns. In addition, similar behaviour of two people may be the result of different motives. The way an individual acts at a specific point in time is based on a number of concurrently occurring and mutually affected motives (Heckhausen & Heckhausen, 2010).

In our publication we focuse especially on theories which support the intrinsic motivation as a way to fill the human's potential and contribute to personal growth.



## SELF ASSESSMENT - PART OF THE MOTIVATION FOR PHYSICAL ACTIVITY IN PSYCHIATRY SETTING

*Běla Hátlová, Milena Adámková Ségárd*

### DEFINITION OF THE PROBLEM

Getting to know oneself is possible only in the complex of physical, psychological and intellectual being with the outside world. The first mentions of self-concept in the form of thinking about intellectual “I” are dated in the 17th century. The term appears in Western philosophical schools. This term was discussed by Descartes, Locke and Hume in their works, who considered the concept of “I” as a fundamental part of the consciousness. McClelland says that at the level of personality can be defined as the innate tendencies that are necessary for healthy development and effective functioning of individuals. These include: competence, autonomy and relatedness. We all have three motivating drivers, and one of these: Need for achievement - Need for affiliation - Need for power, will be our dominant motivating driver (McClelland, 1961). McClelland’s Human Motivation Theory is also known as Three Needs Theory, Acquired Needs Theory, Motivational Needs Theory and Learned Needs. The results of the researches show that self-esteem is generally associated with most strongly perceived competence of people in areas which they considered to be important (Lindwall & Lindgren, 2005).

Everyone who works with people, looks for a way how to motivate them and mobilise their efforts to deal with their situation and life tasks.

Understanding of human motivation requires a consideration of innate psychological needs for competence, autonomy and relatedness (Deci & Ryan, 2000).

## PHYSICAL SELF-ASSESSMENT

Physical health is, also for people with a mental illness, a prerequisite for further overall development. Control over the body and its functionality allows a conscious correction. On the basis of the physical self-assessment, people also take care of their body. People with mental illnesses have an observable psychopathology connected with their body image and specific self-assessment connected with the body. It is related to the use of motion within the range of parts or the whole body and the use of space.

Some parts of the mental illnesses usually are:

- disorganization of mental functions;
- cognitive functions distortion: perception, thinking;
- disruption or even loss of motion schemes (motion behavioural patterns);
- changing the centre of gravity causes a change in body stability;
- lack of coordination of body parts is observable in the in the coarse and mainly in the fine motoric;
- the loss of the borders of "I".

Movement of the body is part of the perceived human health and it has a direct impact on the quality of his life. Quality of life is a comprehensive concept that takes a specific meaning for the people who are weakened, for them it means maintaining the autonomy and a relative richness of life associated with the level of life satisfaction. As same as with a healthy population, the motion activity of ill people is a prerequisite for raising or keeping the level of quality of life (Hošek, 1999).

Experiencing your own body is related to:

- using of motion within the range of parts or the whole body and the use of space;
- reducing or explosion of emotional manifestations obvious in the exercise;
- the social body anxiety, when the physical activities are seen a threat of self-presentation.

The quality of life of the mentally ill is seen in improving of the overall psychosomatic status. The importance of movement is perceived especially in strengthening the physical condition. However, its effect on the psychological factors and inclusion of a person in a social context is equally important. Group dynamics associated with physical activity, sports and games plays an important role in the process of socialisation. Entering into the roles, different levels of communication, learning the rules, these are all important processes taking place spontaneous and organised physical activities (Hošek, 2013).

## THE ISSUE OF PHYSICAL EXERCISE FOR PEOPLE WITH MENTAL HEALTH PROBLEMS

The current movement therapy for psychiatric patients tries to explain the relationships between physical activity, satisfaction of needs, quality of life development and symptoms of mental illness.

### COGNITIVE PROCESSES

One of the controllable abilities is the development of attention, which contributes to the overall structure of the self and the environment of the patient. Positive psychology can help promote the well-being of people with psychological disorders. **Mindfulness** is legitimate preventive strategy before relapse (Wallburg, 2010). In psychological care for the person, we use a method of deliberate **maintaining of attention in the present moment with an attitude of non-evaluation - mindfulness**, used mainly in Mindfulness-Based Cognitive Therapy (MBCT) methods, which took over some of the elements of the Buddhist ethical-psychological system Abhidhammy, where the concept of mindfulness has been developed for over 2500 years.

Mindfulness-Based Cognitive Therapy (MBCT) MBCT was developed by Zindel Segal, Mark Williams and John Teasdale. The Mindfulness-Based



Stress Reduction program was developed by Jon Kabat-Zinn (1987). The goal of MBCT is to interrupt these automatic processes and teach the participants to focus less on reacting to incoming stimuli, and instead accept and observe them without judgment. Such approached attention helps the ill people in addressing their psychological problem (Kabat-Zinn, 2003).

It is now being developed in the context of positive psychology (Niemic, Rashid & Spinella, 2012). Intentional maintenance of attention as a therapeutic tool, which can be used without developing the mindfulness directly through meditation (Germer, 2005; Benda, 2007).

Some authors refer to this enrichment of cognitive behavioural therapy (CBT) methods with aspects derived from Buddhist psychology as the so called third wave of behavioural therapy (Hayes, 2004).

In the context of psychiatric treatment, this concept is used mainly in the treatment of depression and anxiety. Hofman, Sawyer, Witt and Oh (2010) analysed 39 studies on based therapy in respect to depression and anxiety. They found a medium reduction in anxiety and depression. More in Meta-analysis From Randomized Trials Kuyken et al. (2016).

## **EXPERIENCE - EMOTIONS - SELF-CONTROL**

The behaviour of the patient must be seen in the context of his experience. The experience is understood as a differentiated unity of a subjective experience of both outer and inner world, as a psychological process which immediately captures the personal living processes, states, ideas and feelings. The need of experience and its intensity is different for each individual, and is likely to be encoded in the genetic equipment of each individual. In Western society, people are currently led to a so-called emotional implosion, suppression of their emotional expressions. A growing number of people long for emotional release. Opportunity of influencing the need for emotional expressions is low. When an individual fails to satisfy this need in daily life, he looks for experience elsewhere (Zuckerman, 1994; Breivik, 1999; Kuban, 2003).

Character development, personal growth, and development of self-constructs are commonly valued goals in Western society, and are largely taken for granted as desirable.

For people with higher confidence, self-construction is positively associated with a better quality of life and better performance. In people with lower self-esteem, we observe the uncertainty due to the perceived lack of behavioural boundaries. These can be the cause of failure and aggression.

Regarding the changes in the perception of success and failure in time, some time after the events there is a tendency to attribute success to internal causes rather. An individual can learn to control their learned behaviour psychiatrically ill but only partially.

The long term treated psychiatric patients very often exhibit behaviour of a learned helplessness. The state of learned helplessness (Learned Helplessness) is being created for a long time by the negative experience of helplessness to positively manage life situations, despite the efforts which have been made. This creates and reinforces the experience of uncontrollability of future events and helplessness, which further affect the processes of learning, motivation and willpower. The negative personality setting to affect the future events is being developed. The negative emotional accompaniment (or a depressed mood) leads to a deficit in motivation, availability to activity and strengthens the passive behaviour. This belief is subsequently applied even in situations with objectively controllable conditions (Abramson, Seligman & Teasdale, 1978). For psychiatric patients, we can assume the global exposure of learned helplessness. The patient fails in a wide range of situations.

## **PERCEPTION OF THE BODY AND RESOCIALIZATION**

The patient can find and experience his basic value in situations when he touches his being through his body and its movement. Movement therapies lead to a deepening of perception of the body in motion. However, the physical exercise should not be uncomfortable for the patient. The patient should feel confident in his borders, in himself and in the mini space which surrounds him.

A significant proportion of the life satisfaction is created by the ability to establish and maintain relationships. The dissatisfaction of this need leads to negative impacts on mental health related not only to the psychosomatic, but also to the social area.

This is also valid for methods of **resocialization** through physical activity. We start from the assumptions that:

- Physical activity is mainly a social activity. For the development of sociability, the joint activity is an impulse for socialising, also during the individual exercise in the group.
- The activity should be shared even when it does not require interpersonal communication.
- Individually conducted exercises lead to greater concentration on the individual experience. It may be unsuitable for psychotic illnesses.

## SELF-ASSESSMENT AND SELF-REALISATION

Self-assessment and self-realisation controlled by will show how the individual assesses his own strengths, capabilities and suppositions. We can define the innate tendencies that are necessary for healthy development and effective functioning of the individual on the personality level. These include advanced competencies, autonomy and affinity (Ryan & Deci, 2000).

In other situations, the concerns about the presentation of the body are more important. Physical activities are often seen as a **self-presentation threat**, because **most of them** take place in an environment where there is a **great emphasis on the body** (Hart, Leary & Rejeski, 1989; Eklund & Crawford, 1994). Previous research suggest that **the social body anxiety can prevent an individual to undertake a physical activity** (Hart et al., 1989). Individuals with a high degree of social body anxiety refuse to take part in physical activities because **they are concerned about their own body presentation** (Hart et al., 1989). It is possible to clarify these concerns from the perspective of the theory of C. R. Rogers (Rogers & Dymond, 1954): **self-assessment is the result of internalised social norms** (conditions of worth). Two basic human needs are:

- to be positively accepted by others (positive regard);
- to develop one owns skills and potential (self-actualisation).

The individual prevents disruption of the self-assessment by using defence mechanisms. These have a tendency to maintain internal stability and self-esteem. Low self-esteem is associated with a higher risk of mental health problems.

## THE FUNCTION OF SELF-EVALUATION IN THEORIES

- Self-evaluation represents the relationship to oneself.
- Self-evaluation is an important factor of mental control of behaviour and experience.
- The importance of the relationship to oneself is in the broadest sense in its adaptation function. This is essentially a defence of I, realised by means of cognitive and behavioural strategies that enable an individual to anticipate and avoid stress (Greenwald & Pratkins, 1984).

Selected theories of self-evaluation in relation to physical activity:

- C. R. Rogers: Self-actualisation (Rogers & Dymond, 1954);
- A. Maslow: Self-realisation represents the fulfilment of one's assumptions and possibilities for growth and development (Maslow, 1970; 1987a);
- A. Bandura: Awareness of self-efficacy (Bandura, 1977);
- M. Rosenberg: Global Self-esteem and Specific Self-Esteem (Rosenberg, 1995).

Anglo-Saxon literature has brought new insights to the understanding of the self-esteem and importance of self-image, which is considered today to be the essence for creating an individual's resistance against loads.

The share of confidence and hardiness is seen mainly from the perspective of hardiness in the concept of **Sense of Coherence** that is associated with the work of Professor Antonovski (Antonovski, 1979; 1987) (note of the correlation), the consciousness of personal active share of what is happening in the internal and external world. "Sense of coherence" is a theoretical formulation that provides a central explanation for the role of stress in human functioning.

It considers the stable world view of the individual and the idea of his share of the opportunity to participate in the course of what is happening around him and inside of him to be the core of this. The overall orientation of each of us is given by the Antonovski's three dimensions: comprehensibility, manageability, meaningfulness of the world and its happenings.

*Comprehensibility*: a belief that things happen in an orderly and predictable fashion and a sense that you can understand events in your life and reasonably predict what will happen in the future.

*Manageability*: a belief that you have the skills or ability, the support, the help, or the resources necessary to take care of things, and that things are manageable and within your control.

*Meaningfulness*: a belief that things in life are interesting and a source of satisfaction, that things are really worthwhile and that there is good reason or purpose to care about what happens. Meaningfulness is the most important element. If a person believes there is no reason that persist and survive and confront challenges, if they have no sense of meaning, then they will have no motivation to comprehend and manage events.

A similar understanding of self-confidence and self-image have been brought by Gentry and Kobasa in their concept of hardiness (strength, stiffness), the tendency to fight hard and to cope with the difficulties which one encounters (Soderstrom, Dolbier, Leiferman & Steinhar, 2000).

## THE MOTIVATION TO MOVE

**Different kinds of motivation to move affect the specific self-assessment related to the body as well as self-evaluation at the global level.**

Autonomous motivation refers to the assumption of the behaviour with a sense of will (self-begin) and is accompanied by an inner core of perceived causality - this means that the behaviour is perceived as coming from I (Deci & Ryan, 2000). **A direct negative relationship between lack of motivation and global self-esteem** has been found.

Motivation without will is not enough to monitor the goal and to achieve it. Integration of motivation and willpower allows to control the actions. The task of the will is according to Kuhl and Beckmann (Kuhl & Beck-

mann, 1994) maintaining an individual's own goals. Will is connected with the processes relating to the "self" (integrated and implicit representation of personal experiences, beliefs and needs) and also to individual expectations and objectives (future folder). It has important functions (Kuhl & Fuhrmann, 1998):

- maintaining plan in memory;
- suppressing the premature actions;
- suppressing the competing impulses to act;
- dealing with mental stress.

## MOTIVATION FOR PHYSICAL ACTIVITY

The current society associates combines movement with some kind of performance. This is manifested also in psychological theories. In Atkinson (Atkinson & Feather, 1966), these are the affective consequences of performance - the joy of success. Weiner stresses the cognitive aspect of reaching the goal. Affective and cognitive performance implications have a comparable significant function for achieving or not achieving the goal (Weiner et al., 1971).

## CONCLUSION

Modern psychiatry tries to improve existing approaches in the treatment. An important factor of mental control of behaviour and experience is self-assessment. The importance lies in defence of I, in its organisation and adaptation function. **Self-assessment at the global level is closely linked to the self-assessment related to the body and its functionality.** Each rational decision-making and intentional behaviour is preceded by effect of motivation. People handicapped with psychological difficulties are less likely to be physically active due to the mental burden. Even though the approaches to motion therapy in Central Europe, France, and English speaking countries are different, the topic of the motivation for physical activity in the treatment of psychiatric patients at all levels of the disease is common.

## HOW TO MOTIVATE THE MENTALLY ILL TO PHYSICAL ACTIVITY?

- We start from the self-determination theory (SDT; Deci & Ryan, 2000), which describes the various qualities of motivation, a favourable climate for changing the behaviour and predicts the adherence to the active behaviour. It uses the concept of an autonomous motivation.
- Autonomous motivation refers to the assumption of the behaviour with a sense of will (self-begin) and is accompanied by an inner core of perceived causality - this means that the behaviour is perceived as coming from I (Deci & Ryan, 2000).

We start from the assumption that people with mental health difficulties were naturally involved in physical activity when they were healthy. In the present experience, they do not perceive movement as a way to relay, but as an additional burden. How to motivate the mentally ill to physical activity? We start from the assumption that it is important for patients to restore their relationship to physical activity. To build:

- A positive relationship and interest in a physical activity itself which is seen as a possible enrichment in life.
- The decision on the basis of direct or mediated experience to actively engage in physical activity.
- Notion of ability to successfully perform an activity and with a positive effect on experiencing.
- The ability to keep in regular physical activity, despite the possible negative experiences.

# MOTIVATION AND SELF CONCEPT IN RELATION TO PHYSICAL ACTIVITY AMONG INDIVIDUALS WITH MENTAL ILLNESS

*Marit Sørensen, Jeanette Kristiansen*

## INTRODUCTION

Psychiatric illness and psychological disorders represent a considerable health problem, and in recent years we have seen an increase in the number of young people (under 35 years) on social security due to mental health problems (Norwegian Institute of Public Health, 2010). Individuals with severe mental illness, such as schizophrenia, other psychoses or bipolar disorders, die earlier than the general population (Andersson, Connelly, Johnstone & Owens, 1991), and they are also more prone to have coexisting poor physical health and overweight due to medication and a withdrawn lifestyle. Further, it is reported that they tend to be less physically active than the general population (Brown, Inskrip & Barraclough, 2000; Daumit et al., 2005; Ussher, Stanbury, Cheeseman. & Faulkner, 2007).

Research has demonstrated that physical activity for psychiatric patients resulted in reduced physical health threats, reduced secondary symptoms, depression and anxiety (Gimino & Levin, 1984; Marzaloni, Jensen & Melville, 2009). A 6months diet and exercise program successfully reduced body weight & improved metabolic profiles of insulin and triglycerides of in-patients with schizophrenia treated with clozapine (Wu, Wang, Bai, Huang & Lee, 2007).

Systematic physical activity for this type of population has also demonstrated improved positive mental health and quality of life, emotional well-being, social contact, and reduced withdrawal and social isolation (Bjørnstadjordet, 2009; Faulkner & Biddle, 1999; Sørensen, 1983). Others have reported that physical activity helped coping with hallucinations and reduced psychotic features (Faulkner & Sparks, 1999; Chamove, 1986; Adams, 1995). Physical activity has also been found to promote normalization and enjoyment in psychiatric patients (Carless & Douglas, 2008).



The Cochrane Library review Issue 6, 2010, is an attempt to determine the mental health effects of exercise/physical activity programs for people with schizophrenia (Gorczyński & Faulkner, 2010). They found 3 controlled trials that met the criteria for inclusion (Beebe et al., 2005, Duraiswamy, Thirthalli, Nagendra & Gangdaha, 2007; Marzaloni, Jensen & Melville, 2009). Two of the studies were in a hospital setting, and one studied out-patients. The authors concluded that although the number of studies were small, they supported existing studies that indicate that “regular exercise programmes are possible in this population, and that they have healthful effects on both physical and mental health and well-being of individuals with schizophrenia”.

Ussher et al. (2007) studied perceived preferences and barriers as to exercise among 120 psychiatric patients (the majority were schizophrenic, had other psychoses or had schizoaffective disorders). Walking the most popular activity, something that is supported by other studies (Hodgson, McCulloch & Fox, 2011; Daumit et al., 2005). Approximately half of the group preferred group activities, and half preferred individual activity. They reported low confidence in ability to exercise when feeling sad or stressed, and low levels of social support. A majority thought that they would exercise more if they had access to an exercise instructor or was advised by their doctor.

*The importance of motivation.* In order to get both the physical and mental health benefits of physical activity, it is of course necessary to be physically active. Psychiatric health workers often report that the patients lack motivation for physical activity (Farholm & Sørensen, 2016 a). However, several studies report that the patients rank physical activity high among what is experienced as helpful (Faulkner & Sparkes, 1999; Martinsen & Medhus, 1989), and many patients express a wish to become more physically active (Farholm, Sørensen & Halvari, 2016). Among the patients in the study by Ussher et al. (2007), around 50% of the patients believed in health benefits of exercise, enjoyment of exercise, and desired to be more active. It seems as if there is motivation, but it may also be that the quality of the motivation is not sufficient to be transferred into action. Therefore it seems to be a need to understand the motivation of this group better (Farholm & Sørensen, 2016 b).

*The role of self concept for the motivation for physical activity.* We will examine this from two different theories related to our self- concept, namely self-schema theory (Kendzierski, 1990), and self- determination theory (Deci & Ryan, 2000).

*Self- schema theory.* Self- schemas are cognitive and affective structures that influence how we relate to information about our selves and our self-regulatory processes (Kendzierski, 1990). We have self- schemas in areas that are important for us, (also called «working self- concepts (Markus, 1977). We use self- schemas to filter information, we think more and harder about schema relevant information, and we devote more attention to those dimensions. We also try to maintain consistency in our self -schemas, so they will affect our behavior. To have a self- schema of being a physically active person, will therefore increase the attention and information processing about physical activity, and regulate the behaviour towards more active participation. In that respect self-schemas are of importance for the motivation for physical activity.

