



UPPSALA UNIVERSITY

Department of Neuroscience

The Physiotherapy Program

Research Methodology IV/Bachelor Thesis, 15c

Revised and approved

after examination

**Experiences of Barriers and Facilitators for Physical Activity from People with Mental Disorders who Participated in a Physical Activity Project - An Interview Study**

**Purpose:** To explore the experiences regarding perceived barriers and facilitators for physical activity of three participants with mental disorders who took part in the Norwegian Physical Activity Mentor project.

**Design and methods:** Descriptive qualitative design. Individual semi-structured interviews were used for data collection. Data from the interviews was used in two separate bachelor theses, written by Swedish and Norwegian physiotherapy students. This cooperation was part of the NordPlus Higher Education Program *Joint Physiotherapy Education in Bachelor Thesis Module*. Qualitative content analysis was used in processing the data.

**Findings:** Perceived barriers for physical activity were: mental disorder symptoms, antipsychotics, undertaking physical activity independently and physical experiences. Perceived facilitators for physical activity were: positive mental effects, intrinsic and extrinsic motivational factors, goal setting and routine. The experiences from the Physical Activity Mentor project, including the possibility of self-selected activities, were mainly positive. The support provided by the physical activity mentor was an important facilitator.

**Conclusion:** Disease-related problems were perceived as barriers for physical activity. The most important perceived facilitator for physical activity was mental benefits from being physically active. External support from a physical activity mentor might facilitate physical activity for psychiatric outpatients.

**Key words:** mental disorder, physical activity, barriers, facilitators, mentor

Authors

Brandt, Katarina  
Luthagesplanen 27b  
75 235 Uppsala  
Loelv, Sara

Supervisor

Hellström, Karin  
Karin.Hellstrom@neuro.uu.se  
UPPSALA UNIVERSITY  
Senior lecture/PhD Physical Therapist

Examined (May/2012)





UPPSALA  
UNIVERSITET

Department of Neuroscience  
The Physiotherapy Program  
Research Methodology IV/Bachelor Thesis, 15c

Revised and approved  
after examination

**Experiences of Barriers and Facilitators for Physical Activity from People  
with Mental Disorders who Participated in a Physical Activity Project  
- An Interview Study**

Authors

Brandt, Katarina  
Katarina.Brandt.8290@student.uu.se  
Loelv, Sara  
Sara.Loelv.3894@student.uu.se

Examined (May/2012)

Supervisor

Hellström, Karin  
Karin.Hellstrom@neuro.uu.se  
UPPSALA UNIVERSITY  
Senior lecture/PhD Physical Therapist  
Department of Neuroscience  
Division of Physiotherapy

## **ABSTRACT**

**Purpose:** To explore the experiences regarding perceived barriers and facilitators for physical activity of three participants with mental disorders who took part in the Norwegian Physical Activity Mentor project.

**Design and methods:** Descriptive qualitative design. Individual semi-structured interviews were used for data collection. Data from the interviews was used in two separate bachelor theses, written by Swedish and Norwegian physiotherapy students. This cooperation was part of the NordPlus Higher Education Program *Joint Physiotherapy Education in Bachelor Thesis Module*. Qualitative content analysis was used in processing the data.

**Findings:** Perceived barriers for physical activity were: mental disorder symptoms, antipsychotics, undertaking physical activity independently and physical experiences. Perceived facilitators for physical activity were: positive mental effects, intrinsic and extrinsic motivational factors, goal setting and routine. The experiences from the Physical Activity Mentor project, including the possibility of self-selected activities, were mainly positive. The support provided by the physical activity mentor was an important facilitator.

**Conclusion:** Disease-related problems were perceived as barriers for physical activity. The most important perceived facilitator for physical activity was mental benefits from being physically active. External support from a physical activity mentor might facilitate physical activity for psychiatric outpatients.

**Key words:** mental disorder, physical activity, barriers, facilitators, mentor

## **SAMMANFATTNING**

**Syfte:** Att undersöka upplevda hinder och underlättande faktorer för fysisk aktivitet, i samband med det norska projektet *Træningskontakt* hos personer med psykisk sjukdom.

**Design och metod:** Beskrivande kvalitativ design. Individuella semi-strukturerade intervjuer användes för datainsamling. Data från intervjuerna användes i två separata kandidatuppsatser, skrivna av svenska och norska sjukgymnaststudenter. Samarbetet var en del av NordPlus Higher Education Program *Joint Physiotherapy Education in Bachelor Thesis Module*. Kvalitativ innehållsanalys användes för att bearbeta data.

**Resultat:** Upplevda hinder för fysisk aktivitet var: symptom från psykisk sjukdom, psykofarmaka, självständigt utföra fysisk aktivitet och fysiska upplevelser. Upplevda underlättande faktorer för fysisk aktivitet var: positiva psykiska effekter, inre och yttre motivationsfaktorer, målsättning och rutiner. Upplevelserna från projektet *Træningskontakt*, inkluderat möjligheten till självvald aktivitet, var övervägande positiva. Stödet från träningskontakten var en viktig underlättande faktor.

**Konklusion:** Sjukdomsrelaterade problem upplevdes som hinder för fysisk aktivitet. Den viktigaste upplevda underlättade faktorn var de positiva psykiska effekterna av att vara fysiskt aktiv. Yttre stöd från en träningskontakt kan möjligen underlätta fysisk aktivitet för polikliniska patienter med psykisk sjukdom.

**Key words:** mental disorder, physical activity, barriers, facilitators, mentor

## CONTENT

BACKGROUND .....	1
Introduction .....	1
Mental Disorders .....	1
Physical Activity .....	2
Motivation for Physical Activity: The Self-Determent Theory .....	3
Benefits of and Barriers to Physical Activity .....	3
Facilitators for Physical Activity .....	4
Transtheoretical Model (Stages of Change) .....	4
The Physical Activity Mentor project.....	5
NordPlus .....	6
Problem Statement.....	6
Statement of Purpose and Research Questions.....	7
Statement of Purpose .....	7
Research Questions .....	7
METHOD .....	8
Design .....	8
Sample .....	8
Data Collection .....	8
Procedure .....	9
Data Analysis.....	10
Ethical Considerations .....	11
RESULTS.....	12
Perceived Barriers for Physical Activity .....	14
Disease Related Problems.....	14
Self-Governed Physical Activity .....	15
Perceived Barriers and Facilitators for Physical Activity .....	15
Psychosomatics.....	15
Perceived Facilitators for Physical Activity .....	17
Intrinsic Motivation.....	17

Extrinsic Motivation .....	18
Pedagogics of Exercise .....	19
DISCUSSION .....	20
Summary of Results .....	20
Discussion of Results .....	21
Discussion of Method .....	24
Trustworthiness .....	25
Clinical Implications .....	26
Conclusions .....	26
Acknowledgements .....	27
REFERENCES .....	28

# **BACKGROUND**

## **Introduction**

Mental illness and mental disorders are among the most common causes of poor health, premature death, work incapacity and disability. Mental disorders include depression, manias, dysthymia and conditions consisting of a variety of these (1). According to the World Health Organisation (WHO) mental illness accounts for 13 percent of the global disease burden (2). The cost of mental illness in Sweden 2004 was 85 billion SEK, with the most significant portion being due to work incapacity (3). Compared to the general population, people with mental disorders have a higher risk of secondary health problems such as cardiovascular disease, obesity, hypertension and diabetes (4-6). These secondary problems are all associated with an inactive lifestyle.

## **Mental Disorders**

Mental disorders are diagnosed mental illness that affects personality, emotion or cognition. The cause is primarily psychological but could also occur as a result of substance abuse or somatic illnesses (3).

Of the adult population, 4 to 10 percent will at some point of their life meet the criteria for major depression (7). This makes depression a common disease and a significant mental health problem (8). Diagnosis criteria for major depression according to Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) include sadness and/or decreased happiness or interest which lasts at least two weeks and at least four of the following symptom: change in appetite, sleep disturbance, agitation or inhibition, lack of energy, feelings of guilt, impaired concentration and/or thoughts about death (3).

