ADVANCED SKILLS FOR ACTIVE LIVING

Physical Activity • Exercise • Sport and Mental Health:
Advanced Skills for Active Living

Co-funded by the Erasmus+ Programme of the European Union

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Introduction

Konstantinos Karteroliotis, Maria Koskolou

This publication is one of the main outcomes of the ASAL PROJECT, co-funded by the European Union in the framework of the Erasmus+ Programme, Sport Action, and it is structured in two main parts.

1. **PART I** provides a literature review indicating the strong and positive influence of exercise, physical activity, and sports on mental wellbeing and some mental illnesses. More specifically, during the last two decades there is a plethora of research studies and reports, cross-sectional, longitudinal, and experimental, providing convincing evidence that aerobic and anaerobic exercise, including jogging, swimming, cycling, walking, gardening, dancing, and weight training, is effective at reducing anxiety and depression, and eliciting both physiological and psychological benefits to other mental illnesses as well, such as schizophrenia, bipolar, and eating disorders. The compilation of this report leads to the development of a new training course for professionals of Physical Activity, Sport Science, Health and related disciplines.

2. **PART II** provides a research report with the results of six interviews carried out in each partner country. More specifically, twenty-five professionals and five service users from five European countries (Belgium, Greece, Italy, Spain, and Czech Republic) were interviewed using a semi-structured interview protocol in order to understand service users' and health care professionals' perspectives on engaging physical activity as a feasible and beneficial intervention for psychological treatment. Results indicated that health care professionals are willing to promote physical activity as part of psychological treatment for mental illnesses, and service users are likely to participate in physical activity programs organized towards this goal.

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The project has been developed by a balanced partnership encompassing:

Coordinator

EDRA – Social Cooperative Activities for Vulnerable Groups (Greece)

Members

COOSS – Marche Cooperativa Sociale Onlus (Italy)

ENALMH – European Network of Active Living for Mental Health (Belgium)

FOKUS PRAHA – (Czech Republic)

FUNDACION INTRAS – (Spain)

NKUOA – National and Kapodistrian University of Athens (Greece)

Authors

NICOS ANDREOPOULOS, ENALMH AISBL, Belgium

MARIA CARRACEDO, Fundación Intras, Spain

FRANCESCA CESARONI, Cooss Marche, Italy

KONSTANTINOS KARTEROLIOTIS, National and Kapodistrian University of Athens, Greece

MARIA KOSKOLOU, National and Kapodistrian University of Athens, Greece

ANGELIKI MANIOTI, Edra, Greece

ALEXANDRA MARKATI, National and Kapodistrian University of Athens, Greece

MARIA MLATIČEKOVÁ, FOKUS PRAHA, Czech Republic

MIKE MICHIELS, ENALMH AISBL, Belgium

MARA MORICI, Cooss Marche, Italy

MARIA PSYCHOYNTAKI, National and Kapodistrian University of Athens, Greece

NEKTARIOS STAVROU, National and Kapodistrian University of Athens, Greece

FILIPPO TRICCO, Cooss Marche, Italy

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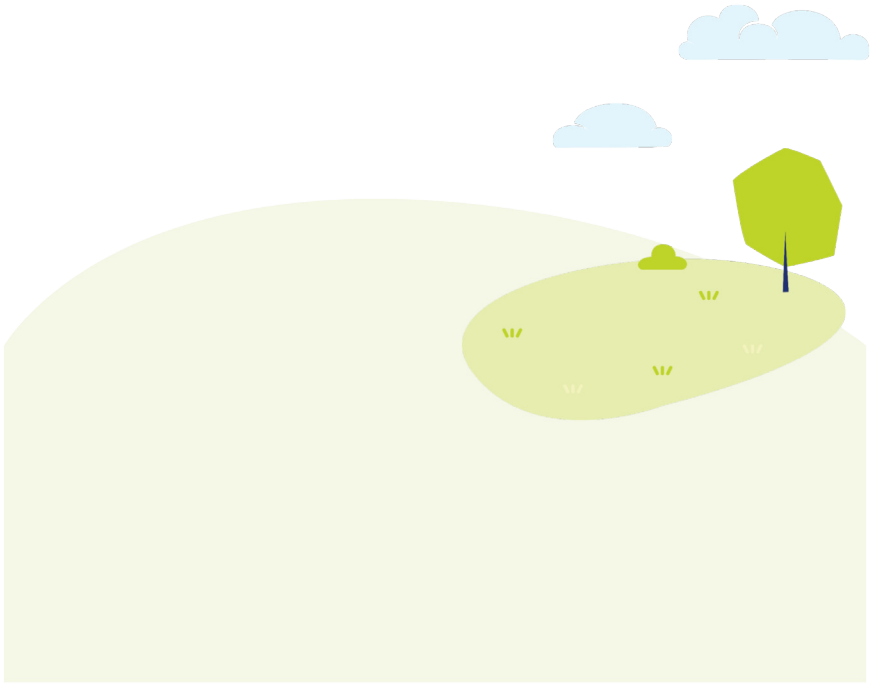

Part I

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ADVANCED SKILLS FOR ACTIVE LIVING

Deliverable title:

Understanding Mental Health

Authors: **María Carracedo**
Fundación Intras

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Introduction to Mental health concept

MENTAL HEALTH/ MENTAL ILLNESS

The World Health Organization (WHO, 2018b) defines mental health as a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community.

Mental Health Europe (MHE), in its conceptual framework for the Promotion of Mental Health and the Prevention of Disorders, remarks that there is no official definition of mental health. Cultural differences and the various theories in this regard make difficult to provide a single definition.

However, most experts agree that mental health and the absence of mental illness are not the same. In other words, the absence of a recognized mental disorder is not necessarily an indicator of mental health. In regards to this statement, mental health or a state of well-being protects against the development of disorders, while mental disorders increase the risk of mental discomfort.

Mental health is an integral component for health and well-being in general (NHS Choices, 2016) (WHO, 2018b), and it should be treated with the same urgency and consideration as when physical health is treated. In line with this approach, the Comprehensive Mental Health Action Plan 2013-2020 (WHO, 2013) has the internationally accepted principle that "there is no health without mental health".

EVOLUTION IN THE UNDERSTANDING OF MENTAL ILLNESS

Definitions of mental illnesses have changed over the last half-century. Mental illness refers to conditions that affect cognition, emotion, and behavior (e.g., schizophrenia, depression, autism). Formal clinical definitions now include more information (i.e., we have moved from a partial to a more holistic perspective and transitioned from a focus on disease to a focus on health). The informal response has fostered a parallel transition from a focus on the stigma of mental illnesses to the recognition that mental health is important to the overall health.

In 1948, the World Health Organization defined health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (WHO, 1948).

In the 1960s and 1970s, a person with a mental illness was defined by diagnosis alone, and there were few broad classes of mental disorders. National statistical data were reported by diagnoses (e.g., cases of schizophrenia and cases of depression). People with mental illness were commonly stigmatized and institutionalized. At the same time, deinstitutionalization had begun and was accelerating (Manderscheid, Ryff, Freeman, McKnight-Eily, Dhingra, & Strine, 2010).

A major shift occurred in care practices during the 1980s and 1990s. The interest in providing care to people with severe mental illnesses was failing to support their needs.

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A large number of people with severe mental illnesses had been released from mental hospitals, but few community mental health services were available to serve them. The population of homeless mentally ill people was growing rapidly in Europe. New definitions were needed to identify people with the most severe mental illnesses and to create a framework for new programs (Manderscheid et al., 2010).

In the last decades a new approach has emerged regarding mental health concept, named the positive psychological functioning, which includes a sense of well-being, hope and quality of life. Several landmark studies described the quality of life with a focus on how it varied based on the demographic characteristics and whether it changed across time (Andrews & Whitney, 1976).

Following this societal perspective, psychologists increased interest in the topic of subjective well-being, delineated its component parts (e.g., life satisfaction, ratings of happiness), and investigated the influences of judgmental and motivational processes (Diener, Suh, Lucas, & Smith, 1999). Other approach psychological functioning from humanistic, existential, and life-span developmental perspectives that emphasized growth, meaning, and personal capacity (Neugarten, 1973). These formulations evolved into two broad orientations for defining psychological well-being: one focused on happiness, and the other on human potential (Kahneman, Diener, & Schwarz, 1999; Riff & Singer, 2008).

At the beginning of the 2000s, some studies have investigated the concept of wellbeing using empirical indicators such as life satisfaction, purpose, personal growth, environmental mastery, self-acceptance, autonomy, and positive relationships (Keyes, Shmotkin, & Ryff, 2002). These studies support the notion that the absence of mental distress does not guarantee the presence of well-being and that mental illness and mental health are independent dimensions.

CURRENT DEFINITION

The most recent definitions use the wellness (or well-being) model, in which wellness refers to the degree to which one feels positive and enthusiastic about oneself and life, whereas illness refers to the presence of disease. These definitions apply to physical as well as mental illness and wellness (Manderscheid et al., 2010).

In this model health and disease are viewed as two separate dimensions. Recovery is the bridge between the two that builds on the strengths of health to address the weaknesses of disease. In addition, because many mental ill people suffer also from physical disorders, a dual emphasis on mental and physical health is essential (Manderscheid et al., 2010). These emphases will be very important for health reform and health care reform.

In these current conceptions, "the person is viewed as paramount; strengths are emphasized and weaknesses de-emphasized. Recovery and full community participation are the goals. Here, recovery is a life-long process in which a person with a mental illness strives to participate fully in community life, even in the presence of continuing symptoms

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and disabilities." (Manderscheid et al., 2010).

The new conceptions also include personal circumstances as risk factors for mental health. The study "The State of Mental Health in European Union" (Health and Consumer Protection Directorate, European Commission, 2004) considers that these adverse 'life events', such as loss of a partner or of a job, can interact with other determinants causing a negative effect on mental health. In addition, many long-lasting difficulties such as disability – either of oneself or of someone close – or major financial problems can result in chronic mental disorders.

Nevertheless, it is important to distinguish between psychological distress and mental disorders. Psychological distress refers to the presence of symptoms, which are mainly types of depression or anxiety (Health and Consumer Protection Directorate General, European Commission, 2004). These symptoms are usually measured by 'checklists' or self-reported instruments, which provide a total score or scores by adding up the answers to the various questions included in the instrument. Psychological distress is, therefore, a continuous dimension. The symptoms are rather common and could be transient, for example, following a negative or stressful life event. However, most of the time the person does not fit into a psychiatric diagnostic category and probably never will. Those who are defined as having psychiatric disorders, however, do usually also score highly on the psychological distress instruments .

Psychiatric diagnoses on the other hand, are discrete entities described in classification through syndromes. These syndromes are a cluster of symptoms whose duration, severity, and impairment on daily life correspond to different diagnoses which usually relate to a need for care, either primary care or psychiatric care.

MAIN MENTAL HEALTH DISORDERS IN EUROPE

As The European Mental Health Action Plan 2013-2020 (WHO, 2015) points out, mental disorders are one of the most significant public health challenges in the European Region as measured by prevalence, burden of disease or disability. Mental disorders are common; lifetime prevalence in Europe is estimated at one fourth of the general population. Mental health problems cut across age, gender, social status, and countries. In addition, it has been estimated that mental disorders affect more than one third of the population every year. As pointed out by the Eurostat Study on Mental health and related issues statistics (Eurostat, 2018), on average, "the percentage of persons who reported having consulted a psychologist, psychotherapist, or psychiatrist in the 12 months prior to the EHIS survey was higher among women (6.3 %) than men (4.2 %). This pattern was apparent across almost all EU Member States" (Eurostat, 2018).

Finally, the proportion of the overall population (men and women combined) aged 15 or over that consulted a psychologist or psychiatrist in the 12 months prior to the survey was between 2.1 % and 8.1 % in most EU Member States (Eurostat, 2018).

The ECNP EBC Report study carried on in 2011 (Wittchen et al., 2011) shows that the

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Table 1. Comparison of 2005 and 2011 estimates and overall number of cases affected by mental disorders in the EU (in millions). Data collected in ECNP EBC Report. Source: ECNP Network, 2011.

	Prevalence estimate		No. of persons affected	
	2005	2011	2005	2011
	% (95% CI)	%	Million	Million
Group A: 2005 report diagnoses				
Alcohol dependence	2.4 (0.2-4.8)	3.4	7.2 (5.9-8.6)	14.6
Opioid dependence (*drug dep*)	*0.5 (0.1-0.6)*	0.1-0.4	2.0 (1.5-2.2)	1.0
Cannabis is dependence (*drug dep*)	*See above*	0.3-1.8	*See above*	1.4
Psycotic disorders	0.8 (0.2-2.0)	1.2	3.7 (2.8-5.4)	5.0
Major depression	6.9 (4.8-8.0)	6.9	18.4 (17.2-19)	30.3
Bipolar disorder	0.9 (0.5-0.9)	0.9	2.4 (1.7-2.4)	3.0
Panic disorder	1.8 (0.7-2.2)	1.8	5.3 (4.3-5.3)	7.9
Agoraphobia	1.3 (0.7-2.0)	2.0	4.0 (3.3-4.7)	8.8
Social phobia	2.3 (1.1-4.8)	2.3	6.7 (5.4-9.3)	10.1
Generalized anxiety dis.	1.7 (0.8-2.2)	1.7-3.4	5.9 (5.3-6.2)	8.9
Specific phobias	6.4 (3.4-7.6)	6.4	18.5 (14.4-18.6)	22.7
OCD	0.7 (0.5-1.1)	0.7	2.7 (2.5-3.1)	2.9
PTSD	-	1.1-2.9	-	7.7
Somatoform disorders[d]	6.3 (2.1-7.8)	4.9	18.9 (12.7-21.2)	20.4
Anorexia nervosa (*eating dis.*)	*0.4 (0.3-0.7)*	0.2-0.5	1.2 (1.0-1.7)	0.8
Bulimia nervosa (*eating dis.*)	See above	0.1-0.9	*See above*	0.7
Subtotal any Group A	27.4%	27.1%	82.7	118.1
Group B: additional 2011 diagnoses				
Borderline personality dis[a]	-	*0.7*	-	*2.3*
Dissocial personality dis[a]	-	*0.6*	-	*2.0*
Hyperkinetic dis./ADHD[b]	-	(5.0) 0.6	-	3.3
Pervasive dev. dis./autism	-	0.6	-	0.6
Conduct disorders[b]	-	(3.0) 0.4	-	2.1
Mental retardation	-	1.0	-	4,2
Insomnia[c]	-	(7.0) 3.5	-	(29.1) 14.6
Hypersomnia	-	0.8	-	3.1
Narcolepsy	-	0.02	-	0.1
Sleep apnoea	-	3.0	-	12.5
Dementias[b]	-	(5.4) 1.2	-	6.3
Total any Group B	-	*27.1*		*51.0*
Subtotal any adjusted	-	11.1%	-	46.7
Total A and B	**27.4%**	**38.2%**	**82.7**	**164.8**

Note: Estimated prevalences do not correspond to number of persons due to age group-specific adjustments.

[a] Borderline and dissocial personality disorders not counted in subtotal to avoid double counting with disorders from Group A

[b] Childhood/adolescent disorders, except for autism, rates () refer only to age group 2-17. Therefore the age group prevalence was adjusted to reflect the total population, dementia rates (applicable age range 60+) were adjusted.

[c] Insomnia counted only 50% (as a conservative strategy in order to avoid double counting with disorders from Group A).

[d] Without headache.

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most frequent mental disorders in Europe are major depression (over than 30 million people in EU), several types of phobias (22 million), somatoform disorders and alcohol dependence (see Table 1). Nevertheless, the data collected by in the Europe Mental Health Plan by WHO 4 years later (WHO, 2015) vary slightly from the ECNP EBC study, situating anxiety as the second most frequent disorder among Europeans.

According to WHO European Region, there are gender and social differences in the prevalence of mental health disorders. As a summary of the most outstanding ones (WHO, 2015) the following are mentioned:

- Depressive disorder: twice as common in women as in men.
- Psychotic disorders: about 1–2% of the population is diagnosed with no differences between, men and women.
- Substance use disorders: 5.6% of men and 1.3% of women.
- Dementia: there is an increasing prevalence among the ageing population, typically 5% in people over 65 and 20% of those over 80.
- In all countries, mental disorders tend to be more prevalent among those who are most deprived.

In addition, mental disorders are by far the most significant of the chronic conditions affecting the population of Europe, accounting for just fewer than 40%. Unipolar depressive disorder alone is responsible for 13.7% of the disability burden, making it the leading chronic condition in Europe. This is followed closely by alcohol-related disorders (6.2%) in second place, Alzheimer's and other dementias in seventh (3.8%), whereas schizophrenia and bipolar disorders are placed in the eleventh and twelfth position respectively, each responsible for 2.3% of all YLDs (Years Lived with Disability).

The following definitions for the main mental disorders are the ones established by WHO in its Fact Sheet about mental disorders (WHO, 2018) and by the Encyclopedia of Psychology of the American Psychiatric Association (APA, 2000):

Mental health conditions

DEPRESSION

Depression is the most common mental disorder. It is characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, tiredness, and poor concentration. People with depression may also have multiple physical complaints with no apparent physical cause. Depression can be long lasting or recurrent, substantially impairing people's ability to function at work or school and to cope with daily life; at its most severe stage, depression can lead to suicide (WHO, 2018).

Some of the most common symptoms of depression are lack of interest and pleasure in daily activities, significant weight loss or gain, insomnia or excessive sleeping, lack of energy, inability to concentrate, feelings of worthlessness or excessive guilt and recurrent

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thoughts of death or suicide (APA, 2000).

Management of depression should include psychosocial aspects, including identifying stress factors, such as financial problems, difficulties at work or physical or mental abuse, and sources of support, such as family members and friends. The maintenance or reactivation of social networks and social activities is important (WHO, 2018).