*Self determination theory (SDT).* SDT is a theory about motivation that has been utilised in a variety of contexts, both education, work life, health, and exercise (Ryan & Deci, 2000; 2002). Two basic concepts in the theory are autonomous - and controlled motivation. They are based in a continuum of ways the motivation is regulated from totally externally controlled (other are deciding for you) through various degrees of internalising of the value of the activity to having it integrated it into the sense of self (autonomous motivation). When people are autonomously motivated they experience volition and self-initiation in their actions. In contrast, when people have controlled types of motivation they feel pressured to think and behave in particular ways (Deci & Ryan, 2000). Controlled motivation may be dominated by external contingencies like reward and punishment. Finally, amotivation refers to a lack of motivation to act, either because the person don't value the activity or outcome, they don't believe in a link between an outcome and a specific behaviour, or they don't feel able to obtain the outcome in question (Deci & Ryan, 2008a).

Another important part of SDT is the concept of psychological needs, which are defined as “innate psychological nutriments that are essential for ongoing psychological growth, integrity, and well-being” (Deci & Ryan, 2000, p. 229). SDT proposes three such needs; the needs for autonomy, competence, and relatedness. When individuals are physically active in conditions that support satisfaction of these needs, it is likely to promote the more autonomous types of motivation and well-being. On the other hand, if physical activity takes place in need thwarting conditions, ill-being and more controlled types of motivation is likely to occur. It is therefore important to create need-supportive surroundings in a physical activity context in order to stimulate autonomous motivation. There is extensive evidence for how SDT helps in understanding the motivational mechanisms of physical activity and exercise (Teixeira, Carraca, Markland, Silva & Ryan, 2012).

The aim of the current chapter is to present data from two different studies of individuals with psychiatric illness who have been engaging in physical activities as part of their treatment inside or outside of a psychiatric institution. We will examine the relationship between their self-reported physical activity level and their self-concepts as to motivational regulations, psychological need satisfaction, and self-schemas related to being a physically active person.

## **METHOD STUDY 1** (Kristiansen, 2010).

The study population were 83 participants in a community activity program for individuals with mental health problems arranged by a “culture network” from 5 municipalities. Data were collected by a cross-sectional survey.

### **MEASUREMENTS:**

*Physical activity:* Self-report of average leisure physical activity during the last year by selecting among 4 answering alternatives (a measure much used in public health reports (Graff-Iversen, Anderssen, Holme, Jenum & Raastad, 2009): 1. Mostly reading, watching TV or other sedentary activity, 2. Walking, bicycling or moving in other ways at least 4 hours pr. week ( include walking, bicycling as transport), 3. Active exercising, heavy gardening or similar at least 4 hours pr week, and 4. Hard physical training regularly and several times a week. Those who selected alternative 1 were categorized as physically inactive, and those who selected category 2 was characterised as somewhat active, the two last categories were called physically active.

*Motivational regulation* in relation to exercise was measured by The Motivational regulation questionnaire made for motivation for exercise (SRQ-E; Ryan & Connell, 1989). The scale consists of 12 items describing the various types of motivation regulation. The answering alternatives are of a Likert type scale ranging from 1 (totally disagree) to 5 (totally agree). The stem of the question is: Why do you or do you want to engage in physical activity? Example item of intrinsic motivation is “ because it is fun”, for identified

motivation an example item is: “ because I believe that exercise helps me feel better”, and an example of external motivation is: “because others may be angry with me if I do not”.

*Need satisfaction through exercise* was measured by an exercise version of Basic Psychological Needs in Sport Scale (BPNS; La Guardia, Ryan, Couchman & Deci, 2000). The short version of the scale consists of 9 items describing the satisfaction of the three basic needs through engagement in physical activity. The answering alternatives are of a Likert type scale ranging from 1 (totally disagree) to 5 (totally agree). The stem of the question is “Indicate the degree of your agreement with the statements about how you feel when engaging in physical activity”. Example item of satisfaction of the need for autonomy is: “ I feel that I am free to decide for myself when I do physical activity”. An example item for competence need satisfaction is: “ I feel that I accomplish something when I engage in physical activity”, and for relatedness satisfaction an example is: “ I really like the people I do physical activity with”.

*Self schema:* This was measured by indicating on a 9 graded scale how well the following statements described the person, plus how important the statements are considered to be: 1. A person who is regularly physically active. 2. A person that keeps fit, 3. A person that is physically active ( in all 6 statements). A self schema as physically active is counted if at least 4 statements were scored 7 or higher (Kendzierski, 1994.)

## **METHOD STUDY 2** (Sørensen, 2006).

Study 2 is presented as a comparison, and is published elsewhere (Sørensen, 2006). The study was carried out 7 years earlier than study 1, but with a similar patient group taking part in a running/walking event (Gaustadløpet). Similar to study 1, the aim of study 2 was to investigate the relationship of physical activity level with self-determination constructs, and determine whether or not self-schema for exercise (physical activity) was present among psychiatric patients who had experience with physical activity as part of their treatment. In both studies we also explored their experiences with physical activity.

The sample of study 2 consisted of participants in a one-day running/walking event (The Gaustad run) for psychiatric patients (N=109) from 15 different psychiatric institutions or day-centres, that had physical activity as part of their treatment. The study was designed as a cross-sectional survey, and data were collected by questionnaires.

## MEASUREMENTS:

There were some small differences in some of the measurements between the two studies. For measuring physical activity in study 2 we used two other questions frequently used in older National Public Health Questionnaires. They ask for about self-reported time (1= 0 hours, 2=1 – 2 hours, 3=3-4 hours, and 4= more than 4 hours) spent on two types of physical activity during a representative week : 1) On «hard physical activity» (defined as where one become short of breath and perspire), such as running or strength training. 2) On «light physical activity» (defined as without getting short of breath and perspire, such as walking, light gardening etc. The scores on these two questions were then summed, and the sumscore given as follows: 1-3= not active, 4-6= somewhat active, 7-8= very active. This measurement was compared to a one item self-rating of own activity level compared with others of the same age, and the summed score for the two questions and the one item rating correlated significantly. The summed score tended to count some more individuals both into the “not active-” and “active category, and the self-rating tended to count more individuals into the “some activity” category.

*Motivation regulation.* We constructed a short scale with four single item questions representing the continuum of motivation regulations from externally regulated motivation (told by doctor), introjected (ought to for my health), Identified (I obtain benefits), and intrinsic (gives me pleasure). The answering alternatives to each statement were: totally agree, partly agree, partly disagree or totally disagree. The items were based on Behavioural Regulation in Exercise Questionnaire (Markland & Tobin, 2004), and The Exercise Self-Regulation Questionnaire, ESRQ-2. A pilot study was performed to compare the original scales with the short version, and was found satisfactory (for details see Sørensen, 2006).

*Self-schema* was measured in a more simple way than in study 1. The respondent indicated agreement or disagreement as to whether he or she looked upon themselves as 1) A physically active person, 2) Someone who is not a physically active person. The answers were categorised as follows: 1) Has a self schema as physically active (agree to statement 1, disagree in statement 2), 2) Do not have a self-schema as physically active (disagreement statement 1, agreement in statement 2), and 3) A-schematic (disagreement to both statements, not relevant).

*Data analyses.* Data were analysed in SPSS. For descriptive data we used frequencies and mean scores. Student's t-test or a one way ANOVA was used as appropriate in order to compare measures between various groups, e. g. the three categories of activity level. Relationship between variables were analysed with Person's bivariate correlation analysis.

## **RESULTS STUDY 1 & 2:**

*Sample in study 1:* The population consisted of 83 psychiatric patients taking part in a network between 5 municipalities (a majority of the population had schizophrenia or other types of psychoses). Response rate: 77.5%, resulting in a sample of 62 patients.

*Sample in study 2:* The sample consisted of 109 psychiatric patients taking part in a running/walking event. The exact size of the population is not known, and diagnoses were not registered.

The samples in the two studies are comparable on a general level: Both groups had various types of psychiatric diagnoses and were in contact with a psychiatric hospital or day care centre, and they all had some experience with physical activity as part of their treatment.

Table 1. Distribution of sex, age and physical activity level in the two samples

Variabel	Study 1 N (%)	Study 2 N (%)
<b>Sex</b>		
Females	39 (63.8)	64 (58.7)
Males	23 (36.2)	38 (34,9)
Not known		7 ( 6.4)
<b>Total</b>	<b>62 (100.0)</b>	<b>109 (100.0)</b>
<b>Age</b>		
< 30yrs	5 ( 8.6)	22 (21.6)
31-49 yrs	28 ( 44.9)	61 (59.8)
> 50 yrs	29 ( 46.6)	19 (18.6)
Not known		7 ( 6.4)
<b>Total</b>	<b>62 (100.0)</b>	<b>109 (100.0)</b>
<b>Physical activity level</b>		
Inactive	20 ( 32.3)	18 (16.5)
Somewhat active	26 ( 41.9)	60 (55.0)
Physically active	16 ( 25.8)	15 (13.8)
Not known		16 (14.7)
<b>Total</b>	<b>62 (100.0)</b>	<b>109 (100.0)</b>

Gender representation was relatively similar in the two samples, but there were relatively more young individuals in sample 2, as well as relatively more in the age group above 50 years in sample 1. As to physical activity level there were also some differences: in sample 1 there were relatively more in both the inactive and the active group, but in sample 2 there were relatively more in the somewhat active group.

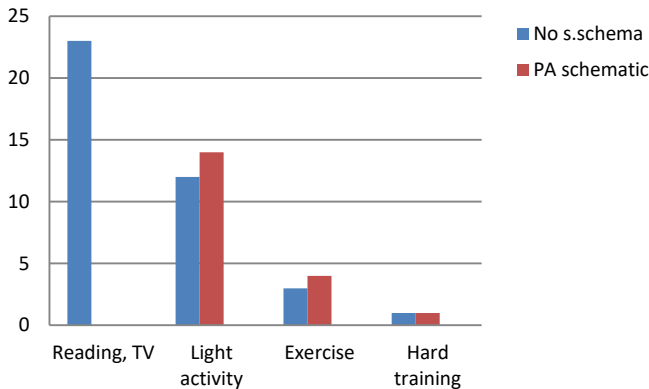
Table 2. Distribution of self- schemas in study 1 and 2 (% given relative to the number who answered the question)

	STUDY 1 (N=93)	STUDY 2 (N=93)
Physically active schema	32.3%	58%
Not active schema	not registred	30%
Aschematic	not registred	12%
Not active schema + a-schematic	68%	42%

Only around one third (n= 20) had a self-schema for physical activity in study 1. In study 2 there were 54 individuals among the 92 who answered the question who had an exercise schema, 29 had a non-exerciser schema, and 9 were a-schematic. Self-schema was positively and significantly correlated ( $r = .465^{**}$ ) with physical activity level in study 1, but was not a direct function of being physically active.

Self- schema as a physically active person and it's relation to physical activity in study 1:

Figure 1. Distribution of self-schema as a physically active person on the activity categories in study 1.



As demonstrated by the figure, there is a clear association between having an exercise schema and physical activity level, but it is not simply a function of being active; in particular the light activity & exercise categories have a noticeable portion of individuals without an exercise schema.

#### EXPERIENCES WITH PHYSICAL ACTIVITY PARTICIPATION.

The most frequently mentioned factor rated to be of importance for participation in study 1 was “Attractive activities”, mentioned by 93.5% of the participants. Then in decreasing percentages the following were mentioned: Good information beforehand (86.9%), influence by personnel (83.3%), help with transport (82.0%), somebody escorting me to the activity (70.7%), I needed a challenge (69.7%), and «positive pushing» (9.4%).



On the other hand, the participants also rated what factors were making participation difficult. The most frequently mentioned factor was related to their illness/ health problems (N= 29, 47.5%), followed by anxiety/fear for participation (42.4%), social network (31%), or nobody to do it together with (26.8%).

Lastly, the participants also rated what they considered to be the greatest challenges when participating in physical activity. These were reported to be to interact with many or new people (N=42, 26%), aspects related to anxiety (N=27, 16,7 %), and aspects related to the activity (N=14, 8,68%).

In study 2 (N=109), nearly 60% reported improvement of symptoms when physically active, 30% reported no change, and 10% negative effect (Sørensen, 2006).

## MOTIVATION REGULATION

Table 3. Scores on the different types of motivation regulation in study 1 & 2.

Motivation regulation	Study 1 N (%)	Study 1 Mean score range 1-5	SD	Study 2 N (%)	Study 2 Mean score range 1-4	SD
Intrinsic regulation	59 (95,2)	4.87	1.14	89 (81.65)	3.61	0.66
Identified regulation	59 (95,2)	5.07	1.38	91 (83.49)	3.64	0.68
Introjected regulation	59 (95,2)	2.70	1.39	93 (85.32)	3.32	0.78

The highest score was on identified motivation, and closely thereafter the intrinsic motivation in both studies (NB! The scores are not directly comparable due to different range in scoring alternatives). These two categories are often collapsed into a common factor for “autonomous motivation”, meaning that even if they do not only engage in the activity for pure joy and fun, they value the activity and want to participate for their own good, which is still a high degree of internalisation. The scores are markedly lower for the external- and the introjected types that are often collapsed into the category “controlled motivation”.

Need satisfaction through the physical activities in study 1.

Table 4. Scores on need satisfaction when engaging in physical activity

Need satisfaction	n	%	M	SD
Autonomy	59	100	5.05	.893
Competence	59	100	4.85	.696
Relatedness	59	100	5.29	.964

Need satisfaction was only measured in study 1. Satisfaction of the need for relatedness was scored the highest, and satisfaction of the need for competence was scored the lowest. However, it was the only need that was significantly correlated with the physical activity level ( $r = .29^*$ ).

Basic needs seem to have been fulfilled through the activities offered, the need for relatedness the most. The need for competence seems important to work on in order to increase well-being and participation, in particular in the light of the reports of anxiety for taking part, and that they reported their illness/ health problems and to relate to many new people to be the greatest challenge for participations. It demonstrates that this type of population may need extra support both as to gain experience and learn skills.

These reports reflect the social consequences of mental illness, and the needs for social support among individuals with mental health problems in order to feel secure in a setting they may not initially feel they are very experienced and competent in.

## DISCUSSION

There were some differences in the distributions on the activity levels, in particular as to the proportion of both inactive and active or in the two samples. Sample 2 had fewer of both these groups, but more in the “somewhat active group”. However, the proportion who engage in some form of physical activity are quite similar (67,7 %in sample 1, and 68,8% in sample 2). This

we found interesting, because it is in spite of differences in measurements, time and situation. The latter because the participants in study 1 took part in activity on a more regular basis, whereas the participants in study 2 only took part in a one-day event, and it is not known what their activity possibilities were on an everyday basis.

In study 2 nearly twice as many had a self- schema as physically active as in study 1. In study 2 such a self-schema was associated with experiencing symptom reduction with physical activity (tall?). Even if both these groups had experience with physical activity, quite a large proportion did NOT have a self- schema as physically active, again demonstrating that self-schema as a physically active person is NOT simply a function of experience with physical activity. Developing a self- schema as physically active may therefore be an important strategy for helping increase activity level.

When it comes to self-schemas the differences between the two samples become more distinct, which may be a consequence of the differences in ways of measuring it, or be explained by the different situations we collected data in. In study 1 the participants answered the questionnaire in their every-day life situation, whereas in study 2 data were collected in relation to participation in an activity event. As for the measurement of self-schema, there is a question whether the most sophisticated way of doing the measure in fact was getting a little too complicated by adding an estimation of the value of physical activity. There is also a question whether indication of agreement on a nine graded scale is meaningful, and if it makes it more difficult to indicate full agreement. However, as suggested by self-schema theory self-schema was positively and significantly correlated with physical activity level in both studies ( $r = .465$  in study 1, and  $r = .345$  of study 2.)

The practical consequences of these findings is that in order to increase physical activity, helping individuals to develop and exercise or physical activity self- schema may be one possible approach. The question is how can this be done? According to theory (Markus, 1977; Kendzierski,1994), it may be helpful to create a positive environment around the activity without stressing extrinsic rewards such as weight reduction or health, and create attention around physical activity by providing information about activities, suitable equipment etc. It is important to create a sense of belonging or relatedness to the activity group in several ways, such as use of same type of clothes, props etc. related to physical activity. The idea is to gradually demonstrate that the person is counted as a physically active participant.

The two samples were also similar when reporting on the quality of their motivational regulation. This means that as a group they are motivated to be physically active, they know physical activity is something they will benefit from (identified motivation), but they are not quite where it simply feels good and fun and demands no effort to engage in (intrinsic motivation). Even so, it is important to note that both samples were clearly motivated to be physically active, they reported low scores on controlled motivation, and high scores on autonomous motivation.

If the physical activity is organised so that the needs for autonomy, competence and relatedness are satisfied, the activity will, according to the theory and other research (Teixeira et al., 2012) result in increased well-being and more autonomously regulated motivation. The activities should therefore be adapted to the needs of these populations. The combination with the lower scores on satisfaction of the need for competence of study 1, makes it likely that this type of population need extra support both in gaining experience/learning skills and feel more competent in relation to the activity! It is an important lesson to learn that in both these studies, when activity was offered as part of treatment inside or outside of a psychiatric institution, engagement in physical activity seemed to approach that of the general population.



# MOTIVATIONAL INTERVIEWING AND ITS POSSIBILITIES OF USE FOR WORK OF MOVEMENT INSTRUCTORS

*Martin Dlabal*

## THEORETICAL BACKGROUND

Motivational interviewing (MI) was initially created for the needs of alcohol addiction treatment. The makers of MI, Miller and Rollnick (2013), noticed that in the traditional asymmetric concept of treatment often occurs a discrepancy between the worker and the client. They say that this discrepancy results from different evaluation of issues and different point of view on their solution. The helping worker usually highlights the client's issues in a critical way and presents him with an already formulated solution. However, the client usually flouts the severity of these issues and points out different aspects of the issues that need to be addressed.

According to MI, this discrepancy directly endangers the cooperation quality and resulting effect of the therapy. The client usually has a feeling of discomfort because of this discrepancy, which can either be addressed to the helper "Does he understand me at all?" or to client himself "Am I bad?". In both cases, this can cause rather defensive position than willingness to cooperate. The client begins to create arguments in his defence. These arguments then reduce his efforts to initiate and sustain change.

According to MI, the helper should, instead of using a confrontational and directive conversational style, rather accompany the client during exploring his ambivalence to change in a kind and respectful way. In particular, the client's guidance itself is based on MI principles which include expressing empathy, developing discrepancy between client's goals and current problem behaviour, avoiding argumentation, rolling with resistance, rather than confronting or opposing it, supporting self-efficacy and optimism for change. However, the way of leading the conversation and use of interviewing skills can vary according to the phase in which the client is, in relation to the change.

In this paper, we will first explain the spirit of MI, which should always be followed during the interview, we will also discuss basic principles and core interviewing skills of MI. In the end, we will explain phases of interview and their relation to the process of change.

## **THE SPIRIT OF MOTIVATIONAL INTERVIEWING**

MI should always be conducted in a respectful atmosphere, supporting the client's benefit. If the client feels that the helping worker is interested in helping him and his subject, and that he respects him, it makes it easier to establish and maintain a quality working relationship. Also, without such a frame of reference, MI could become only a strategic manipulation, which the helper uses to direct the client towards a "suitable" change. Spirit of MI stands on four interconnected elements, which is partnership, compassion, acceptance and evocation.