Schizophrenia is a severe form of mental illness affecting about 7 per 1000 of the adult population in the world (9). Schizophrenia is characterised by positive- (delusions, hallucinations), negative- (emotional flattening lack of drive, poverty of speech) and cognitive symptoms (10). On average, people suffering from schizophrenia have a life expectancy of 20 years less than the general population. The reasons are suicide, heart

disease and other diseases associated with lifestyle. The treatment of schizophrenia includes various components such as antipsychotics, psychological therapy and psychosocial interventions (1). Antipsychotics are powerful, they save lives but side effects may lead to diabetes, extrapyramidal symptoms (movement disorders), seizures, tremor, diarrhoea and/or weight gain (11).

Anxiety syndrome includes panic disorder, generalized anxiety, social anxiety, obsessive compulsive disorder, post-traumatic stress disorder, agoraphobia, and specific phobias (3). One in every four people will at some point suffer from anxiety syndrome (12).

Bipolar I syndrome is characterized by one or more manic episodes, which in most cases, develop into or from depressive episodes. Manic episodes are characterized by a high and expansive mood or excessive irritability lasting for at least one week. At least three of the following symptoms should be present: enhanced self-esteem, decreased need for sleep, talkativeness, racing thoughts, easily distraction, increased activity and/or prolixity (3).

## **Physical Activity**

Physical activity is defined by WHO as “any bodily movement produced by skeletal muscles that requires energy expenditure” (13). Regular physical activity is one of the main factors for preserved health and prevention of diseases, this is even more important for disorders that are associated with reduced survival and decreased general health (14).

Physical activity is necessary for people of all ages to be able to handle everyday physical efforts without fatigue or discomfort (15). Physical activity is proven to reduce the risk of cardiovascular disease, obesity, hypertension and diabetes (4-6). There is evidence that physical activity is beneficial for promoting mental health; it reduces anxiety, depression and negative mood whilst improving self-esteem and cognitive function (16). One of the major reasons for physical inactivity is a lack of motivation in the population in general and even more so for individuals with mental disorders (17).

## **Motivation for Physical Activity: The Self-Determent Theory**

To be motivated means to be compelled to do something (18). There are several different theories regarding motivation. The self-determent theory (SDT) by Deci and Ryan (19) is based on the assumption that humans have an inherent need for competence, autonomy, and relatedness (20). There are two important concepts in this theory, intrinsic- and extrinsic motivation. Intrinsic motivation means that the motivation comes from within the person e.g. the activity is enjoyable and/or gives the person pleasure (17, 18). To be told by a doctor to exercise is an example of extrinsic motivation. When the motivation is extrinsic the activity is separated from the goal, extrinsic motivation comes from outside the person. For people with mental disorders it is important to make physical activity as intrinsically motivating as possible (17).

Studies have shown that people with mental disorders do not differ from the population in general in regards to motivation mechanisms (17). However, this patient group may experience additional and different barriers to physical activity because of their illness (17, 21).

## **Benefits of and Barriers to Physical Activity**

A study by McDevitt and al. (21) show that the mental benefits of physical activity are more important for the patients with mental disorders than physical fitness and reducing the risk of cardiovascular disease. Being active is viewed as becoming involved in life as opposed to focusing on the illness (21). Benefits of physical activity experienced by the general population as well as people with mental disorders, besides the decreasing risk of cardiovascular disease, obesity, hypertension, certain cancers and diabetes, are feeling more energetic, feeling less stressed and sleeping better. Physical activity also provides distraction and social contact (17).

According to the study by McDevitt and al. (21) barriers for physical activity for people with mental disorders include a lack of initiative and the feelings of hopelessness, which are associated with the mental disorder itself. There are also the side effects of medications such as weight gain and fatigue. The participants described the personalities of the staff in

the rehabilitation program as a barrier. If staff were seen as “lazy” it influenced the caretakers to be less active. The study concludes that the barriers to physical activity in people with mental disorders differ from the most common barriers defined by the general population, which include a lack of time and competing responsibilities (21).

Other perceived barriers to physical activity among psychiatric patients are lack of social support, little confidence in being able to exercise when feeling sad or stressed and low self-efficacy for exercise. The latter being experienced especially by outpatients and patients with depression (22). Self-efficacy is described as an individual’s beliefs concerning one’s ability to perform a behavior that is intended to achieve a certain outcome(23).

### **Facilitators for Physical Activity**

In a study based on a cross-sectional survey answered by 120 in- and outpatients receiving treatment for psychiatric illness in the UK, a majority of the respondents strongly agreed that they would exercise more if they were given the opportunity to talk with an instructor or were advised to do so by their doctor (22). Of the respondents, 50% reported a high motivation to exercise more regularly, but only 20% reached the recommended physical activity level of at least 30 min at moderate intensity at least five days a week. As mentioned above, low self-efficacy is one of the barriers to physical activity, therefore feedback and support from enthusiastic, knowledgeable and supportive exercise leaders are as important as the actual exercise (24). Programs that are tailored to the individual, taking in to account for example the participants gender, personal barriers, fitness level and health status are more effective than generic interventions. By including goal setting and social support a program becomes even more effective (24).

### **Transtheoretical Model (Stages of Change)**

The Transtheoretical Model of Behavior Change (TTM) is a framework used to assess an individual's readiness to adopt a new healthier behavior. An individual’s change in health behavior involves progress through six stages of change: precontemplation, contemplation, preparation, action, maintenance and termination (25). For each stage different change processes and standpoints produce optimal progress (26). *Precontemplation* is the first stage

where there is no intention to change behavior and the individual is unaware that there is a problem. During the stage of *contemplation* the individual starts thinking about changing behavior and is struggling with the amount of effort, energy and loss it will take to make a change. The *preparation stage* is where the individual is intending to take action in the next month and has started taking small steps towards the new behavior. In the *action stage* the individual has begun to modify his or her behavior, taking actions leading to actual change. When the individual has maintained the new behavior from between 1 day and 6 months he or she is considered to be at the *action stage*. *Maintenance* is the stage where the individual works to prevent relapse and has been in this stage for at least 6 months. *Termination* is the last stage where the individual is no longer tempted to return to the old unhealthy behavior. During the earlier stages it is important to raise consciousness and improve the patient's motivation by helping them create positive images and envision how they could feel about themselves if they made the change. In the later stages it is beneficial with a more coaching or consultational approach (26).

One study concludes that the TTM framework can be useful in developing an understanding of physical activity for people with severe mental illness (27). In the TTM model two other important concepts are present: self-efficacy and decisional balance. It is suggested that self-efficacy is lower in the earlier stages and that people in the earlier stages perceive greater barriers to change, whereas those in later stages perceive greater benefits of change. This means that interventions that encourage the use of behavioral processes of change and enhance self-efficacy may improve movement into later stages leading to increased physical activity. One facilitating factor earlier mentioned is the support and encouragement from an exercise leader or caregiver (27).

### **The Physical Activity Mentor project**

*The Physical Activity Mentor project* also known as *Træningskontakt* was a Norwegian project aiming to study whether collaboration between hospital, borough and university collage could contribute to regular physical activity amongst outpatients with mental disorders. The project ran from February 15th until May 15th in 2011. Six participants took part in the project and each was provided with a physical activity mentor. The physical

activity mentors were Norwegian physiotherapy students who, before the commencement of the project, received special training which included information about mental disorders such as depression, anxiety syndrome, bipolar disorder, schizophrenia and as well as on how to meet these patients. The six participants performed a specific physical activity together once a week with their physical activity mentor, thus they meet in total approximately 12 times. The specifically chosen activity was based on the interests and goals of each participant. Examples of activities performed were walking to the grocery shop, spinning or playing tennis. Two of the physical activity mentors joined NordPlus and decided to evaluate the Physical Activity Mentor project in a bachelor thesis. The Swedish authors were asked to join to enable more aspects of the project to be emphasized.

## **NordPlus**

The study was carried out in NordPlus Higher Education Program's *Joint Physiotherapy Education in Bachelor Thesis Module* through collaboration between Swedish and Norwegian physiotherapy students (28). Two separate bachelor theses were written, one in each country. The NordPlus project started in May 2011 in Copenhagen, Denmark and was completed in April 2012 in Haapsalu, Estonia. The objectives of the NordPlus Higher Education Program are to link higher education institutions (HEI) in the participating countries, establish networks for an exchange of experiences and to contribute to cooperation between HEIs and other institutions, organizations and to develop work life partnerships. The Joint Physiotherapy Education in Bachelor Thesis Module included physiotherapy students from Sweden, Norway, Finland, Denmark, Lithuania, Estonia and Latvia. The Swedish and Norwegian authors had three additional exchange weeks besides the Copenhagen and Haapsalu meetings. All exchange weeks were financed by NordPlus.