ANXIETY DISORDERS

Anxiety refers to anticipation of a future concern and is more associated with muscle tension and avoidance behavior. Anxiety disorders differ from normal feelings of nervousness or anxiousness, and involve excessive fear or anxiety. Anxiety disorders are the most common of mental disorders and affect nearly 30 percent of adults at some point in their lives. However, anxiety disorders are treatable and a number of effective treatments are available which help most people experience normal productive lives (WHO, 2018).

In addition, people with anxiety disorders may try to avoid situations that trigger or worsen their symptoms. Job performance, schoolwork and personal relationships can be also affected. In general, for a person to be diagnosed with an anxiety disorder, the fear or anxiety must:

- Be out of proportion to the situation or age inappropriate
- Hinder his/her ability to function normally

There are several types of anxiety disorders, including generalized anxiety disorder, panic disorder, specific phobias, agoraphobia, social anxiety disorder and separation anxiety disorder (APA, 2000).

BIPOLAR AFFECTIVE DISORDER

The bipolar affective disorder affects approximately 60 million people worldwide. It typically consists of both manic and depressive episodes separated by periods of normal mood. Manic episodes involve elevated or irritable mood, over-activity, pressure of speech, inflated self-esteem and a decreased need for sleep. People who experience manic attacks but do not experience depressive episodes are also classified as having bipolar disorder (WHO, 2018).

Bipolar disorders are brain disorders that cause changes in a person's mood, energy and ability to function. Bipolar disorder is a category that includes mainly three different conditions -bipolar I, bipolar II and cyclothymic disorder (APA, 2000).

- BIPOLAR I DISORDER can cause dramatic mood changes. During a manic episode, people with bipolar I disorder may feel extremely high and on top of the world, or uncomfortably irritable and "revved up". During a depressive episode they may feel sad and hopeless. There are often periods of normal moods in between these episodes. Bipolar I disorder is diagnosed when a person has a manic episode.

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- BIPOLAR II DISORDER refers to a person experiencing at least one major depressive episode and at least one hypomanic episode. People return to usual function between episodes. People with bipolar II often first seek treatment because of depressive symptoms, which can be severe, and often have other co-occurring mental illnesses such as an anxiety disorder or substance use disorder.
- CYCLOTHYMIC DISORDER is a milder form of bipolar disorder involving many mood changes, with hypomania and depressive symptoms that occur often and fairly constantly. People with cyclothymia experience emotional ups and downs, but with less severe symptoms than bipolar I or II. Additionally, cyclothymic disorder symptoms include the following:
  - ▶ For at least two years, many periods of hypomanic and depressive symptoms (see above), but the symptoms do not meet the criteria for hypomanic or depressive episode.
  - ▶ During the two-year period, the symptoms (mood changes) have lasted for at least half the time and have never stopped for more than two months.

SCHIZOPHRENIA AND OTHER PSYCHOSES

Schizophrenia is a severe mental disorder, affecting about 23 million people worldwide. Psychoses, including schizophrenia, are characterized by distortions in thinking, perception, emotions, language, sense of self and behaviour. Common psychotic experiences include hallucinations (hearing, seeing or feeling things that are not there) and delusions (fixed false beliefs or suspicions that are firmly held even when there is evidence to the contrary). Schizophrenia causes a number of difficulties affecting, in a negative way, work or study and people's lives in general (APA, 2000).

Stigma and discrimination can result in a lack of access to health and social services. Furthermore, people with psychosis are at high risk of exposure to human rights violations, such as long-term confinement in institutions.

Schizophrenia typically begins in late adolescence or early adulthood. Some patients may present clear symptoms, but on other occasions, they may seem fine until they start explaining what they are truly thinking. Symptoms and signs of schizophrenia can vary, depending on the individual characteristics. The symptoms are classified into four major categories (APA, 2000):

1. Positive symptoms - also known as psychotic symptoms. For example, delusions and hallucinations.
2. Negative symptoms - refer to elements that show a removal of the individual. For example, absence of facial expressions or lack of motivation.
3. Cognitive symptoms - affect person's cognitive or thought processes. They may be positive or negative symptoms; for example, poor concentration is a negative symptom.

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4. Emotional symptoms - these are usually negative symptoms, such as blunted emotions.

Below is a list of the major symptoms:

- Delusions - the patient displays false beliefs, which can take many forms, such as delusions of persecution, or delusions of grandeur. They may feel that others are attempting to control them remotely. Or, they may think that they have extraordinary powers and abilities.
- Hallucinations - hearing voices is much more common than seeing, feeling, tasting, or smelling things which are not there; however, people with schizophrenia may experience a wide range of hallucinations.
- Thought disorder - the person may jump from one subject to another for no logical reason. The speaker may be hard to follow or erratic.

Other symptoms may include:

- Lack of motivation - the patients lose their drive or motive. Everyday actions, such as washing and cooking, are neglected or extremely difficult to accomplish.
- Poor expression of emotions - patients' responses to happy or sad occasions may be lacking, or inappropriate.
- Social withdrawal - when patients with schizophrenia withdraw socially, it is often because they believe somebody is going to harm them.
- Unawareness of illness - as the hallucinations and delusions seem so real for patients, many of them may not believe they are ill. They may refuse to take medication for fear of side effects, or for fear that the medication may be poison, for example.
- Cognitive difficulties - the patients' ability to concentrate, recall things, plan ahead, and to organize their life are affected, which makes the communication ng more difficult (APA, 2000).

DEMENTIA

Dementia is not a single disease in itself, but a general term to describe symptoms of impairment in memory, communication, and thinking. Worldwide, approximately 50 million people have dementia. Dementia is usually of a chronic or progressive nature in which there is deterioration in cognitive function (i.e., the ability to process thought) beyond what might be expected from normal ageing. It affects memory, thinking, orientation, comprehension, calculation, learning capacity, language, and judgement. The impairment in cognitive function is commonly accompanied, and occasionally preceded, by deterioration in emotional control, social behaviour, or motivation (WHO, 2018).

Dementia is caused by a variety of diseases and injuries that affect the brain, such as Alzheimer's disease or stroke. These are some types of dementia (APA, 2000):

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- Alzheimer's disease is characterized by "plaques" between the dying cells in the brain and "tangles" within the cells (both are due to protein abnormalities). The brain tissue in a person with Alzheimer's has progressively fewer nerve cells and connections, and the total brain size shrinks.
- Dementia with Lewy bodies is a neurodegenerative condition linked to abnormal structures in the brain. The brain changes involve a protein called alpha-synuclein.
- Mixed dementia refers to a diagnosis of two or three types occurring together. For instance, a person may show both Alzheimer's disease and vascular dementia at the same time.
- Parkinson's disease is also marked by the presence of Lewy bodies. Although Parkinson's is often considered as a disorder of movement, it can also lead to dementia symptoms.
- Huntington's disease is characterized by specific types of uncontrolled movements but also includes dementia.

Other disorders leading to symptoms of dementia include (APA, 2000):

- Frontotemporal dementia also known as Pick's disease.
- Normal pressure hydrocephalus when excess cerebrospinal fluid accumulates in the brain.
- Posterior cortical atrophy resembling changes seen in Alzheimer's disease but in a different part of the brain.
- Down syndrome increasing the likelihood of young-onset Alzheimer's.

Possible symptoms of dementia (APA, 2000):

- Recent memory loss - a sign of this might be asking the same question repeatedly.
- Difficulty completing familiar tasks - for example, making a drink or cooking a meal.
- Problems communicating - difficulty with language; forgetting simple words or using the wrong ones.
- Disorientation - getting lost on a previously familiar street, for example.
- Problems with abstract thinking - for instance, dealing with money.
- Misplacing things - forgetting the location of everyday items such as keys, or wallets, for example.
- Mood changes - sudden and unexplained changes in outlook or disposition.
- Personality changes - perhaps becoming irritable, suspicious or fearful.
- Loss of initiative - showing less interest in starting something or going somewhere.

As the patient ages, late-stage dementia symptoms tend to worsen.

DEVELOPMENTAL DISORDERS

Developmental disorder is an umbrella term covering intellectual disability and autism

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spectrum disorders. Developmental disorders usually have a childhood onset but tend to persist into adulthood, causing impairment or delay in functions related to the central nervous system maturation. They generally follow a steady course rather than the periods of remissions and relapses that characterize many other mental disorders (WHO, 2018).

Developmental disorders are defined by limitations in core functional domains (e.g., motor, communication, social, academic) resulting from aberrant development of the nervous system. These limitations can manifest during infancy or childhood as delays in reaching developmental milestones, and as qualitative abnormalities or lack of function in one or multiple domains (Reiss, 2009).

Based on Sulkes (2018), the neurodevelopmental disorders include the following, among others:

- Attention-deficit/hyperactivity disorder: ADHD is characterized by poor or short attention span and/or excessive activity and impulsiveness inappropriate for the child's age that interferes with functioning or development. Symptoms may include difficulty in concentrating, in completing tasks (poor executive skills), restlessness, mood swings, impatience, and difficulty in maintaining relationships.
- Autism spectrum disorders: Autism spectrum disorders (ASDs) refer to conditions in which people have difficulties in developing normal social relationships, use language abnormally or not at all, and behave in compulsive and ritualistic ways. Autism spectrum disorder (ASD) comprises a group of neurodevelopmental disabilities. The Diagnostic and Statistical Manual of Mental Disorders (5th edition, DSM-5, American Psychiatric Association, 2013) includes autism, Asperger's disorder, and "pervasive personality disorder not otherwise specified" under the umbrella heading of ASD (APA, 2013).

- Symptoms of autism spectrum disorders include impaired social behaviour, communication and language, and a narrow range of interests and activities that are both unique to the individual and are carried out repetitively (Reis, 2009). Children with autism spectrum often repeat certain behaviors, for instance:
  - Avoid eye contact
  - Not be able to express what they're thinking through language
  - Have a high-pitched or flat voice
  - Find it hard to keep up a conversation
  - Have trouble controlling emotions
  - Perform repetitive behaviors like hand-flapping, rocking, jumping, or twirling
  - Developmental disorders often originate in infancy or early childhood. People with these disorders occasionally display some degree of intellectual disability.

SUBSTANCE USE DISORDERS

Addiction is a complex condition, a brain disease that is manifested by compulsive sub-

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stance use despite harmful consequence. People with addiction (severe substance use disorder) have an intense focus on using a certain substance(s), such as alcohol or drugs, to the point that it takes over their life. They keep using alcohol or a drug even when they know it will cause problems to them. Yet, a number of effective treatments are available helping people to recover from addiction and lead normal, productive lives (APA, 2013).

People with a substance use disorder have distorted thinking, behavior and body functions. Changes in the brain's wiring are what cause people to have intense cravings for the drug and make it hard to stop using the drug. Brain imaging studies show changes in the areas of the brain that relate to judgment, decision making, learning, memory and behavior control. These substances can cause harmful changes in how the brain functions. These changes can last long after the immediate effects of the drug — the intoxication. Intoxication is the intense pleasure, calm, increased senses or a high sense caused by the drug. Intoxication symptoms are different for each substance. Over time people with addiction build up a tolerance, meaning they need larger amounts to feel the effects.

Substance-related disorders are usually divided into two groups (Domingo & Zhang, 2019):

- Substance-induced mental disorders: they refer to those mental changes caused by the direct effects of a substance or withdrawal, namely, depression, psychosis, or anxiety.
- Substance use disorders: they refer to the difficulty to control the use or intake of certain substances.

People with addictive disorders may be aware of their problem, but they are unable to stop it even if they want to. The addiction may cause health problems as well as social problems at work and with family members and friends. The misuse of drugs and alcohol is the leading cause of preventable illnesses and premature death. Symptoms of substance use disorder are grouped into the following four categories:

- Impaired control: a craving or strong urge to use the substance; desire or failed attempts to cut down or control substance use
- Social problems: substance use causes failure to complete major tasks at work, school or home; social, work or leisure activities are given up or cut back because of substance use
- Risky use: substance is used in risky settings; continued use despite known problems
- Drug effects: tolerance (need for larger amounts to get the same effect); withdrawal symptoms (different for each substance).

Many people experience both mental illness and addiction, often called dual disorder. The mental illness may be present before the addiction. Or the addiction may trigger or make a mental disorder worse.

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Medication and side effects

DEPRESSION

There are several drugs used for depression treatment that are classified depending on the neurotransmitter on which they act:

- The Tricyclics antidepressants: Tofranil, Anafranil, Triptizol, Ludiomil, Lantanon.
- Monoamine oxidase inhibitors (MAOIs): Parnate, Nardelzine, Manerix (reversible)…
- Inhibitors of Serotonin Reuptake (SSRI): Dumirox, Prozac, Reneuron, Adofen, Motivan, Seroxat, Frosinor, Besitran, Aremis, Seropran, Prisdal, Rexer. They are the safest and have a lower number of side effects and interactions with other types of medications.
- Noradrenergics and serotoninergics: Vandral, Dobupal.
- Trazodone: Deprax.
- Nefadodona: Menfazona, Dutomin, Rulivan.
- Noradrenergics and serotoninergics: Vandral, Dobupal.
- Trazodone: Deprax; Nefadodona: Menfazona, Dutomin, Rulivan.

The main side effects of that medication could be nausea, increased appetite, which causes increased weight, sexual dysfunction, fatigue, drowsiness, insomnia, dry mouth, blurred vision, constipation, dizziness, agitation, anxiety, uneasiness and even genetic variations (Mayo Clinic, 2017; Ferguson, 2001; Medina & Garcia de Leon, 2004).

ANXIETY DISORDERS

The most commonly used medications to treat anxiety disorders are anti-anxiety medications (generally prescribed only for a short period of time) and antidepressants. Beta-blockers, used for heart conditions, are sometimes used to control physical symptoms of anxiety. This is a classification of anti-anxiety medications according to the Anxiety and Depression Association of America (ADAA):

1. Selective serotonin reuptake inhibitors (SSRIs). They are a type of antidepressants and work by stopping nerve cells in the brain from reabsorbing serotonin, which is a chemical that plays a vital role in mood regulation. Examples of SSRIs for anxiety include:

- citalopram (Celexa)
- escitalopram (Lexapro)
- fluoxetine (Prozac)
- fluvoxamine (Luvox)
- paroxetine (Paxil, Pexeva)
- sertraline (Zoloft)

The side effects of SSRIs can include: blurry vision, dizziness, drowsiness or fatigue, dry

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mouth, feeling agitated or restless, gaining weight, headaches, nausea, sexual problems or erectile dysfunction, sleep problems, an upset stomach.

2. Serotonin-norepinephrine reuptake inhibitors: Serotonin-norepinephrine reuptake inhibitors (SNRIs) are another class of antidepressant that treats depression and anxiety. Doctors may also prescribe them to treat some chronic pain conditions. These medications work by reducing the brain's reabsorption of the chemicals serotonin and norepinephrine. Examples of SNRIs for anxiety are:

- duloxetine (Cymbalta)
- venlafaxine (Effexor XR)

The side effects of SNRIs are similar to those of SSRIs and include: constipation, dizziness, drowsiness or fatigue, dry mouth, headaches, increased blood pressure, weight gain, loss of appetite, nausea, sexual problems or erectile dysfunction, sleep problems, sweating more than usual, an upset stomach.

3. Tricyclic antidepressants: Tricyclic antidepressants (TCAs) are an older class of antidepressant drug. Although they may be effective for the treatment of depression and anxiety, doctors often prescribe SSRIs instead, as they cause fewer side effects. However, TCAs may be useful for some people, especially if other medications do not provide relief. Examples of TCAs for anxiety include:

- amitriptyline (Elavil)
- imipramine (Tofranil)
- nortriptyline (Pamelor)

Side effects vary among TCAs, as they work in different ways. Possible side effects include: constipation, blurry vision, difficulty urinating, dry mouth, drowsiness or fatigue, increase in appetite, lightheadedness, low blood pressure, weight loss or gain, sexual problems or erectile dysfunction, tremors, sweating more than usual.

4. Benzodiazepines: Benzodiazepines are a type of sedative drug that reduces the physical symptoms of anxiety, such as tense muscles. These drugs also encourage relaxation, and their effects take place within a few minutes. Benzodiazepines include:

- alprazolam (Xanax)
- chlordiazepoxide (Librium)
- diazepam (Valium)
- lorazepam (Ativan)

The possible side effects include: blurry vision, confusion, drowsiness or fatigue, dizziness, headaches, loss of memory or concentration, problems with balance, problems with coordination or speech, an upset stomach.

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Other medications for anxiety: Many other medicines may help treat anxiety, although doctors usually only prescribe them if SSRIs or similar drugs do not work.

1. Beta-blockers: Beta-blockers are a common medication for people with high blood pressure and heart conditions. However, doctors may prescribe them off-label for anxiety in certain situations. Beta-blockers reduce the effects of norepinephrine, meaning that they can relieve some of the physical symptoms of anxiety. Examples of beta-blockers include atenolol (Tenormin) and propranolol (Inderal). The possible side effects of beta-blockers include: cold hands and feet, depression, extreme tiredness, low blood pressure, shortness of breath, sleep problems, weight gain.

2. Buspirone: This anti-anxiety medication may treat short- or long-term anxiety symptoms. Buspirone (BuSpar) works much more slowly than benzodiazepines and may not treat all types of anxiety disorder, but it causes fewer side effects and has a lower risk of dependency. The side effects of buspirone may include: blurry vision, diarrhea, dizziness, drowsiness, dry mouth, fatigue, headaches, muscle pain, nausea, poor concentration, restlessness or nervousness, sleep problems, sweating, weakness.