### **PARTNERSHIP**

Partnership approach represents the cooperation of two experts. The helping worker is an expert in the management of interview on the basis of his expertise and the client is an expert on living his life. The helping worker would not be able to make any change in client's life without client's help, because the client decides entirely on his own which facts he will turn into practice and which facts he shall continue to maintain. Therefore, the helper can "only" offer an interview about possibilities of meaningful cooperation, rather than encourage client to change his behaviour in any way.

## ACCEPTANCE

The helper accepts the client as a unique and autonomous being. Everything that the client brings to the interview is accepted as an inspiring material. The helper respects that the client is the one who decides if he takes any direction and which direction shall it be. The client is also responsible for this decision and its subsequent implementation. This decision of course arises on the basis of an interview on the subject. Therefore, the helper should present his thoughts in a neutral way, as an offer for discussion. Before that, however, he should verify that the client is interested in his thoughts regarding the discussed area.

## COMPASSION

According to MI, compassion means that the client's interest is always a priority. The helper should actively promote the client's benefit without regarding his own benefit. He expresses his understanding and respect to the client, no matter if the client decides to change or not. From this perspective, compassion differs the helper from a trained retailer of any product.

## EVOCATION

However, the helper does not provide only that what client needs, which is his expertise with respect to the client's needs. The client already has many of his own motives, abilities and skills, which he can use to make a change. Therefore, the helper should gradually understand the client's motives and strengths. He can subsequently identify and develop these internal resources. It is usually easier and more acceptable for the client to use his own discovered strengths than to learn something completely new.



## **THE BASIC PRINCIPLES OF MI**

MI is based on a set of principles which help to lead a conversation with a focus on exploring and resolving ambivalence to change. Basic principles of MI include: 1) expressing empathy; (2) developing discrepancy between client goals and current problem behaviour; (3) avoiding argumentation; (4) rolling with resistance, rather than confronting or opposing it; (5) supporting self-efficacy and optimism for change.

### **EXPRESSING EMPATHY**

Empathy represents an effort to understand the other person from his own point of view. Seeing the world through the eyes of the other person makes it easier for the helper to make a better understanding of the client's current needs, motives and values. Empathy can be expressed by reflecting of the client's communication, and especially in his own language. Thus, the client may perceive that the helper carefully listens to him and that he understands him. Consequently, the client is more willing to continue in discussing his topics.

### **DEVELOPING DISCREPANCY**

Motivation to change arises when the client clearly recognises the discrepancy between his objectives and current state. Therefore, the helper should clearly describe this discrepancy between what the client is doing at the moment and what he wants to achieve. Naming the discrepancy should be always notified in a neutral tone without irony, lecture or guilt.

## **AVOIDING ARGUMENTATION**

As it has been already mentioned, the potential conflict between the helper and the client endangers mutual working relationship and the resulting effect of treatment, so the helper should avoid any form of conflict with the client. Therefore, he should avoid so called righting reflex, i.e. he should not judge, moralise, dictate or persuade the client and he should not provide a solution without the client's consent. He explores the troubled topics exclusively in an accepting and constructive way.

## **ROLLING WITH RESISTANCE**

Ambivalence to change is, according to MI, a normal part of thinking about the potential pros and cons. Therefore, if the client presents arguments against the change, the helper does not impeach these arguments, but includes them in the discussions, so the client does not have to defend them by repeating and highlighting them. The helper can even stand on the client's side and his arguments, so the client gets into a role of the one who seeks alternative viewpoints or solution options instead of opposing.

## **SUPPORTING SELF-EFFICACY AND OPTIMISM**

Awareness of the discrepancy between the required objectives and current negotiations does not mean, however, the beginning of a change itself. The real beginning of a change is related to the client's confidence that the change can take place. Therefore the helper supports the client in his confidence in his abilities and personality traits, which will make it easier for him to start and maintain change.

## CORE INTERVIEWING SKILLS

The helper leads the interview while basing it on communication skills, which makes it easy to lead a conversation and have a significant influence on the course of interaction with the client. Core interviewing skills include reflective listening, asking open questions, affirming and summarizing.

### REFLECTIVE LISTENING

Reflective listening is an effective communication skill, which makes it easier to understand the client's communication. Basically it is about capturing and subsequent reflection of what the client said. The helper usually briefly reformulates the client's statement.

The expressed reflection tests whether the helper adequately understands the importance of the client's statement, because the client can edit the helper's reflection or steadily continue in his statement. Reflection also helps to avoid many dangers, which can disrupt the smooth opening of the client. These dangers include the already mentioned righting reflex, which can cause the client to have a sense of incomprehension and uncertainty. This is also the reason for preferring the statement to question when formulating the reflection. Well formulated statement, compared to question, is less likely to raise defensive arguments and it encourages more constructive exploration of the topic.

It is beneficial for the client, according to MI, when he can hear and further develop his own words repeated by the other person, especially if he talked about the need of change, so called "change talk". However, reflective listening can be also a very active process in which the helper can decide what he will and will not highlight from the offered content in the reflection.

For example, if a motion instructor hears from the client "I can't breathe at all when I am running", he can soften this statement in following way: "So you are saying that it is a little bit complicated for you to breathe during more challenging activity." This reflection allows the client to continue with a sense that the instructor listens to him carefully and that he is on his side. At the same time, reflection does not prevent a conversation about doing less challenging physical activities.

## ASKING OPEN QUESTIONS

Another important communication skill is asking open questions. Open questions open to the client a window into an unknown landscape, or at least do not close this window to restrictive and already predefined clear borders.

Questions need to be formulated more positively: “What do you need in order to manage it?”. Negatively formulated question: “What’s bothering you?” could lead to finding the negative aspects and support client’s resignation and lack of motivation. Positive and recognitive questions about how is the client doing, what else does he need to manage the situation, have rather a supportive and mobilising effect. Therefore, the motion instructor may ask “What should we do today, so it is helpful for you?” or “What motion activity would you like to try today?”.

In the case when the client offers negative arguments against change at the beginning, it is better to use questions that map the client’s ability to handle the current status, for example: “What helps you, that you are able to endure this?”. Therefore, the helper becomes the one who helps the client to construct the new reality by asking him questions, or identify his sources or abilities.

## AFFIRMING

Encouraging and appreciating the client includes support, encouragement or detecting and highlighting the positives in the statement of the other person. A positive appreciation of the client helps to create and maintain therapeutic working relationship. People prefer to spend time with those who are able to notice their positives and confirm them in an interview. Additionally, the client accepts these positives as his own (to a certain extent), thus increasing his self-confidence and faith in a positive outcome.

However, the helper should rather highlight the positives related to some specific and already performed activity. If the helper bases his actions on intentions on already performed activities, the client perceives him as somebody who listens to him carefully and can find a sense in his doings. In addition, the given activity was really performed, so the client can under-

stand the statement as an objective record of his effort, skills or abilities. But if the helper convinces the client about his future success based on his belief that the client can handle it for sure, he can get in a trap of counter arguments, which can be certainly offered by the client. In addition, at that moment, the helper becomes a part of those people who had already supported the client in the past, without any significant success.

The helper can even prepare the client's appreciation, because he can ask him about his past effort or any of his achievement. Then, the client can communicate everything what he had already tried to do or what he had already done. This effort can then be adequately appreciated.

## SUMMARIZING

Summary is basically a set of reflections, which bring together all the essential information shared by the client. The helper also has the ability to emphasize or link in the summary everything, what could be (in his opinion) helpful for the client and encourage or support him in his getting through the ambivalence to change. There is no doubt that it seems much more motivating to mention everything positive that the client said about the change. However, it is reasonable to mention some of the reasons of the client's reluctance or indecision, so the client does not have to repeat the reasons against change again. According to MI, it is useful for the client if he can hear his story in a meaningful and constructive image. Summarizing also maintains the client focused on a particular topic, to which he can connect and elaborate more on some parts or move in an interview in a certain direction.

For example, the client says that he has not made much progress since the last meeting, despite his effort. He also says that he went out only once last week, because it was a bad weather outside and also because he has much more responsibilities at work and he had to take his father to the doctor several times as well. The motion instructor can firstly connect to a serious topic of client's father's health and then summarise other information while emphasizing the physical activity "You say you had to arrange a visit at the doctor's office for your father several times. But you also say that despite the increased workload and bad weather, you had the effort and even managed to go out for a walk. Very well." The client has the opportunity to record in that summary, that the instructor listens to him carefully

and that he can name his success as well. That means that the summary does not put any prominent obstacle to continue in conversation about the dedication to further conversation about cooperation relating to physical activity.

## PHASES OF CHANGE

General experience and also research survey confirm (Conn, Hafdahl & Mehr, 2011) that it is not enough to tell the others to make a change in their actions. Induction and maintenance of physical activity-related change is not, as same as most of changes, a quick and easy matter, but rather a difficult and gradual process. In the case of physical activity you need to take into account the potential fatigue after coming home from work or school, the relative lack of free time, the unavailability of the sports area, the reluctance to pursue physical activity alone or a concern that the individual will not look well during the exercise for any internal reason. Many people, despite the obvious need to increase the amount of their physical activity, for example due to health problems, do not start any physical activity at all or cease to exercise after a certain time.

Miller and Rollnick (2013) understand change as a process of overcoming a hill, which includes the preparation and cautious climb through a slippery terrain of ambivalence and then going down towards the desired objective. In the first stage happens the building of motivation to change and in the second phase happens the strengthening of this motivation. The authors combine the process of change with changes in the client's language. In the first phase, the client uses a language which includes considering or his wish to make a change, so called preparatory talk. It is also usual that the client talks in a way which balances the ambivalence and argues in favour of the current status quo, so called sustain talk. In the second phase the client argues in favour of the change and he begins to use self-motivating statements relating to the decision to change.

However, practical use of this model has its obvious limits. It seems that the process of change has rather circular than a linear character. Therefore, Miller and Rollnick, propose interconnect their progressive model with cyclical phases of the trans-theoretical model of change (Prochaska & DiClemente, 1982). Prochaska and DiClemente (1982) distinguish six phases in this model, which form a closed cycle. The trans-theoretical model of change includes these phases: pre-contemplation, contemplation, determination, action, maintenance, relapse.

Miller and Rollnick (2013) eventually replaced the original biphasic model with four stages of the interview, which is engaging, focusing, evoking, and planning. These stages are successive and at the same time, they gradually overlap each other. The authors say that the arrangement of these phases can be illustrated on the sketch of steps, where the lower blocks form a base for the following blocks. If there was not induced a quality working alliance, it is not quite possible to effectively aim the cooperation on a specific target. Similarly, it would not be too effective to cause a specific intrinsic motivation when there is no obvious target of cooperation. So it is possible to go up the stairs to the realisation of change, but it is also possible to go back and work again on renewing and deepening the relationship, refocusing, revoking, and replanning.

## ENGAGING

Engaging is the process of shaping meaningful work alliance on both sides “Shall we do this together?”. The basis for induction of the quality working relationship is based on MI spirit and responsible use of communication skills. Clients generally prefer to build the relationship with a person who is trusted, is interested in them and respects them. After establishing a positive working relationship, the clients are usually more active, more energetic, and achieve better results toward the desired change (Fuentes et al., 2007; Horvath & Greenberg, 1994).

At this stage, the helper builds with the client an experience of a safe self-expression. Therefore, he avoids the negative evaluation of the client or his activities and also anything that could lead to conflict, for example he does not blame the client, does not mandate anything nor changes the client’s topic, so the helper should use mainly reflective listening and in significantly smaller extent open-ended questions. The probability of creat-

ing the work relationship is increased on the client's side by his own wish to make a change, the importance of change and his hope that the change will take place.

## **FOCUSING**

Engaging provides a good basis for the second phase of MI: focusing. The focusing is the process leading to the designation of a specific objective to which a cooperation will aim "Where does the client want to go with us?". It is necessary to accept the client's ambivalence during the search of the desired direction. The client can be deciding between multiple choices or he thinks about some pros and cons on the path to a particular aim. The helper is supposed to support the client in a given phase of the interview in his autonomous expression and clarification of his wishes and priorities, which he wants to work on. Only then, based on the expressed wishes and needs, it is possible to more tightly focus and negotiate the orientation of cooperation. The helper can offer some of his thoughts about a discussed topic (when he is allowed to do so by the client), but he always respects client's assessment and choice.

## **EVOKING**

In the case when the direction of mutual cooperation is known, you can go to the next stage: evoking. Evoking is a process of encouraging and amplifying client's motivation to change. The helper primarily tries to identify and further develop the client's internal motives for change. When the client indicates that he is sent by the doctor, at first the motion instructor shortly determines what reasons did the doctor have for recommending the client to start some physical activity. However, the instructor after turns his interest on client's own motivation and asks him whether he had ever thought about the potential benefits of physical activity and why. While asking, he tries to identify the "change talk" in the client's speech and develop it further in the interview.



The helper does not only try to map the client's motives, but also any of his achievements or personal characteristics, which may help him in the implementation of the change. Then he connects all useful pros with the ability to achieve the desired objective. The intention is to support the client's self-confidence.

For mapping the achieved progress recorded by the client himself can be used the measuring range. For example, if the client wants to take a ten kilometre race, it is possible to ask him how far can he run right now and what helped him to achieve this distance without any help.

## PLANNING

A successful incitement and development of the client's inner motivation creates a base for planning specific steps or actions leading to change. Planning is the process in which the client moves from thinking and speaking about if and why he should make the change, to thinking and speaking about when and how the change is to be made.

The helper usually already has an idea about steps which need to be made. However, he should communicate this idea (as well as all information) only with the client's courtesy and only as a suggestion for the discussion. It means that the client is than more willing to discuss the proposal and perhaps even accept it as his own.

The plan itself should describe what the client will do to achieve the desired state. It should be written as clearly as possible: "I want to go, within the next month, at least three times a week for a 20-minute walk." Of course, the plan should be realistic, measurable and significant for the client. The planning usually goes in individual steps, which are time-bound. In the event of client's difficulties with fulfilling the plan, it is possible to rebuild the plan, based on the feedback.

## THE ACTION ITSELF

During the action itself, the client makes specific steps on his own, but some clients need support even during this phase, because formulation of the plan is only the beginning of implementation of the change. In addition, the motivation to change typically oscillates over time and some challenging situations can appear in the client's life, which can significantly restrict the implementation of the change itself.

The motion instructor usually meets with the client for some time and practically participates also on the performance of physical activity. So, the helper can continue in using MI for maintaining a working relationship, aiming and maintaining motivation for planned or performed physical activity and for possible evocation and development of the client's intrinsic motivation. If necessary, it is possible to replan steps or even the objective of mutual cooperation, based on the client's feedback.



## **PART II.**

# **DIFFERENT SETTINGS IN MOTIVATION FOR PHYSICAL ACTIVITY**



# THE PHYSICAL ACTIVITY AMONG PATIENTS WITH SCHIZOPHRENIA

*Otakar Fleischmann*

## SCHIZOPHRENIA

The English word of schizophrenia comes from two Greek words that mean “split mind”. Schizophrenia is one of the chronic mental disorders with the prevalence of about 1- 2% of the population around the world. Schizophrenia consists of a set or a constellation of symptoms. This includes effects on personal thinking, feeling and behaviour and it is frequently linked to a long-term disability and burden of individuals, families and societies. The common, disabling and persisted symptoms of schizophrenia include affective flattening, alogia and avolition. The most patients with schizophrenia, especially if untreated, gradually withdraw from interaction with other people and lose their ability to take care of personal needs and grooming. They may seem like they have lost the contact with reality (Sailer et al., 2015; 30).

Among adults the progression of schizophrenia can be divided into three phases. In the first phase: the acute phase, during which the patients have an overt loss of contact with reality- and experience psychotic episodes. The intervention and treatment are therefore needed. The initial psychotic symptoms can be brought under control in the second or stabilization phase but the patients are still at the risk for the relapse if the treatment is interrupted. In the third phase, the maintenance one, the patients are relatively stable and they can be kept indefinitely on psychotic medication. However, even in the maintenance phase, the relapse is not unusual and not always the patients return to full function (schizophrenia. (n.d.) ).

Recently, some psychotherapists have begun to use a classification of schizophrenia based on two types. Patients with Type I, also known as positive schizophrenia, have an acute onset of symptoms, they tend to respond well to pharmacotherapy and they also tend to suffer more from the “positive symptoms”. Patients with Type II, also called as negative schizophrenia, are usually poorly adjusted in their lives before schizophrenia slowly over-

takes them. The “negative symptoms”, such as psychomotor retardation (inhibition of mental and physical reactions) and withdrawal from social contact are the predominant symptoms manifested by such patients (schizophrenia. (n.d.) ).

## SYMPTOMS OF SCHIZOPHRENIA

As mentioned before, schizophrenia consists of a set of symptoms. We can assign the basic symptoms as well as positive and negative symptoms of schizophrenia.

The basic symptoms have been describes as: thought distortions, distortion of perception, emotional disorder or affectivity, autism and ambivalence.

Positive symptoms are described as excessive or distorted expression of normal functions. The positive symptoms include Schneider’s first-rank symptoms (delusions, somatic, hallucinations, hearing voices commenting on the patient’s behaviour, thought insertion or thought withdrawal (Schneider, 1959, in.: 1) and disorganized thought processes reflected mainly in speech and disorganized or catatonic behaviour. Disorganized thought process involves such characteristics as looseness of associations (patients ramble from one topic to another without any connection between them), tangentially (patients give unrelated answers to questions) and so called “word salad” (patients’ speech is incoherent and makes no grammatical or linguistic sense). Disorganized behaviour represents difficulties with any type of purposeful or goal orientated behaviour which may include many forms of disorganized behaviour as personal self-care, preparing meals, dressing in odd or inappropriate ways, sexual self-stimulation in public, agitated shouting or cursing (Smolík, 1996; 1). Concerning the theme of physical activity among schizophrenic patients, it is not surprising that the condition could be negatively influenced by positive symptoms.

We may also add the “Zenon syndrome” to the positive symptoms of psychotic patients. As Syřiřtřová (1989) states, this is a hypertrophy in the tendency to exceed all borders and the inability to move on in the same time. Schizophrenic patients are not able to put on the limit in the process of thinking, decision making and action. They are not able to choose a certain alternative or to make a conclusion. Thus such patients are limited in physical activities, in choosing any specific movement.

Negative symptoms are defined as weakening or loss of normal functions. They represent the lack or absence of behaviour. They include for instance reduction of emotional expression (affective flattening), *alogia*, which means reduction in fluency and productivity of thinking and speech, and *abulia*, which is an absence of volition or will (Smolík, 1996; schizophrenia. (n.d.) ).

Comparing all of the positive as well the negative symptoms, many motor problems are connected with schizophrenia. Causes of such problems may be found by pathophysiology of schizophrenia and movement physiology.

## **PATOPSYCHOLOGY OF SCHIZOPHRENIA**

Dysfunctional dopaminergic and glutamatergic signalling are considered to the most closely account for the pathophysiology relating to symptomatic features (Archer & Kostrzewa, 2015). It includes structural and functional abnormalities as reduced brain mass, increased volume of lateral ventricles, metabolic alterations in hippocampus and amygdala, frontal lobe and prefrontal cortex and in grey and white matter as well (Archer & Kostrzewa, 2015).

Another causation of schizophrenia may be signalling chemicals and their modulators, including epigenesis, immune system alteration, neurophysiological changes, dysconnectivity, neurotrophic factors, metabolomics and proteomic factors and sensory gating (Archer & Kostrzewa, 2015). Another approach in the pathophysiology of schizophrenia spectrum disorders could be provided by necroptosis, a form of pre-programmed necrotic cell death, which modulates normal or disturbed neurodevelopment, neuroimmunological functioning and neuroinflammation (in.: Archer & Kostrzewa, 2015).