## **Problem Statement**

Physical activity is known to have positive effects on mental health for both the general population and for people with mental disorders (8, 9). People with mental disorders are in general less physically active, which leads to increased risk of secondary health related

problems which in turn may lead to increased costs to society (3-5). Therefore it is important to find ways to integrate physical activity as part of treatment of different mental disorders.

The Norwegian Physical Activity Mentor project is unique in its approach to integrate physical activity as part of treatment for outpatients with mental disorders. There are no similar studies presented in other countries and never before in Norway has the Physical Activity Mentor project been described from the participant's point of view. One of the major barriers to physical activity for people with mental disorders is a lack of motivation (3). Clarifying and distinguishing barriers and facilitators for physical activity may lead to increasingly effective interventions leading to increased physical activity for people with mental disorders and simplify the process of integrating physical activity as part of treatment (23).

## **Statement of Purpose and Research Questions**

### **Statement of Purpose**

The purpose of the study was to explore the experiences regarding perceived barriers and facilitators for physical activity of three participants with mental disorders who took part in the Norwegian Physical Activity Mentor project.

### **Research Questions**

1. What were the perceived barriers for physical activity for three of the participants with mental disorders that took part in the Physical Activity Mentor project, 9-11 months after termination of the project?
2. What were the perceived facilitators for physical activity for three of the participants with mental disorders that took part in the Physical Activity Mentor project, 9-11 months after termination of the project?

## **METHOD**

### **Design**

The study had a descriptive qualitative design. Individual semi-constructed interviews were used to create a deeper understanding of the different perceived barriers and facilitators for physical activity for the informants.

### **Sample**

The study consisted of strategic and convenience sampling. Four informants were expected to give an adequate amount of basic data of the investigated topic (29).

Inclusion criteria: Patients who participated in the Physical Activity Mentor project between February 15<sup>th</sup> and May 15<sup>th</sup>, 2011 in Norway. The patients had to understand written and spoken Norwegian and participate voluntarily in the study. Exclusion criteria: patients who, due to their condition, were evaluated not able to communicate to a sufficient standard.

Out of the six participants in the project group, four people fitted the inclusion and exclusion criteria's and were asked to take part in the interviews. Three people agreed to participate, this was still expected to give enough basic data, considering this was 75 percent of the investigated population. The study group consisted of three men, ages +/- 40 years, two were outpatients and one was hospitalized, diagnosed with either schizophrenia or bipolar disorder I. They had all been hospitalized several times.

### **Data Collection**

The data was collected through semi-constructed interviews, that is a limited set of open questions rather than exact detailed questions (29). The interview guide (Appendix I) was constructed in collaboration between the Swedish and Norwegian authors during October 2011. Three question sub-sections were created: *Experiences*, *The physical activity mentor* and *Physical, social and psychological effects*. The study had to be ethically approved by the

Norwegian Social Science Data Services (NSD) and all potential supplementary questions had to be determined and defined in the interview guide.

Two trial interviews were conducted on two people without mental illness, in Norway, in November 2011 to assess the interview guide and make potential adjustments. No adjustments were made.

## **Procedure**

Individual semi-constructed interviews were conducted and recorded by the Norwegian authors during January and February in 2012. The interviews were conducted in a familiar environment for each informant, only the informant and one interviewer were present at the interview. The interviews took between 21 and 79 minutes. Two of the informants were interviewed by the person who had been their physical activity mentor, the third informant had met the interviewer a few times before. To avoid possible misunderstandings between the authors and the informants, the informants were asked if they wished to add or explain anything at the end of the interview. The audio files were transferred to an encrypted USB-memory stick and sent by recommended letter to one of the Swedish authors. The password for the USB-memory stick was sent separately by e-mail. The Swedish authors made the transcription of the interviews in February and April in 2012. The transcription resulted in 75 written pages all three interviews together. The interviews were transcribed in *slightly modified verbatim mode*, which means as verbatim as possible but some alterations were done to make the transcripts readable (30). Pauses and laughs were marked out in the transcripts. Because of linguistic barriers some words and sentences not understood by the authors were colour marked. The transcripts were sent to the Norwegian authors for editing. In April 2012 the Swedish and Norwegian authors performed the content analysis in cooperation but used different methods for data analysis. A presentation of the study's progress was made in Haapsalu, Estonia in April 2012 at the last NordPlus meeting. Feedback from fellow students and supervisors was considered in future work.

## Data Analysis

Qualitative content analysis inspired by Graneheim and Lundman was used to analyse the data (31, 32). A transcript of an interview as a whole was considered an *analyse unit*. The analyse unit was read several times, discussed and reflected upon, hence an overall picture could be created. The analyze unit was unconditionally scanned through to extract *meaning units*. The extraction was done individually and then compared, discussed and reflected on by the Swedish authors to reach consensus. A meaning unit was defined as words, sentences or paragraphs containing aspects related to each other through their content and context. During the first extraction 106 meaning units were found. The meaning units were then abstracted into *condensed meaning units*, which are shorter sentences preserving the core of the meaning unit. The next step was abstraction into *codes*. Codes can be understood as keywords or labels for a meaning unit describing its content. One code could not be used for meaning units of the same informant but could be used for two or three different informants. Example of text condensation in the analysis process is presented in table I.

Next the codes were compared with regards to similarities and differences and divided into *sub-categories*, this was done individually by each author. To reach consensus a comparison and discussion between the Swedish authors was done to assure the codes were divided in to the same sub-categories. The number of sub-categories was 15, containing between 1 and 7 meaning units each, in total 54 meaning units. The meaning units were placed in envelopes labelled with the sub-category. A person not familiar with the material was asked to place the meaning units in the correct envelop, known as third party evaluation. The results were compared between the third party and the Swedish authors. The correlation was 61 percent. Through discussion between the third evaluator and the authors the 15 sub-categories were compared regarding similarities and differences and divided into 12 sub-categories (31, 32). The content of a sub-category is internally homogeneous, i.e. the content of the category is closely connected within the sub-category and externally heterogeneous i.e. the content differs from the contents of the other sub-categories. No data that answers the research questions may fit in to two sub-categories or be excluded because it does not fit in to any sub-category. The sub-categories were then interpreted and 6 categories emerged based on

groups of sub-categories that share communality (33). The categories were divided to describe either perceived barriers or facilitators.

Table I. Example of text condensation in the analysis process.

Meaning Unit	Condensed Meaning Unit	Code
<b><i>As I said it's these strange side effects from the medication that simply takes the joy, or it's not so fun you know. Because you are dizzy, and you are sick, and you are, you are so to say somewhat detached, right? Joints and muscles ache, water in the body. You notice that the legs are swelling, the arms, or fingers and wrist, everything is heavier. It was much easier to do physical activity when you didn't take any medication, everything was so much easier.</i></b>	<i>It's these strange side effects from the medication that simply takes the joy... It was much easier to do physical activity when you didn't take any medication, everything was so much easier</i>	Difficult to be physically active because of side effects from antipsychotics
<b><i>I almost said I felt younger. I'm 51 years now, so I sat down and waited to be old and grey, but when I started working out I sort of began to see the other way instead, I felt a bit younger.</i></b>	<i>When I started working out I sort of began to see the other way instead, I felt a bit younger.</i>	Felt younger from exercise

## Ethical Considerations

The participants received both verbal and written information about the background and the aim of the study. They were informed that the study was a part of the international cooperation NordPlus. The interviews were recorded and the audio files shared between the Swedish and Norwegian authors. Both the study and sharing of the audio files were approved by the Norwegian Social Science Data Services (NSD) in Norway (Appendix II).

Participation in the study was voluntary and could be terminated at any time. All information was handled confidentially and the audio files were deleted when the bachelor thesis was completed in June 2012. One informant stated his name during the interview, which was

deleted before printing the transcribed interviews. Before the interview the informants gave written consent by signing a consent form (Appendix III). The participants were promised confidentiality in the presentation of results.