3. Monoamine oxidase inhibitors: Monoamine oxidase inhibitors (MAOIs) are one of the earliest types of antidepressant. Doctors may prescribe them off-label to treat the symptoms of panic disorder and social phobia. Types of MAOI include:

- isocarboxazid (Marplan)
- phenelzine (Nardil)
- selegiline (Emsam)
- tranylcypromine (Parnate)

The potential side effects of MAOIs include: constipation, diarrhea, dizziness, drowsiness, dry mouth, difficulty urinating, headaches, low blood pressure, nausea, sexual dysfunction, sleep problems, sweating, and weight gain.

BIPOLAR AFFECTIVE DISORDERS

Medications known as "mood stabilizers", like lithium, are the most commonly prescribed type of medication for bipolar I disorder. Anticonvulsant medications are also sometimes used and antipsychotics can also help manage bipolar disorders, especially those accompanied by periods of psychosis during severe depression or mania (APA, 2013).

- Lithium goes by the generic names lithium carbonate (capsules and tablet form) and lithium citrate (liquid form), as well as several trade names, such as Eskalith, Eskalith CR, and Lithobid. Lithium has the following possible side effects: nausea, shaking, dry mouth, frequent urination, diarrhea, weight gain, increased thirst, loss appetite, kidney trouble, lowered thyroid activity, fatigue, emotional numbness or a dull feeling. Finally, it is essential that people taking lithium stay hydrated to prevent

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their lithium blood levels becoming too high and toxic.

- Anticonvulsant medications: Anticonvulsants treat conditions that cause seizures, but they can also help manage mania and bipolar disorders. Some anticonvulsant medications are:
  - divalproex sodium (Depakote)
  - lamotrigine (Lamictal)
  - valproic acid (Depakene)
  - carbamazepine (Equetro)
  - topiramate (Topamax)

  By using anticonvulsant medications some of the most common side effects are: nausea, shaking, weight gain, dizziness, drowsiness, blurred vision, decreased white blood cell or platelet count, dry mouth, skin rashes. Also, topiramate may have different or additional side effects, including: weight loss, memory problems, emotional numbness or a dull feeling, kidney stones. On the other hand, lamotrigine can sometimes cause a severe rash that requires medical attention.

  - Antipsychotics: During the last years, few antipsychotics are used to treat bipolar disorders, including:
  - olanzapine (Zyprexa)
  - risperidone (Risperdal)
  - quetiapine (Seroquel)
  - asenapine (Saphris)
  - aripiprazole (Abilify)
  - ziprasidone (Geodon)

  Some of the potential side effects of antipsychotic medications are: drowsiness and sedation, dry mouth, shaking, increased appetite, weight gain, constipation, low blood pressure, restlessness, increased saliva, reduce libido or sexual dysfunction. In addition, asenapine often causes numbness of the mouth and a strange taste in the mouth, whereas aripiprazole and ziprasidone may cause insomnia and restlessness. Ziprasidone can also cause heart problems. Finally, its important to be mentioned that medications most commonly used in the treatment of bipolar II disorder are mood stabilizers and antidepressants, depending on the specific symptoms. The side effects of antidepressants have been listed in the section of medication for depression.

SCHIZOPHRENIA AND OTHER PSYCHOSES

The neuroleptics and antipsychotics are the most common treatment drugs (Haloperidol, Sinogan, Largactil, Meleril, Orap, Modecate, Clopixol, Eskazine, Leponex, Cisordinol, Zyprexa, Risperdal, Dogmatil, Tiaprizal, Seroquel). These drugs block the receptors of do-

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pamine (substance responsible for transmitting information between cells of the nervous system), in which excess can produce symptoms such as hallucinations and delusions. They organize the thought and consequently, they also prevent relapses acting as a "filter" which avoid the excessive transmission of information from one neuron to another in the brain. The neuroleptics and antipsychotics may have the following side effects: weigh increase, metabolic syndrome or sexual dysfunction (Caqueo-Urízar, Urzùa, & Rus-Calafell, 2017; Sàez de Adana García de Acilu et al., 2014). Extrapyramidal effects are characterized by a motor restlessness, especially of legs, forcing the person to move them (akathisia), muscle stiffness, tremor (especially in hands), spasms and the tendency of having the mouth open and with excessive salivation.

DEMENTIA

Brain cell death cannot be reversed. Based on that, there is no known cure for degenerative dementia, nevertheless there are four drugs, called cholinesterase inhibitors that are used to reduce the symptoms, especially for Alzheimer's disease and can also help with the behavioral elements of Parkinson's disease (APA, 2013):

- donepezil (brand name Aricept)
- galantamine (Reminyl)
- rivastigmine (Exelon)
- tacrine (Cognex)

The majority of the people do not have side effects when they take cholinesterase inhibitors, but some do have: Nausea, vomiting, loss of appetite, more frequent bowel movements, bruising, muscle cramps, headaches, fatigue, insomnia. A different kind of drug, memantine (Namenda), an NMDA receptor antagonist, may also be used, alone or in combination with a cholinesterase inhibitor. Memantine helps balance glutamate, which is another "chemical messenger" involved in the memory and learning, and could help improve memory, attention, reasoning, and language.

The side effects are not very common but may include: constipation, dizziness, headache, confusion, fatigue, increased blood pressure, and sleepiness.

DEVELOPMENTAL DISORDERS

Medication for developmental disorders differs for each type of disorder. These are the most common ones (Sulkes, 2018):

- Treatment of ADHD: Psychostimulant drugs are the most effective drug treatment. Methylphenidate and other amphetamine-like drugs are the psychostimulants most often prescribed. They are equally effective and have similar side effects. Among others the side effects of psychostimulant drugs include the following: Sleep distur-

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bances (such as insomnia), appetite suppression, depression, sadness, or anxiety, headache, stomachache, elevated heart rate and blood pressure. Most children have no side effects except perhaps a decreased appetite.

A number of other drugs can be used to treat inattentiveness and behavioral symptoms. These drugs include:

▶ Atomoxetine (a non-stimulant ADHD drug). Some common side effects of atomoxetine are: acid or sour stomach, blenching, disorders with periods, cough, decrease of urination, decrease of appetite, dizziness, dry mouth, fever, headache, irritability, nausea, drowsiness.
▶ Certain drugs typically used for high blood pressure such as clonidine and guanfacine
▶ Antidepressants
▶ Antianxiety drugs

Sometimes, a combination of drugs is used. Side effects of these drugs have been already listed in other parts of this chapter.

- Autism spectrum disorders (ASDs): Drug therapy cannot change the underlying disorder, however, the selective serotonin reuptake inhibitors (SSRIs), such as fluoxetine, paroxetine, and fluvoxamine, are often effective in reducing ritualistic behaviors of people with an ASD. Antipsychotic drugs, such as risperidone, may be used to reduce self-injurious behavior, although the risk of side effects (such as weight gain and movement disorders) must be considered. Mood stabilizers and psychostimulants may be helpful for people who are inattentive or impulsive or who have hyperactivity (Sulkes, 2018). Side effects of such medication have been described above.

SUBSTANCE USE DISORDERS

Medications are used to control drug cravings and relieve severe symptoms of withdrawal. However, the treatment varies depending on substance and circumstances. Specific treatment depends on the drug being used, but it typically involves counseling and sometimes involves use of other drugs (Bressert, 2016).

- Cocaine abuse: The principles of cocaine rehabilitation are similar to treatment of alcoholism or sedatives:

  ▶ Antianxiety: Severe cocaine-induced agitation can be treated with diazepam (Valium); tachyarrhythmia's can be treated with propranolol (Inderol).
  ▶ Antidepressant: imipramine and desipramine reduced cocaine euphoria and craving.

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- Cannabis abuse: Usually adverse effects of marijuana intoxication do not lead to professional attention. There is no adequately documented case of a fatality in a human being. Pure marijuana abuse rarely requires inpatient or pharmacological treatment, and detoxification is not necessary. Since marijuana may be one of the many drugs abused, total abstinence from all psychoactive substances should be the goal of therapy.

  ▶ Antianxiety: Antianxiety drugs are occasionally needed to treat severe cannabis-induced anxiety or panic. If the patient was using cannabis for anxiety reduction, an antianxiety drug should be considered as substitution therapy.
  ▶ Antipsychotic drugs: are occasionally needed to treat protracted, cannabis-induced psychosis.
  ▶ Antidepressant: If the patient was using cannabis to alleviate depression, an antidepressant should be considered as substitution therapy.

- Opioids abuse: The medicines used to treat opioid abuse and addictions are methadone, buprenorphine, and naltrexone. Side effects of methadone can be: headache, weight gain, stomach pain, dry mouth, sore tongue, flushing, difficulty urinating, mood changes, vision problems, difficulty falling asleep or staying asleep. On the other hand, the side effects of buprenorphine may be: headache, stomach pain, constipation, difficulty falling asleep or staying asleep, mouth numbness or redness, tongue pain, blurred vision, back pain. Finally, naltrexone side effects may include: nausea, vomiting, stomach pain or cramping, diarrhoea, constipation, loss of appetite, headache, dizziness, anxiety, nervousness, irritability, difficulty falling or staying asleep, increased or decreased energy, drowsiness, muscle or joint pain, rash.

- Alcohol abuse: A number of medications are recommended to treat alcohol misuse. These include:

  ▶ Acamprosate: is used to help prevent a relapse in people who have successfully achieved abstinence from alcohol. Among the side effects of acamprosate can be: diarrhoea, gas, upset stomach, loss of appetite, dry mouth, dizziness, itching, weakness, nausea, anxiety, difficulty falling asleep or staying asleep, sweating.
  ▶ Disulfiram: works by deterring from drinking by causing unpleasant physical reactions (nausea, chest pain, vomiting, dizziness).
  ▶ Naltrexone (see above).
  ▶ Nalmefene: can be used to prevent a relapse or limit the amount of alcohol someone drinks. It works by blocking opioid receptors in the body, which reduces cravings for alcohol. The side effects may include nausea, vomiting, tachycardia and hypertension.

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ADVANCED SKILLS FOR ACTIVE LIVING

Deliverable title:

Exercise and Mental Health

Authors: **Kostas Karteroliotis, Maria Koskolou**
National and Kapodistrian University of Athens

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Physical Activity/Exercise and Mental Health

Defining Physical Activity and Exercise

PHYSICAL ACTIVITY (PA)

WHO defines physical activity as any bodily movement produced by skeletal muscles that require energy expenditure – including activities undertaken while working, playing, carrying out household chores, travelling, and engaging in recreational pursuits. Regular moderate-intensity physical activity –such as walking, cycling, or participating in sports- has significant benefits for health (WHO, 2017).

EXERCISE

Exercise is a subcategory of physical activity that is planned, structured, repetitive, and aims to improve or maintain one or more components of physical fitness. Beyond exercise, any other physical activity carried out during leisure time, for transport to get to and from places, or as part of a person's work, has a health benefit. Further, both moderate- and vigorous-intensity physical activity improve health (WHO, 2017).

Effects of PA/exercise on health and mental health

There is mounting evidence suggesting that PA and/or exercise is an effective component of treatment for people suffering from acute and chronic diseases. For example, regular PA and/or exercise are very important factors in overall wellbeing and it has been proven that even modest increases in PA have a large impact on improving overall health and quality of life (Kohl et al., 2012; Reiner, Niermann, Jekauc, & Woll, 2013). On the other hand, insufficient PA, or a high level of sedentary behavior, is one of the leading risk factors for death worldwide. The effect of insufficient PA is a key risk factor for noncommunicable diseases such as cardiovascular diseases (i.e., cancer and diabetes) (Lee et al., 2012). A meta-analysis primarily based on cohort studies found PA to be associated with a 28-37% decrease in all-cause mortality in both men and women, even after adjusting for other relevant risk factors (Nocon, Hiemann, Müller-Riemenschneider, Thalau, Roll, & Willich, 2008). These health benefits have been indicated consistently across all age groups and racial/ethnic categories.

The positive effects of PA on mental health are also well documented. Epidemiological and experimental studies, as well as randomized controlled trials (RCTs), have indicated a moderate to strong association between increases in PA/exercise and improvement in multiple areas of psychopathology (Rosenbaum et al., 2014; Stubbs et al., 2017) and self-perception of mental health (Herman, Hopman, & Sabiston, 2015). More specifically, higher levels of PA are associated with a decreased prevalence in symptoms

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for mood (Ten Have, de Graaf, & Monshouwer, 2011), anxiety (including panic disorder, agoraphobia, social phobia, and specific phobia) (Goodwin, 2003), substance-use (Bardo & Compton, 2015), and eating disorders (Goñi & Rodríguez, 2007), as well as with improvements in quality of life (Schmitz, Kruse, & Kugler, 2004). Prospective examinations note that increased PA decreased prevalence of anxiety, somatoform, and dysthymic disorder in young adults (Ströhle et al., 2007) and depressive and anxiety disorders in older adults (Pasco et al., 2011). Further, interventions manipulating PA in young adults have linked increases in PA to clinically meaningful improvement in depression symptoms (Parker et al., 2016) and quality of life (Rosenbaum et al., 2014).

Research in adults with schizophrenia who participate in supervised exercise interventions also suggest improvement in symptoms and enhanced cognitive performance. PA/exercise programs in schizophrenia patients have also shown improvement in psychological outcomes, such as social competence, self-esteem, and well-being (Holley, Crone, Tyson, & Lovell, 2011). Exercise is also beneficial for improving the physical health of individuals with serious mental health disorders (e.g., schizophrenia, bipolar disorder), who die 16 to 20 years earlier than the general population (Saha, Chant, & McGrath, 2007). Finally, some population-based studies suggested that non-pharmacological interventions, such as physical exercise, appear as an alternative treatment for patients with cognitive decline, dementia, and related illnesses (Laver, Dyer, Whitehead et al., 2016; Tanigawa, Takechi, Arai et al., 2014).

RELATIONSHIP BETWEEN PA/EXERCISE AND DEPRESSION

The Scientific Advisory Committee for the 2008 Physical Activity Guidelines for Americans concluded that there was not enough evidence to support that PA and/or exercise would protect against any type of anxiety disorder or reduce symptoms among patients with an anxiety disorder (Committee, 2008). However, during the last two decades there is strong evidence, particularly from RCTs, indicating that relatively high levels of PA/exercise is protective against the development of depression (Schuch et al., 2016; Strawbridge et al., 2002). It has been found that individuals who are physically active are less likely to develop clinical depression over 5 years (Strawbridge et al., 2002). In a study conducted in Norway with 33,908 participants it was found that baseline regular leisure-time exercise was associated with a reduced risk of developing depression over the next 11 years (Harvey et al., 2018). Furthermore, the results of this study also suggested that a relatively small amount of PA (1 h/week) was sufficient to significantly attenuate the likelihood of developing depression. The finding that high PA participation is negatively associated with future subclinical depressive symptom severity and a lower risk of developing clinical depression has been consistent across the literature and is supported by many studies of high methodological quality (Mammen & Faulkner, 2013).

The effects of PA and exercise interventions on depressed individuals have been also supported in various studies (Robertson, Robertson, Jepson, & Maxwell, 2012; Schuch et

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al., 2016; Stanton & Reaburn, 2014). The main results from these studies indicate that PA/exercise has an antidepressant effect, that ranges from slightly moderate to very large, compared with control conditions (Krogh, Nordentoft, Sterne, & Lawlor, 2011). Furthermore, a plethora of meta-analyses have summarized the effects of exercise on depressive symptoms in people with depression (Krogh et al., 2011; Radovic, Gordon, & Melvin, 2017; Rebar, Stanton, Geard, Short, Duncan, & Vandelanotte 2015; Rethorst, Wipfli, & Landers, 2009). The results in most of these meta-analyses indicated that exercise reduces depressive symptoms in people with depression, with effect sizes ranging from small to very large. However, these results have been suggested to be interpreted carefully due to their high heterogeneity (i.e., the difference in the size of the effects across these studies) (Krogh, Hjorthøj, Speyer, Gluud, & Nordentoft, 2017). In some cases, previous research didn't indicate any effect of exercise on depression. However, recent meta-analyses may have underestimated the benefits of exercise due to publication bias (Ekkekakis, 2015).

Finally, research findings have supported that regular leisure-time exercise, even at low levels, and regardless its intensity, is associated with reduced incidence of future depression. Furthermore, it has been suggested that 12% of future cases of depression can be prevented if individuals participate in at least 1 hour of PA per week (Harvey, Øverland, Hatch, Wessely, Mykletun, & Hotopf, 2018).

Overall, both cross- sectional and longitudinal research findings suggest that higher levels of exercise are associated with a lower risk of current and future depression. However, there are still many questions limiting the wider application of exercise in depression. For example, it has been discussed that there are several methodological problems, such as uncontrolled nonrandomized trials, small sample sizes, non-blinded outcome assessments, and inclusion of subjects without clinical diagnosis that limit the interpretability of research outcomes (Lawlor & Hopker, 2001).

GUIDELINES FOR DEPRESSION DISORDER

Research results have indicated that PA and aerobic exercise are effective methods for the treatment of depression comparable to other methods of treatment, including antidepressant medications. For example, regarding the effects of PA/exercise on depression it has been suggested that both aerobic (e.g., walking, running, swimming) and anaerobic (e.g., resistance training) exercises are effective in decreasing depression symptoms (Rimer, Dwan, Lawlor, Greig, McMurdo, Morleyet al., 2012). However, there are a few difficulties related to resistance training interventions because they require more space, financial investment, and qualified supervision. On the other hand, aerobic exercise is an easier and cheaper alternative to exercise for the treatment of depression. Furthermore, even lifestyle physical activities (e.g., occupational, recreational, household and transportation) also do not cost and they are effective alternatives for the treatment of depressive symptoms (Mead, Morley, Campbell, Greig, McMurdo, & Lawlor, 2009).

Rethorst and Trivedi (2013) provide excellent guidelines for prescribing exercise for

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depression. They suggest that exercise programs can be organized with three to five sessions per week, each session lasting 45 - 60 min at 50% - 85% of maximum heart rate for aerobic training or three sets of eight repetitions at 80% of one repetition maximum for resistance training. These programs should have a duration of at least 10 weeks.