We want to add that besides all the above mentioned biological factors, psychological part of an individual (i. g. personal's characteristics) and a social environment (i. g. difficult life situations, relationships in the family, drugs) can be counted for as risk factors which could be triggering for schizophrenia.



## MOVEMENT PHYSIOLOGY

As Pometlová (2013) says the basis of the motion is the synergy of the cortical areas, respectively, each of the motor parts of the cerebral cortex, with the sub-cortical structures and sensory inputs and the spinal generators of movement. The result is the activation of individual motor units, which perform the planned movement.

The following hierarchy of control has been identified for locomotion:

- \* The control centre for locomotion is located in the hypothalamus (Locomotor pattern controller)
- \* The initiator of locomotion (Locomotor pattern initiator) is in the mesencephalic area. This allows the locomotion only on certain, for instance on acoustic or painful stimuli.
- \* The generator of movement (Locomotor pattern generator), which responds to direct somatosensory inputs from the feet and it is located in the spinal cord.

Movements depend on sensory representation from the external and internal environment. Information from the visual and vestibular receptors, skin exteroceptors, muscle and arthral proprioceptors are important for the movement. There are also varieties of mechanoreceptors in the muscles fascias, which are activated by the movement and affect the vegetative system. Thus the movement is projected beside the metabolic effects into the function of the whole body.

## MOVEMENT ABNORMALITIES CAUSED BY SCHIZOPHRENIA

Motion abnormalities are increasingly recognized as a part of the schizophrenic disease. Extrapyrarnidal syndromes (EPS) are no longer evaluated as the “after medical” negative effects of antipsychotic treatment, but become one of the typical manifestations of the basic disorder. Vancampford also adds that neuromuscular changes are not related to the side-effects or the chronic course of antipsychotic medication use. The range of motor disability is indicative of a total disruption of the connectivity of brain circuits (Maršálek, 2013; Vancampford et al., 2013e). Movement disorders are usually sorted out between so-called neurological “soft signs” (Kašpárek, Řehulová, Křekovský & Mareček, 2013).

Abnormal movements are divided into:

- extrapyramidal;
- catatonic;
- soft and hard neurological signs.

In addition to the soft and hard neurological signs another classification distinguishes also involuntary and volitional manifestations. The involuntary manifestation, for the most part, coincides with the EPS and catatonic manifestations.

In connection with the involuntary abnormal movements we should mention the “Tardive dyskinesia”. It appears the more often by long term treatment by neuroleptics as a side effect, the more rarely the course of psychotic illness is triggered spontaneously. It expresses itself clinically with abnormal choreatic, athetoid and ballistic movements of hands, legs, torso, grimacing in the face, chewing, pouting etc. (Látalová, Pidrman & Bouček, 2002).

Abnormalities of volitional manifestations, which are under the control of a larger number of neuronal networks and the activity of which is not fully accessible to conscious attention, express themselves as a disruption of fluency and coordination of motor skills, disruption of the sequential movements, or interruption and repetition of movements. Voluntary motor abnormalities and soft neurological symptoms reflect basic attendance toward illness development. EPS, catatonic elements and more complicated neurological symptoms represent „state markers“, and they rise from actual statement of the illness and medication (Koukolík, 2012; Maršálek, 2013).

The disturbance of sequence of the movements is an important problem for the patients with schizophrenia too. It is the most commonly occurring disorder of movement and it represents a disruption of the ability to perform continuously several movements in a row. Even the neurobiological aspects of this are not still fully clear. Aspects such as: whether it is not related to antipsychotic medication or extrapyramidal symptoms. Patients have significantly disturbed morphology of the grey matter which influences the brain’s motor system. The functional connectivity and the integrity of the cortico-cerebral tract with impaired functional integration of the activity of cortical and cerebral areas are disrupted. This however was not observed among patients with normal motor functions (Kašpárek et al., 2013).

## NEGATIVE CONSEQUENCES OF SCHIZOPHRENIA AND PROBLEM OF PHYSICAL ACTIVITIES BY SCHIZOPHRENIC INDIVIDUALS

Schizophrenia is associated with a three-fold increased risk of premature death and shortens life expectancy. The most important environmental risk factors are obesity, diet and physical inactivity (Holt, 2015; Manu et al., 2015)). And as Vancampfort et al. (2013d) concluded, the additive burden of diabetes might place patients with schizophrenia at greater risk for functional limitations of daily life.

Many of the cognitive deficits observed in schizophrenia have the potential to reduce the ability to perform the self-management and self-maintenance activities which are essential requirements for leading a healthy life. These deficits are connected to memory, problem solving, concentration, executive functions and speed processing (Strassnig, Caceda, Newcomer & Harvey, 2012) and, as the consequence of these problems, the volition to any physical activities.

Vancampfort et al. (2011a) say that people with schizophrenia are known to be less physically active compared to people in the general population. They spend less time during the week performing strenuous activities than the general population and during leisure time they are not involved in sport activities in such proportion as the general population (about 30% schizophrenics to 62% of general population). It is mainly because these findings, it is possible to state that people with schizophrenia are at a higher risk of medical illness, especially obesity hyperlipidemia, diabetes, coronary heart disease and stroke, malignant neoplasms, respiratory and gastrointestinal disorders than the general population (Roick et al., 2007, Vancampfort et al., 2011b).

Patients with schizophrenia have reduced aerobic capacity. They also report subjective muscle weakness, which play an important role in the physical adaptation to daily life activities (Vancampfort et al., 2013c). Individuals with schizophrenia are known to have nearly twice the risk of dying from cardiovascular diseases compared to the general population (Vancampfort et al., 2011a). It was also found (concerning other connections to physical activity) that people with schizophrenia are also more likely to smoke, suffer from malnutrition due to an unhealthy diet and have low cardiorespiratory fitness (Engh, Andersen & Holmen, 2015).

In accordance with the symptoms of schizophrenia the schizophrenics have problems with watching, listening, undertaking a single tasks, communicating, fine hand use, caring for body parts, dressing, looking after the health, using transportation, acquisition of goods and services, assisting others, informal social relationships, basic economics transactions, economics, self-sufficiency, community life, smoking etc. (Bradshaw, Lovell & Campbell, 2010; Tenorio-Martinez, Del Carmen Lara-Muñoz & Medina-Mora, 2009).

Cognitive impairment influences patients' quality of life, ability to attain or maintain the employment (Archer & Kostrzewa, 2015). So

Many studies in this area indicate that psychosocial determinants, including reduced self-esteem and social stigma, and the presence of psychiatric symptoms, have a profound impact on the high-related quality of life of people with schizophrenia (Vancampfort et al., 2015b).

## **BENEFITS OF PHYSICAL ACTIVITY FOR PATIENTS WITH SCHIZOPHRENIA**

Physical activity is important for the entire population as well as for people with physical and/or mental illnesses. Physical activity has been defined as any bodily movement that enhances health (U.S. Department of Health and Human Services, 2008; in.: Leutwyler, Hubbard & Slater, 2014).

Physical activity has beneficial effects on some attributes associated with psychological well-being of an individual with schizophrenia, most commonly in positive attributes of autonomy and competence (self, social and psychical), social interest, psychological health (well-being, mental health) and perceived self-image or self-concept. Physical activities also reduce levels of anxiety and tension among individuals with schizophrenia (Holley, Tyson & Geoff, 2011).

There is an evident effect of physical exercise on neurobiological mechanisms too. For instance the exercise has a positive influence on a number of synaptic connections through developing new neurons and neural connections but it also increases the cortical capillary blood supply. As it is known, the voluntary exercise stimulates adult hippocampus neurogenesis which effects learning and memory. This stimulation also increases interest in exploratory behaviour. Positive effects of physical exercise on mood symptoms are associated with increased production of brain neurotrophic factors and increased activity and production of neurotransmitters as serotonin, norepinephrine and dopamine are (Malchow et al., 2013).

Prevailing evidence indicates that aerobic exercise is safe and beneficial for people with schizophrenia (Archer & Kostrzewa, 2015). Pajonk et al. (2010; in.: Archer & Kostrzewa, 2015) found that exercise increased the relative hippocampal volume in schizophrenia patients (12%) and in healthy subjects (16%) that besides others positively affects short-term memory. The exercise improves cognitive performance involving attention, vigilance, verbal working memory, verbal learning memory and reasoning (Archer & Kostrzewa, 2015). Physical activity might improve glycemic control, improves lipid profile, it lowers blood pressure and decreases abdominal fat mass (Vancampfort et al., 2013c). Aerobic exercise that includes treadmill walking and cycling lasting 30- 40 minute per session (3 times weekly, 10- 16 weeks) at moderate intensity has beneficial effects for patients with schizophrenia (Archer & Kostrzewa, 2015).

In general, we can observe the general physical health benefits as well as the bio-psycho-social benefits engaging in physical activity. Two emergent categories were apparent concerning the physical health benefits: first, the general physical health benefits (i.g. promoting physical fitness, improving cardio respiratory function, mental fitness preventing physical disorders that could develop from a sedentary life style etc.) and avoiding sedentary behaviour, second, the disease-specific benefits associated of physical activity in schizophrenia. Regarding the bio-psycho-social benefits of physical activity which can be seen as the positive effect on mental health, social integration and engagement, body awareness and image, improving self-esteem and providing natural endorphin, helping to achieve increased socialization etc. (Stubbs et al., 2014).

Another interesting observation to be mentioned are the correlations between physical activity and schizophrenia in demographic, biological, psychological, cognitive, emotional, behavioural, socio-cultural and physical and policy areas.

Demographic correlations- the most often studied variables are age and gender where studies reported no associations for any of the variables. Variables as employment, marital status, ethnicity and duration of the last hospitalization were also not associated with physical activity behaviour. In contrast, less educated patients with a lower socio-economic status and patients with longer illness duration and more hospitalizations during the last 3 years demonstrated lower physical activity participation.

Biological correlations- weigh and antipsychotic medication use, type and dosage were unrelated to the physical activity level. But side-effects of antipsychotic medication were negatively associated with physical activities participation. Also, the presence of cardio-metabolic comorbidity was the most consistent negative correlation found. Patients with better physical fitness and functional exercise capacity were more involved in physical activities than those without it.

Psychological, cognitive and emotional correlations- consist of negative physical activity determinants as the presence of negative symptoms. Knowledge and awareness of cardiovascular disease risk factors, a greater belief in physical activity benefits, intention to engage in physical activity, increased self-efficacy, better physical self-perception and improved health-related quality of life were positive correlates.

Behavioural attributes/skills- being a non-smoker, healthy eating and drinking habits were also associated with more physical activities.

Social/cultural factors- patients who perceived having no social support reported lower physical activity levels.

Physical environment and policy factors were evaluated as unrelated to the physical activity participation (Vancampfort et al., 2012).

## CONCLUSION

Currently, the most effective treatment for schizophrenia is the symptomatic approach which involves the use of antipsychotic drugs. But the drugs can also cause serious iatrogenic problems, including above mentioned persistent tardive dyskinesia. Pharmacological treatments eliminate positive symptoms, but have little effect on negative symptoms, i. g. social withdrawal, blunted affect, and have the potential to produce adverse effects such as tardive dyskinesia (Patterson, Kaplan & Jeste, 1999). Also, many of pharmaco-epidemiological studies have shown that people receiving antipsychotic have a high prevalence of diabetes (Holt, 2015).

These findings support the medical and scientific tendency to find another effective way of treatment of schizophrenic people. Uncovering the connection between physical activity and its effects on schizophrenia could help involve patients in the physical training and activities and also include these activities into the treatment as a supplemental program for the patients.

For instance, offering a weekly walking group trips with a variety of walking speed levels is a cost-effective place to start. Offering a video game based on physical activity in treatment programs is also very good because it is a form of physical activity that could be done on site in a familiar environment and can be used also for group activity. It is also important to eliminate negative attitudes towards aging and physical activities (Leutwyler et al., 2014). It should be mentioned that there is currently an insufficient evidence to judge whether regular high-intensity interval training reduces key symptoms of schizophrenia (Engh et al., 2015).

System of wide changes may be necessary to better integrate physical and mental health care for schizophrenic patients. Incorporation of regular preventive physical examinations into the psychiatric treatment plan may improve the psychiatric and medical outcomes for patients with schizophrenia (Mackell, Harrison & McDonnell, 2005). The physical activity intervention should become a routine component of comprehensive psychiatric care for individuals with mental illness (Sailer et al., 2015).

A person will seek to embark on health related behaviour change if they value their health and believe that any behavioural change will improve their health. Thus, the patients with a high internal locus control feel more empowered to bring this behavioural change independently (Buhagiar, Parsonage & Osborn, 2011). This idea is supported by a key finding that autonomous regulation positively correlates with the physical activity. External regulation and amotivation as a state of lacking any motivation to engage in activity, characterized by a lack of perceived competence and or failure to value the activity, negatively correlate with physical activity. As well negative symptoms have been found to be associated with lower autonomous motivation to the physical activity (Sailer et al., 2015). This seems to be a problem especially for patients with schizophrenia where we can detect and observe rather low self-esteem among patients as well as low trust in their abilities and competence; this sadly also negatively influences the area of physical activity.





# MOTIVATION FOR PHYSICAL ACTIVITY OF OUTPATIENTS WITH MENTAL DISORDERS IN A WORKING COMMUNITY

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## INTRODUCTION

Mental disorders is an important public health issue world wide (World Health Organisation, 2014). The population with mental disorders have an increased risk of mortality and morbidity from chronic physical diseases, such as cardiovascular diseases and diabetes (Bingham, 2009; Kilbourne et al., 2009; Roshanaei-Moghaddam & Katon, 2009). This is due to biological factors, adverse effects from medicine, sedentary behaviour, and a lack of ability to maintain a healthy lifestyle, (Roshanaei-Moghaddam & Katon, 2009). Several of these physical health issues may be counteracted by physical activity. In addition, individuals who are physically active have lower prevalence of mental disorders than those who are sedentary (Wiles, Haase, Gallacher, Lawlor & Dewis, 2007).

On the other hand, physical inactivity is considered an independent health risk factor (WHO, 2010). All the same physical inactivity seems to be increasing, (WHO, 2010). Individuals with mental disorders are often even less physically active than the general population (Daumit et al., 2005; Schmitz, Kruse & Kugler, 2004; Sosial- og helsedirektoratet, 2000).

In order to assist the population with mental health disorders in becoming more physically active, it is important to learn more about their motivation for physical activity. The literature on this topic for this particular population increasing, and a couple of systematic reviews have been published recently (Farholm & Sørensen, 2016 a; Farholm & Sørensen, 2016 b). They conclude that the current evidence base on motivation for PA among individuals with SMI so far is small, inconsistent, and often not sufficiently based in sound theory. However, it is pointed out that the preliminary evidence seem to demonstrate that the motivational processes of individuals with severe mental disorders are similar to that of the general population, and that they seem not to rely on diagnosis, medication, age, gender, or body mass index. The results may also give some tentative guidance on how

to facilitate motivation for physical activity within mental health-care, but that there is still a great need for more research on, and development of, practical strategies that can enhance adoption and adherence of physical activity among people with mental disorders.

The main types of articles are reports from types of physical activity interventions, there was only one report of a theory based, specific motivational intervention (Beebe et al.(2010). Most articles reported on physical activity behavior. Other central themes were reports on barriers (e.g. Carpiniello, Primavera, Pilu, Vaccargiu & Pinna, 2013; Champion, Francis, Preston & Wallis, 2005; Ussher, Stanbury, Cheeseman & Faulkner, 2007), and reports on readiness for physical activity (Transtheoretical model, Prochaska & Di Clemente, 1983), ( e.g. Bassilios, Judd, Pattison, Nicholas & Moeller-Saxone , 2015; Vancampfort et al., 2013a; Vancampfort et al., 2015; Aschbrenner, Mueser, Bartels & Prat, 2013; Bezyak, Berven & Chan, 2011; Lindamer et al., 2008). A few articles were based in motivational theory, such as social cognitive theory (Bandura, 1997), e.g. Arbour-Nicitopoulos, Duncan, Remington, Cairney & Faulkner, 2014; Leas & McCabe, 2007; Van de Vliet , Van Coppenolle & Knapen, 1999), or self-determination theory (Ryan & Deci, 2002), (e.g. Vancampfort et al., 2014; Sørensen, 2006).

Most of the populations with mental disorders have been studied when they take part in treatment, in an intervention, or when some kind of activity is offered. Even if there are exceptions, we know relatively less about outpatients, their physical activity level or their motivation for physical activity. One group of outpatients find other type of activities to engage in, for instance a working community.

Working communities (in some countries called Clubhouses or Fountain Houses) are communities for persons with mental disorders outside of treatment that are run by the municipality. They try to establish belonging and membership in a working community. Membership is voluntary, and the members choose various ways towards recovery through selection of type of work, and how much they want to work. Some working communities offer physical activities such as walking groups and some sport classes with different focus areas (Clubhouse International, 2015a). Today there are more than 300 such Houses globally (Clubhouse International, 2015b) and in Norway there were eight working communities in 2012 (Fontenehus Norge, 2012). Members of a “working community” could be expected to have more motivation for general activity than other persons with mental disorders that have not found such an opportunity, but it is not known if this translates into greater engagement in physical activity. To our knowl-

edge, the only report on physical activity from a working community is from the Genesis Wellness Program, developed by Pelletier, Nguyen, Bradley, Johnsen, & McKay (2005). They aimed to integrate exercise into the culture of the working community, and they successfully implemented a structured physical exercise program for members. The findings supported physical activity as a health promoter and demonstrated positive association with the mental-, physical-, and social health (Pelletier, Nguyen, Bradley, Johnsen, & McKay, 2005). One such working community approached The Norwegian School of Sport Sciences because they wanted to know more about the physical activity of their members.

Definitions of terms to be used in this chapter:

<b>Term</b>	<b>Definition</b>
<b>Mental disorder</b>	“... a syndrome characterized by clinically significant disturbance in an individual’s cognition, emotion regulation, or behaviour that reflects a dysfunction in the psychological, biological, or developmental process underlying mental functioning. Mental disorders are usually associated with significant distress or disability in social, occupational, or other important activities.” (American Psychiatric Association, 2013, p.20).
<b>Physical activity</b>	“...any bodily movement produced by skeletal muscles that result in energy expenditure” (Caspersen, Powell & Christenson, 1985, p.126).
<b>Self efficacy for physical activity</b>	“Outcome expectations and the self regulatory beliefs about being able to perform physical activity in spite of barriers” based on social cognitive theory (Bandura, 1997)
<b>Motivational regulation for physical activity</b>	“...the quality of motivation (autonomous, versus controlled and amotivation ) according to self-determination theory” (Ryan & Deci, 2000).

## THEORETICAL BACKGROUND

Self-determination theory (SDT) describes various types and qualities of motivation. Autonomous motivation refers to when the individual either identifies with the value of the activity, have integrated it into their sense of self, and derive enjoyment and pleasure from it (Ryan & Deci, 2000). When people are autonomously motivated they demonstrate volition and self-initiation in their actions. In contrast, when people are motivated for controlled reasons their behaviour is regulated by external contingencies like reward and punishment or motives like avoidance of shame or approval. Finally, a-motivation refers to a lack of motivation to act. This may be due to not valuing the activity or the outcome from it, missing to see a link between the outcome and the behaviour, or not feeling competent to achieve a valued outcome (Deci & Ryan, 2008b). SDT has demonstrated its usefulness in understanding the motivational mechanisms of physical activity and exercise in the general population (Teixeira, Carraca, Markland, Silva & Ryan, 2012). Some studies have examined the role of motivation for physical activity in people with mental health disorders (Sørensen, 2006; Vancampfort et al., 2013a; Vancampfort, 2015), but more research is needed.