## **RESULTS**

The analysis resulted in six categories of which two were perceived as barriers, one was perceived as both a barrier and as a facilitator and four were perceived as facilitators for physical activity. The categories perceived as barriers were *Disease-related problems*, *Physical experiences* and *Self-governed physical activity*. The category *Psychosomatics* had one sub-category perceived as a barrier and two sub-categories perceived as facilitators. The categories perceived as facilitators were *Intrinsic motivation*, *Extrinsic motivation and Pedagogics of exercise*. All together 12 sub-categories were found, see figure 1. Each category with its underlying sub-categories is presented in the results. The subcategories are explained with quotes.

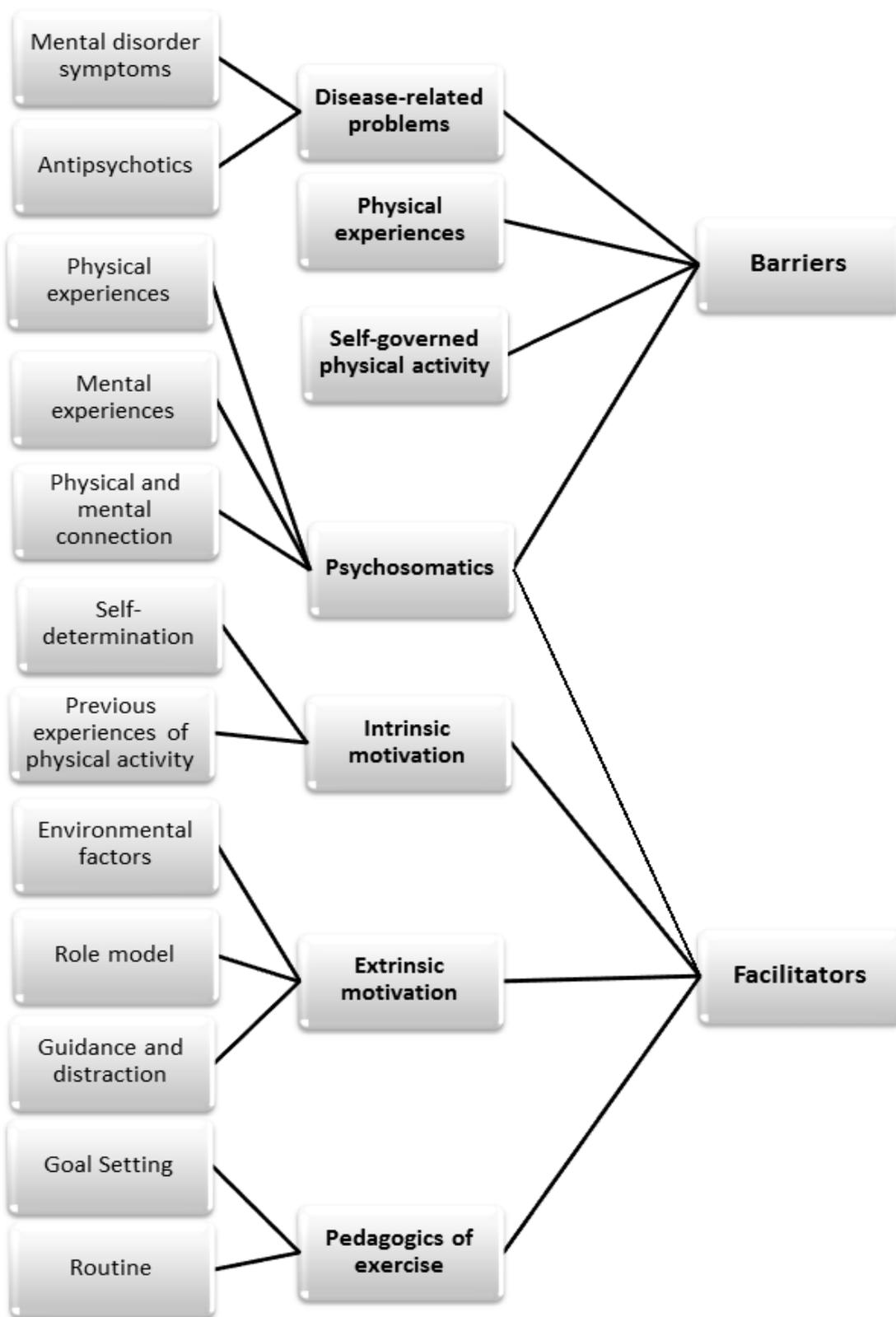


Figure 1. Summary of categories and subcategories divided into perceived barriers and facilitators for physical activity

## **Perceived Barriers for Physical Activity**

### **Disease Related Problems**

Problems relating to symptoms from mental disorders and from antipsychotics characterized the category Disease related problems and were perceived as barriers for physical activity. The sub-categories Mental disorder symptoms and Antipsychotics describe the informant's view of these barriers.

#### ***Mental Disorder Symptoms***

Problems associated with the mental disorder itself were mentioned as a discouraging factor for physical activity. Periods of not feeling well, increased anxiety and depression led to isolation at home. One informant expressed the feeling of not wanting to be a bother to anyone. Passivation and lack of initiative made it hard to do anything practical. A weakening of the body due to the illness complicated physical activity.

*"No, I guess I wasn't feeling very well then. I just felt like staying at home. More anxiety and depression, things like that. Compulsion."* (Informant 2)

*"It's one of the side effects we get really, that we become a bit reserved and we become passive and lazy and a bit more like couch potatoes. In my case I actually just want to hide away from everything and everybody, not be a bother to anyone"* (Informant 3)

#### ***Antipsychotics***

The antipsychotics led to side effects that complicated physical activity. Dizziness, feeling sick, joints- and muscle ache, and water retention took some of the joy out of being physically active. The informant thought that it was easier to be physically active when he didn't take any medication.

*"It's these strange side effects from medication that simply takes the joy, or it's not so fun you know. Because you are dizzy, you are sick and you're so to say detached, right? Joints and muscles ache, there is water in the body. You notice that the legs are swelling, the arms, or fingers and wrist, everything is heavier. It was much easier to do physical activity when you weren't taking any medication, everything was so much easier."* (Informant 3)

## **Self-Governed Physical Activity**

Experiences of being physically active without support characterized this category. Self-governed physical activity was perceived as a barrier as the informants expressed that it was a challenge to be physically active on their own. It was described as important to have someone to perform the physical activity together with. The difficulty was that it was tough to find activities that could be done on your own and initiate unsupported physical activity. Physical problems made it difficult to maintain activity on an individual basis.

*"An example of a challenge could be to keep exercising when the project is over and stuff. This could be seen as a challenge. There isn't so much to do on your own, there's skiing, running and walking."*

(Informant 1)

*"Yes, I have some personal projects or special things. Playing tennis is something I do when I feel I'm up for it. Now I struggle a bit with the back, a bit with the knees, a bit with one shoulder and things like that. (Informant 3)*

A deviant finding was that one informant stated the opposite and said that he had no problem with physical activity on his own.

## **Perceived Barriers and Facilitators for Physical Activity**

### **Psychosomatics**

Psychosomatic effects in association with physical activity and exercise describe the category Psychosomatics. Of the three sub-categories, Physical experiences, Mental experiences and effects and Physical and mental connection, one was perceived as a barrier and two as facilitators. Physical experiences was generally described in a negative way while both the sub-categories Mental experiences and effects and Physical and mental connection were seen as facilitating factors for physical activity.

### ***Physical Experiences***

Feeling out of breath, tired from running and tiredness in the legs after exercise were experiences described. An increased hunger and thirst, which made it hard to lose weight when exercising, was perceived as a barrier for being physically active.

*“The disadvantage is that you become more hungry and thirsty and you eat more and drink more and put on weight instead of losing it. That’s the bad part. I wish I could manage to combine it. Diet and nutrition and exercise or physical activity are very much associated with each other.” (Informant 3)*

### ***Mental Experiences and Effects***

The informants expressed better mood, feeling more healthy and alert, decreased anxiety, a more positive view of life and feeling better afterwards. Exercise was described as both a struggle and relief and one informant expressed that the exercise made him feel younger. Physical activity led to distraction from everyday life and from the symptoms of the mental disorder.