Individual or group exercise programs influence depression outcomes equally (Mota-Pereira, Silverio, Carvalho, Ribeiro, Fonte, & Ramos, 2011). It has been discussed that group exercises help depressed individuals to develop positive feelings, such as perception of enjoyment, feeling of belonging in a social context and social support (Gore, Farrell, & Gordon, 2001). Group exercises are recommended specially for women, adolescents, individuals under stressful conditions, and chronically ill people (Luyten, Blatt, Van Houdenhove, & Corveleyn, 2006). According to Mead and colleagues (2009), group exercises seem to develop encouraging atmosphere, which could help to decrease depressive symptoms.

On the other hand, individual exercise programs are also effective to achieve immediate, large, and enduring anti-depressant effects. Research studies indicate that individual exercise programs assist in skill training and setting realistic goals. Furthermore, the individual exercise programs have an additive effect on improving participant compliance for treatment program (Chu, Buckworth, Kirby, & Emery, 2009).

Finally, a very helpful strategy in order to retain individuals in the exercise group is to use music or games and also include enjoyable, preferred, and recreational activities (Cotter & Lachman, 2010).

RELATIONSHIP BETWEEN PA/EXERCISE AND ANXIETY

Compared with the study of the effects of PA on depression, the association between PA and anxiety has received significantly less attention. During the past two decades, however, there is strong evidence from observational as well as from epidemiological studies that regular PA and exercise are positively related with lower level of anxiety. Recent large-scale cross-sectional evidence demonstrates an inverse association between PA and anxiety (Stubbs et al., 2017), supporting previous longitudinal evidence of an inverse association between PA and subsequent anxiety among older adults (Pasco et al., 2011). However, longitudinal associations between PA and anxiety symptoms in the general population have been mixed (Ten Have et al., 2011).

Experimental evidence has supported the anxiolytic effects of exercise training among non-clinical adult populations (Rebar, Stanton, Geard, Short, Duncan, & Vandelanotte, 2015), chronically ill patients and individuals with anxiety disorders (Herring, Jacob, Suveg, Dishman, & O'Connor, 2012; Stubbs et al., 2017). Furthermore, experimentally increasing sedentary behaviour has been found to increase anxiety among young adults (Edwards & Loprinzi, 2016). Finally, results from RCTs suggest that PA and exercise can improve anxiety symptoms among patients with anxiety or stress-related disorders (Herring, 2018).

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Wipfli, Rethorst, and Landers (2008) conducted a meta-analysis of large-sample RCTs on the effects of exercise on anxiety. The results indicated a clear effect of exercise on anxiety levels. A total of 3,566 individuals were included in the analysis and an effect size of -0.48 was found for exercise compared with controls. The findings of this study also indicated that exercise alone was effective at reducing anxiety since none of the included forty-nine studies combined exercise with other forms of treatment.

However, there is limited evidence regarding the dose–response relationship between PA/exercise and mental health outcomes. Research indicates different findings regarding the variability in the preference for and tolerance of different exercise intensities. In summary, results from both epidemiological studies and RCTs regarding the dose–response relationship between PA/exercise and anxiety are mixed (Heesch, Burton, & Brown, 2011; Jayakody et al., 2014; Ten Have et al., 2011). The majority of the studies concluded that, as a treatment for elevated anxiety or anxiety disorders, PA and exercise offer benefits comparable to established treatments, including medication, and better than those of placebo or waitlist control. Although it has been proven that antidepressants are more effective for the treatment of clinical anxiety disorder than PA and exercise, research findings have suggested that PA and exercise can still be beneficial as an adjunctive treatment (Jayakody et al., 2014)

In summary, research findings suggest that exercise could be a useful, affordable, and accessible treatment for anxiety. However, due to several methodological limitations (e.g., inadequate sample sizes, inappropriate control groups, selection of non-well-validated instruments to assess anxiety, and weak internal validity) identified in most of the studies examining exercise programs designed to reduce anxiety levels, results should always be interpreted with great caution.

GUIDELINES FOR ANXIETY DISORDER

Based on The Scientific Advisory Committee for the 2008 Physical Activity Guidelines for Americans there was no strong evidence to support that PA and/or exercise protect against the onset of any anxiety disorder or reduce symptoms among patients with an anxiety disorder (Committee, 2008). However, during the past decades sufficient evidence, particularly from RCTs, indicates that exercise training can improve anxiety symptoms among healthy adults, chronically ill patients, as well as patients with anxiety disorders.

Unfortunately, there are inconclusive findings on what to guide decisions regarding the dose and type of exercise for individuals suffering from anxiety. Recent research that reviewed ten RCTs which assessed the use of exercise versus waiting list control groups and five RCTs comparing high-intensity to low-intensity exercise for the treatment of anxiety concluded that exercise was more effective than waiting list control and that high-intensity exercise was more effective than low-intensity exercise. Furthermore, in the same study, it was found that the improvement in anxiety levels of the individuals who followed the high-intensity exercise program was maintained for several months after

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training (Aylett, Small, & Bower, 2018). Duration of the exercise interventions in individuals suffering from anxiety may also have an effect on the results of the programs. PA and exercise studies for anxiety problems indicate that durations up to 12 weeks are more effective than longer interventions (Herring, O'Connor, & Dishman, 2010). Finally, there are not clear guidelines regarding the optimal intensity of the exercise programs to treat anxiety. Overall, for individuals with serious anxiety problems exercise programs should be designed to have sessions lasting at least 30 minutes at an intensity of 60-80% of maximum heart rate three times a week (Perraton, Kumar, & Machotka, 2010).

In terms of aerobic and non-aerobic exercise for the treatment of anxiety, it has been suggested that both types of exercise achieve similar and significant reductions in anxiety scores. Finally, for lowering anxiety levels, it has been suggested that interventions that target specific groups or are tailored to the individual are preferable to more generic ones.

RELATIONSHIP BETWEEN PA/EXERCISE AND COGNITIVE FUNCTIONING

Cognitive functioning is an important part of mental health and, in the last decades, a number of researchers have investigated the relationship between PA/exercise and cognitive functioning. There is well-established evidence regarding the positive role of PA and exercise on cognitive function in older adults, as well as in older adults with cognitive impairment. Specifically, numerous cross-sectional (Boots, Wolfs, Verhey, Kempen, & De Vugt, 2015; Hillman, Kramer, Belopolsky, & Smith, 2006) and experimental (Strassnig et al., 2015) studies have demonstrated positive associations between increased PA and memory, processing speed, cognitive flexibility, and executive functioning. Further, longitudinal investigations (Smith et al., 2013; Yaffe, Barnes, Nevitt, Lui, & Covinsky, 2001) suggest higher levels of PA may in fact promote neurogenesis and effectively attenuate age-related demyelination, thus leading to improvements in overall cognitive abilities in older adults as well as in other individuals with progressive neurocognitive decline.

Physical activity seems to enhance brain vitality and several research studies have indicated that exercise interventions are sufficient to slow down cognitive decline once the clinical diagnosis of dementia has been established (Farina, Rusted, & Tubet, 2014; Hess, Dieberg, Mcfarlane, & Smart, 2014; Scherder, Scherder, Verburgh, Konigs, Blom, Kramer, & Eggermont, 2014).

The inverse relationship between exercise and cognitive impairment has been suggested in some population-based studies. For example, a cross-sectional study suggested that lower amount of physical activity could increase the risk of cognitive decline in older adults (Tanigawa et al., 2014). Furthermore, another study with 1.740 participants aged 65 years or older indicated that regular PA and exercise was related with a delayed dementia and Alzheimer disease development (Larson et al., 2006). Despite the evidence of the association between exercise and cognitive impairment (e.g., dementia, Alzheimer disease), some other studies have failed to observe the benefits of physical exercise in preserving cognitive function (Lamb et al., 2018; Morgan et al., 2008). For example, a study with 6158

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participants aged 65 years or older revealed that weekly exercise (mean hours=3.5) was not associated with the odds of Alzheimer's disease (OR=1.04, 95% CI 0.98 to 1.10) (Wilson et al., 2002).

Overall, results of studies of exercise training in people with dementia are conflicting primarily due to the different sampling methods, measurements of exercise, study design and lengths of follow-up (Lamb et al., 2018).

GUIDELINES FOR COGNITIVE FUNCTIONING

There is well-established evidence regarding the benefits of physical activity (PA) across the lifespan. Furthermore, it is well documented that the reported benefits of PA also apply to older adults with cognitive impairments (Groot, Hooghiemstra, Raijmakers, van Berckel, Scheltens, Scherder et al., 2016; Livingston, Sommerlad, Orgeta, Costafreda, Huntley, Ames et al., 2017). As result, many national governments, non-governmental organizations (NGOs) as well as the World Health Organization (WHO) have some guidelines for PA for older individuals, including people with cognitive impairment (Tremblay, Kho, Tricco, & Duggan, 2010; WHO, 2008):

- Increase aerobic activities to a frequency of at least four days per week or accumulate at least 150 minutes of moderate-intensity aerobic PA throughout the week. Seventy-five to ninety minutes per week of vigorous-intensity aerobic PA is usually suggested as equivalent,
- Undertake muscle-strengthening activities, involving major muscle groups, on two or more days a week,
- Include flexibility activities regularly as part of PA,
- Incorporate PA aimed at improving balance and preventing falls, especially if mobility is poor,
- Be as active as comorbidities and abilities allow, even if the recommended amounts cannot be achieved.

Individuals with cognitive impairment should perform a combination of aerobic and anaerobic exercises (e.g., resistance training). Aerobic and resistance training each may be associated with favorable changes in neurobiological mechanisms (e.g., BDNF, IGF-1, VEGF) (Cassilhas et al., 2007; Rasmussen et al., 2009; Voss, 2013).

Furthermore, it has been suggested that shorter duration and higher frequency of sessions predict greater cognitive effects. Specifically, short sessions may induce less fatigue, which can positively impact the ability and motivation to exercise. Further, high session frequency may decrease overall sedentary time and stabilize levels of exercise-induced neurobiological factors, thereby improving neurocognitive health (Sanders et al., 2019).

Finally, sport science and health professionals should tailor exercise prescriptions to each individual, as to maximize conformity to exercise programs and ensure long-lasting benefits.

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RELATIONSHIP BETWEEN PA/EXERCISE AND SCHIZOPHRENIA

Sedentary behavior is one of the most serious problems to the overall poor health status of patients with schizophrenia (Vancampfort, Probst, Knapen, Carraro, & De Hert, 2012). One of the characteristics of this population involve reduced PA levels as a result of both the disorder itself and the side effects from treatments.

Sedentary behavior is evidenced to be very high in patients with schizophrenia compared to healthy controls. For example, Vancampfort et al. (2012) indicated that patients with schizophrenia spend approximately 8.5 hours a day sitting in comparison to only 6.21 hours in healthy individuals. In a similar investigation Ratliff and colleagues (2012) found lower levels of PA in patients with schizophrenia with the most marked distinction in activity levels between the two groups within the "moderate" activity phase, compared to "light" or "vigorous." In another research study Wichniak and colleagues (2011), using objective measures of PA, found out that patients with schizophrenia had significantly lower average 24-hour activity levels, lower average daytime 10-hour activity levels, and higher time spent in bed.

Numerous research results suggest improvement in symptoms and important benefits of increasing PA for people with schizophrenia, including positive effects on general physical health, mental health and well-being as well as decreases in schizophrenia symptomatology. Positive effects in general health include better overall aerobic fitness, lower body mass indices, blood lipids, blood pressure, body composition, and glucose metabolism (Beebe et al., 2005; Vancampfort et al., 2011). Additionally, in another study it was found that the dose of PA was a critical factor, as the benefits were seen in those who were engaged in around 90 min or more per week of moderate/vigorous PA (Firth et al., 2017.

PA also improves some of the mental health indices in patients with schizophrenia. Specifically, patients with schizophrenia who exercise regularly experience lower levels of anger, stress, and depressive symptoms in comparison to healthy individuals (Hassmén, Koivula, & Uutela, 2000). Further, exercise has an effect on somatic health outcomes, such as mobility and walking capacity in schizophrenia populations, which in turn has been found to improve quality of life measures (Vancampfort et al., 2012). Most importantly, however, improvements in both somatic and mental health help out patients with schizophrenia to increase their PA levels (Marzolini, Jensen, & Melville, 2009).

Additionally, Leutwyler et al. (2014) reported a positive association between PA and increased cognitive functioning (i.e., better working memory, and attention/vigilance) in schizophrenia patients. These findings seem to be very important since cognitive disability can be one of the most functionally impairing symptoms for individuals suffering from schizophrenia (Lin et al., 2011).

During the last few decades researchers started examining PA and exercise as an intervention, testing whether controlled increases in PA can significantly reduce negative physical and mental symptoms in patients with schizophrenia. RCTs, using various forms primarily of aerobic PA as the main intervention, have examined its effects on cognitive

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impairment (Pajonk et al., 2010; Scheewe et al., 2013), quality of life (Browne, Penn, Battaglini, & Ludwig, 2016; Scheewe et al., 2013), and schizophrenia-symptom domains (Acil, Dogan, & Dogan, 2008). Despite various methodological differences between programs, such as limited length of intervention, diverse types of aerobic activity, insufficient sample sizes, and non-controlled or randomized research models, results so far provide evidence that aerobic exercise can improve physical as well as mental health among people with schizophrenia, particularly using interventions with higher dosages of exercise.

GUIDELINES FOR SCHIZOPHRENIA

According to a guidance reported by a panel of experts from the European Psychiatric Association on exercise interventions in the treatment of severe mental health, 90 minutes of weekly PA (i.e., 30 min per session at least three sessions per week) of moderate-to-vigorous intensity is associated with alleviating general, positive and negative symptoms of schizophrenia and improving patient's life (Stubbs et al., 2018). Furthermore, combining aerobic with resistance exercise, according to the same panel of experts, may also improve outcomes in people with schizophrenia spectrum disorders.

There are limited data available specifically on resistance training for people with schizophrenia-spectrum disorders and data are inadequate comparing the potential superiority of various forms of PA to each other. Nonetheless, interventions supervised by qualified professionals, with a motivational component, result in less dropout.

Following the suggestions of scholars in the field, it appears that aerobic and combined aerobic/ anaerobic exercises (e.g., 30 min of indoor cycling, three times per week for 3 months) improves the cognitive deficits of patients with schizophrenia (Falkai, Malchow, & Schmitt, 2017) and may be prescribed with confidence. Aerobic interventions should shift from 'fatness to fitness', since health and mortality are primary outcomes while BMI and weight may be perceived as secondary outcome variable (Vancampfort, Rosenbaum, Ward, & Stubbs, 2015). Achievable and realistic goals are essential elements and all professionals involved may need to have adopted, in advance, a behavior strategy to negotiate the (possible) relapse of the patients throughout their involvement in PA. Vancampfort et al. (2015) reported that 'it is important to explain to persons with schizophrenia that relapses are part of the process of change and that responding with guilt, frustration and self-criticism may decrease their ability to maintain PA. Relapse prevention strategies such as realistic goal setting, planned activity, realistic expectations, identifying and modifying negative thinking, and focusing on benefits of single exercise sessions seem to be effective' (p. 10). The presence of qualified professionals (e.g. exercise physiologists, physical therapists) and the respective supervision will minimize the dropout rates and maximize the efficiency of the prescribed PA programs for individuals with schizophrenia (Vancampfort et al., 2016).

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RELATIONSHIP BETWEEN PA/EXERCISE AND BIPOLAR DISORDER (BD)

Besides the common pharmacological treatment, PA/exercise has been identified as a non-pharmacological intervention due to its respective anti-inflammatory effect upon patients with BD.

Researchers in the field agree that BD patients experience significantly lower levels of daily PA, with respect to the ASCM guidelines. The reduced PA has been related to several secondary medical conditions, such as type II diabetes, metabolic syndrome, cardiovascular diseases (CVD), increased weight, and stroke. The secondary medical conditions and the increased risk of physical health problems have an impact upon the course of the illness, with an increased risk of recurrent episodes, frequent hospitalizations, unhealthy dietary patterns, physical inactivity, depressive recurrence, smoking, substance abuse, low-self efficacy, and an overall reduction in the cost-effectiveness of therapeutic interventions.

Although PA and exercise have been found to be effective in the treatment of most types of mental health disorders (e.g., depression, anxiety, schizophrenia), it is unclear whether these data can be extrapolated to bipolar disorder (Thomson et al., 2015). There are, to date, only five reviews (Kucyi et al., 2010; Melo et al., 2016; Souza de Sa Filho et al., 2015; Sylvia et al., 2010; Thomson et al., 2015) on the effects of PA on BD, with no existing RCTs having tested the impact of exercise on depressive, manic or hypomanic symptomatology.

Recent research (Subramaniapillai et al., 2016) demonstrated that adolescents with BD experience similar exercise-induced emotional benefits as their healthy peers following a 20-min bout of moderate intensity exercise (heart rate goal of 60% - 80% of the age estimated maximum [220 - 0.7 x age]). Overall, single bouts of aerobic exercise have been found to activate potential mechanisms underlying the benefits of longer exercise interventions.

In another study of the same research group (Metcalfe, MacIntosh, Scavone, Ou, Korczak, & Goldstein, 2016), it was shown that 20-min bouts of aerobic exercise impacted neural deactivation deficits in attention and activation deficits in inhibition. These findings are of high interest as the data show that one potential mechanism to explain the protective role of PA for severe mood fluctuations may be related to the association between PA participation and the functional connectivity of the brain (Douw et al., 2014).

The overarching conclusions are that given the high rate of medical comorbidities experienced by people with BD, it is possible that PA and/or exercise is a potentially useful and important intervention with regard to general health benefits. Although medication and other forms of psychological treatment are accepted as the primary forms of intervention for these disorders, PA and exercise can play an important role in helping to maintain the overall health of the individuals with BD.