Earlier studies have demonstrated that lack of competence or confidence related to physical activity has been perceived as a barrier for participating in physical activity in this type of population (Ussher et al., 2007). Further, reports of need satisfaction through physical activity by similar samples have shown the need for competence to be scored the lowest (Kristiansen, 2010; Sørensen, 2006). One theoretical approach to study the role of competence in relation to motivated behavior, is social-cognitive theory and the concept of self-efficacy (Bandura, 1997). Two concepts are important in self-efficacy theory, one being mastery expectations or self-regulatory mastery, which is a person's ideas about being able to carry out a certain task, or continue to do a task in spite of barriers. The other concept is outcome expectations, which are expectations that a behaviour will lead to a certain outcome or consequences. In the general population a consistent link between physical activity self-efficacy and physical activity has been demonstrated (e.g. McAuley & Blissmer, 2000; Teixeira et al., 2012). However, an intervention study attempting to increase self-efficacy in individuals with severe mental disorders did not yield any significant results (Beebe et al., 2010), so further studies are needed.

Prochaska and Di Clemente (1983) developed the original Transtheoretical framework, or Stages of change model related to smoking behaviour. It describes stages of readiness for behaviour change based on actual behaviour and intention to change. Marcus and Simkin (1993) developed the readiness for change in exercise framework. The description of the actual behaviour has also been used as a measure of physical activity, and two studies have reported an association between the action- and the maintenance stage and increased physical activity among individuals with mental disorders (Archie et al., 2007; Lindamer et al., 2008), but it needs further comparison to other measures of physical activity.

The aim of the present study was therefore to describe physical activity participation, Stages of change, and activity preferences of members of a working community in Norway, to describe motivational regulation and self-efficacy related to physical activity among these members, and to analyse the association between the motivational variables and physical activity participation in this group.

## METHOD

*Design.* Based on the aim of the study and the population in question, a cross sectional design seemed the obvious choice. Data were collected with questionnaires. The initiative to the study came from the staff at one working community who contacted The Norwegian School of Sport Science [NSSS] for help in registering the physical activity level of their members.

*Sample.* All active members from one working community in Norway were invited to participate in the study. Active members had attended the working community within the last 90 days. The number of registered active members in this working community was 270 at the time of data collection.. On a daily basis there were approximately 58 members present. The inclusion criteria were: older than 18 years of age, and a members of the particular working community.

*The questionnaire.* The questions relevant for this study are part of a larger survey, including a Master Thesis on the association between physical activity and Health Related Quality of Life (Rekve, 2015). The data included in this study share the same descriptive background information and the basic physical activity measurements, but otherwise data presented have not previously been reported.

*Descriptive background.* Background information contained the participants gender, age, marital status, living situation, and if they had a diagnosed mental disorder. Those who answered yes were further asked to choose one of 6 categories of mental disorders listed for their main diagnosis.

*Measures:* Two different measures of physical activity level were used: The International Physical Activity Questionnaire short form (IPAQ-short), Leisure Time Physical Activity (LTPA) for both summer and winter, and in addition, the Stages of Change related to physical activity was measured (Marcus & Simkin, 1993). In order to make the questionnaire more suitable for the respondents and in order to increase the response rate we made some slight modifications to the original questionnaires. The International Physical Activity Questionnaire short form (IPAQ-short) is measuring the type, frequency, and intensity of physical activities that have been performed the last 7 days and have lasted at least 10 minutes consistently. In order to keep the questionnaire as short as possible, and due to the documented low physical activity level of our target group, the questions about vigorous activity were taken out (Daumit et al., 2005; Schmitz et al., 2004; Sosial- og helsedirektoratet, 2000). The responses were provided in days and minutes, and converted into a total sum of minutes per week. The two indicators of physical activity (moderate physical activity and walking) were summarized and translated into a continuous variable (Metabolic Equivalents of Task (MET)- minutes per week) which is further explained in IPAQ (2005). A higher score of MET- minutes per week were indicating a higher physical activity level. The IPAQ-short has been validated (also for Norway) and used frequently to measure the population's physical activity level globally (Craig et al., 2003). The translated Norwegian version used in this study has been validated (Anderssen & Andersen, 2004). The IPAQ-short has also been tested for validity in adults with schizophrenia, and it has comparable validity as for the general population (Faulkner, Cohn & Remington, 2006). However, the reduced total MET- minutes per week score have to be considered when comparing the results with other studies calculating the total MET-minutes per week score with all three types of activity.

*Leisure Time physical activity (LTPA).* The participants described their average weekly leisure time physical activity (LTPA) level separately for summer and winter. The answering alternatives ranged from 1) "read or watch TV or other sedentary activities" 4) "exercise hard or take part in competitive sport regularly and several times a week". The measure has been validated (Graff-Iversen, Anderssen, Holme, Jennum & Raastad, 2008). The original measure was an estimate for an average week during the last year, but in this study we differentiated between the summer and the winter.

*Stages of change in physical activity.* The participants were asked to classify themselves into the stage that best described their regular physical activity. Regular physical activity was defined as; "moderately intensive physical activity which is an intensity where you breathe somewhat harder than normal, lasting for 30 minutes each day and performed on most days of the week" (Gorczyński, Faulkner, Greening & Cohn, 2010). The five answering alternatives described the present regular physical activity level and the intentions to become more physically active, a method supported by Reed, Velicer, Prochaska, Rossi, & Marcus, B. (1997).

*Self efficacy.* The self-regulated self-efficacy is according to Bandura (1997) the belief that you can carry out a specific behaviour in spite of barriers that you may encounter. The stem of the question was: "I feel certain that I can be physically active...". Then 10 alternatives was presented, representing the different qualities of motivation, and the answering alternatives ranged from Not true (1) to completely true (4). An example item is: "even if I am busy".

*Motivational regulation.* The Behavioral Regulation Exercise Questionnaire (BREQ-2; Markland & Tobin, 2004) is an 19-item questionnaire designed to capture reasons for physical exercise varying along a continuum of self-determination. We adapted the questionnaire by replacing the term "exercise" with "physical activity", and shortened it, by excluding the introjected regulation, and one item from each scale. The BREQ-2 short form included the following subscales: 1) Intrinsic motivation (2 items; sample item: "I am physically active because it is fun"), identified regulation (3 items; sample item: "It is important to me to be regularly physically active"), external regulation (3 items; sample item "I feel pressure from others to be physically active"), and a-motivation (2 items; sample item: "I don't see any point in being physically active"). Aligned with SDT and past research (e.g. Deci & Ryan, 2008b; Standage, Sebire & Loney, 2008) we averaged the intrinsic motivation and identified regulation subscales to form a score for autonomous motivation, whereas a controlled motivation score was created by the external regulation.



*Statistical analyses.* All data was registered in Statistical Package of Social Science (IBM SPSS Statistics, Version 21). \* $P < .05$  and \*\* $p \leq .05$  was set as level of significance. Descriptive statistics (frequencies and mean scores) were assessed for the different demographic variables. A chi-square test for the categorical variables, and an independent-samples T-test or a one-way ANOVA for the continuous variables were used to examine whether there were significant differences in the variables across groups (gender, age, marital status, housing and diagnose categories). As the self determination variables as well as the self efficacy measures were not normally distributed, we ran non-parametric analyses (Kendall's Tau and Kruskal –Wallis Test) in order to establish the relationship between the dependent variable and the independent variables.

*Ethics.* The project was approved by the Norwegian Social Science Data Services (NSSD) as the working community themselves was the responsible agent for the data collection. They kept the personal data and anonymized the data material. The participants signed an informed consent form, which consisted of two parts; the consent form and information about the study. They were given the information that they could resign from the study whenever they wanted to, that participation was voluntary, and that all information would be anonymous.

## RESULTS

Descriptive statistics of the sample: A total sample size of 87 active members from one working community in Norway participated in the study. This made out 32, 2 % of the active members. The distribution of the different groups; age, gender, marital status and housing and categories of mental disorders of the participants are shown in Table 1. The most frequent categories of disorders were anxiety disorders among women and affective disorders among the men. The other diagnoses were approximately equally distributed between men and women. Twenty four (27,6%) participants had indicated two or more categories of diagnosed mental disorder diagnoses (not shown in table ). The chi-square tests, one-way ANOVA, and independent T-tests found no significant differences between the age, gender,

marital status and housing in any of the physical activity measures. As an example the different age groups did not differ significantly in MET-minutes per week ( $F=1,64$ ,  $p=,151$ ).

*Table 1. Descriptive data: The distribution of age, gender, living situation, and mental disorders in the sample (n=87).*

<b>Demographic variables</b>		<b>Total N (%)</b>
<b>Age</b>	20-40 years	27 (31,0)
	41-60 years	49 (56,3)
	61-70+ years	11 (12,7)
	Total	87 (100)
<b>Gender</b>	Men	43 (49,4)
	Women	42 (48,3)
	Other	2 (2,3)
	Total	87 (100)
<b>Living situation</b>	Living together with someone	29 (33,3)
	Living alone	56 (64,4)
	Living in an institution	2 (2,3)
	Total	87 (100)
<b>Diagnosis</b>	Affective disorder	27 (31,0)
	Anxiety disorder	34 (39,1)
	Psychosis	20 (23,0)
	Drug- substance abuse or addiction	4 (4,6)
	Personality- or behavioural disorder	15 (17,2)
	Other mental disorders	11 (12,6)
	Had a diagnose, but did not want to specify it	10 (11,5)
	Did not have a diagnosis	4 (4,6)
	Total	87 (100)

Levels of physical activity .The physical activity level measured by IPAQ, leisure time physical activity for winter and summer and the stages of change measures are presented in Table 2.

Table 2. The physical activity level from the physical activity measures.

Variable	Measure	N (%)	Min-max	Mean (SD)
PA level	IPAQ (MET-minutes/ week)	66 (75,9)	0-8505	1667,5 (1717,0)
	LPA Summer			
	1,0 (not active)	29 (33,3)		
	2,0 (a little active)	33 (37,9)		
	3,0 (active)	11 (12,6)		
	4,0 (active)	6 (6,9)		
	Total	79 (90,8)		
	LPA Winter			
	1,0 (not active)	52 (59,8)		
	2,0 (a little active)	23 (26,4)		
	3,0 (active)	3 (3,4)		
	4,0 (active)	4 (4,6)		
	Total	82 (94,3)		
SOC				
	1. Pre-contemplation	6 ( 6,9)		
	2. Contemplation	13 (14,9)		
	3. Preparation	15 (17,2)		
	4. Action	8 ( 9,2)		
	5. Maintenance	45 (51,7)		
	Total	87 (100)		

Note. PA= Physical Activity, IPAQ=International Physical Activity Questionnaire MET= Metabolic Equivalent of Task, LPA= Leisure time Physical Activity, SOC=Stages of Change, SD= standard deviation

Moderate physical activity contributed with 577 and walking contributed with 1062 of the MET-minutes per week of walking+ moderate physical activity. The MET- minutes does not include the physical activity for vigorous intensity, and therefore the total METs will be lower than other IPAQ MET results. The results from the various measures for physical activity were inconsistent, even if they correlated reasonably. One obvious problem was that quite many participants rated themselves to be in the maintenance stage of change, even if they reported themselves inactive through the winter. This made the first author go through all the measurements manually for each individual, and sort the individuals into a high-, moderate- and inactive groups. Those who were only active during the summer, were automatically put in the “A little active” group .

Table 3. Activity levels based on three different measurements (Modified IPAQ, one item rating from 1 -4 for winter and summer separate + Stages of change)

Activity level	N	(%)
Not active	26	(29,9)
A little active	31	(35,6)
Active	30	(34,5)
<b>Total</b>	<b>87</b>	<b>(100)</b>

There were no significant differences in activity level between gender or age groups.

We also registered what type of activities the participants took part in, and their preferences .

Table 4. Participation in the various activities offered by the working community

Activity offered	Yes	No	Do not know activity	Unanswered	Total
	N (%)	N (%)	N (%)	N (%)	N (%)
Walk during lunch	27 (31,0)	57 (65,5)	3 ( 3,5)	0	87 (100,0)
Active during daytime	9 (10,3)	74 (85,1)	2 ( 2,3)	2 (2,3)	87 (100,0)
Thursday exercise	11 (12,6)	69 (79,3)	6 ( 6,9)	1 (1,2)	87 (100,0)
The co-wanderer	3 (3,4)	65 (74,7)	17 (19,6)	2 (2,3)	87 (100,0)

As demonstrated in several studies, walking was the mostly used activity, but only less than one third engaged in this offer from the working community themselves. “Active during day time” is the name of activities offered by the regional sport organisation during working hours. When asked about what type of activity they would like to engage in, we received the alternatives presented in table 5.

Table 5. Activities the members of the working community would like to engage in.

<b>Activity</b>	<b>N</b>	<b>(%)</b>
<b>Walks</b>	43	(49,4)
<b>Ballgames</b>	27	(31,0)
<b>Yoga</b>	26	(29,4)
<b>Water activity</b>	25	(28,7)
<b>Bicycling</b>	23	(26,4)
<b>Strength train.</b>	20	(23,0)
<b>Dancing</b>	19	(21,8)

Between 10 & 20 % suggested : boxing, Zumba, aerobic ( other), between 1 & 10 % said : slalom/snowboard, spinning, cricket, running, martial arts, pilates and overnight trips. Again walking is the most popular, but there is actually a wide variety of activities that seem to be attractive to the group.

*Motivational variables.* The scores for the motivational variables cannot be directly compared to each other due to different range of answering alternatives.

Table 6. Mean scores on the motivational variables

<b>Motivational variable</b>	<b>Mean score</b>	<b>Range</b>	<b>Standard deviation</b>
SR Self efficacy	2,66	1 - 4	.64
Outcome expectation	3,04	1 - 4	.65
Intrinsic motivation	4,14	1 - 5	.83
Integrated motivation	4,01	1 - 5	1.09
Extrinsic motivation	2,30	1 - 5	1.25
A-motivation	1,60	1 - 5	1.04

As a group, their outcome expectations are higher than the belief that they will be able to exercise in spite of various barriers (self regulatory self-efficacy), which means that they believe that exercise will do them good, but they doubt their own ability to do what it takes to achieve the outcome. They score the highest on intrinsic- and integrated motivation (autonomous motivation), lower on extrinsic (controlled) motivation, and very low on a-motivation, meaning that are motivated for physical activity, but that there may be barriers they do not trust themselves to overcome.

*Group differences.* There were no significant differences in any of the motivational variables or activity level between genders, age groups or diagnoses.

*Further analyses:* Intrinsic- and integrated motivation were collapsed into autonomous motivation, before we examined the association between the motivational variables and the physical activity level. Because the variables were not normally distributed we ran non-parametric analyses.

Table 7. Bivariate correlations between activity level and motivational variables (Kendall's tau)

Variable	Activity level	Self-efficacy	Outcome expectations	Autonomous motivation	Controlled motivation
<b>Activity level</b>	—				
<b>Self-efficacy</b>	.257**	—			
<b>Outcome expectations</b>	.048	.189*	—		
<b>Autonomous motivation</b>	.421**	.422**	.232**	—	
<b>Controlled motivation</b>	-.209*	-.245**	-.003	-.416**	—
<b>A-motivation</b>	-.041	-.136	-.204*	-.301*	.314**

The strongest correlations were between activity level and autonomous motivation, and also self-efficacy. There was also a weak, negative correlation between activity level and controlled motivation, and likewise between self-efficacy and controlled motivation. This is in accordance with the theories. The motivational variables correlated with each other in an expected way with negative correlations between controlled motivation and a-motivation and autonomous motivation and self-efficacy. Outcome expectations did not demonstrate any strong relationships with the other variables.

*Table 8. Significant relationships between activity levels and motivational variables among members of a working community for individuals with mental disorders.*

<b>Activity level</b>	<b>Not active</b>	<b>A little active</b>	<b>Active</b>	<b>Significance</b>
<b>Motivational variable</b>	<b>(N) Mean score</b>	<b>(N) Mean score</b>	<b>(N) Mean score</b>	<b>Kruskal Wallis</b>
Autonomous motivation	(26) 3,67	(31) 3,84	(30) 4,68	P < .001
Controlled motivation	(26) 2,90	(31) 2,10	(30) 1,98	P < .05
SR Self- efficacy	(25) 2,44	(31) 2,56	(29) 2,95	P < .01
Outcome expectations	(26) 3,10	(31) 2,85	(30) 3,19	NS

The motivational variables that demonstrated a significant positive relationship (more activity with higher scores) with physical activity level, were autonomous motivation and self-regulated self- efficacy. Controlled motivation demonstrated a weaker negative relationship with activity level (the more activity, the lower score). Outcome expectations did not demonstrate a significant relationship with activity level.

## DISCUSSION

For associations between activity level and motivational variables, we see largely the same patterns as described in the theories and as in the general population. Another important finding is that this sample clearly is motivated for physical activity, they score the highest on autonomous motivation, lower on controlled motivation, and very low on a-motivation. Even if this may be a selection of the population with mental disorders that are interested in physical activity, it means that perceptions of people with mental disorders as not being motivated for physical activity certainly is not true for the whole population. This should have consequences for both how health personnel evaluate and approach the issue of physical activity in psychiatric treatment.

This taken into consideration, there is clearly also an over-reporting of being in the maintenance stage. It seems that this has been rated according to the summer period, because several of those who chose the maintenance stage, described themselves as inactive during the winter.

Some limitations of this study have to be considered when examining the results. The cross-sectional design cannot convey causal-effect relationships of the results; it provides a main idea of the population at one specific time (Thomas, Nelson & Silverman, 2005). To define the exact intensity of the specific physical activity can be challenging, because the individual feeling of intensity is varying (Solberg & Anderssen, 2002). Another bias is that many report physical activity only as recreational activities and do not regard the daily activities and activities during work as part of their physical activity level. The IPAQ is considered a valid and reliable questionnaire and the results from IPAQ correspond to other measurements of physical activity (Anderssen & Andersen, 2004; Craig et al., 2003). However, it is a challenge to capture the variation in activity level of populations with relatively modest activity.

Subjective self-reports may cause over- or under-reporting, and social desirable behaviours can influence the response of the questionnaires (Solberg & Anderssen, 2002). An example in this study is that so any participants reported being in the maintenance stage of change even if they were inactive half of the year.



Recruitment of individuals with mental disorders in a study such as this seem to result in a skewed sample as to interest in physical activity, and the response rate is low (32, 2%). It is likely that one will mainly get responses from those who are the most positive to physical activity. One indication for this is that in the sample there were only 7% in the precontemplation stage. The results can therefore not be generalised to all outpatients, and probably not even to all members of this particular working community.

## CONCLUSION

The physical activity level was not very different from in the general population among a sample from a working community for outpatients with mental disorders, but the sample is likely to be skewed towards those with an interest in physical activity. This group scored also high on autonomous motivation, which, together with self-efficacy for being physically active, demonstrated significant associations with the physical activity level. It was demonstrated that there are a number of people with mental disorders that are motivated for physical activity, even if some may still need support to translate the motivation into action.