*“I felt younger. I’m 51 years old now, so I sat down and waited to be old and grey, but when I started working out I began to see things another way instead, I felt a bit younger.” (Informant 1)*

*“You start seeing things more positively when you work out, you are away from the everyday life when you work out a bit.” (Informant 1)*

*“No, I like it. Sometimes it’s a struggle and sometimes it’s a relief, that’s how it is.” (Informant 2)*

*“Both because you think about something else and you feel much better afterwards you know. I’d always felt like that because I was always active before I got ill..” (Informant 3)*

### ***Physical and Mental Connections***

Thoughts and feelings about the direct connection between physical activity and mental health were mentioned by the informants. Being physically active was considered beneficial for both physical and mental health. Physical and psychological health were equally important and described as “hand-in-glove”.

*"I think that mental health also has something to do with physical health. They are very much associated with each other so if you stay in shape and try to keep up the physical part, you will also feel better mentally. They are like a hand in a glove really. The physical and the mental aspects are equally important."* (Informant 3)

## **Perceived Facilitators for Physical Activity**

### **Intrinsic Motivation**

The category Intrinsic motivation had two sub-categories, Self-determination and Previous experiences of physical activity. Both sub-categories were perceived as facilitators for physical activity.

#### ***Self-Determination***

As mentioned above one informant felt that he was able to perform physical activity on his own. The self-selected activities were central in increasing motivation for physical activity for all of the informants.

*"Because I like to exercise, and first and foremost, it was me who decided what we should do, it was a bit more enjoyable. I got to do the exercise that I wanted to."* (Informant 1)

#### ***Previous Experiences of Physical Activity***

Experiences of physical activity before the Physical Activity Mentor project were perceived as a facilitator. All of the informants had been active as children both in school and during leisure time, but they had all some periods in the past with little or no physical activity. The activities mentioned were various ball sports, running and bike riding. Skiing and nature walks were other kinds of activities experienced.

*"It has varied periodically. I played a little tennis before, I also played squash and went running, a little of various, a bit of football. "* (Informant 1)

*"I trained before as well .. There have been some interruptions since I was a child. But I've been working out for the last few years."* (Informant 2)

*"Mom and dad were early to take me. To be out in nature and be in the forest, and to walk, yes, the idea of that kind of activity has always been there."* (Informant 3)

### **Extrinsic Motivation**

The category Extrinsic motivation was characterized by different motivational factors from outside the person. Sub-categories Environmental factors, Role model and Guidance and distraction described the informants view and were all perceived as facilitators.

#### ***Environmental Factors***

One environmental factor that facilitated physical activity was exercising to music that you like. The lack of a car provided an opportunity to walk more, and one of the informants was convinced that owning a dog would have increased his activity level.

*"You save so much money not having car, so this has motivated me to walk more when I have to go somewhere. If you're going to the doctor and the weather is nice, you might walk."* (Informant 3)

#### ***Role Model***

One informant liked seeing how the physical activity mentor worked out and how he planned his own exercise. The physical activity mentor was seen as a role model in the way he cared about himself.

*"I saw xxx as a bit of a role model, he showed me that he cared very much about himself."*  
(Informant 3)

#### ***Guidance and Distraction***

Guidance in physical activity was provided by the physical activity mentor by encouraging and presenting new activities. The physical activity mentor offered distraction in periods of feeling down and provided the motivation to do things that wouldn't otherwise have been done.

*"It was good, you pushed me a little and showed me some new things, and things like that"*

(Informant 2)

*"Often it doesn't take much, right? An exercise coach can mean so much. If you are a bit off one day and he calls and says "let's do something", go skiing, go for a walk or...Often we meet in the gym. You simply get the motivation to do something you wouldn't have done otherwise." (Informant 3)*

The physical activity mentor helped provide motivation when trying to combine physical activity and daily duties.

*"It's a combination of doing daily duties and staying in shape, of course both are important. I see the necessity in that too and getting some motivation from you all is worth its weight in gold."*

(Informant 3)

The Physical Activity Mentor project provided a distraction from everyday life by evoking a feeling of being the center of attention, this was fun, something out of the ordinary and gave some more meaning to life.

*"I guess I've sometimes wondered what kind of activity is most important for me .. Both xxx and xxx ..they're good, they probably think about what's most important for me. They really show that I should be centre of attention. It's a bit fun to be a part of something where you are in focus, because then you simply get a little more meaning in life. To be part of something out of the ordinary, a project, it's exciting." (Informant 3)*

### **Pedagogics of Exercise**

Thoughts about structure and pedagogics of the Physical Activity Mentor project characterized the category Pedagogics of exercise. Sub-categories Goal setting and Routine were both perceived as facilitators for physical activity.

#### ***Goal Setting***

The Physical Activity Mentor project was designed so that participants were assisted by their physical activity mentor to set goals for the project. One informant mentioned that he and

the physical activity mentor had similar goals. Weight loss was mentioned as a major objective. Another goal was to have fun while performing physical activity.

*"I was looking forward to starting playing tennis .. Tennis is my favourite sport! .. Yes, that and it's also important to lose some weight, that's one of the most important things." (Informant 1)*

*"A major goal is to reduce my waistline. It's only going one way, the stomach is getting bigger and bigger." (Informant 3)*

### **Routine**

Routine, a place to be and a time to keep, facilitated physical activity. Coming on time could also be a challenge.

*"Yes, it helps to have sort of a firm agreement at that time and this time are you going to work out." (Informant 1)*

*"It makes me pull myself together again and even tell myself that today I'm going to do this. Today I have that agreement and I will try to keep to time." (Informant 3)*

## **DISCUSSION**

### **Summary of Results**

The informants expressed both differences and similarities regarding the perceived barriers and facilitators for physical activity. Disease related problems connected to the symptoms from the mental disorder and antipsychotics were perceived as barriers for physical activity. Self-governed physical activity was perceived as a barrier. Difficulties in finding activities that could be done on your own, as well as initiating and maintaining unsupported physical activity were mentioned. Combining everyday life responsibilities and physical activity was a problem. Increased hunger and thirst as a result of exercising made it tough to lose weight and was seen as a barrier for physical activity. Perceived as facilitators were the positive mental effects associated with physical activity and exercise. The informants described a positive connection between physical and mental health. Both extrinsic and intrinsic

motivational factors were important in facilitating physical activity. Self-selected activities as well as the guidance and distraction provided by the physical activity mentor were central for promoting physical activity. One informant stated that the feeling of being the center of attention was fun, something out of the ordinary and gave life some more meaning. All of the informants had previous experiences of physical activity in childhood and as adults. The provision of a routine was seen as an aid in being physically active.

## **Discussion of Results**

According to this study barriers to physical activity include disease related problems such as not feeling well, increased anxiety and depression, not wanting to be a bother to anyone, passivation and a lack of initiative. This is consistent with the study by Ussher and al. (22) where the respondents experienced little confidence in being able to exercise when feeling sad or stressed. McDevitt and al. (21) show that barriers to physical activity for people with mental disorders include a lack of initiative and feelings of hopelessness. Side effects of antipsychotics such as dizziness, feeling sick, joints- and muscle ache, water retention, weight gain and fatigue are common (21, 34). These side effects were barriers for physical activity according to the results of the study. Disease related problems and the side effects of medication made mental disorder themselves barriers for physical activity.

Having to perform physical activity independently was seen as a barrier in this study. The physical activity mentor was a facilitating factor for physical activity as he or she provided guidance during physical activity and a distraction from everyday life as well as being seen as a role model. A majority of the respondents in a study from the UK, strongly agreed that they would exercise more if they were given the opportunity to talk with an instructor or were advised to do so by their doctor (22). Other studies conducted on people with severe mental illness have showed that enthusiastic, knowledgeable, and supportive exercise leaders are as important as the actual physical exercise (24). A study on psychiatric outpatients from the US showed that the personalities of the staff in the rehabilitation program were important to the caretakers when being in physical activity (21). In our study the informants experienced their physical activity mentor as being knowledgeable, supportive and motivating, which became an important facilitating factor for physical

activity. One informant stated that his physical activity mentor functioned as a facilitating factor in helping him combine physical activity and daily duties. This barrier of competing responsibilities, such as daily duties, is, together with a lack of time, one of the most common barriers of physical activity in the general population (21). Barriers experienced by other people with mental disorders, on the other hand, often differ from those experienced by non-suffers because of, for example, the loss of a job or the placement of children in foster care, which are common during down-periods for people with serious, persistent mental illness (21).