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GUIDELINES FOR BIPOLAR DISORDER

The research findings so far justify the necessity for well-designed intervention programs to enhance PA, reduce sedentary behaviors and decrease the elevated risk for comorbid conditions in patients with BD (Janney, Fagiolini, Swartz, Jakicic, Holleman, & Richardson, 2014; Vancampfort et al., 2016). The exercise guidelines for those with BD and the general population are not dissimilar. Some common types of exercise for individuals with BD are aerobic training, strength training, circuit /interval training, yoga, pilates, tai-chi, and swimming.

Overall, individuals with BD need to be active preferably all days of the week accumulating 150-300 minutes of moderate PA or 75-150 minutes of vigorous intensity per week. However, the duration, frequency and intensity of the PA/exercise programs need to be constantly adjusted, according to the phases experienced by the BD patients. Clinicians should avoid concentrating on the type of exercise (e.g., aerobic exercise or anaerobic/ resistance exercise) or whether the exercise is carried out in a group or individually. What seems important is to tailor the exercise based on patients' preferences. Particularly for individuals with BD, it may be necessary to increase patients' levels of PA very slowly.

In summary, a multidisciplinary team of psychologists, psychiatrists, nutritionists, experts in PA and sports (e.g., exercise physiologists) may work together and facilitate the patient's compliance and adherence to the demands of the interventions (Bauer et al., 2016).

RELATIONSHIP OF PA/EXERCISE AND EATING DISORDERS

Regular exercise is considered as one of the most effective ways to fight addictions (alcohol, drugs) and eating disorders (anorexia nervosa, bulimia nervosa, binge eating disorder), as physical activity increases tolerance and reduces stress, negative mood, and bodily tension. In fact, individuals who consume large amounts of alcohol are less active (Liangpunsakul et al., 2010) and physically active teenagers report less use of prohibited substances with less chance of being users as adults (Terry-McElrath & O'Malley, 2011). But "is exercise always good?" and "is exercise good for all?". There is a minimum level of exercise for health improvement and increasing levels of exercise lead to additional benefits. Excessive exercise, though, may change from a protective factor to a risk factor for health. People who exercise excessively often suffer from stress, low self esteem, depression, excessive concern of body weight, and bad perception of body image. Compulsive exercise is often associated with disordered eating habits and a strict diet. A high percentage of individuals with eating disorders (43%) exercise excessively (Shroff et al., 2006); for example exercise is used by individuals with anorexia nervosa to get rid of calories and by individuals with bulimia as a means to "punish" themselves. Energy expenditure seems to decrease with age and the duration of suffering from the disorder (Probst, 2018).

Eating disorders is a major health problem among athletes (32.8%) and non athletes

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(21.4%). The incidence relates to the type of pressure that may be exerted on athletes with respect to body image and depends on the level of competition, with high-level athletes exhibiting more often symptoms of abnormal eating behavior, and on the type of sport, with the prevalence being higher in artistic sports (40-42%) and in sports with weight class (30-35%). However, even athletes who participate in sports that do not include judging based on appearance, weight classes, weight requirements, or revealing uniforms, may develop eating disorders. Therefore, the problem of eating disorders should not be overlooked in athletes as it can affect both males and females, regardless of sport affiliation, and can occur at nearly any age (Sherman & Thompson, 2009; Selby & Reel, 2011).

Further to psychosocial impairments, individuals with eating disorders complain of health problems including cardiovascular, skeletal and metabolic disturbances associated with physical inactivity (Mitchell & Crow, 2006). Both strength and aerobic training are considered beneficial for health improvement eliciting physiological as well as psychological changes. Increase in muscle mass and development of physical strength help eating disorder patients decrease hostility towards their body, help weight restoration process, and increase self-confidence and independence. Aerobic fitness improves the capability of the cardiovascular system to supply oxygen and energy decreasing the risk of diseases (stroke, hypertension, diabetes, osteoporosis) and combating anxiety, stress, depression and low self-esteem. The level of physical activity in patients with eating disorders is measured with specific questionnaires in combination with accelerometers and simultaneous evaluation of other parameters, e.g. body image, perfectionism, obsessive-compulsive features (Probst, 2018).

GUIDELINES FOR EATING DISORDERS

The guidelines of the American College of Sport Medicine (2013) accepted worldwide as the minimum recommendations to remain healthy are also appropriate for patients with eating disorders. These guidelines suggest moderate exercise of ≤30 min/day on ≤5 days/week for a total of ≤150 min/week or vigorous activity of ≤20 min/day on ≤3 day/week for a total of ≤75 min/week. However, many patients with eating disorders do not comply with these guidelines, e.g. some patients with anorexia nervosa engage in substantially more exercise than prescribed, whereas most patients with binge eating disorder do not reach these recommendations (Probst, 2018).

The behavior of people with eating disorders with regard to exercise is often problematic and health care providers seek for an optimum dose for physical activity, as they are convinced nowadays that exercise is beneficial for the sense of well-being, quality of life and preservation of autonomy and not a contraindication, as it used to be considered in the past when knowledge was lacking and fear was prevailing (Bratland-Sanda et al., 2009). The answer to the question "Is exercise harmful for patients with eating disorders?" is difficult because of the uniqueness of each case and the complexity of the problem. The health care provider must investigate the physical and psychological needs and strike the

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balance between what is therapeutically acceptable and what is acceptable for the patient. For example, in patients with anorexia nervosa, it appears better to allow physical activity to a certain degree than to completely forbid exercise, which leads to therapy resistance, a struggle with the therapist and hidden activities. Based on clinical studies, exercise in the treatment of patients with anorexia nervosa does not have a detrimental impact on BMI or eating disorder symptoms; improvements in fitness and strength are generally minimal, possibly as a result of insufficient training loads of short duration and small sample sizes (Probst, 2018).

Planning of an individualized and tailored exercise program should follow the FITT principles: frequency, intensity, type, and time based on the needs of individual patients. Progression to increased intensity and amounts of exercise must occur only when the individual understands the bodily sensations, psychological motivations, and health outcomes related to exercise at low levels (Cook et al., 2016). A group exercise approach for social contact, support, and interpersonal interactions is preferable and sport competition should be avoided during therapy. In order to make a realistic individual program, patient's prior exercise behaviors and preferences may be taken into consideration. For medical safety, it is preferable that physical activity is performed under supervision and in balance with nutritional intake. Knowing the patient's condition and setting the limits is essential. Furthermore, psychoeducation is considered essential for clarifying the positive and negative effects of physical activity and reducing the gap between the therapist's and the patient's point of view (Probst, 2017).

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ADVANCED SKILLS FOR ACTIVE LIVING

Deliverable title:

Relation of Mental Health and Physical Activity/Exercise with Age, Gender and Cultural Features

Authors: **Francesca Cesaroni, Mara Morici & Filippo Triccoli**
Cooss Marche

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PHYSICAL ACTIVITY, AGE, AND MENTAL HEALTH RELATION

One in three children (200 million globally) fail to reach their full physical, cognitive, psychological and/or socio-emotional potential due to poverty, poor health and nutrition, insufficient care and stimulation and other risk factors to early childhood development. 80% of adolescents are insufficiently physically active.

All these alarming data has led WHO to put adolescents, women and children at the heart of the Global Strategy (The Global strategy for women's children's and adolescents' health 2016-2030, Every Woman Every Child, 2015).

A child's brain and other systems develop most rapidly through the first three years of life, so investments in early development are essential to promote the physical, mental and social development that shape each individual's present and future health (Heckman, 2015).

Adolescence is a second critical developmental stage. The physical, mental and social potential acquired in childhood can blossom into skills, behaviours and opportunities that contribute to better health and well-being in adolescence and later to a more productive adulthood. The right investments and opportunities may consolidate early gains, or offer to young people a second chance missed out during childhood. Moreover, as possible future parents, adolescents can transfer health potentials and risks to future generations (WHO, 2014).

As adults, women contribute to society, politics and the economy in many ways that can promote health and well-being and advance sustainable development. Their invaluable, but often overlooked, contributions include: knowledge; resilience in the face of adversity; leadership for their own and their families' health; contributions to the workforce; participation in cultural and political life; and the ability to mobilize themselves and their communities to prevent and mitigate crises, rebuild communities and achieve transformative social change and peace.

The Global Strategy takes a life-course approach that aims for the highest attainable standards of health and well-being —physical, mental and social— at every age. A person's health at each stage of life affects health at other stages and also has cumulative effects for the next generation.

Age differences in attitudes toward seeking professional psychological help is another key point to examine whether attitudes negatively influence intentions to seek help among older adults and men, whose mental health needs are underserved.

To explore this field, Mackenzie, Gekoski, and Knox (2006) performed a research where 206 community-dwelling adults completed questionnaires measuring help-seeking attitudes, psychiatric symptomatology, prior help seeking, and intentions to seek help. Older age was associated with more positive help-seeking attitudes in this sample, although age interacted with gender, marital status and education, and had varying influences on different attitude components. Age and gender also influenced intentions to seek professional psychological help. Women exhibited more favorable intentions to seek help from mental health professionals than men, likely due to their positive attitudes concern-

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ing psychological openness. Older adults exhibited more favorable intentions to seek help from primary care physicians than younger adults, a finding that was not explained by age differences in attitudes. Results from this study suggest that negative attitudes related to psychological openness might contribute to men's underutilization of mental health services. Help-seeking attitudes do not appear to be a barrier to seeking professional help among older adults, although their intentions to visit primary care physicians might be. These findings suggest the need for education to improve men's help-seeking attitudes and to enhance older adults' willingness to seek specialty mental health services.

EXERCISE FOR ADOLESCENTS AND YOUNG PEOPLE WITH MENTAL ILLNESS

The lifetime prevalence of depression in adolescents has doubled between the mid 1980s and 2000s. To this extent, the prevalence of major depressive disorder (MDD) is now ranging from 4% to 8%, and as many as 12% of children and adolescents may have sub threshold symptoms of depression. Alarmingly, 20% of young people experience at least one episode of major depression before they reach 18 years of age (Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993).

Broader population health interventions are required to prevent disengagement from physical activity and reduce sedentary behaviors in young people generally, but particularly those at risk of developing mental health problems.

The evidence base for using exercise interventions in youth mental health is growing, and early signs indicate the benefits across multiple mental disorders.

Findings from meta-analyses and studies indicate the potential for exercise interventions in improving depression symptoms in young people; acceptability of the intervention appears to be strong, as indicated by the high adherence and attendance rates. As reported by Parker & Bailey (2018), interventions for young people should:

- Promote exercise as a pleasant and enjoyable activity to maximize adherence and sustained engagement.
- Track the long-term health and mental health outcomes as essential to demonstrate the longer-term effects of exercise in young people's lives.

As a low-risk, low-stigma, and highly acceptable intervention, supporting young people to make a change in their levels of physical activity has an exciting contribution to make to youth mental health care. Similar conclusions can be drawn from the anxiety and early psychosis trials; exercise appears to be efficacious in reducing key clinical symptoms and can be delivered alongside usual treatment for early psychosis. Significant improvements were observed in psychosocial functioning and verbal short-term memory. Increases in cardiovascular fitness and processing speed were positively associated with the amounts of exercise achieved by participants.

Individualized exercise training could provide a feasible treatment option for improving symptomatic, neuro cognitive and metabolic outcomes in first-episode psychosis and

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young people, in the early stages of illness, engaged well with individualized exercise (Firth, Carney, Elliott, French, Parker, McIntyre et al., 2016). This study suggests that individualized gym training is a feasible and engaging intervention in first-episode psychosis: although the participants were largely inactive upon entering, they changed their sedentary lifestyles to achieve 107min of moderate to-vigorous activity per week for 10weeks, thus surpassing the 90-min target.

The high levels of acceptability and engagement suggest that future trials could also take advantage of the expertise and facilities available through community leisure services to provide low cost and destigmatizing interventions.

Notwithstanding the limited clinical research available, exercise appears to be an effective strategy also in treating adolescents with elevated levels of depression. Carter, Morres, Meade, and Callaghan (2016) reported some recommendations:

- Group-based and supervised light- or moderate-intensity exercise activities three times a week for a period of 6 to 12 weeks could bring about an improvement in depression.
- Exercise seems to be equally effective for both moderate and severe depression in both inpatient and outpatient settings.

Results indicated that high-intensity exercise and low-intensity exercise were both successful, on average, at decreasing overall anxiety sensitivity. High-intensity exercise, however, had several distinct advantages over low-intensity exercise. Specifically, based on findings of Broman-Fulks, Berman, Rabian, and Webster (2004) the high-intensity exercise group reported significantly less fear of anxiety-related bodily sensations at post-intervention compared to their counterparts in the low-intensity comparison group, and these group differences were maintained at follow-up. Thus, high-intensity exercise may be especially effective in the rapid reduction of fear of physiological arousal in high-anxiety sensitivity individuals.

Clearly, there are limitations to using high-intensity aerobic exercise as an intervention for anxiety sensitivity. Individuals with certain health-related problems, such as heart disease or severe asthma, would not be candidates for this intervention. Also, some individuals may find it difficult to initiate or maintain a regular aerobic workout routine, and some may simply refuse to consider this option.

However, for individuals with high-anxiety sensitivity who cannot or will not consider more traditional means of intervention (i.e., pharmacology, psychotherapy) due to financial or personal constraints, aerobic exercise may prove to be an invaluable treatment alternative. Future research will also need to address whether longer participation in a high-intensity exercise program (eight weeks or more) will confer additional benefits, and whether these benefits are maintained for longer follow-up periods.

Young adults 18–24 years have the highest rates of problems associated with alcohol use among all age groups, and substance use is inversely related to engagement in

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substance-free activities. A pilot study (Weinstock, Capizzi, Weber, Pescatello, & Petry, 2014) investigated the promotion of one specific substance-free activity, exercise, on alcohol use in college students. This pilot study found that the intervention was well received by sedentary hazardous drinking college students, the addition of CM (contingency management) to MET (motivational enhancement therapy) significantly increased frequency of self-reported exercise, but not any other indices of exercising, and no effects of these interventions were noted with respect to alcohol use.

Efficacy of this combined intervention remains to be tested on a large scale for a longer duration including long-term follow-up, and in these circumstances may yield beneficial effects. Evaluating motivations to drink and drinking consequences may highlight specific groups for whom the intervention may be most beneficial.

The scientific evidence available for the age group 5–17 years supports the overall conclusion that physical activity provides fundamental health benefits for children and youth. Appropriate levels of physical activity contribute to the development of:

- Healthy musculoskeletal tissues (i.e., bones, muscles and joints)
- Healthy cardiovascular system (i.e., heart and lungs)
- Neuromuscular awareness (i.e., coordination and movement control), while it also facilitates maintenance of a healthy body weight.

Moreover, physical activity has been associated with psychological benefits in young people by: improving their control over symptoms of anxiety and depression; and assisting in social development by providing opportunities for self-expression, building self-confidence, social interaction and integration. According to Global Recommendations on Physical Activity for Health 5–17 years old, World Health Organization (2011), for children and young people, physical activity includes play, games, sports, transportation, chores, recreation, physical education, or planned exercise, in the context of family, school, and community activities.

The recommendations to improve cardio-respiratory and muscular fitness, bone health, and cardiovascular and metabolic health biomarkers are:

- Children and youth aged 5-17 should accumulate at least 60 minutes of moderate-to vigorous-intensity physical activity daily.
- Amounts of physical activity greater than 60 minutes provide additional health benefits.
- Most of the daily physical activity should be aerobic. Vigorous-intensity activities should be incorporated, including those that strengthen muscle and bone, at least 3 times per week.

EXERCISE FOR OLDER ADULTS WITH MENTAL ILLNESS

Epidemiological studies have provided evidence of the effectiveness of physical activity in increasing active life expectancy and in preventing:

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- Functional losses leading to loss of independence and well-being and, potentially, some aspects of cognitive losses and depression and
- Disease (cardiovascular diseases, diabetes, some cancers) and all-cause mortality.

The dose of physical activity that is needed to achieve these benefits has been assessed and used to derive guidelines for physical activity for older adults. The recommendations are (Donald, Paterson, & Murias, 2014):

- Perform moderate- to vigorous-intensity aerobic activities (e.g., brisk walking or walking for exercise, some uphill walking or participation in aerobic sport) to enhance cardiorespiratory fitness.
- Perform a minimum of 150 min/wk of moderate-intensity activity that amounts to an energy expenditure of approximately 1000 kcal/wk (or ~90 min/wk of vigorous exercise).
- Gain additional benefits from adding 2 sessions/wk of muscle-strengthening activities (e.g., callisthenic exercises, resistance training).
- If balance and mobility are limitations, include balance-related activities (e.g., walking on uneven surfaces such as trails).
- Structured exercise-training programmes, usually consisting of 30-min/ session of moderate- and vigorous-intensity exercise, have been shown to be effective and safe.
- It is possible that lower levels of activity may yield some health benefits. However, all guidelines report that more is better.
- Flexibility or stretching exercises offer no known health benefits. Individuals should devote time and energy to the other aspects of fitness.

Regular physical activity is generally associated with psychological well-being, although there are relatively few prospective studies in older adults.

Pasco, Williams, Jacka, Henry, Coulson, and Brennan (2011) investigated habitual physical activity as a risk factor for de novo depressive and anxiety disorders in older men and women from the general population. The study provides evidence consistent with the notion that higher levels of habitual physical activity are protective against the subsequent risk of development of de novo depressive and anxiety disorders. The therapeutic effects of exercise in the treatment of depression are established. Extending this, the results of this study would suggest that exercise is a viable lifestyle candidate for the primary prevention of high prevalence mental health disorders, with clear benefits in a range of other common health issues. However, further research investigating the effects of both vigorous and habitual physical activity and the contributions of different types of physical activity are required before physical activity can be unequivocally recognized as a modifiable risk factor for the primary prevention of depression and anxiety in older adults.