# PHYSICAL PROGRAMS IN PREVENTION AND TREATMENT OF SOMATIC DISEASES OF PSYCHIATRICALY ILL PATIENTS

*Hana Kynštová, Michaela Zahrádka Köhlerová*

## INTRODUCTION

Mental illness is often associated with high comorbidity of somatic disorders. These somatic disorders (e.g. obesity and diabetes) are the cause of increased mortality of these patients. Therefore, the life expectancy of mentally ill patients can be reduced by up to 20 to 25 years (Hennekens et al., 2005; McGrath et al., 2008 in Faulkner & Duncan, 2012).

People with mental disorders are significantly more frequently affected with metabolic syndrome (Bresee, Majumdar, Patten & Johnson, 2010; Vancampfort et al., 2013b), which includes insulin resistance, obesity (especially the abdominal type) and dyslipidaemia. The metabolic syndrome subsequently leads to the development of type 2 of diabetes mellitus (DM II) and complications of the circulatory system, such as atherosclerosis, heart-attack, CMP, etc. (Ryan & Thakore, 2002).

The risk of comorbidity of DM II is higher for patients with schizophrenia regardless of their drug therapy. There is a number of risk factors participating on the formation of DM II, such as low physical activity, obesity, smoking, and consumption of foods high in fat. People, which suffer from either schizophrenia or bipolar disorder, generally have a higher Body Mass Index (BMI) in comparison with the rest of the population. Obesity and the risks associated with it play an important role in the health of patients suffering from chronic mental illness. However, the studies show that for these people, the prevalence of obesity is higher for these people than in the general population (Fountoulakis et al., 2010), and that obesity is associated with lower quality of life of people with schizophrenia. These conclusions are in their study also confirmed by Vancampfort et al., 2013b.

The research indicates that the main causes of obesity of patients with schizophrenia include lack of physical activity, poor diet, lack of self-care and side effects of the medication. The introduction of new types of psychopharmacological treatment means also the change of objectives of treat-

ment, where the emphasis is put on subjectively perceived quality of life and functionality in the natural environment. The safety and side effects of antipsychotic treatment is also increasingly monitored. Serious metabolic and cardiovascular side effects of antipsychotic treatment include the higher prevalence of obesity, DM II, dyslipidaemia, hypertension, metabolic syndrome, and nicotineism (Faulkner & Taylor, 2005; McElroy, 2009). So these are the conditions which are included in the so called civilisation diseases and are greatly dependent on the lifestyle, exercise and diet.

According to our practical knowledge, the second important group of disorders, which we can find in group of patients with mental illness, falling into somatic category, is pain. In some cases, intense pain is a part of syndromology of the disease, for example, in the case of a depressive illness, but very often, the pain is caused by a dysfunction of the musculoskeletal system.

People with depression report physical problems and pain, disorders of psychomotoricity are also very common. It is almost a rule that these patients have their vitality distorted and their body condition is reduced (fatigue, tiredness, reduced life energy). Patients also often complain about a burning sensation, pressure, cold, "heavy" limbs as well as unpleasant visceral experiences. Somatic complaints often improve after application of the medication, but without taking care of the musculoskeletal system, they rarely completely subside.

Low body condition, muscle strength and endurance handicap these patients in the labour market, even in sheltered workshops and other occupations that patients with chronic mental illness can perform. Very often, the pain and shoddy health condition become an obstacle for finding the optimal employment classification.

Evidence based medicine of the last twenty years includes studies that clearly demonstrate the critical importance of physical activity in the treatment of metabolic syndrome. There are physical programs targeted to influence hypertension, obesity or DM II (Knapen et al., 2003; 2005). According to Szabó, Pelíšková, Kvapil and Matouš (2009) the results which we achieve in the Czech Republic in these special physical programs conducted by physiotherapists, are comparable to the results indicated in the world literature. These programs contain the exact methodology of how gradual adaptation to physical stress can influence insulin resistance, blood pressure, and the ability of the organism to reduce weight. The exact dosage of physical stress leads to the adaptation of the cardiovascular apparatus and the prevention of osteoporosis.

In the professional literature, we can find numerous studies, which specifically recommend other physical programs for people suffering from depression and anxiety disorder. Once again, the physical therapy is recommended for a long-term positive effect on the quality of life of patients suffering from chronic mental illness (Knapen et al., 2003; 2005).

Despite the good education and the undeniable benefits of physical programs, the compliance of patients with serious mental illness is still limited, but the evolution of obesity or metabolic syndrome reduces it even further. It is therefore necessary to look for new ways of motivating patients to physical activity with the aim of long-term change for each patient (Holley, Crone, Tyson, & Lovell, 2011; Vancampfort et al., 2012).

The motivation of the patient to a physical activity is an integral part of the work of each therapist and for patients with mental illness is this issue even more important, because their disease fundamentally affects their lifestyle and will. People with mental illness generally have a very low motivation for physical activity and they often have motoric disorders indirectly related to their mental illness, which do not contribute to the motivation for the movement.

The patient is rarely motivated to regular exercise and movement. Such patient usually does regard his illness or problems associated with his inactivity and he cannot or does not want to fully understand them. He is just “sent” to the therapy and sometimes doesn’t even know why. If we meet such patient, it is necessary to use the instruments of the motivational interview.

Any therapy begins by establishing contact with the patient, by the therapist introducing himself to the patient (in accordance with his education and cognitive abilities) with the purpose of why the therapist comes to him.

It is important for the therapist to seem credible to the patient in order to motivate him. The credibility is supported by the exterior; suitable clothing and hairstyle and the overall appearance. It does not look very conclusively if the therapist is showing signs that he is not able to adhere to the recommended lifestyle himself. What is more important is the leadership of the interview from which emerges the therapist’s professionalism. The therapist shows his interest in the patient by giving him his attention (he does not speak to anyone else, he does not phone, he does not eat, he does not write on his phone etc. during therapy), he is “tuned” to the patient. His attention is aimed at patient, he is able to listen and tries to understand him. The therapist must be prepared to cooperate with the patient and pursue the “joint work”.

It is needed to create a relationship especially in the first meetings with the patient, which can be built up in the space where the patient feels safe and is willing to talk about his problems. The therapist does not evaluate nor criticise the patient, when he tells him his life story. The education, correction and mistake adjustment part etc. comes later, when the therapist establishes belief and solid relationship.

It is essential, for increasing the motivation of patients to physical activity, to map out their needs in the field of physical activities and optimisation of intervention. To obtain data for this optimal planning of physical therapy, we have prepared our own survey in the area of physical activities of patients with psychiatric illness or mental health problems, which are hospitalized in Psychiatric Hospital in Prague - Bohnice (PNB) (time and scope of intervention, duration of treatment, the choice of physical activities is always determined in relation to the diagnosis).

The aim is therefore to design physical activities for patients with mental illness during their hospitalization in optimal mode, regarding the selection of physical activities as well as the timing of when they should perform this physical activity, in order to be as motivated as possible.

## METHODOLOGY

In order to obtain the data we chose the technique of asking in a non-standardized questionnaire. The questionnaire was forwarded in April, in person by the therapist to patients hospitalised with mental illness in the PNB included in physical programs. The patient fills in the questionnaire himself, this questionnaire includes 8 questions with the possibility of a subjective evaluation of physical activity. The questionnaire was filled by patients, there were 52 evaluable questionnaires (N = 52).

### **Charakteristic of respondents file**

- Gender: 14 men, 38 women
- Age distribution: 20 to 61 years of age, the average age 34.8
- Diagnosis: schizophrenia F2.. - 15 subjects, mood disorders F3.. - 13 subjects, post traumatic stress F4.. - 12 subjects, others 13 subjects

- BMI: under 25 - 31 subjects, over 25 - 21 subjects
- Extremes: BMI 15.7 to 41.7, the average BMI 24.2, BMI under 18.5 - 4 women, BMI over 30 - 3 men and 3 women
- Weight - range from 42.8 to 110 kg, average weight 70.5 Kg

Comparison of the results according to the diagnosis shows that in our file, there is 47% of patients with schizophrenia which have therapy 3 times a week. Other patients have a high frequency of physical activity - 4 times a week almost in 50%. A high percentage or up to almost half of the patients have a physical activity only once a week.

More than 25% of our respondents group perform the nordic walking activity, the others participate in nordic walking (73%), or combine nordic walking and group exercises (25%) or exercise on instruments (2%). Division by gender confirms that women take part in group exercise more than men, whereas men prefer exercise on instruments.

There are 3 routes in the PNB, divided by difficulty, the first and shortest one is 1.609 km long and has a 30 m elevation, the middle one is 2.501 km with elevation of 41 m, the most demanding is 3.263 km long with elevation of 45 m. The statistical results show that all our respondents clearly prefer the medium difficult and long route and that the short route is significantly unpreferred.

According to the diagnosis, it shows that patients with depression accept the shortest route, in contrast, patients with post traumatic stress, prefer to take the longest route.

Women from our chosen file prefer the longest route more often than men.

According to the BMI, we see that patients in our file with a BMI over 25 do not like the longest route, by contrast, more than 1/3 of patients with a normal BMI prefer the most demanding route.

The least suitable time for physical activity is for a group of subjects the evening. The results from the diagnosis perspective for the observed file of respondents suggest that patients with schizophrenia prefer as the optimal time for physical activity the morning and afternoon soon after lunch. The patients with mood disorder in our file say that it is least acceptable for them to exercise in the a.m. hours, morning and the whole afternoon is well acceptable for them and as the only ones, they would exercise even in the evening.

The patients from the file subjects with post traumatic stress and neurotic disorders prefer a time soon after lunch for physical evening is absolutely unacceptable for them.

Therefore, the early evening and late afternoon is not suitable for physical activity, except for people with depressive illnesses, but they prefer morning as well.

We have also found out that, in our file of respondents, men prefer to exercise in the a.m. hours, women prefer to exercise in the morning and right after lunch.

Patients from our file with a lower BMI are willing to devote to exercise throughout the day (in absolute numbers = patients select any number of options), they prefer morning for exercising, but evening is also acceptable. In contrast, patients with a higher BMI do not want to exercise in the evening, other times are acceptable for them, but they prefer to exercise soon after lunch.

All patients of our file, regardless of the nature of their disease, feel that swimming would be another welcomed physical activity for them. Patients with depression, post traumatic stress and neurotic disorders could also try dancing, because it is suitable for them. People with schizophrenia do not want to dance or play ball games, they prefer individual sports.

Both genders would most welcome swimming, women would welcome dancing (and men as well, but they would prefer running and ball games).

Patients from the reference file with a lower BMI would generally welcome more physical activities, whereas patients with a higher BMI would not welcome other physical activities, possibly they would accept swimming. Outside of the therapy the more active patients are those with depression, neurotic disorder and stress disorder than patients with schizophrenia. Patients with depression are the most active outside of the therapy. All patients, performing some physical activity outside of therapy, do jogging and some of them also do swimming. This question mapped physical activity before the hospitalization, the responses show that this set of respondents active, since more than 80% of them performed some physical activity, most often walking (at least once a week for more than 30 min), ball games, and they were going to a gym.

The most active are patients with depression who engaged in physical activity in 100%, it was most often running or walking. Patients with neurotic and stress disorder had varied physical activities, the least active are pa-

tients with schizophrenia, which also prefer walking as a physical activity. The least active are patients with schizophrenia.

We found out that in our group of respondents, the gender is not as important from this point of view as BMI. Even before hospitalization, patients with a lower BMI were more active than those with a higher BMI, and patients with a higher BMI performed walking as the most common activity.

## RESULTS

- Our group of patients is still too small to be able to generalise results.
- Nevertheless, the interpretation of the results confirm long-term empirical experience and in the future, it would be advisable to obtain a larger sample for more information about patients with mental illness, their physical activity and effective motivation for their involvement in therapy.
- Patients are willing to exercise especially in the morning, shortly after lunch and in the afternoon, and some of them even in the a.m. hours, but not in the evening. Therefore, it would be appropriate to incorporate more physical activity in the morning as well as in the afternoon.
- Patients, regardless of gender or diagnosis, would welcome swimming, more ball games and dancing (men as well) and physical outdoor activity, outside the gym.
- Patients with schizophrenia are less active than other groups. before the hospitalization as well as during the hospitalization, therefore they should have the physical activities ensured during the therapy and be rigorously motivated to the physical activity.
- Patients with a higher BMI are also less active both in and outside of therapy, and even before the hospitalization.
- The statistical results of our group respondents show that the group of patients with a higher BMI is most critical from the perspective of physical inactivity and also patients with schizophrenia.



- These findings revealed a hypothesis for our further investigation, in which we assume that the most vulnerable group of patients from the point of view of physical inactivity is a group of patients with schizophrenia and higher BMI?
- To confirm the hypothesis and verification of other information that was provided to us by this questionnaire, for example, the relationship between the duration of a mental illness and overall physical activity, the number of hospital admissions, etc., we would need a larger sample of respondents.

## CONCLUSION

It is clear that an important component of motivation is the mere fact of asking the patients about their opinion on physical activities, their experiences with movement and we are looking for options for planning the physical intervention with regarding the possibilities of our patients.

Based on this experience, the work schedules are changing, the times are changing, as well as the character of physical activities, but these are long-term and demanding changes.

It is important to repeat the data collection and it would be appropriate to create a standardised questionnaire, which would map the physical activity and demographic data more accurately.

# WORKING PHYSICAL ACTIVITY WITH CHILDREN WITH PSYCHIATRIC DISORDERS

Renata Hajná

## INTRODUCTION

*“Being and knowledge belong together - but in a remarkable and difficult-to-comprehend way.” (Fink, 1996, p. 101)*

School (educational institution) is, as well as the personality of each one of us, a complex system, except that the school is a place of not only social but also pedagogical interactions of relatively large amount of people – more specifically, pedagogical and non-pedagogical workers, students and their family and social surroundings. From this concept arises the diversity of understanding the importance of education and training and looking at the possibilities of the pedagogical process.

## PSYCHO-MOTORIC ACTIVITIES AND SCHOOL ENVIRONMENT

The previous period in the mainstream agreement focused rather on the “knowledge” area, i.e. it brought an emphasis on cognitive factors. The current period is increasingly being linked to the area of “being”, as it is clearly visible that these personality variables affect our realized school performance.

“Psycho-motoric is a complete motion program built on the close connection between perception, movement, experience. In a more specific sense, it represents a summary of the human physical activities, which are a manifestation of his psychological features and his mental state, so it is the integrated cooperation of the psyche” (Karásková, 2014, p. 1).

Here we can find a big foundation of the targeted use of psycho-motoric activities in the school environment, because the psycho-motorics as a pedagogical direction applies in itself the mutual continuity and connectivity between mental and bodily processes, which can positively influence a child's (pupil's) personality through an educational process, when it is used in a corresponding way from the point of view of a child's development and his specific needs. This means that from our early development, these processes are involved in the development of our personality as such and allow the outside observer to react to the partial transformations of our development (not only diagnose the current status, but to intervene in favour of the positive transformation of this development) (Hátlová, 2010) and this does not have to take place only in special institutions. So it is definitely true that in the school environment "the psycho-motoric as an educational or therapeutic process is therefore a means to integrate the personality and coping with relationships to the world and to people throughout the whole life" (Adamírová, 2010 in Hátlová, 2010).

From this point of view, there is a new actor in the foreground - an educationalist, whose personality and competences will play an important role in this process.

At present, he will have other variable in his favour, which is the transformation of strategy in education in our education system that began to be realised in the previous periods. Currently the most important shifts are due to amendments to the Education Act in 2015 and Regulation No 27/2016 Coll., Decree on the education of pupils with special educational needs and gifted pupils (valid from 1st September, 2016) - processing the implementation of support measures for these pupils in schools and school institutions and organization of the education of pupils with acknowledged support measures, such as methods of teaching, editing the educational content and outcomes (i.e. the organization of learning, e.g. taking into account the position of the pupil, assessment, intervention of school). Last, but not least no. 197/2016 Coll., Decree, amending Decree No 72/2005 Coll. about the provision of advisory services in schools and educational counselling establishments, as subsequently amended, and some other Decrees.

Therefore, psycho-motoric as a means of education can become an active part of a pedagogic-educational process in all types of educational institutions. Indeed, in its broadest conception, it works through the movement on the perception of the people's own feelings, emotions and their differentiation leading to awareness of their own "self" and watching the developing

potentials for their “self”. “This supports the activity on its own, which is important for creating new patterns of behaviour and experiencing things” (Hátlová, 2010, p. 13).

Karášková (2014), with regard to its specific objectives, talks about the direction to the three core competencies: competence of the interaction with the environment, the competence of social interaction and personal competence.

The competence of the interaction with the environment is characterised by the child’s efforts to “get as much experience of perception of movement from the material area as possible, so it can adapt to the surrounding world of things with its tangible objects, instruments and obstacles, and actively adjust this world according to its image. During this process, the child is learning to deal with objects, but also to understand the laws of physics.

- Handling of things and items, especially with natural materials, everyday objects, sports equipment and tools, specific psycho-motoric tools.
- Orientation in the environment and in the space. (Karášková, 2014, p. 3)

Other competence is social interaction, which allows us to “learn to adapt to other people, but to promote our own needs in the actual communication.

- Making contacts.
- The development of verbal and non-verbal communication.
- Development of cooperation in a pair, in the group.
- Creating readiness to help; responsibility, the ability of initiative taking of responsibility.
- Respect for others.
- Social perception, empathy.

Removing barriers of shyness between individuals of different sex and with other differences. (Karášková, 2014, p. 3-4).

And the third competence is perceived as a personal competence, i.e. “get the information about self, the body schema, its size, the individual sections and use them affectionally.

- Your own power, identity.
- Awareness of your own emotions and feelings.
- Control your own body in time and in space.
- Regulation of muscle tension and release.
- Improving gross and fine motor skills.
- Increasing creativity, originality, spontaneity and flexibility.
- Support of perceptive functions.
- Speech support. (Karásková, 2014, p. 4)

In the situation of compliance with the “psychological security” in the use of psycho-motoric activities which respect the above stated competencies developments and leading to creation of so called bio-psycho-social comfort of the individual, we support the development of psycho-motorically advocated self-concept “me and a sense of my own existence”. Presented by educational legislation we create for a pupil with special educational needs partially the support measures aiming at the development of a harmonious personality.

## CHILDREN (PUPILS) WITH PSYCHIATRIC DIAGNOSIS

“Health is a state of perfect physical, mental and social wellbeing, which is the result of a harmony of mutual interaction of the organism and the environment. The disease is a summary of the organism reactions to the disturbed balance between it and the environment” (Malá & Pavlovský, 2002, p. 10) and mental illnesses are one of their group.

Pedopsychiatric diagnosis as itself captures the developmental dimension that corresponds with the specifics of the given development periods. That means that not only the physical condition is being considered, but also mental manifestations of the child (pupil) in the context of its development and social situation, including their mutual overlapping. “It is true not only in the pedopsychiatry, that an individual is a biopsychosocial unit in the historical-environmental context.” (Hort et al., 2000, p. 106)

In the context of the school environment, the majority of these children (pupils) belong (with their assignment) to a group of pupils with special educational needs with the individual specification of the support zone. The largest subgroup, in particular for younger school-age, is formed by children (pupils) with disorders of behaviour and emotions, in particular, with hyperkinetic movement disorder.

Hyperkinetic disorders have these basic symptoms (Hort et al., 2000)

- cognitive function disorders (attention disorder, difficulties in selection of stimuli, analysis and synthesis disorder in relation to information, distortion or disorder of executive functions, motivation, effort and endurance disorder, reduced ability of spatial imagination, difficulties with in memory – word and work),
- motoric-perceptual disorders (hyperactivity, including difficulties with relaxation, small neurological disability, motoric clumsiness, disorder of visual motoric coordination),
- disorders of emotions and affects (lability, explosiveness),
- impulsiveness (chaotic and unpredictable behavior),
- social maladaptation (behaviour irrelevant to age, inability to control their behaviour, in particular in relation to their surroundings).