Positive mental effects of physical activity were frequently mentioned in the study. An improved mood, feeling more healthy and alert, decreased anxiety and a more positive view of life, were positive mental experiences expressed by the informants. Hardly any bodily effects were mentioned in connection with physical activity, those mentioned were considered as complicating physical activity. This is consistent with a focus-group study where the participants foremost mentioned the mental health benefits of being physically active with much less focus on physical fitness (21). There is evidence suggesting that physical activity reduces anxiety, depression and negative mood (16). Regular physical activity may lead to a permanent reduction of depression, and reduced stress and anxiety on a daily basis (35). One explanation for the limited mentions of bodily effects by the informants can be that the relatively short length of the project didn't allow bodily changes to become apparent or that one weekly meeting with the physical activity mentor was too seldom. An additional explanation can be that the body awareness of people with mental disorders may be reduced, leading to difficulties interpreting the body's signals and distinguish emotions. This leads to decreased ability to provide a proper expression of bodily signals (36). Therefore the informants may have had difficulties explaining their bodily sensations.

Goal setting and routine, such as time and place, were mentioned as facilitators for physical activity in this study. This is coherent with other studies that suggest that programs tailored to the individual, including goal-setting and social support are recommended (24). The fact that the informants were allowed to choose the activity themselves was mentioned as an important factor for staying in the Physical Activity Mentor project. Findings from a study

about motivational factors for psychiatric patients indicate to offer activities that are experienced as pleasant and enjoyable to make the activity as intrinsically motivating as possible (17). As mentioned above, having someone to perform physical activity together with and the guidance and support from the physical activity mentor, were important extrinsically motivating factors. This is dissimilar to the findings that intrinsic motivation is the most important kind of motivation for psychiatric patients but similar to the studies emphasizing that skilled and enthusiastic exercise leaders are of high importance (17, 24).

Self-efficacy is mentioned as an important factor for physical activity and a lack of knowledge, experience, feedback and unsuccessful achievement of goals hinder successful participation in physical activity (19, 20). The informants in this study were not specifically asked about their self-efficacy to perform physical activity, which would have been interesting to study more closely, because it is considered to be such an important factor for physical activity. All the informants had previous positive experiences of physical activity, which increases the self-efficacy for that kind of activity and the probability of wanting to perform the same activity again (19). The previous experiences of physical activity can be seen as one explanation to why the informants wished to join the Physical Activity Mentor Project.

Self-efficacy is an important concept in the Transtheoretical Model of Behavior Change (TTM) (27). The informants can be categorized into different stages of change in the TTM (21, 22). Informant 3 expressed problems maintaining physically active on his own and stated many different barriers and reasons not to be able to perform physical activity. He was active at the time of the interview thanks to the support of physical activity mentors. These findings indicate that informant 3 was in the *action stage*, he was taking action to be more physically active but very much in need of support to maintain activity. Informant 2 expressed no problems being physically active on his own and stated that he had kept on exercising since the end of the Physical Activity Mentor project. These findings indicate that informant 2 was in the *maintenance stage*, where the individual has maintained his new habits for at least 6 months. Informant 1 had problems being physically active on his own. He was interested in sports that are hard to perform alone and didn't like going to the gym.

He had not been physically active on a regular basis since the project ended and expressed a desire to attain another physical activity mentor. These findings indicate that informant 1 was in the *preparation stage*, where the individual has started to make small steps toward a new behavior but not yet achieved actual changes (21, 22). The authors believe that placing the informants in the stages of the TTM can help in understanding the need for individualization in projects aiming to increase physical activity among people with mental disorders.

## **Discussion of Method**

The present study has some limitations. The results are based on three people's opinions and/or perceived barriers and facilitators for physical activity and cannot be generalized to all people with mental disorders. The study group quite homogenous; the participants were all male, close in age and with similar backgrounds. The reason for this was that the focus group consisted only of male participants. This limited the possibilities to illuminate the research area from different angles (31). The data was collected through semi-structured interviews which gave the content greater width and depth compared to what another data collection method such as questionnaire would have done (29). The interview guide with its open questions gave the informants the possibility to speak more openly about their experiences. The interviews were conducted 9-11 months after termination of the Physical Activity Mentor project. This may have influenced the informants' perceptions about their experiences of the project. It is difficult to remember an experience from a relatively long time ago and the symptoms of bipolar disorder I and schizophrenia often fluctuate. If the informant at the time of the interview is in a generally higher or lower state of mind, compared to during the project period, this could possibly affect the informant's statements (3). The time aspect could be good as well, considering it gave the informants time to reflect on their experiences. This made it possible to discuss the potential remaining effects of the project.

The fact that the informants in two out of three cases were interviewed by their physical activity mentor, that is a person they already knew, is both a weakness and a strength. A strength in that some mental disorders limit an individual's ability to interact and speak with

other people, especially people they do not have a relationship with. A weakness in that it might limit the informant's willingness to express their true feelings. An interview should always be seen as an interaction between the interviewer and the informant (37). The fact that the interviewer had also been a part of the physical activity mentor project, which is the basis of the study, may increase subjectivity of the interviewer. This weakens the results slightly.

The transcription of the recorded interviews was made by the Swedish authors and edited by the Norwegian authors, which reduced the risks of linguistic misunderstandings. The Swedish authors that were not present at the interviews were given a first possibility to familiarize themselves with the data by doing the transcription (30, 32). Qualitative content analysis inspired by Graneheim and Lundman was used to analyse the data (31, 32). The benefits of the selected method of analysis are its adaptability for various purposes, for data of varying quality and to the limited expertise of the researchers. Disadvantages are that the broader content may be lost through the detailed coding (31, 32).

### **Trustworthiness**

In qualitative research trustworthiness will increase if the findings are presented in a way that allows the readers to look for alternative interpretations and to follow the research process as detailed as possible (31).

### ***Credibility***

Different ways of enhancing credibility were taken into consideration, both during the research process and in the presentation of the results (31, 32). By providing an illustration of how meaning units were condensed and labelled with key-words the possibilities for alternative interpretations by the readers were assured. Credibility was increased by the presentation of representative quotations that is meaning units, from the transcribed interviews. This allowed for insight into whether the requirements of likeness within a sub-category and category as well as the requirements of distinct differences between the different sub-category and categories were met. Credibility was insured by seeking agreement between the authors, Norwegian co-researches and experts (31, 32, 38).

### ***Dependability***

The data was collected in a quite short time period and the same questionnaire was used for all the informants, this increased dependability (31). One of the informants easily drifted out in long monologs not related to the question, this somewhat limited the possibilities to ask the same questions because of a lack of time, this weakens the dependability of the results slightly. The extent of essentially equal opinions between the authors, co-researchers and experts was high over time. This increases the dependability of the results (31).

### ***Transferability***

The transferability is, as mentioned above, somewhat limited. Because of the little number of informants from a unique project in a small country, the perceived barriers and facilitators for physical activity cannot be generalized to all people with mental disorders. However, the results could be transferred to people with mental disorders in a similar context.

## **Clinical Implications**

In this study all of the informants mentioned the support from the physical activity mentor as positive and meaningful. This indicates that people with mental disorders are in need of external support from a physical activity mentor to increase their physical activity level. Similar projects could therefore be considered beneficial to increase the level of physical activity among outpatients with mental disorders. To overcome the disease-related barriers there is a need to further evaluate the experiences of facilitators for physical activity among people with mental disorders.

## **Conclusions**

This study concludes that disease-related problems were perceived as barriers for physical activity. The most important perceived facilitator for physical activity was mental benefits from being physically active. External support from a physical activity mentor might facilitate physical activity for psychiatric outpatients.