According to Erickson and Kramer (2008) 6 months of moderate levels of aerobic activity are sufficient to produce significant improvements in cognitive function with the most dramatic effects occurring on measures of executive control. These improvements

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are accompanied by altered brain activity measures and increases in prefrontal and temporal grey matter volume that translate into a more efficient and effective neural system. It is safely recommended that moderate levels of exercise can serve as both a preventive measure against age-related cognitive and brain deterioration and a treatment to reverse decay and cognitive deficits already present in older adults. This result is also consistent with a large epidemiological literature that generally suggests that higher levels of physical fitness and physical activity can reduce the likelihood of developing cognitive impairments. Therefore, it remains unknown whether longer durations of exercise produce longer-lasting and stronger effects than a 6-month intervention.

In addition, according to one meta-analysis, the combination of aerobic and non-aerobic regimens produces greater benefits to cognitive function than either type of exercise by itself. Indeed, an understanding of the interactions and the effects of multiple types of exercise regimens and factors such as cognitive, social or nutritional interventions is in its infancy. In fact, some researchers have postulated that the neural and cognitive benefits of exercise must occur within the context of cognitive engagement in order for exercise to be effective.

Although recent studies have argued that aerobic exercise and physical activity can also serve to protect against the development of dementia, the extent to which pathological decline can be reversed or treated with an exercise regimen remains unknown. However, there is mounting evidence that exercise has beneficial cognitive and neural effects on a number of populations besides those with dementia, including children, multiple sclerosis patients, and Parkinson's patients.

In sum, although many questions remain unanswered regarding the effect of exercise on brain and cognition, we can safely argue that an active lifestyle with moderate amounts of aerobic activity will likely improve cognitive and brain function and reverse the neural decay frequently observed in older adults.

HOW THE GENDER VARIABLE CAN AFFECT MENTAL HEALTH

A wide literature demonstrates that gender can be a factor affecting mental health: Cabral and Astbury (2000) published an evidence based review, which examined the evidence related to women's poor mental health considering a number of determinant variables, as socio-cultural and environmental factors, community and social support, stressors and life events, personal behavior and skills, availability and access to health services. A gender approach was also used, including biological or sex differences between women and men, as well as the critical roles that social and cultural factors or unequal power relations play in promoting or impeding mental health. Such inequalities create, maintain and exacerbate exposure to risk factors that endanger women's mental health and produce different rates of depression between men and women.

Nevertheless, according to a study on women's mental health (Reale, 2001), the clinic maintains an odd attitude between men and women, orienting the diagnosis and inter-

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pretation of the underlying pathogenic processes in two different channels traditionally attributed to male and female roles: the motivations of male depression are anchored more to external facts and events and to their objective seriousness (observable seriousness), whereas the motivations attributed to women are more anchored to the subjective "humoral" variability, to the greater emotionality, and as such are characterized by minor gravity. The suicidal behavior endorses the difference included in the greater social severity of male depression than that of women. As a consequence, the prevalence of women suffering from mental health problems does not create a health emergency.

Gender differences were also identified in attitudes toward seeking professional psychological help: a study exploring the reasons for the underutilization of mental health services (Mackenzie & Gekoski, 2006) revealed that female gender was associated with more positive help-seeking attitudes, although it interacted with marital status and education, and had varying influences on different attitude components. Women exhibited more favorable intentions to seek help from mental health professionals than men, likely due to their positive attitudes concerning psychological openness. Results from this study suggest that negative attitudes related to psychological openness might contribute to men's underutilization of mental health services. These findings suggest the need for education to improve men's help-seeking attitudes and to enhance their willingness to seek specialty mental health services.

The latest scientific evidences led WHO to build up "The Global strategy for women's, children's and adolescents' health (2016-2030)", a roadmap aimed to achieve the highest attainable standard of health for all women, children and adolescents. It is intended to inspire political leaders and policy-makers to further accelerate their work to improve the health and well-being of women, children and adolescents, as well as a guide to enable people and communities to drive change, claim their rights and hold leaders to account.

GENDER-RELATED EXERCISES AND PHYSICAL ACTIVITY

Evidence exist on the roles of physical activity (exercise) in improving mental health among men and women. In a study carried out by Zhang and Yen (2015) the relation between depressive symptoms and physical activity among mildly and moderately depressed individuals was analyzed. It emerged that regular physical activity reduces depressive symptoms among both men and women with mild to moderate depression, notably among women, particularly when regularly practiced. The authors suggest physical activity as an effective clinical tool to combat depression, and doctors should recommend it for mildly or moderately depressed individuals. Nonetheless, physical activity or exercise is no longer an effective way to reduce depressive symptoms for individuals with a record of bad physical health: for them, amelioration of depression would have to be accomplished by (along with) other means.

Other studies indicate that a moderate to vigorous intensity exercise program is a promising strategy for reducing anxiety sensitivity (AS). Building upon this evidence, Me-

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dina et al. (2014) tested the hypothesis that the effect of exercise on AS would vary as a function of gender. The findings indicated that the effects of exercise on mental health outcomes might vary as a function of gender, with men benefitting more than women. Males showed significantly greater initial AS reductions relative to females (following 1 week of exercise). However, these gender differences were no longer evident at the end of the intervention. In conclusion, responses to exercise interventions for anxiety pathology may vary by gender. This may have implications for the delivery of these interventions, which should be different in women than men at least as it relates to anxiety reduction. In addition, studies that compare types of exercise modalities (e.g., yoga, resistance training) and doses (e.g., intensities, frequencies, and duration) may yield findings that can help refine the knowledge needed to develop individually tailored exercise interventions.

Since mental health conditions are two times more likely to exist among women, Adams et al. (2007) examined the relationship between physical activities and indicators of mental health in a national sample of female college students. The purpose of this study was to determine whether two types of Physical Activity (VME = Vigorous/moderate exercise and ST = Strength Training exercise) were associated with MH in a wide sample of 18 to 24-year-old college women.

Depression, anxiety, suicidal ideation and perceived health were the dependent variables; two measures of weekly exercises frequency were the independent variables. VME was positively associated with perceived health and negatively associated with depression, but not associated with either anxiety or suicidal ideation; ST was, in most cases, associated with perceived health, depression, anxiety and suicidal ideation. It has to be considered that the measures of physical activity were based on recall of weekly frequency but not intensity, duration, or consistency of exercise, even if consistent with ACSM guidelines. Continued research on this issue is needed. Determining whether exercises buffered or exacerbated a variety of mental health challenges would be valuable.

It is finally worth mentioning a study carried out by Schaal et al. (2011) bringing forth two important themes of psychology in elite sport, which mirror the findings from other epidemiological studies performed on the general population. The gender-based differences in psychopathology demonstrated that elite female athletes are more likely to be diagnosed with a psychological problem than men, and appear more susceptible to difficulties encountered in their environment than their male counterparts. Besides, important variations occur according to the type of sport practiced, conveying that the demands and pressures associated with the practice of a particular sport may act as one of the significant socio-environmental risk factors which, if combined with a particular personality and genetic predisposition, could facilitate the development of some disorders.

From the psychosocial perspective, it is thought that women's biological tendencies for increased worrying are often strongly reinforced by gender-related norms. The predominance of women suffering from anxious or affective disorders is most likely due to a combination of these fundamental differences at the biological and psychosocial levels.

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The sex-based differences in the prevalence of various disorders are demonstrated and resemble those of the population at large. The practice of a sport at the high level, in itself, does not appear psycho-pathogenic, since the prevalence of psychopathology identified is no higher than in the general population. Rather, it is the presence of very particular stressors, such as problems in the athletes' social, personal and sporting environment that is associated with psychopathology.

HOW THE CULTURAL VARIABLE CAN AFFECT MENTAL HEALTH

Cross-national epidemiological studies show that prevalence rates of common mental disorders (i.e., depression, anxiety disorders, and PTSD) vary considerably between countries, suggesting cultural differences. In order to gather evidence on how culture relates to the etiology and phenomenology of mental disorders, finding meaningful empirical instruments for capturing the latent (i.e., non-visible) construct of 'culture' is vital (Heim et al., 2019).

The literature abounds of evidence on how cultural variables as ethnicity, religion and socio-economic status can affect the individuals' well-being and mental health. Interesting publications analyze religion in connection to sports and physical activities: this is the case of "Cattolicesimo, gynnastics e sport" (2012), where the relationship between Christianity and physical activities and sports from antiquity to the mid-twentieth century is analyzed. Part of the book is devoted to the use of physical activities and sports in the education of the citizen, highlighting the reasons of profound dissension that developed during the fascism, which suppressed the Catholic sports organizations.

Sport in Islam and in Muslim Communities (Testa and Amara, 2016) analyzes the interplay between sports and Islam, approaching an array of contemporary issues as the role of sport in gender, youth and political identities in Islam and Muslim societies, sport's role among Muslim minorities and sport relationship to Muslim cultures. Drawing on sociology, anthropology, political science, Islamic studies and sport studies, it helps to draw wider conclusions on religious identity in sporting settings and the interplay between sport, gender, political ideology and consumer culture.

The intersection between sport events and athletes' religious affiliation boasts a history and striking cases and controversies (Fedele, 2014). Jonathan Edwards, a British triple jumper and holder of the world record for many years, shared the Christian faith of his father - pastor of the Anglican Church - and in applying the rule of holiday rest he refused to compete on Sunday. For this reason, Edwards did not compete in the 1991 Tokyo World Cup final, giving up a probable medal. Mohamed Ali, probably the greatest boxer of all time, was sentenced to five years in prison for his refusal to perform military service. Ali's choice - disruptive and symbolic, because it was carried out during the Vietnam War - was motivated by his belonging to Islam and the opposition of this religion to the use of weapons.

Mental problems related to the refugees and asylum seekers status are also widely

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investigated, but the current scenario results complex and in need of further analysis and intervention. The demographic characteristics of the migratory flows seem to have changed over the past few years; to understand in detail what is happening, how these variations affect the mental health of the applicants for protection and what the most effective protection interventions can be requires data which we are not yet fully in possession of (Caritas Report, 2016).

SOCIO-ECONOMIC STATUS, MENTAL HEALTH AND PHYSICAL ACTIVITY RELATIONS

Physical activity plays a crucial role in maintaining health and well-being. The evidence consistently demonstrates that a social gradient exists in physical activity behaviour. This gradient is established to a large extent in childhood and prevails across the life course. Physical inactivity in the socially deprived might accentuate the effects of psychosocial stress and partly account for the established social disparities in health and well-being (Hamer, 2014). A strong and well-established social gradient exists in health and well-being. Adverse socioeconomic position is linked with lower physical activity and greater sedentary behaviour. This association appears to be largely driven by poorer education. Physical inactivity in the socially deprived might accentuate the effects of psychosocial stress. Insufficient physical activity is possibly one of the key mechanisms linking lower socioeconomic status with poorer wellbeing.

Further work is crucial for better understanding effective approaches to improving lifestyle in the socially deprived and eradicating social inequalities in health and well-being. In a longitudinal study, Brodersen et al. (2006) assessed the developmental trends in physical activity and sedentary behaviour in British students aged 11–12 years in relation to sex, ethnicity and socioeconomic status (SES). The measures consisted in the number of days per week of vigorous activity leading to sweating and breathing hard on the one hand, and the hours of sedentary behaviour, including watching television and playing video games on the other.

The most remarkable results indicated that Asian students were less active than whites, and this was also true of black girls but not boys. Black students were more sedentary than white students. Levels of sedentary behaviour were greater in respondents from lower SES. Most differences between ethnic and SES groups were present at age 11 years, and did not evolve over the teenage years. It seems, therefore, that physical activity declines and sedentary behaviour becomes more common during adolescence. Ethnic and SES differences are observed in physical activity and sedentary behaviour in youth, which are anticipated to result in adult variations in health risks. These are largely established by age 11–12 years and, thus, reversing these patterns requires intervention at an earlier age.

Sedentary behaviour is a distinct category of activity and is not merely the absence of vigorous exercise, predictor of later health problems. Adolescents of lower socioeconomic status (SES) engage in more sedentary behaviour, but physical activity differs by SES only

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in girls. Variations in physical activity in UK adolescents in relation to ethnic background and socioeconomic status are poorly understood, but are largely established by age 11–12 years; hence remedial action requires earlier intervention.

Physical activity appears to be an important factor in determining health outcomes among ethnic minority groups, who tend to be socially disadvantaged and reside in more socially deprived areas (Hamer, 2014). Recently investigated physical activity behaviour among different ethnic communities in the United Kingdom showed consistent differences across men and women, age groups and indicators of SES. These Physical Activity Behaviour in Ethnic Minorities results might be explained by ethnic differences in knowledge about, attitudes toward and resources for engaging in healthy lifestyles. Physical activity interventions need to be targeted to socially deprived groups, but it is important to understand the environmental barriers to physical activity in deprived areas. Physical activity programmes should be tailored to the individual and contain multiple components (e.g., goal setting, problem solving, self-monitoring, supervised exercise), as they are generally more effective than those that do not.

Changing health behaviour in low-income groups can be challenging and complex and requires a collaborative approach among different actors. Interventions designed to improve social inequalities in health behaviours should be applied during both childhood and adult life, as socioeconomic inequalities throughout life are known risk factors for life-threatening conditions. Improving socioeconomic inequalities in health behaviours will require development of better interventions, to be applied across the life course and will need to focus on disadvantaged groups to provide the greatest benefit (Watt et al., 2009).

CONCLUSIONS / RECOMMENDATIONS

Findings from literature in the field confirm:

- The potential for exercise interventions in improving depression symptoms in young people and that exercise appears to be efficacious also in reducing key clinical symptoms and as such can be delivered alongside usual treatment for early psychosis.
- That exercise appears to be an effective strategy also in treating adolescents with elevated levels of depression.
- The effectiveness of physical activity in increasing active life expectancy for older adults and in preventing: functional losses leading to loss of independence and well-being and, potentially, some aspects of cognitive losses and depression and disease (cardiovascular diseases, diabetes, some cancers) and all-cause mortality.
- That higher levels of habitual physical activity are protective against the subsequent risk of development of de novo depressive and anxiety disorders in old men.
- That moderate levels of exercise can serve as both a preventive measure against age-related cognitive and brain deterioration and a treatment to reverse decay and cognitive deficits already present in older adults.

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Next steps for research:

- There remains the need for large, high-quality effectiveness trials to examine what types of activities and intensities lead to the best outcomes for young people with depression or depression symptoms and implementation studies within mental health care. Longer-term follow-up beyond the immediate intervention period is also required.
- Future directions need to consider how to gather sufficient efficacy and effectiveness evidence to support a personalized medicine approach (e.g., to enable the matching of exercise dose, type, frequency to a young person's presenting issues and preferences).
- As for the utilization of exercises in treating adolescents with elevated levels of depression, more trials with better methodological quality are needed to provide firmer clinical recommendations towards the dose-response relationship.
- Further research investigating the effects of both vigorous and habitual physical activity and the contributions of different types of physical activity are required before physical activity can be unequivocally recognized as a modifiable risk factor for the primary prevention of depression and anxiety in older adults.
- Further research understanding the interactions and the effects of multiple types of exercise regimens and factors such as cognitive, social or nutritional interventions in older adults are needed.

According to the National Institute of mental health (2005), depression and anxiety affect over 12 million women and nearly 7 million men. If physical activity has a reasonable probability of buffering mental Health while "doing no harm", then exercise recommendations by mental health professionals might be more universally indicated. Finally, evidence of a dose-response relationship exists whereby more exercise is associated with better mental health. It would be helpful if future research could clarify the ideal dose of physical activity for mental health outcomes and additional longitudinal research is needed priori to endorsing exercise as a treatment for mental disorders.

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ADVANCED SKILLS FOR ACTIVE LIVING

Deliverable title:

Psychosocial Dimensions of Physical Activity, Exercise, and Sport and Mental Health

Motives for and Barriers towards Exercise in Mental Illness

Authors: **Nektarios Stavrou, Maria Psychountaki**

National and Kapodistrian University of Athens

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Motives for and barriers towards exercise in mental illness

Introduction

Exercise is usually defined as planned, structured, continuous bouts of activity, which people typically take time out of their daily routine to take part in. People exercise regularly for numerous of reasons, including for enjoyment, social reasons, and/or to achieve health benefits, such as weight management or physical fitness (Berger, 2004). Physical activity (PA) is a broad term that includes all bodily movement produced by the skeletal muscles that result in energy expenses (Berger, 2004). Common PA includes exercise, sport, occupational, transport, and lifestyle activities.

Psychological disorders and mental illness affect an individual's ability to work, engage in relationships and live independently in the community and, at the same time, they constitute a significant risk factor for morbidity and mortality (Evans et al., 2007; Mueser et al., 2001). They represent a significant health problem; the life expectancy of individuals with severe mental illness is approximately 20-25 years less than that of the general population (Dixon et al., 1999; McGrath et al., 2008). For example, reviews confirm that 35% to 70% of individuals with schizophrenia have an additional morbidity (Casey & Hansen, 2009). According to the World Health Organization (WHO), severe mental illnesses (schizophrenia, bipolar disorder, major depression) cause 10.5% of the burden of disease and injury worldwide accounting for the three of the top 30 leading causes of living years with disability (Murray & Lopez, 1997).

Mental illness is a serious public health issue. Individuals with severe mental illness are less active than individuals in the general population (e.g., Lindamer et al., 2008). Mental illnesses, such as depression, are associated with lethargy, lack of motivation, low self-confidence, as well as, low self-esteem, all factors that tend to increase sedentary behaviour (Grace et al., 2005; Lin et al., 2010). Researchers have found that depression is one of the most threatening health issues; Clow and Edmunds (2014) have pointed out that "approximately 30% of the European population has a long-term condition" and also that "people with a long-term condition that is comorbid with a mental health problem have worse health outcomes than do people with either of these alone" (p. 141).