In the school environment, the typical manifestation of overactive and impulsive child can be one of the following: a child is rocking in a chair, it is constantly playing with something - even its own fingers, it is not able to play calmly and quietly, it is constantly driven by something, it is verbally hyperactive, it answers the question before the question is completed, it is ahead of the others,... It is clear that the child has a problem with learning and saturating core competencies in all three areas (competency of interaction with the environment, competency of social interaction and personal competency).

In addition, the severity of this category from the perspective of co-morbidity assessed from the spectre of pedopsychiatrists is: “Disorders of attention and activity are a risk factor for other psychiatric and psychosomatic disorders (e.g. opposition behaviour, behavioural disorders, substance abuse, enuresis, tics, etc.). A minimum of 40% of hyperactive children have behavioural disorders, which in up to 50% of cases transit to adulthood (ADHD-RT, retarded type) with the diagnostic “sticker” of a personality disorder (mostly antisocial and emotionally unstable). “ (Hort et al., 2000, p. 313)

From these identified factors arises the relevance and higher significance of work with these groups of children and pupils from the beginning of their entry into educational institutions with the objective of promoting their own core competencies and thus support their school socialization and its feedback mechanisms for their own “self” of children with the given diagnosis. A side effect from the own activity can be seen in others in the group, because they have the opportunity to gain real experience with their development potential.

**EXAMPLE OF THE PRACTICAL BLOCK (THAT SUPPORTS CORE COMPETENCIES) DESIGNED FOR CHILDREN OF PRESCHOOL DEPARTMENT OR THE BEGINNING OF THE PRIMARY SCHOOL:**

### **1. WARM UP GAME (ICE BREAKER) COMPOTE**

Objective: to warm up the kids, run the motion game

Duration: 5-10 minutes

Number of participants: the whole group (class)

Tools: chairs arranged in ring

The children (pupils) are seated in the inner circle and we gradually sort them in groups according to the fruit (initially is suitable to divide them into 3 groups, for pupils with a longer experience is possible to increase the number of groups) – APPLES, PEARS, PLUMS. The player in the middle of the circle, calls out which group of fruit (or combination of groups for older pupils) shall exchange places. When he calls this – these pupils must get up from their places and take up the free place. In a situation where the leading player shouts COMPOTE, everybody changes places.

It is possible to play with a smaller number of chairs (1 chair less than the number of children) in a situation of the common group.

## 2. CUSTOM WORKFLOW TECHNOLOGY RACING

Objective: reduction of discomfort and excitement, concentration on verbal and motoric stimulus

Duration: 15-20 minutes

Number of participants: the whole group (class)

Tools: not needed

All children sit together in the circle, and at the beginning they unify movements and sounds, which they will use during the game.

- Galloping horses - mouthing the thighs and uttered word tarab, tarab, tarab,....,
- Left turn – everybody will band to the left,
- Right turn - everybody will band to the right,
- Simple obstacle – one swing,
- Double obstacle – two swings,
- Ride in front of the platform - we smile and wave (as we would smile and wave at the viewers)
- Ride in front of the reporters - we pretend clicking of cameras,....

This list can be of course expanded, but also narrowed, according to the group's abilities.

The reciter can be also continuously changed. We launch the game by using the command START and finish it with the notification HOME STRAIGHT.

## CONSECUTIVE TECHNIQUE OF EGG

Objective: focus on verbal instruction, at the same time also the perception of spatial orientation and physical and visual stimuli

Duration: approx. 10-15 minutes

Number of participants: maximum of 8 children (pupils) per 1 egg, i.e. we divide the entire work group to a required number

Tools: rubber, rope of the required length (or linked gymnastic skipping ropes)



We motivate the children for example in the spring with an Easter egg, which can be optically created by children from a rubber. Their task will be to move around the area as instructed by the leading person (that can be also the child itself), and at the same time, keep the egg, that is not only its shape, but also outlines in the required height (waist level). In simplified form, the children hold the edges of the egg (they have the rubber in their hands), in the more demanding form, they keep it with their own body with a help of the group movement.

### **3. FINAL TECHNIQUE -"FRAMING OF THE BLOCK" FOR EXAMPLE DECORATING THE EGG**

We draw an outline of our egg on a piece of wrapping paper and children record their place on it (with the imprint of hands or feet using the finger colours) and draw their message in the inner space, answering the question: What was it like?

We finish the entire block with a discussion:

For example: What was it like? Does the colour of my hands or feet match in the egg match this emotion? How do we feel now (emotionally)? What did we enjoy the most? What did we do well together and what do we need to practice? Or how can we improve our next common game?

### **EXAMPLE OF THE PRACTICAL BLOCK (THAT SUPPORTS CORE COMPETENCIES) DESIGNED FOR PUPILS AT PRIMARY SCHOOL:**

#### **1. WARM UP GAME (ICE BREAKER) ATOMS**

Objective: it is a warm up game, i.e. it aims to involve and draw attention of all children in the group

Duration: 5-10 minutes

Number of participants: the whole class

Tools: none

We introduce the game by explaining the concept of atom (according to the current level of pupils) and we further instruct them, what size of elements or compounds we are going to make, i.e. how many atoms. For example, we will create a group of 5 atoms, 2, ....

## 2. WORKING TECHNIQUE ITSELF - IMAGINATION SUNFLOWER

Objective: to calm and concentrate on verbal instructions and link them with the motoric implementation and own emotional and experience

Duration: 15 minutes

Number of participants: the whole class

Tools: free space (a smaller gym class with adapted space and with reasonable temperature) or camping mats

Pupils select a place in the space based on their own consideration and they are briefly familiarised with a development of the sunflower and the instructor adds that now they are going to try it.

*Try to imagine that you are a sunflower seed and you just have been planted by a gardener. Get in a position which shows how your seed lies in the ground. In doing so, try to close your eyes to make the experience of growth unique by focusing on it. Imagine that the land is wonderfully soft and warm and you feel very pleasant in it. The gardener is caring, so he waters the plants and they grow – they bore their roots into the ground to hold and the first sprouts are beginning to show. Our sunflowers grow - they frisk to the sun – they unroll their leaves and create their beautiful blooms. This bloom is slowly developing and looking for sunshine, turns to the sun and feels the heat from the sun getting through and sends it through the stem to leaves and roots. It's a relaxing feeling. You can feel a mild wind blowing, which is playing with your sunflower, but it is pleasant and you want to look how the other sunflowers are doing... You slowly open your eyes, but you keep that warm, relaxed feel.*

You sit up together, stretch your bodies and start to discuss.

Questions for discussion: Who managed to put himself in the imagination of the sunflower? Why someone might have had a problem with that at some moments? Which imagination was the most enjoyable and which one did not raise the feeling of enjoyment? .... It is possible to lead the discussion about the next possible topic.

You can use colours to draw a field of common sunflowers, create a poem, a story....

### **EVENTUAL ADDITIONAL FINAL TECHNIQUE RAIN (OR STRONZO):**

Objective: to calm and concentrate on verbal instructions and link them with the motoric implementation and own emotional and experience

Duration: 10-15 minutes

Number of participants: the whole class

Tools: free space (a smaller gym class with adapted space and with reasonable temperature) or camping mats

We sort pupils into pairs (e.g. with a prepared mixture of different coloured strips of ribbon - they freely choose from them untangle into pairs), and sit them down on the foam pads. First, they sit in pairs opposite to each other. One of the pair holds up his palms and the other gradually demonstrates the varying intensity of rain (from fine rain to a strong storm), then they exchange places. Alternatively, this activity can be implemented on each other's backs.

In the discussion, we lead the pupils towards identifying pleasant and unpleasant feeling and to understanding of mutual difference in the perception of the intensity (i.e. limits of the individual).

Alternative of stronzo: free movement around the space is finished with an agreed signal. After they hear this signal, the pupils stay in the momentarily implemented positions. This is repeated several times.

An effective way to work with the tension and release and concentration on the audio signal.

## CONCLUSION

This study and the aforementioned groups of activities illustrate the possible ways of working with pupils with special educational needs (especially with a psychiatric diagnosis - hyperkinetic disorder) in the school space, i.e. pupils which are included in the mainstream of the educational process and promoting the comprehensive development of the pupil's personality. At the same time, it is necessary to take into account a significant variability of the final outputs of the own implementations in the field, as there is number of variables entering the process, whether we observe this phenomenon from the perspective of a specific supported child (pupil) or from the perspective of the entire educational-training process.



**PART III.**

**EXPERIENCE  
IN MOTIVATION FOR PHYSICAL ACTIVITY**



# WHAT SUPPORTS PEOPLE WITH MENTAL HEALTH PROBLEMS TO PARTICIPATE IN SPORTS CLUB PROGRAMMES? A QUALITATIVE APPROACH

*W.Ruf, A.Heimgartner, S.Titze*

## INTRODUCTION

People with mental health problems have an increased risk of chronic diseases compared to the general population. This could be explained by the high level of sedentary behaviour among this target group (Chapman, Fraser, Brown, & Burton, 2015). Instructed physical activity offers can be an appropriate way to reduce these risks. Furthermore physical activity can increase the quality of life of people with mental health problems (Rosenbaum et al., 2014). In an Austrian pilot study from 2009, people with mental health problems were asked about the reasons for their inactivity. About 86% of those interviewed answered that there are no physical activity programs meeting their personal needs. Similar results were described in the review of Mason & Holt in 2012. These results are in contrast to the UN-convention on the rights of person with disabilities that was signed and ratified by the Austria government and most of the European countries already in 2008. In this convention, in article 30, it is written that people with disabilities have the right to participate in cultural life, recreation, leisure and sport. The aim of this study is to look at frameworks that are necessary for people with mental health problems to participate in sport programs and in turn to increase their physical activity behaviour. The results of this study should create an awareness of the situation for people with mental health problems in Austria and Europe. Furthermore, policy makers will? Receive some guidance about different frameworks in order to increase physical activity behaviour of people with mental health problems.



## METHOD

To emphasise the perspective and personal experience of people with mental health problems as well as from sport trainers and authorities of regular sport clubs, semi structured interviews were undertaken. For this study, individuals of the target group were eligible if they stayed at least once in a psychiatric hospital or received an ambulant treatment and attended the “pro move” physical activity program run by a mental health NGO at least once a month between 2013 and 2014. The “pro move” program is one of two offers for people with mental health problems in the non-clinical setting in Austria. People with mental health problems have the chance to participate in various kinds of sport. The offers are for free and unlimited in time. From 121 individuals that participated in this program, 23 were chosen. The selection was based on the criteria to generate a variation sample according to gender, age, education, professional background, preferred sport, duration of stay at pro move, and mental disorder. Finally, fifteen semi-structured interviews were conducted (2 women). The mean age was 36.7 (SD=11.8) years. Participants have been either employed, in work rehabilitation, in disability pension or unemployed. The most preferred sports were football, climbing, table tennis, nordic walking and swimming. About 27% of the individuals were overweight and another 27% were obese. The interviewees participated on average three times per month in the “pro move” program.

Two football trainers and a dance therapist who had experience in the work with people with mental health problems were interviewed.

Moreover, three representatives from the three main sports associations were asked about their opinion on how to support the access to sports clubs for people with mental health problems. Finally, questionnaires have been sent to 27 European sport clubs for people with mental health problems to gain a European perspective. All 27 sports clubs are members of the European Association for Sport and Social Integration (EASI). Seventeen questionnaires from Austria, Czech Republic, Germany, Spain, Norway, Netherlands, Slovenia, Slovakia, and Great Britain were completed and sent back.

The interview data were transcribed verbatim and relevant paragraphs were assigned to categories by using a Grounded Theory approach (Strauss & Corbin, 2010).

## RESULTS

Two core categories were generated out of the data. The first core category is the “target group specific courses” which are available for people with mental health problems only and are located at mental health community services. The aims of these sport programs are the improvement of health and quality of life through physical activity but also helping people with mental health problems to manage their life. Therefore, sport scientists, psychologists and social worker work together. “Target specific courses” are preferred by people with mental health problems as they experienced an atmosphere of trust and a feeling of wellbeing in the own peer group as a male participant described:

“You walk together with people with the same fate, you start to talk and do not feel as lonely anymore.”

A subcategory of the core category “target group specific courses” is the mental health literacy of the trainer as described by a trainer of a mental health football team:

“You recognize if somebody doesn’t feel well and wants to talk. Then you can offer him to talk. This is quality of life, if you have somebody to talk to and this is possible very easily.”

Experienced trainers agree with these positive aspects of target specific courses. However, they are aware that target specific courses are cost-intensive and therefore only available for a small number of people with mental health problems. Among sport clubs authorities there is little knowledge about the target group and their specific needs. To take responsibility for the implementation of an appropriate framework for the target group is closely linked to resources provided by the government as a responsible authority of a sport club stated:

“We have shown several times what the organized sport is able to do. But this of course is linked to financial resources. To provide something, to organize something is connected with staff costs.”

At a European level, seven of the 17 respondents provide target group specific courses. Most of these sport projects receive basic funding from the government. People can stay as long as they want and there are no entry requirements for participants.

The second core category is the “open courses to all”. This is defined as sport programs that are offered to all people interested in a certain kind of sport no matter if they have a mental illness or not. Another advantage of open courses located at regular sport clubs is the widespread network and so the availability of the courses to all people with mental health problems. A male trainer of a mental health football group raised this potential positive aspect:

“It would be good to offer a wider range of sports where also women have the chance to do sports. Where the level of difficulty is different so you have a choice and do not have to take what is there at the moment.”

Although the interviewed people with mental health problems could imagine participating in such programs, they raised some concerns:

“I would be very interested to be member of a tennis club for example. The problem is that with my illness it is not always easy to keep appointments. Especially when you are not feeling well.”

Experienced trainer view open structures of sport clubs as positive if the special needs of people with mental health problems are considered. A female trainer and dancing therapist stated:

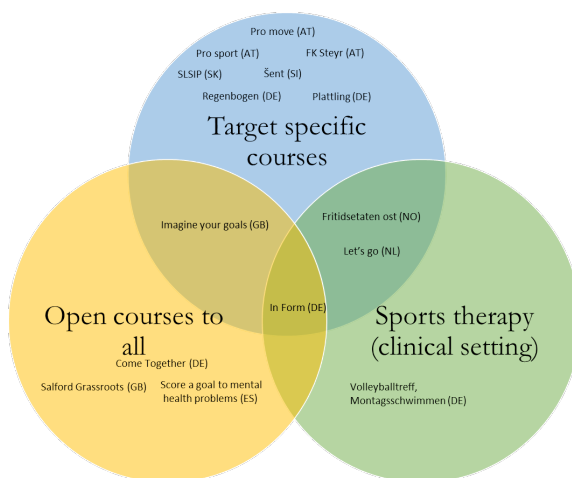
“At the end it is important that people with same interests in sport find each other. Everything else is secondary. There is too much focus on deficits of people with mental health problems.”

To offer open courses to all at their sport clubs, is seen as controversial by the sports club authorities. Concerns were raised with regard to costs, the lack of experience among sport trainer with regards to working with people with mental health problems and the often exclusive structure of sport clubs. A male participant who wanted to join a tennis club stated:

„People ask since when you are playing tennis. It is like an entrance exam. They say, they are having a fixed schedule and it is difficult to enter. This is not cool because then you surrender immediately.“

At a European level, three of the sport clubs for people with mental health problems defined themselves as located at a regular sport club. Many of the open courses to all are dependent on membership fee, donations and voluntary work. There are no entry requirements for participants and they stay as long as they want at the sport club.

Figure 1. Settings of European sport clubs for people with mental health problems



In figure 1 all European sport clubs that participated in the study are represented. Beside the target group specific courses and the open courses to all, some of the projects are also located in a clinical-setting and can therefore be defined as sports therapy. As all the projects are individually designed, some of them are not clearly assignable to one of the structures. Therefore, they are located at the intersection of different settings.

## CONCLUSION

The de-hospitalization of people with mental health problems leads to new responsibilities in our society. Sports clubs have to open their doors for a new target group if they take social responsibility. Despite all concerns that appear, this can be seen as a chance to strengthen the position as a public health organization in Austria. To conclude whether “target specific courses” or “open courses to all” are the way to go is not easy to answer. It is important to respect the request of people with mental health problems

to want to participate in target group specific courses. One problem of target specific courses is that these courses are not feasible for all people with mental health problems. Furthermore, these courses disable people with mental health problems from being included into society. Nevertheless, target group specific courses can be an easy first step for people with mental health problems to (re-) start with physical activity. If article 30 of the UN convention on the rights of person with disabilities should be implemented, it will be crucial to install open courses for all at regular sport clubs. A prerequisite is a structural change of Austrian sports clubs. Therefore, the mental health literacy of trainers, and responsible authorities of sports clubs, has to be increased and at the same time financial resources have to be provided to implement open courses for all. In Austria, the current the difficulty is the little experience with open sport courses and little knowledge about whether, and how, inclusion of people with mental health problems in regular sports clubs really works. A possible solution could be to learn from European sport projects for people with mental health problems. One promising approach is implemented by a sports club in Germany that installed a case manager to transfer the advantages of target group specific courses to open courses at sport clubs. This person acts as an interface between mental health service centres and regular sports clubs. To increase the chance for people with mental health problems to be regularly physically active, the awareness of responsible authorities for the needs of these people and the required structural changes has to be raised and people with mental health problems have to be included in the decision making process.

# EXPERIENCES FROM OFFERING PHYSICAL ACTIVITY AS A PART OF THE TREATMENT FOR PSYCHIATRIC OUTPATIENTS

??????????????

## INTRODUCTION

Persons with severe mental illness need to be more physically active. As a group they are suffering from obesity, coronary heart disease and type 2 diabetes. As a result they live 15-20 years shorter compared than the general adult population when suicide is not included in this statistics. (Birkenæs, 2007)

Both recent and older studies show us that physical activity improve quality of life , has a positive effect on mood including depression, reduces anxiety, gives reduction of negative symptoms and it its helping on positive illness symptoms as well (Gorczynski & Faulkner, 2010).

In the Norwegian guidelines on treatment of psychoses from 2013, physical activity is included as an important part of the treatment program for patients with severe mental illness. All treatment units are advised to give information, motivate and offer physical activity to people with mental illness. (Helsedirektoratet, 2013, p.71)

## THE UNDERSTANDING OG PHYSICAL ACTIVITY

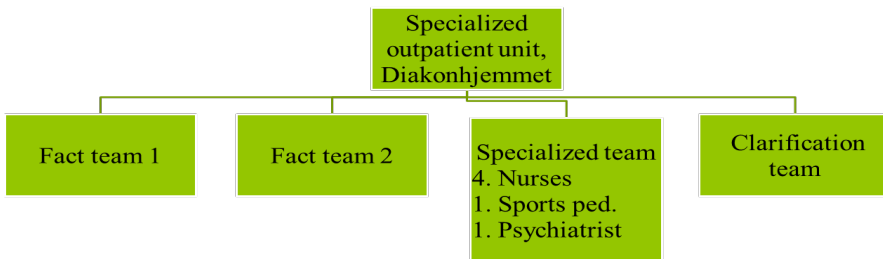
Commonly and in the literature, physical activity is defined as any bodily movement produced by skeletal muscles that requires energy expenditure. (Caspersen, Powell & Christenson, 1985)

However, I prefer this definition which is more extensive and describes PA as all forms of movement with the aim to improve and maintain physical, mental and social functioning (Moe, 1998). So how do we work at my hospital with respect to this understanding?