## **Acknowledgements**

Thanks to the informants, your experiences have literally built this thesis. Thanks to the NordPlus cooperation, to all fellow students, teachers and work life partners. Special thanks to our co-researchers Line-Marie and Katrine, it's been fun! Thank you, Ingrid Narum and Elizabeth Møyne, Oslo University College for your priceless guidance in the progression of this thesis.

And thank you, Karin Hellström for all the time, support and effort!

## REFERENCES

1. SBU. Om psykiatrisk diagnos och behandling – en sammanställning av systematiska litteraturoversikter. Stockholm: Statens beredning för medicinsk utvärdering (SBU); 2012. [sited 2012-04-26]  
[http://www.sbu.se/upload/psykiatrirapport\\_regeringen120111/Psykiatri\\_slutredovising.pdf](http://www.sbu.se/upload/psykiatrirapport_regeringen120111/Psykiatri_slutredovising.pdf)
2. WHO: The global burden of disease – 2004 update. [sited 2012-05-25]  
[http://www.who.int/healthinfo/global\\_burden\\_disease/2004\\_report\\_update/en/](http://www.who.int/healthinfo/global_burden_disease/2004_report_update/en/)
3. Allgulander C. Introduktion till klinisk psykiatri. 2<sup>ed</sup> ed. Studentlitteratur, Lund 2008.
4. Dickerson FB, Brown CH, Kreyenbuhl JA, Fang L, Goldberg RW, Wohlheiter K, et al. Obesity among individuals with serious mental illness. *Acta Psychiatr Scand*. 2006;113(4):306-13.
5. Brown AD, Barton DA, Lambert GW. Cardiovascular abnormalities in patients with major depressive disorder: autonomic mechanisms and implications for treatment. *CNS Drugs*. 2009;23(7):583-602.
6. Brown LC, Majumdar SR, Newman SC, Johnson JA. History of depression increases risk of type 2 diabetes in younger adults. *Diabetes Care*. 2005;28(5):1063-7.
7. SBU. Behandling av depressionssjukdomar: Sammanfattning och slutsatser. Stockholm: Statens beredning för medicinsk utvärdering (SBU); 2004. [sited 2011-11-17]  
[http://www.sbu.se/upload/Publikationer/Content0/1/depression\\_2004/Sammanfattning\\_slutsats.pdf](http://www.sbu.se/upload/Publikationer/Content0/1/depression_2004/Sammanfattning_slutsats.pdf)
8. WHO: 2000, Health Systems: Improving Performance. WHO, Geneva. [web page] [sited 2011-10-17] [http://www.who.int/whr/2000/en/whr00\\_en.pdf](http://www.who.int/whr/2000/en/whr00_en.pdf)
9. WHO: Mental health. Schizofreni, What is schizophrenia? [cited 2012-05-25]  
[http://www.who.int/mental\\_health/management/schizophrenia/en/](http://www.who.int/mental_health/management/schizophrenia/en/)
10. Koychev I, El-Deredy W, Deakin JF. New visual information processing abnormality biomarker for the diagnosis of Schizophrenia. *Expert Opin Med Diagn*. 2011;5(4):357-68.

11. SBU. Behandling med antipsykotiska eller stämningsstabiliserande läkemedel vid akut mani. Stockholm: Statens beredning för medicinsk utvärdering (SBU); 2012. [sited 2012-04-25]  
[http://www.sbu.se/upload/SBU\\_kommenterar/Behandling\\_med\\_antipsykotiska\\_och\\_stamningsstabiliserande\\_lakemedel\\_vid\\_akut\\_mani.pdf](http://www.sbu.se/upload/SBU_kommenterar/Behandling_med_antipsykotiska_och_stamningsstabiliserande_lakemedel_vid_akut_mani.pdf)
12. SBU. Behandling av ångestsyndrom: Sammanfattning och slutsatser. Stockholm: Statens beredning för medicinsk utvärdering (SBU); 2005. [sited 2011-10-17]  
[http://www.sbu.se/upload/Publikationer/Content0/1/SBU\\_sammanfattning\\_angest.pdf](http://www.sbu.se/upload/Publikationer/Content0/1/SBU_sammanfattning_angest.pdf)
13. WHO: Global Strategy on Diet, Physical Activity and Health. [sited 2011-10-17]  
<http://www.who.int/dietphysicalactivity/pa/en/index.html>
14. Martinsen EW, Taube J. Schizofreni. In Fyss 2008, Fysisk aktivitet i sjukdomsprevention och sjukdomsbehandling. 1<sup>th</sup>ed. Elanders, Stockholm 2008.
15. Exercise for health. WHO/FIMS Committee on Physical Activity for Health. Bull World Health Organ 1995;73(2):135-6.
16. Sørensen M. Motivation for physical activity of psychiatric patients when physical activity was offered as part of treatment. Scand J Med Sci Sports 2006;16(6):391-8.
17. McDevitt J, Snyder M, Miller A, Wilbur J. Perceptions of barriers and benefits to physical activity among outpatients in psychiatric rehabilitation. J Nurs Scholarsh 2006;38(1):50-5
18. McDevitt J, Wilbur J, Kogan J, Briller J. A walking program for outpatients in psychiatric rehabilitation: pilot study. Biol Res Nurs 2005;7(2):87-97.
19. Callaghan P. Exercise: a neglected intervention in mental health care? J Psychiatr Ment Health Nurs 2004;11(4):476-83.
20. Ryan RM, Deci EL. Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. Contemp Educ Psychol 2000;25(1):54-67.
21. Ryan RM, Deci EL. The what and why of Goal Pursuits: Human Needs and the Self-Determination of Behavior. Psychological Inquiry 2000;11(4):227-68.
22. Biddle SJH, Mutrie N. Psychology of physical activity: determinants, well-being, and interventions. 2<sup>nd</sup> ed. Taylor & Francis e-Library 2007

23. Ussher M, Stanbury L, Cheeseman V, Faulkner G. Physical activity preferences and perceived barriers to activity among persons with severe mental illness in the United Kingdom. *Psychiatr Serv.* 2007;58(3):405-8.
24. Bandura A. Influence of models' reinforcement contingencies on the acquisition of imitative responses. *J Pers Soc Psychol* 1965; 1(6): 589-595.
25. Richardson CR, Faulkner G, McDevitt J, Skrinar GS, Hutchinson DS, Piette JD. Integrating physical activity into mental health services for persons with serious mental illness. *Psychiatr Serv.* 2005;56(3):324-31.
26. Prochaska JO, Velicer WF. The Transtheoretical Model of Health Behavior Change. *American Journal of Health Promotion.* 1997; 12 (1): 38-48.
27. Norcross JC, Krebs PM, Prochaska JO. Stages of change. *J Clin Psychol.* 2011;67(2):143-54.
28. Bezyak JL, Berven NL, Chan F. Stages of change and physical activity among individuals with severe mental illness. *Rehabil Psychol.* 2011;56(3):182-90.
29. NordPlus, Higher Education 2011. [web page] [sited 2011-10-17]  
[http://www.nordplusonline.org/eng/higher\\_education](http://www.nordplusonline.org/eng/higher_education)
30. Trost J. Kvalitatativa intervjuer. 3<sup>th</sup> ed: Studentlitteratur, Lund 2005.
31. Malterud K. Kvalitativa metoder i medicinsk forskning, en introduktion. 2<sup>th</sup>ed. Studentlitteratur, Hungary 2009.
32. Granheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today.* 2004. p. 105-12.
33. Lundman B, Granheim UH. Kvalitativ innehållsanalys. In Granskär M, Höglund-Nielsen B (red). *Tillämpad kvalitativ forskning inom hälso- och sjukvård.* 1<sup>th</sup>ed. Studentlitteratur, Hungary 2008.
34. Patton MQ. *Qualitative Research & Evaluation Methods.* 3<sup>ed</sup> ed. Sage Publications, Thousand Oaks, California 2002.
35. FASS.se för förskrivare. Zyprexa. [web page] [sited 2012-05-14]  
[www.fass.se](http://www.fass.se)

36. Martinsen, E. W. Kropp og sinn. Fysisk aktivitet og psykisk helse. 1<sup>th</sup>ed. Fagbokforlaget Vigmostad og Bjørke, Bergen 2004.
37. Lundin L, Ohlsson OS. Psykiska funktionshinder – stöd och hjälp vid kognitiva funktionsstörningar. 1<sup>th</sup>ed. Cura Bokförlag, Riga 2002.
38. Kvale S, Brinkmann S. Den kvalitativa forskningsintervjun. 2<sup>te</sup>ed. Studentlitteratur, Lund 2009.
39. Beck CT, Polit DF. Essentials of nursing research: apprasing evidence for nursing practice. 7<sup>th</sup>ed. Wolters Kluwer Health/Lippincott Williams & Wilkins, Philadelphia 2010.