Researches have concluded that PA is effective in reducing depression at least at the same level as psychotherapy or pharmacotherapy, while it is with added benefits for general health and without the negative side effects of drugs (Landers, 2007). Specifically, research has shown that PA is an important component of the quality of life of any participant. PA and exercise can improve the physical and mental health and health-related quality of life of mentally ill population (Josefsson et al., 2014; Rosenbaum et al., 2014; Vancampfort et al., 2015). According to Clow and Edmunds (2014), PA can positively affect a various range of mental health conditions (e.g., schizophrenia, Alzheimer's disease and

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depression) and well-being. On the contrary, physical inactivity is itself a major cause of morbidity and mortality as other risk factors for cardiovascular disease (e.g., Wei et al., 1999).

However, although it is well documented that PA and exercise have multiple benefits for physical and mental health, follow-up examinations revealed that most of the participants had not maintained their activity levels (Andersen et al., 1998). Despite it has been shown that PA and exercise can improve health and decrease mortality (Haskel et al., 2007), PA levels in adults have declined over the past two decades. Indeed, vast numbers of the global population abstain from exercising either due to limited participation or to difficulties in adhering to an exercise or PA program. Indicatively, the majority of American adults are considered non-active (Haskel et al., 2007), 47.2% of young Cypriots do not perform any type of exercise at all (Kyriakou & Pavlakis, 2011) and 25% of the Greek population do not participate in PA beyond the necessary daily tasks (Valanou, Bamia, Chloptsios, Koliva, & Trichopoulou, 2006).

According to recent scientific studies, only a minority of individuals with depression (Wielopolski et al., 2014) and bipolar disorder (Janney et al., 2014) engage in PA and exercise at a level consistent with public health recommendations. The prevalence of physical inactivity is high among clinical population. Research showed that in clinical population, 96% of the sample did not meet the physical activity guidelines of at least 150 min/week of moderate-to-vigorous-intensity PA (Jerome et al., 2009).

Overall, research evidence from both nonclinical and clinical populations demonstrates the crucial implications of physical inactivity for morbidity and mortality, and evidence from mainly nonclinical populations demonstrates that physical activity interventions can be effective and have a meaningful impact on health parameters.

These reasons led researchers to find ways to increase the level of exercise and physical activity in mentally ill people's everyday lives. PA programmes for mentally ill individuals should be integrated into mental health services (Richardson et al., 2005). Because of the importance of PA and exercise in terms of health improvement, it is essential to identify the causes of the observed low levels of exercise participation and the difficulty of adhering to an exercise routine.

MOTIVES FOR EXERCISE

The role of motivation in PA participation has been a central research area and it remains a topic that is currently being systematically investigated. The reason for this is the recognition that PA and exercise can affect both physical and mental health. In order to understand why people choose or not to adopt a physically active lifestyle or to participate in PA and exercise programs, numerous studies have been conducted to point out the reasons (Molanorouzi, Khoo, & Morris, 2014; Zervou, Stavrou, Kohen, Zounhia, & Psychountaki, 2017).

Researchers, health professionals, and policy makers have explored why some

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people are physically active, whereas others are not. One crucial reason for people to be physically active during their free time is motivation. Motivation not only affects PA participation, but is also a critical factor in exercise adherence (Andre & Dishman, 2012; Aaltonen et al., 2012; Frederick & Morris, 2004).

With regard to motivating factors, according to a systematic review by Firth et al. (2016), the most common reason for participating in exercise was to improve physical health (91%), followed by increasing fitness/energy (75%), improving appearance (77%) and losing weight (83%). Popular psychological motivating factors were reducing stress (80%) and managing mood (81%), as well as improving sleep patterns (72%). Enjoyment of exercise was only chosen by 54% of patients, while the social aspect of the exercise was considered as a motivating factor by only 27% of patients.

Self-Determination Theory (SDT; Deci & Ryan, 1985, 2000) is one of the most important theories of human motivation that examine the differential effects of various types of motivation that can drive behaviour. SDT provides insight into reasons why mental ill patients (e.g., schizophrenia) adopt and maintain health behaviors. According to SDT, the regulation towards PA can be amotivated, extrinsically motivated or intrinsically motivated. Literature on mediators of interventions indicates that self-regulatory actions (e.g., planning, problem solving, self-monitoring) are the most consistent factors of change (Rhodes & Pfaeffli, 2009). Sorenson (2006) found that the probabilities of an individual being physically active rather than inactive were 20 times greater when he/she had intrinsic motivation.

Furthermore, Bandura's self-efficacy theory (Bandura, 1997) seems to be a reasonable theoretical basis for developing suitable interventions for this specific population. In self-efficacy theory, participation in physical activity seems to be influenced by both cognitions (e.g., values, beliefs, attitudes) and external stimuli (e.g., social norms, access to facilities). Self-efficacy is a strong predictor of behavior change in a variety of situations. In addition, self-efficacy has been found to be a significant predictor of physical activity among individuals with serious mental illness (Gorczynski et al., 2010; Leas & Mccabe, 2007; Ussher et al., 2007). According to Bandura (1997), four parameters: (a) past performance, (b) vicarious experience, (c) social persuasion and (d) physiological factors are the sources of self-efficacy. Each one of these sources can be a motivator for the mentally ill population regarding their physical activity improvement and maintenance in an exercise program.

(a) Past performance is considered as a strong source of an individual's self-efficacy. Taking into consideration the poor fitness levels as well as the sleepiness and fatigue as side effects of some medications, a very gradual approach to increasing PA must be created (Mutrie & Faulkner, 2003).

(b) Modeling -seeing other patients succeed- can be one more source of self-efficacy. Individuals with severe mental illness are more likely to have a poor social life and reduced social networks and they have many possibilities to be poor and unemployed (Bengtsson-Tops & Hansson, 2001).

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(c) Social persuasion includes verbal and nonverbal language used by others to promote an individual's self-efficacy. In order to social persuasion be succeeded, practitioners should create opportunities for consistent and structured PA as part of integrated mental health services. Furthermore, Carless (2007) presents three elements of social persuasion: (i) awareness increasing, to help the patient consider the potential benefits of PA, (ii) commitment, involving close interaction (usually one to one) between a health professional and patient in order to understand the interest and create enthusiasm, and (iii) facilitation, where health professionals take care of practical aspects of the exercise sessions on a day-to-day basis and may use exercise sessions to provide verbal encouragement, reassurance, and support.

(d) Physiological factors and affective states can also be an important source of self-efficacy. Providing supportive and no-pressure sessions that allow participants to go at their own pace can be more positive about participating in PA (Hodgson, McCulloch, & Fox, 2011). Ekkekakis, Parfitt, and Petruzzello (2011) presented data demonstrating that most adults who are sedentary and overweight or obese (characteristics of many individuals with severe mental illness) experience reduced pleasure in performing exercise at any intensity level.

BARRIERS TOWARDS EXERCISE

According to Royal College of Psychiatrists, people may be turned off by the exercise because: they have never done exercise, they were not good at sports at school, they would feel silly, they have thoughts that other people would make fun of them, exercise could not help unless it hurts, during exercise they are sweaty and uncomfortable, they are too tired, they would rather do something else, they believe that it is expensive, they think exercise will make them feel worse, thy don't have anyone to do exercise with, they don't know where, when or how to start (Royal College of Psychiatrists; Taylor, 2014).

In addition to the motivational factors that facilitate the participation in exercise of people with severe mental health issues, there are individuals who face several barriers, obstacles or difficulties in their exercise participation. Having this in mind, several meta-syntheses of the qualitative literature, as well as systematic reviews and meta-analyses have examined the factors that may encourage or prevent exercise participation among people with severe mental health issues (Firth, Rosenbaum, Stubbs, Corczynski, Yung, & Vancampfort, 2016; Mason & Holt, 2012; Soundy, Freeman, Stubbs, Probst, Coffee, & Vancampfort, 2014b).

The reason for that is that individuals with mental health problems engage in significantly less vigorous exercise, and significantly greater amounts of sedentary behaviour than health controls (Stubbs et al., 2016a,b; Vancampfort et al., 2016a). This inactivity is predictive of a range of adverse health outcomes including obesity, diabetes and medical co-morbidity among individuals with mental health issues (Vancampfort et al., 2013a,b;

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Suetani et al., 2016). It is also associated with more severe negative symptoms and poor socio-occupational functioning (Vancampfort, Knapen, Probst, Scheewe, Remans, & De Hert, 2012; Suetani et al., 2016).

Discussing in detail the obstacles that the individuals with severe mental health issues/problems face, the most prominent socio-ecological barrier identified across the studies included in the review of Firth, Rosenbaum, Stubbs et al. (2016) was a 'lack of support'. In more detail, the most frequently experienced practical barrier was a lack of support, which was reported by 50% of patients. In the same vein, the lack of time was only identified as a barrier by 19% of patients. Nonetheless, the majority of patients felt that exercise supervision would enable them to exercise more (Ussher, 2007; Sylvia, Kopeski, Mulrooney, Reid, Jacob, & Neuhaus, 2009; Carpiniello, Primavera, Pilu, Vaccargiu, & Pinna, 2013). This is congruent with the qualitative literature, within which patients with severe mental illness have stipulated that adequate support can overcome many of the barriers faced towards exercise (Soundy, Freeman, Stubbs, Probst, & Vancampfort, 2014a; Firth, Rosenbaum, Stubbs, Corczynski, Yung, & Vancampfort, 2016b). In addition to the above, Firth, Rosenbaum, Stubbs, Corczynski, Yung, and Vancampfort, (2016) mentioned that tiredness/low energy was reported as a barrier by 45% of patients and physical illness and poor health was a barrier for 25% of patients. Furthermore, the experienced stress/depression was a more significant barrier to exercise for 61% and disinterest in exercise was a barrier for only 32%. Data on low motivation was not suitable for meta-analysis but was stated as a common psychological barrier to exercise.

Based on the above, people with severe mental illness value exercise for being beneficial towards improvement of physical health and appearance, and also for its psychological benefits. However, as it was mentioned mental health symptoms, tiredness and insufficient support present substantial barriers for the majority of patients.

Participating in physical activities could be essential for reducing the multiple risk factors for health problems that persons with mental illness may suffer. However, people with mental illness are significantly less active than the general population. To develop knowledge about factors related to the perceived barriers hindering this population's participation in physical activities and the benefits this participation would have, Shor and Shalev (2016) conducted a study with people suffering from mental illness living in community mental health facilities prior to their participation in a health promotion program. The findings revealed high ranking for accessibility barriers hindering the participation in physical activities. Bio-psycho-social factors stemming from the participants' mental health, such as level of depression, were correlated with higher ranking of accessibility barriers. Bio-psycho-social factors reflecting positive mental health and health, such as positive appraisal of body weight, were correlated with lower ranking of accessibility barriers. Other barriers may include organizational and broader systemic barriers in the mental health facilities where the participants reside. These findings illuminate the need to consider the unique challenges that persons with mental illness may face in any at-

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tempt to advance their involvement in physical activity (Sher & Shalev, 2016).

Dergance, Calmbach, Dhanda, Miles, Hazuda, and Mouton (2003) conducted a study aiming to examine the ethnic differences in attitudes toward barriers and benefits of leisure-time physical activity in sedentary elderly people. In this cross-sectional survey, analytical variables included ethnicity, age, gender, income, education, marital status, and leisure-time physical activity. Self-consciousness and lack of self-discipline, interest, company, enjoyment, and knowledge were found to be the predominant barriers to leisure-time physical activity in all participants, regardless of their age, gender, and ethnicity. All participants held similar beliefs about benefits gained from exercise, such as improved self-esteem, mood, shape, and health, but the beliefs about the positive benefits of exercise were more prevalent in people with different ethnicity. These findings remained after adjusting for age, income, education, marital status, and sex. Some might think that a major barrier lies in misconception about benefits of leisure-time physical activity, but in this study, both ethnic groups were accurate in their perceived benefits of leisure-time physical activity. When attempting to engage elderly in leisure-time physical activity, it is important not only to consider what barriers exist but also what beliefs about the benefits exist.

Demographic Factors. Age and sex status are consistent correlates of PA (Jerome et al., 2009; Roick et al., 2007; Vancampfort et al., 2011b). Males were more physically active than females and their levels of activity were negatively correlated with the increased age. Physical health problems also influence the participation in PA of mentally ill population. Individuals free of physical health problems were more active (Arango et al., 2008; Vancampfort et al., 2011b). Body weight and BMI were not related to PA in the severe mentally ill population (Archie et al., 2007; Jerome et al., 2009; Sharpe et al., 2006).

Psychosocial, Cognitive and Emotional Factors. Leas and Mccabe (2007) concluded that self-efficacy was the strongest predictor of intention to increase levels of PA in individuals with severe mental illness. Some researchers have suggested that lack of motivational is the central link between negative symptoms and functional impairment in severe mental illness (Foussias et al., 2009). This conclusion is a strong indication for the necessity to develop and implement physical activity interventions in this population.

INTERVENTION FOR PA PARTICIPATION IMPROVEMENT

Scientific research results indicate that individuals with severe mental illness can improve components of mental health through their participation in exercise programs. Identifying the factors that influence PA participation is critical to designing effective interventions programs in order to support their initiate and maintain physical activity.

Taking this into account, exercise-training programs for individuals with severe mental health problems should be designed to improve exercise capacities and cardiorespiratory fitness, while also providing the necessary levels of supervision or assistance for each patient to overcome psychological barriers and achieve the preset goals. Such

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interventions would be motivating and rewarding for patients, resulting in higher levels of exercise engagement. This, in turn, could improve physical health outcomes and facilitate functional recovery in mental illness. Given the inherent physical health benefits of regular physical activity, interventions for promoting physical activity should be integrated into mental health services (Clow & Edmunds, 2014).

Based on cognitive-behaviour approach, when working with a patient, the first step is to create a base of knowledge with regard to both the exercise benefits and the negative effects of sedentary life. To improve the knowledge about physical activity in severe mental illness, Sallis and Owen (1999) recommended adopting a behavioural epidemiological framework, which advocates five stages: (a) establish the links between physical activity and physical (and mental) health, (b) develop methods for accurately measuring physical activity, (c) identify factors that influence physical activity, (d) evaluate interventions that promote physical activity, and (e) translate research into practice.

Interventions aiming at life changes in the mentally ill population, such as increased engagement in physical exercise, dietary modifications, lifestyle changes and preventive health care, can provide potential health benefits across the lifespan (Hammond et al., 1997). Individuals with severe mental illness should be encouraged to ask their clinicians for support and advice regarding their efforts to become more physically active. The common physical activity guidelines for adults (i.e., 150 min/week of moderate-to vigorous-intensity physical activity) seem to be applicable to individuals with severe mental illness (e.g., schizophrenia, depression, bipolar disorder) with regard to the potential benefit providing for mental and physical health.

Mental health services should establish regular PA and exercise programs and clinicians should educate patients, family, and caregivers about the metabolic risks associated with antipsychotic medications and provide lifestyle advice regarding diet and physical activity (Faulkner, Cohn, & Remington, 2007).

Some suggestions for practice can be extracted from the literature and clinical experience. For example, Richardson et al. (2005) describe examples of structured, supervised, facility-based exercise programs as well as lifestyle physical activity interventions that encourage participants to incorporate walking into everyday life and discuss a range of practical issues related to promoting physical activity in this population. However, more research is needed in order to examine how to help individuals with severe mental illness adopt and maintain physical activity.

Programs for changing health behavior that teach skills for self-management are recommended as, according to the SDT, they can be effective in increasing PA participation and continuation (Kahn et al., 2002). Helping the individual to learn and apply the self-regulatory skills enables him/her to use them in the context of increasing PA. Practitioners may use daily or weekly calendars to support patients' plans for PA and to find solutions to the barriers they may face.

According to the literature, the strength of social support may be a key factor of qual-

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ity of life in people with severe mental illness (Hansson, 2006). Eklund and Hansson (2007) have suggested that interventions in mental health care should be targeted at increasing patients' social interactions. Transferring this notion into practice, physical activity in groups -at least in the beginning- would be useful for patients.

CONCLUSIONS

In line with the above text, understanding mental health is a key precursor to the development of interventions and strategies to enhance mental health through the sports domain.

Overall, the limited understanding of modifiable, theory-based determinants of physical activity in persons with severe mental illness inhibits the ability to develop, implement, and evaluate interventions for increasing their physical activity (Clow & Edmunds, 2014).

Taken as a whole, two key messages arose from the articles included in this research topic. Firstly, mental health stigma is a barrier to disclosure, self-helping behavior, and support for those with mental health problems. It has been acknowledged that stigma can lead to under-reporting and service aversion (Gulliver et al., 2012). Secondly, recognition of mental health status is not simply an issue for sport psychologists and their clients, but a shared mandate within sport systems necessary for both mental health prevention and the promotion of well-being.

The implications of the aforementioned themes are two-fold. Firstly, we advocate exploratory research to understand the barriers to reporting among exercise instructors, exercise participants, and other members, who contribute or effect exercise participation. Then, future studies should augment prototypical approaches to mental health surveys with measures of mental health stigma and help seeking behaviors, attitudes toward service provision as well as barriers and enablers to reporting an issue.

Future research is required to examine how environments in mental health units and public clinics should be structured in order to encourage reductions in sedentary life and increase of PA. Thus, more prospective, theory-driven, well-organized research is needed to identify determinants of physical activity for persons with severe mental illness. For example, studies with diversity in sampling, quantitative and qualitative methods of measures and various kinds of mental illness may be informative.