This is Diakonhjemmet hospital where I have my office. I started to work here in 2007, and in 2012 we started our program with patients living at home. The patients are mainly severe mentally ill with psychosis. Totally, I have about 40 patients in my program.



## THE SPECIALIZED OUTPATIENT UNIT



We are a part of the specialized outpatient unit. First we have the Fact teams (Flexible Assertive Community Treatment). *FACT teams provide long-term care for people with severe mental illness who are not in psychiatric hospitals. In addition to psychiatric problems, these people have many limitations in their social functioning, for instance in relation to housing, self-care, employment and finances. It is difficult for them to participate in society, to 'belong'. Their support systems and contacts are often limited. Family is very important, but sometimes family is kept at a distance.* (Veldhuizen, van & Bähler, 2013). The specialized team where I work is small, we are 4 nurses, 1 sports pedagogue that's me, and a psychiatrist. We work as a service team for the two fact teams, this work includes to give depot medicines, have group therapy and a daily physical activity program.

Some patients are getting the treatment they need voluntarily, but others are in a compulsory medicine program. The unit serves about 400 patients.

The Fact teams report to us when a patient may be interested and can benefit to participate in the PA program. We then meet the patients together with the case manager (member of the FACT team) and introduce the PA program. We talk with the patient and together find activities they will like to enter.

When included in the program we call them up in the morning and most of them are able to come to the hospital on their own. However, we also sometimes drive home to and pick up the ones who struggle the most.

There are about 6-7 patients following the program daily, and there are usually two therapists present at the activities.

<b>10.00 -</b>					
<b>11.00</b>					
<b>11.00 -</b>	Walks in the city/	Health studio	Walks in the city/	Cross-country	Swimming
<b>12.00</b>	Hiking in nature	Diakonhjemmet hospital	Hiking in nature	Skiing group	Risenga/Asker
<b>12.00 -</b>	Walks in the city/	Aquagym (1145)	Walks in the city/	Cross-country	Swimming
<b>13.00</b>	Hiking in nature	Diakonhjemmet hospital	Hiking in nature	Skiing group	Risenga/Asker
<b>13.00 -</b>	Walks in the city/		Walks in the city/	Cross-country	Swimming
<b>14.00</b>	Hiking in nature		Hiking in nature	Skiing group	Risenga/Asker
<b>14.00 -</b>	Walks in the city/		Walks in the city/	Cross-country	
<b>15.00</b>	Hiking in nature		Hiking in nature	Skiing group	
<b>15.00 -</b>					
<b>15.30</b>					

## THE WEEKLY PROGRAM

Above is an example of the weekly program we had this winter. As can be seen, we had four types of activities: walking, cross-country skiing, swimming and health studio. Consistent with literature, walking is the most popular activity in all patients group.

It is the most basic form of movement-, it is a part of life and can be performed nearly everywhere. People who walk have less risk of injury than other activities for example jogging.



Is inexpensive, requires little equipment and you do not need any specific skills.

It is also ideal for maintaining or increasing aerobic fitness and of course, as all exercise, leads to increased energy expenditure and helps to prevent overweight.



## A STORY OF SUCCESS

### FEMALE PATIENT WITH SCHIZOPHRENIA AND ANXIETY AS HER MAIN SYMPTOM

Let me tell about a patient who have been drinking beer every dag. She was afraid of going out on her own. Her story is that she always have been fond of walking around discovering new places. Due to her illness it became difficult for her to do her walking. She started to put on weight and her anxiety got worse. The last few months she has been joining the program 3 days a week. She has experienced relief in symptoms and stopped drinking beer daily. As a consequence she has started to loose weight, has a much more social life and she has even started to do the walks on her own again.

### SOCIAL BENEFITS OF THE PROGRAM

We have mostly 7 patients, and try to work together as a group, involving the patients in the whole process. My experience is that after a group activity, f.eks. after a one hour easy walk in the forest, it is very advantagous to finish the day with a shared meal, for instance eating lunch (often in front of a fire). That makes the patients feel extra wanted and included. Many also make friends within the group even though they do not meet outside of the program.

One of the parents of a patients told the other day that their son-, refers to his fellow patients as his friends. He also told them that he really liked staying in the group.

Hence, this teaches us that if we do a good job with establishing a good social setting, that is what gets them motivated and gives them the desire to come back.



We have observed other benefits of the programs as well. Some of the therapists from the FACT teams often participate and meet with their patient in the PA group. PA is a good way of doing observations because the situation is not connected with illness. Therefore it provides another type of setting that allows the patient and therapist to get to know each other better.

Keeping weekly contact with the patients is important (even just on the phone). I recommend the patients to participate at least twice a week. This is not just because of improved fitness, it's also because I see that a break (f.eks. holiday) makes it so much harder to re-join the group. When we see the patients regularly, we can talk, observe and find out how they are doing.

## CHALLENGES

There are many challenges to get the patients to show up and participate in the weekly exercise program. Due to positive and negative symptoms most are very sedentary and have problems to get out of bed. The use of strong medicines makes it even more difficult to get up even though they like to come. Others have few good experiences with exercise and are harder to motivate.

As a consequence they do not answer the phone.

Because of the patient entering this program having problems with both anxiety, depression and lack of motivation, it is a big problem to get them to participate regularly. Like I already mentioned, it's important to keep in contact with them on the phone, and never give up – if they do not talk, you talk. I believe that hearing your voice makes them feel safe and helps them more than we really think.

For some, it can be difficult taking public transport, etc. Hence we need to pick them up for all activities.

It's also a challenge to be just one sports pedagogue with respect to sickness, holidays and seminars like this. Days off, regardless of reason, makes it difficult for the other team-members to keep the program going. I hope we can do something with this in the future.

## THE REASON FOR SUCCESS

To sum up, I think in order to succeed with physical activity as a part of the treatment program for people with psychiatric disorders, it is essential to create a good social climate, as well as to adjust the activities individually so that all patients can participate at their own fitness level. Walking in different kind of settings (urban like a city walk, going fishing, hiking in the forest, are really important for most patient groups, and several scientific studies show the same.

Good follow up is also essential, and we see the same as Libak (2010) did in her study, that especially among those who are most ill, transport to activity is of big help and needed for adherence.

It is also important to have support and backing from the other treatment units, like nurses, physicians and psychiatrists.

We have a sports pedagogue: many hospital, do not have a sports pedagogue. My job is to meet patient and offer physical activity at different levels. This of course makes it much easier to have a successful PA program.

# INFLUENCE OF UNIVERSITY EXERCISE PROGRAM ON TIME STUDENTS DEDICATE TO PHYSICAL ACTIVITY OUTSIDE OF SCHOOL

*Martin Dlabal, Tereza Louková*

## PROBLEM DEFINITION

Use of physical activity to support both physical and mental health is currently widely recognized among general population (Biddle, Fox & Boutcher, 2000; Biddle, Mutrie & Gorel, 2015). Adequate physical activity has beneficial effects on health in the prevention of lifestyle diseases (Křivohlavý, 2003) and increases physical and mental well-being and happiness (Physical Activity Guidelines Advisory Committee Report, 2008). A preventive effect of physical activity in adolescents on the emergence of lifestyle diseases in adulthood has also been proven. Before and after puberty, regular physical activity brings about changes which prevent osteoporosis until late adulthood (Máček, 2011). Furthermore, physical activity is an important factor in avoiding excess weight and obesity in childhood and adulthood (Bunc, 2010). According to Nešpor and Csémy (2006), adequate physical activity reduces anxiety and depression, increases resistance against brain damage caused by alcohol and people's happiness in life.

Yet, only a minority of adults in modern societies reports engaging in physical activity at a level compatible with most public health guidelines (Sisson & Katzmarik, 2008). Indeed, approximately 40% of Europeans agree with the statement: "Being physically active does not really interest me - I would rather do other things with my spare time" (Special Eurobarometer, 2010).

The subject of this investigation was to determine whether or to what extent the amount of physical activity among students can be affected. Specifically, if the frequency and the total amount of time that students of Faculty of Education at the University of Jan Evangelista Purkyně engaged in physical activity outside of school can be increased by a university exercise program supported by motivational interviewing.

General experience and the research investigation confirm that encouraging or instructing others to devote more time to physical activity in itself is not enough. V. S. Conn and his colleagues' (Conn, Hafdahl & Mehr, 2011) data from 358 research projects focused on influencing physical activity found that on average it only had a slightly positive effect. The resulting increase in the amount of physical activity in many cases did not meet the recommended health requirements.

Current research is therefore trying to control more diverse environmental influences affecting involvement in physical activity and it focuses on verification of physical activity motivation and guidance methods.

Some studies associate the final effect of guidance towards physical activity with variables such as crime rates in the area, number of available and attractive sports facilities and the weather in a given period. B.E.Molnar and his colleagues (Molnar, Gortmaker, Bull & Buka, 2004) state that disorderly conduct and less safety in the place of residence affect the levels of physical activity its residents engage in. Other research confirms the positive impact of a sufficient number of accessible and attractive facilities on the amount and the way of performing physical activity (Sallis et al., 2001; Rozita et al., 2010).

Furthermore, M. Bélanger and colleagues (Bélanger, Gray-Donald, O'Loughlin, Paradis & Hanley, 2009) demonstrated the impact of weather on physical activity. According to this survey, the amount of physical activity gradually decreases with decreasing temperatures and with increasing rainfall or snowfall (Bélanger et al., 2009).

Surveys that deal with methods of guidance towards physical activity focus mainly on the influence of the experience of being engaged in physical activity, on the impact of counseling and on varied methods in the field of motivation. For example, J.F. Sallis's survey (Sallis et al., 1997) found that if fourth grade pupils are guided by specialized instructors in their physical education classes, it leads to a greater amount of physical activity in the subject. However, this guidance does not increase the amount of physical activity outside of school. Research done by B. H. Marcus and his colleagues (Marcus, 1997) confirmed the positive influence of the medical model of guidance on a short-term increase in the amount of physical activity. This increase correlated positively with a higher number of counseling sessions. Finally, the importance of motivation is presented in the research of J.A.Bennett and his colleagues (Bennett, Lyons, Winters-Stone, Nail & Scherer, 2007) who confirmed the influence of "motivational interviewing"

to increase physical activity in patients who have successfully undergone cancer treatment.

The aim of this investigation is to determine whether or to what extent guidance towards physical activity within university education affects the rate and the total amount of time that students spend in physical activity outside of school. For the purpose of verification of these statements, four basic hypotheses were formulated.

H1: Completing the exercise program positively affects the frequency of physical activity undertaken.

H2: Completing the exercise program positively affects the amount of time spent in physical activity.

H3: The frequency of physical activity performed by the respondents of the control group in the input and output investigation will be the same.

H4: The amount of time spent in physical activity of respondents of the control group in the input and output investigation will be the same.

## **METHOD**

The survey is primarily designed as a quantitative work focused on verifying relationships between the variables examined. The investigation was also supplemented with several illustrative qualitative testimonies.

### **THE SAMPLE IN QUESTION**

The sample in question included first year students of the Faculty of Education at the University of Jan Evangelista Purkyně in Usti nad Labem who enrolled in one of two courses offered by the Department of Psychology. Overall, it was a sample of 39 students aged between 19 and 22 years of age. Five students who failed to attend the second measurement were eliminated from the group.

## APPLIED METHODOLOGY AND VARIABLES

Values indicative of the frequency and the amount of physical activity of the surveyed students were obtained from a short questionnaire in which students marked the frequency and the amount of time that they had recently dedicated to light and heavy physical activity. While light physical activity was defined as any activity that does not speed up breathing and does not cause perspiration, heavy physical activity was defined as any activity that accelerates breathing and causes sweating.

Thus, dependent variables are the acquired values from the questionnaire concerning the frequency of physical activity and the amount of physical activity outside of university. Independent variables are the presence or absence of the exercise program.

Due to the nature and the type of data, Wilcoxon's signed-rank test was used to validate the individual hypotheses.exercise program.

## PROCEDURE

Before the start of the semester, students of selected subject of Psychology were asked to evaluate the frequency and the amount of time they had recently dedicated to physical activity. Subsequently, students who enrolled in „Psychomotor games“ took part in the exercise program. At the end of the semester, all students filled out another questionnaire which surveyed the frequency and the amount of time, that they had recently dedicated to physical activity.

## EXERCISE PROGRAM

The exercise program was carried out from September to December 2015 and numbered a total of fourteen 50-minute sessions a week. The exercise program was based on the fundamental concept of psychomotor skills - entertainment education by movement whose goal is not primarily performance but the experience from movement, cultivating a positive attitude towards movement and the overall personality development of physical, mental and social skills. The main means of teaching psychomotor skills is a game in which a variety of unconventional tools (eg. plastic bottle caps, yoghurt cups, newspapers, etc.) are used. Physical activities should aim to:

- to get participants moving so that their breathing and heart rates are increased;
- to provide participants with a sense of competence, mastery and autonomy (eg. an opportunity to choose tools, speed at which they performed the task, space for their own creativity);
- to create a positive social setting, to give participants a feeling of belonging to a group and a feeling of support in the group.

The exercise program was also supported by motivational interviewing.

## RESULTS

*Table 1. Basic descriptive analysis - experimental group*

Exercise program participants								
	Frequency of physical activity				Total time of physical activity			
	Light		Heavy		Light		Heavy	
	Before	After	Before	After	Before	After	Before	After
<b>Max</b>	8	8	7	8	9	9	9	10
<b>Ø</b>	5,16	5,89	3,21	3,37	5,63	6,37	4,21	4,68
<b>Med.</b>	5	6	3	3	5	6	4	5
<b>Mod</b>	3	6	3	2	5	9	4	3
<b>Min</b>	1	3	1	1	1	3	1	1
<b>SD</b>	1,95	1,41	1,54	1,98	2,13	2,08	1,85	2,23



Table 2. Basic descriptive analysis - control group

Students without exercise program								
	Frequency of activity				Total time			
	Light		Heavy		Light		Heavy	
	Before	After	Before	After	Before	After	Before	After
<b>Max</b>	8	8	7	5	9	9	9	9
<b>Ø</b>	6,15	5,15	3,75	2,85	5,4	5,85	4,2	3,25
<b>Med.</b>	6,5	5	4	3	5	5	4	3
<b>Mod</b>	8	4	3	4	5	4	3	3
<b>Min</b>	3	2	1	1	2	3	1	1
<b>SD</b>	1,71	1,79	1,3	1,15	1,88	2,1	2,08	1,89

1) The effect of completing the university exercise program on the subsequent frequency of physical activity outside of university was verified by Wilcoxon signed-rank test.

H1: Completing the exercise program positively affects the frequency of physical activity undertaken.

p = 0.108

2) The effect of completing the university exercise program on the subsequent amount of time devoted to physical activity outside of university was verified by Wilcoxon signed-rank test.

H2: Completing the exercise program positively affects the amount of time spent in physical activity.

p = 0.076

3) The data of the control group, which did not participate in the university exercise program and the subsequent frequency of physical activity outside university was verified by Wilcoxon signed-rank test.

H3: The frequency of physical activity performed by the respondents of the control group in the input and output investigation will be the same.

p = 0.006

H3a: The frequency of light physical activity performed by the respondents of the control group will be the same in the input and output investigation.

p = 0.036

H3b: The frequency of heavy physical activity performed by the respondents of the control group in the input and output investigation will be the same

p = 0.022

4) The data of the control group that did not participate in the university exercise program and the subsequent amount of time spent in physical activity outside of university has been verified by Wilson signed-rank test.

H4: The amount of time spent in physical activity of respondents of the control group in the input and output investigation will be the same.

p = 0.324

H4a: The amount of time spent in light physical activity by respondents of the control group in the input and output investigation will be the same.

p = 0.470

H4b: The amount of time spent in heavy physical activity by respondents of the control group in the input and output investigation will be the same.

p = 0.030

## DISCUSSION

The inquiry dealt with the influence of an exercise program within university education supported by motivational interviewing on the frequency and the amount of time spent in physical activity among students outside of school.

The acquired data did not confirm a significant effect of the exercise program on the frequency and the amount of time spent in physical activity outside of university. However, after completing the program, in all measured indicators, on average, students devoted more time to physical activity than before this program (Tab. No. 1). This result generally corresponds with the work of V.S. Conn et al. (2011) that found that research projects that address the influence of physical activity of adults only have a slightly positive effect.

The resulting data also found that students who did not take part in the exercise program exercised with a significantly lower frequency than before the start of the semester. This finding concerned both light and heavy physical activity. In the case of the amount of time spent in physical activity, students who did not take part in the exercise program were found to have a significant decrease in heavy physical activity.

This result may indicate that students have limited opportunities of spending their leisure time in physical activity during the semester. Students themselves said that they have less free time for their own activities. For example, when submitting the questionnaire, one student stated: "A month ago I did a lot of exercise but today the school does not allow me to do that at all".

A significant reduction of time devoted to physical activity may be due to the fact that the survey was carried out among first-year students. These students are still looking for places suitable for physical activity in the new environment. This corresponds with the results of some investigations that found that the willingness to engage in physical activity in leisure time increases if there are enough available and reasonably attractive sports facilities (Sallis et al., 2001; Rozita et al., 2010).

Another contributing factor may be the change of season which occurred in the course of the research. The input survey was carried out in September when students started their school year. At this time there are favorable conditions and temperatures for physical activity outdoors. The output survey was carried out in December, when most people do not perform physical activity outdoors as they can be limited by colder weather (Bélanger et al., 2009).

The results of the survey suggest that the university exercise program has a positive effect on maintaining the original frequency and the amount of time students spend in physical activity outside of school. Data concerning the frequency and the amount of time spent in physical activity was on av-

erage higher than before the program in students who participated in the exercise program. (Tab. No. 1). Students who did not complete the exercise program, by contrast, showed a significant decrease of physical activity in the majority of the indicators.

## CONCLUSION

The inquiry dealt with the influence of an exercise program within university education, which is supported by motivational interviewing, on the frequency and the amount of time students spend in physical activity outside of school.

The acquired data did not confirm a statistically significant effect of the exercise program on the frequency and the amount of time spent in physical activity outside of school. However, after completion of the program, students devoted on average more time to physical activity than before the program.

The data also found that students who did not take part in the exercise program performed physical activity with a significantly lower frequency. As for the amount of time spent in physical activity, the students who did not participate in the exercise program showed a significant decrease in the time spent in heavy physical activity.

Students who completed the exercise program, as opposed to students who did not complete the program, retained their original frequency and the amount of time spent in physical activity during the semester.



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## SUMMARY

The book *Psychomotor Therapy and Motivation for Physical Activity* is a sequel of a series of previous books, which are dealing with psychomotor therapy as a healing rehabilitation method not only for psychiatric patients, who create the focused group of our research, but also for relatively mentally and physically healthy people.

The publication responds to the needs of modern time, when people suffer from lack of movement in over technical world and their mental state is not able to balance all stimulus from outside.

From many studies we know that well used physical activity can help to improve mental state of individual, but very important moment is how to motivate them.

The aim of the publication is to introduce basic concepts of motivation in theoretical parts and present researches from more countries in Europe, which are dealing with the motivation for physical activity from different points of views and also practical methods for use.

# PSYCHOMOTOR THERAPY AND MOTIVATION FOR PHYSICAL ACTIVITY

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