## Interview guide (Norwegian and English translation)

### Introduction

What made you join this project?

*"Hva var det som gjorde at du ble med i prosjektet?"*

### Experiences

Please, tell me about what type of (physical) activity you have been doing before you joined the project.

*"Fortell meg om hvilke type aktivitet du har drevet med før du ble med i prosjektet?"*

What do you think about exercising/being physically active?

*"Hva synes du om det å trene / være i fysisk aktivitet?"*

Please, tell me about what you did together with your physical activity mentor?

*"Fortell meg om hva du gjorde sammen med din treningskontakt?"*

Please, tell me about one time that was good.

*"Fortell om en situasjon som var bra?"*

Please, tell me about one time that was bad.

*"Fortell om en situasjon som var dårlig?"*

What made you meet up every time?

*"Hva fikk deg til å møte opp hver gang?"*

Please tell me about how the project was terminated.

*"Si litt om hvordan prosjektet ble avsluttet?"*

How has your activity been since the project was terminated?

*"Hvordan har det gått etter prosjektet ble avsluttet?"*

In what way has the project had an impact on you?

*"På hvilken måte har prosjektet hatt betydning for deg?"*

Do you think this is something that should be offered to everyone with some kind of mental disorder?

*"Synes du at dette bør være noe som alle som er plaget av psykiske lidelser bør få tilbud om?"*

Can you please give me some advice on how this project could have been done differently?

*"Kan du gi meg forslag til hvordan prosjektet kunne bli gjort annerledes?"*

## **The physical activity mentor**

Please, tell me about the first time you met with your physical activity mentor.

*"Si litt om første gang du traff treningskontakten?"*

What importance have the physical activity mentor had for you?

*"Hvilken betydning har treningskontakten hatt for deg?"*

Please, tell me about what you think of the cooperation between you and your physical activity mentor.

*"Fortell meg om hvordan du synes samarbeidet mellom deg og treningskontakten var?"*

How do you experience the fact that the physical activity mentor was a physiotherapy student?

*"Hva synes du om at treningskontakten var en fysioterapistudent?"*

## **Physical, social and psychological effects**

Please, tell me about if you have experienced any effects of the activity you have been doing during the project.

*"Fortell om du har opplevd noen effekter av det du har drevet med i prosjektet?"*

How have you been lately?

*"Hvordan har du hatt det i det siste?"*

How was it to do the activity together with someone?

*"Hvordan har det vært å ha en å trene sammen med?"*

How do you experience using your body?

*"Hva synes du om det å bruke kroppen?"*

## **Termination**

Is there something else you want to tell me that I forgot to ask you?

*"Har du andre ting du vil fortelle meg, som jeg har glemt å spørre om?"*

## NSD Ethical approval

Norsk samfunnsvitenskapelig datatjeneste AS  
NORWEGIAN SOCIAL SCIENCE DATA SERVICES



Harald Hårfagres gate 29  
N-5007 Bergen  
Norway  
Tel: +47-55 58 21 17  
Fax: +47-55 58 96 50  
nsd@nsd.uib.no  
www.nsd.uib.no  
Org.nr. 985 321 884

Ingrid Narum  
Institutt for fysioterapi  
Høgskolen i Oslo og Akershus  
Postboks 4 St. Olavs plass  
0130 OSLO

Vår dato: 22.12.2011

Vår ref: 28704 / 3 / KS

Deres dato:

Deres ref:

## TILRÅDING AV BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 10.11.2011. All nødvendig informasjon om prosjektet forelå i sin helhet 19.12.2011. Meldingen gjelder prosjektet:

28704  
Behandlingsansvarlig  
Daglig ansvarlig  
Student

*The Participants Experiences of "The Physical Activity Mentor Project"*  
Høgskolen i Oslo og Akershus, ved institusjonens øverste leder  
Ingrid Narum  
Katrine Smørsgård

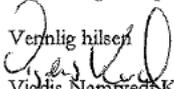
Personvernombudet har vurdert prosjektet, og finner at behandlingen av personopplysninger vil være regulert av § 7-27 i personopplysningsforskriften. Personvernombudet tilrår at prosjektet gjennomføres.

Personvernombudets tilråding forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, eventuelle kommentarer samt personopplysningsloven/-helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, [http://www.nsd.uib.no/personvern/forsk\\_stud/skjema.html](http://www.nsd.uib.no/personvern/forsk_stud/skjema.html). Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, <http://www.nsd.uib.no/personvern/prosjektoversikt.jsp>.

Personvernombudet vil ved prosjektets avslutning, 01.09.2012, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen  
  
Vigdis Namtvedt Kvalheim

  
Katrine Utaaker Segadal

Kontaktperson: Katrine Utaaker Segadal tlf: 55 58 35 42

Vedlegg: Prosjektvurdering

Kopi: Katrine Smørsgård, Olaf Schous vei 23, 0572 OSLO

Avdelingskontorer / District Offices:

OSLO: NSD, Universitetet i Oslo, Postboks 1055 Blindern, 0316 Oslo. Tel: +47-22 85 52 11. [nsd@uio.no](mailto:nsd@uio.no)

TRONDHEIM: NSD, Norges teknisk-naturvitenskapelige universitet, 7491 Trondheim. Tel: +47-73 59 19 07. [kyre.svana@svt.ntnu.no](mailto:kyre.svana@svt.ntnu.no)

TROMSØ: NSD, HSL, Universitetet i Tromsø, 9037 Tromsø. Tel: +47-77 64 43 35. [martin-arne.andersen@uit.no](mailto:martin-arne.andersen@uit.no)

## Consent form (translation)

### Request to participate in the interview in connection with a bachelor thesis

We are four physiotherapy students, two from Oslo University College and two from Uppsala University in Sweden and we will write our bachelor thesis about the Physical Activity Mentor project. We want to write a paper about your experience in relation to participation in the project. To determine this, we want to interview 4 people. The physiotherapy students from Oslo University College participated as physical activity mentors in the project and are the ones who will conduct the interviews.

### How will the interviews be done and how will the information be handled?

The interviews will last approximately one hour and we will together agree on time and place. There will be a tape recorder used and notes will be taken during the conversation. The audio files will be sent to the students in Uppsala for transcription of the interview. Data from the interviews will form the main part of the bachelor thesis. We want to get permission to contact you if there is anything we wonder after the interview.

██████████ and ██████████ at ██████████ Hospital are responsible for the Physical Activity Mentor project. We will, via ██████████ and ██████████ access to anonymous data that were recorded during the project period. This information includes gender, age, height, weight, blood pressure, pulse and waist measurement, data from functional measurement (Coop / Wonca) and information about motivation and previous experience with exercise. We will also get an overview of the type of activity, duration and frequency, which was performed during the project. This information will be used as the basis of our thesis.

We are subject to confidentiality. All information will be de-identified and treated confidentially. The data will be deleted in August 2012. The study is reported to the Norwegian Social Science Data Services A / S.

### Voluntary participation

It is voluntary to participate in the interview and if you do not wish to participate you do not need to state a reason. You have the right to request access to the information recorded about you and correct any errors. You can drop out at any time and your information will be deleted. Whether you choose to participate or not has no bearing on your further treatment at the hospital. If you would like to participate please sign the consent form.

If you have any questions, please contact us or our supervisors Ingrid Narum (22452719) or Elizabeth Møyne (22452508), Oslo University College.

Sincerely

Line Marie Sletten (95236230)  
Trondheimsveien 197A  
0570 Oslo

Katrine L. Smørsgård (41365655)  
Olaf Schous vei 23  
0572 Oslo

**Consent statement: I have received written and oral information and would like to participate in an interview. I also agree that I can be contacted by phone afterwards.**

-----  
(Signed by xxx , date)

-----  
(Phone number)