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ADVANCED SKILLS FOR ACTIVE LIVING

Deliverable title:

Psychosocial Dimensions of Physical Activity, Exercise, and Sport and Mental Health

Social Benefits in Sport and Physical Activity: Socialization & Other Benefits

Author: **Angeliki Manioti**
EDRA

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According to Bailey (2005), in recent years, there has been evidence of disturbingly high rates of mental illness among adolescents and even younger children, ranging from low self-esteem, anxiety and depression to eating disorders, substance abuse and suicide (Sallis & Owen, 1999). There is now fairly consistent evidence that regular activity can have a positive effect upon the psychological well-being of children and young people. Reviewing the literature in the area, Mutrie and Parfitt (1998) conclude that physical activity is positively associated with good mental health. The case is particularly strong with regards to children's self-esteem, especially so in disadvantaged groups, such as those with learning difficulties or initially low self-esteem. Other associations with regular activity that have been reported include reduced stress, anxiety and depression, all of which lend support to Sallis and Owen's (1999) claim that 'physical activity improves psychological health in young people' (p. 51).

Michalak et al. (2011) insist that people with mental illness often have to endure life experiences due to face symptoms of their condition and face deficits in functioning and quality of life (QoL). In addition, they may also have to struggle with the negative attitudes and behaviors that society, and they themselves, hold regarding mental illness. Stigma is a complex, multifaceted social process that consists of labeling, stereotyping, separation, status loss, and discrimination that co-occur in a power differential. Three levels of stigma identified within the research literature consist of public, structural and internalized stigma. Public stigma refers to the phenomenon of large social groups endorsing stereotypes about mental illness and acting against individuals who are labeled mentally ill. Structural stigma refers to institutional policies and practices—the structures that surround a person—that create inequality by restricting opportunities for people with mental illness. Internalized stigma refers to a subjective process, embedded within a socio-cultural context, which may be characterized by negative feelings (about self), maladaptive behavior, identity transformation, or stereotype endorsement resulting from an individual's experiences, perceptions, or anticipation of negative social reactions on the basis of their mental illness. The concept of internalized stigma is central to the understanding of the psychological harm that is produced by stigma. There are preliminary quantitative and qualitative findings indicating that stigma can play an important role in the expression and experience of bipolar disorders (BD).

Michalak et al. (2011) carried out a study using descriptive qualitative methods trying to explore and describe the meaning and experience of stigma for participants living. The research analysis revealed that participants consider internalized stigma to be a factor that significantly affects their ability to self-manage BD. Indeed, internalized stigma appears to add a layer of complexity for individuals with BD who are seeking to both reclaim their identity and recover their roles in society. Participants face a constant negotiation between the stereotype-laden social-identity and the self-identity that they choose to adopt. Some qualitative research paints an essentializing and rather bleak picture as to how individuals with BD perceive themselves; for example, 'bipolar patients view themselves as

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unstable, defective, and helpless, their lives as disordered, their community as rejecting them, and their future as uncertain and hopeless'. In contrast, in the study by Michalak et al. (2011) it is suggested that people with BD are not always passive and inevitable receptacles of stigma—rather, they describe a range of subjective experiences as they actively manage their illness and mitigate internalized stigma. This analysis has uncovered that the subjective experience of stigma has consequences with respect to how individuals understand their sense of self or identity (Michalak et al., 2011).

People suffering from social stigmatizing, as mental health service users, frequently experience social exclusion and limited occupational engagement. Dorer et al. (2009) conducted a survey to gather staff reports of 199 service users' levels of engagement and social inclusion across eight domains of community occupation. The staff reported that the majority of service users (54%) engaged in two or fewer of the community occupation domains over a 7-day period, the most common being the use of local facilities (92%) and contact with family and friends (61%). The staff reports suggested that far fewer service users were engaged in the other domains: day centers (25%), education (14%), sport (13%), arts (12%), employment (11%) and faith (8%). With regard to social inclusion, activities occurred most frequently in mainstream settings for the domains of faith (100%), use of local facilities (98%), sport (80%), and family and friends (79%). Lower levels of social inclusion were reported for the other domains. Statistical analysis revealed that service users' occupational engagement was related to their accommodation type, age and gender, but not to ethnicity.

These findings indicate that further research is needed to explore service users' views on social inclusion and what they feel would support them to engage in community occupations at a level that suits their individual needs (Dorer et al., 2009).

Trying to identify any relationship between social approval and inclusion of mental health service users and physical exercise we took under consideration Andersen et al. (2018) research on the social and psychological health outcomes associated with participation in team sport and synthesized the key issues about team sport as a health promoting activity. A search of 10 key electronic databases was conducted to identify both quantitative and qualitative studies addressing the social and/or psychological health outcomes from participation in a team sport. A total of 6,097 publications were identified and 17 studies met the inclusion criteria. A wide range of different positive social, psychological, and psychosocial health outcomes associated with team sport participation were identified in the studies, with emotional social support, sense of belonging, higher self-esteem, social network, and social interaction being the most frequently reported health benefits. In addition, three key issues influencing the psychological and social health outcomes of team sport participation as a health-promoting activity were identified: (1) team sport versus individual sport, (2) competitive versus non-competitive structure, and (3) commitment and continuation.

Andersen et al. (2018) concluded that that there is consistent evidence that participation in a team sport is associated with improved social and psychological health independent of the type of team sport, age, somatic, or mental health problems. The findings

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indicate that team sport could be more efficient in promoting health and ensuring exercise participation and continuation than individual sport. However, when utilizing team sports for health purposes, precautions must be taken with regard to their inherent competitive nature of exercise (Andersen et al., 2018).

GOOD PRACTICES IN LOCAL / COMMUNITY BASIS

The government of England together with the Sport and Recreation alliance created the first mental health Charter for Sport promoting mental health in the field of sport and recreation. Aiming to lift the ideologies of stigma around mental health, the Charter had been signed by the largest sport organizations of the country. The government has committed to cover part of the funding of the activities for a certain time of period (Kindi, 2018).

In January 2009, in England, Mental Health Charities MIND and Rethink launched the programme entitled Time to Change, the largest nationwide programme to combat stigmatization and discrimination on mental health grounds. The main goal of the programme was the reduction of stigma by facilitating social contacts between members. One of the project's programmes was Get Moving! The programme includes organizing more than 100 events within a week in October of every year. The events' participants are having an experience of some form of mental illness and the general public. Participants could engage in physical activity, offering relaxed social contact between those experiencing mental health problems and members of the general public, as well as in organized sports, like a game of football where each team includes mentally ill and health persons. In each game individuals participate equally and work for the best of the team (Kindi, 2018).

CONCLUSIONS / RECOMMENDATIONS

The contribution of this literature we might say that is the attempt to make a direct link between physical activity as a tool for socialization and stigma elimination for people facing mental challenges.

The strength is mainly the logical approach in which all researches are composed in order to come to a point and show the relativeness between physical exercise / spots – stigma elimination and social inclusion for disadvantaged groups of people and mostly for mental health service users.

The weakness is the small scale of bibliography, which though gives us the message to do more research on the field.

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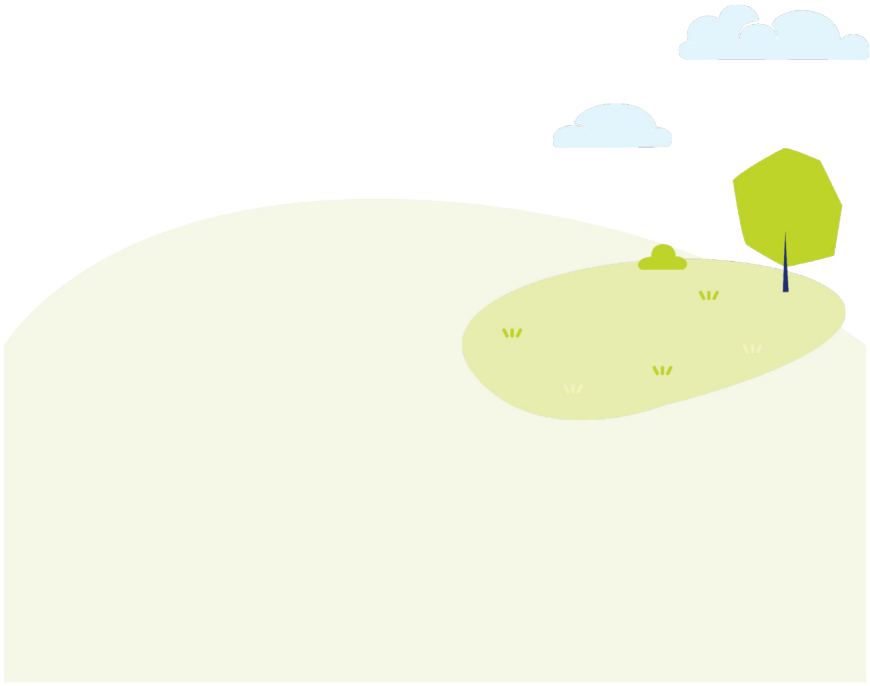

Part II

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Mental health service users' and health care professionals' perspectives on physical activity programs for individuals with mental illness: The ASAL study

Abstract

Contemporary research demonstrates that physical activity (PA) provides physical as well as psychosocial benefits and constitutes an effective intervention for various mental illnesses (Lowlor & Hopker, 2001). Yet, numerous obstacles hinder promoting PA as part of psychological treatment and clinical practice (Glowacki & Duncan, 2017). The present research aims to understand health care professionals' and mental health (MH) service users' perspectives on promoting PA as part of psychological treatment. Twenty-five professionals and five service users from five European countries were interviewed using a semi-structured interview protocol. After verbatim transcription of the interviews, a qualitative content analysis was conducted (Graneheim & Lundman, 2004). This procedure was performed individually and meaning units and codes were labeled and interpreted. Results emerged 624 meaning units that were summarized into five codes: (a) PA conditions, (b) benefits of PA, (c) patients' characteristics in PA programs, (d) barriers in PA programs and (e) recommendations for PA programs. This is the first cross-cultural study to document health care professionals' as well as service users' perspectives on PA within the mental health care system. Results indicated that health care professionals are willing to promote physical activity as part of psychological treatment for mental illnesses and service users are likely to participate in physical activity programs organized towards this goal.

Method

Aim

The present research aims to understand service users' and health care professionals' perspectives on promoting PA as part of psychological treatment. Thus, qualitative study was conducted, aiming to explore the views of interviewees (experts and users) and obtain an ''insider perspective''.

Design

A qualitative study was undertaken to access a broad range of views from MH professionals (n=20) and MH service users (n=5). Thus, a semi-structured interview was designed with open-ended questions. It was developed to assess experts' attitudes and behaviors associated with recognizing difficulties and providing advices on a variety of issues within PA adjustment for psychological treatment.

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Participants and recruitment

Twenty health care professionals and five MH service users from five European countries were interviewed using a semi-structured interview protocol.

Data analysis

After verbatim transcription of the interviews, a qualitative content analysis was conducted (Graneheim & Lundman, 2004). The interview transcripts were inductively analyzed; this procedure was performed individually and meaning units and codes were labeled and interpreted.

Qualitative content analysis is suitable for reporting common issues mentioned in data conducting work in an area where not much is known (Green &Thorogood, 2004). Content analysis enables researchers to analyze data qualitatively and at the same time quantify the data (Gbrich, 2007). Qualitative content analysis uses a descriptive approach in both coding the data and interpreting quantitative counts of the codes (Morgan, 1993).

According to the procedure, firstly the researchers read and reread the transcripts in order to become familiar with the data. Then the interview transcripts were analyzed inductively for meaning units. The three researchers discussed their interpretations, condensed and labeled the meaning units (often taken directly from the text) as codes (Graneheim & Lundman, 2004). One researcher grouped the codes, according to how they were related, into subcategories and categories, which were then discussed with the other two researchers. In total, 776 meaning units resulted from the answers and five general dimensions were revealed from the underlying meaning of the categories. Specifically, the content of the 776 raw data responses were analyzed following a consensual procedure by the three researchers who discussed and came to consensus on grouping the raw data responses into meaningful subcategories. This procedure resulted in 101 subthemes that were grouped into 18 higher order themes that were then summarized into 5 overall general dimensions.

Results

The results are described in three sections: (1) demographic results, (2) health care professionals' perspectives, and (3) service users' perspectives through narratives.

(1) Demographic results

Of the twenty experts interviewed, four were social workers, four were nurses, six were psychologists/psychiatrists, two were directors and four had other occupations. Of the five MH service users, three were women and two were men, aged from 27 to 79 years old. All participant names used are pseudonyms. Four were married, one was divorced and one unknown. All participants were coming from five European centers The participating centers were K.S.D.E.O. EDRA (n=4), Fundacion INTRAS (n=5), European Network of Active

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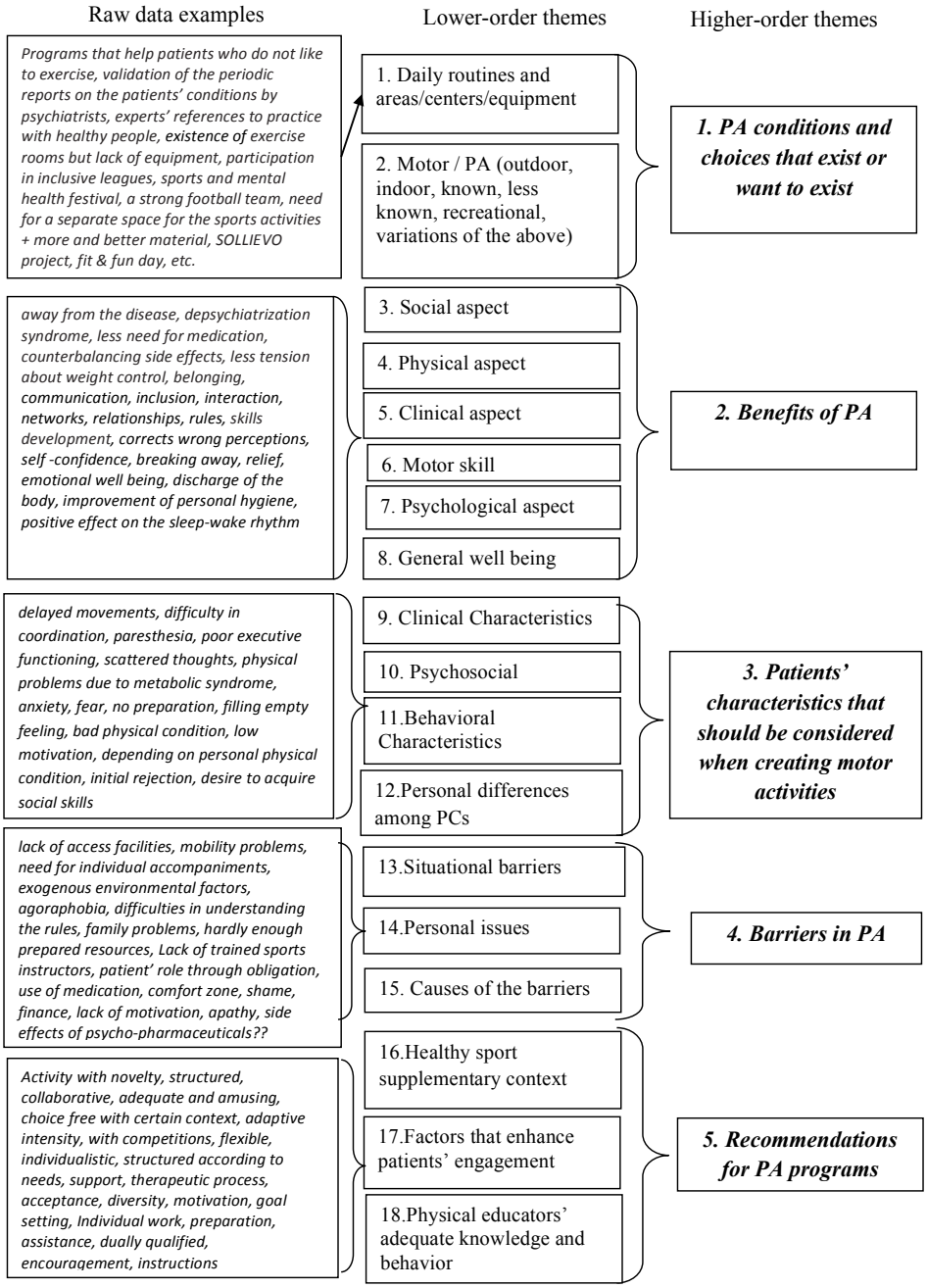

Figure 1. Raw data, lower order and higher order themes through qualitative content analysis.

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Living for Mental Health (n=5), Fokus ČR, z.s. (n=3), and Cooperativa Sociale Cooss Marche Onlus (n=3)... The most common mental conditions in the centers were: Schizophrenia, bipolar disorder, psychosis, anxiety and personality disorders, and depression.

(2) Health care professionals' perspectives

Five higher order themes emerged from the results: (2.1) PA conditions, (2.2) benefits of PA, (2.3) patients' characteristics in PA programs, (2.4) barriers in PA programs and (2.5) recommendations for PA programs (figure 1).

2.1. Physical activity conditions

The sporting condition in mental health centers, as described by the experts, involves daily routines, leagues and motor / physical activities, as far as sporting areas and equipment allow. In particular, experts articulate some components that are considered as positive, such as: physical activity greatly embedded within communities, PA involving components of teamwork, social inclusion, awareness, and the fact that clinical users often practice with healthy people. Regarding the equipment provided by the centers, some experts find it adequate, while others express complaints about the great lack of it. Similarly, some professionals refer to complementary programs that are well tailored for centers' sport plan (offered in afternoons, evenings, and weekends), while others mention lack of programs offered either indoors and outdoors the center. However, participation in sports leagues (e.g. Sports and Mental Health Festival, fit & fun, football tournaments with patients and experts in the same team) is reported as very attractive for patients.

According to health care professionals, varieties of motor / physical activities exist or need to be included in the centers. A great variety of activities were considered as helpful for clinical users: known sports (football, basketball, swimming, athletics, roller skating, hiking, jogging, tennis, dancing, and traditional dances), less known ones (climbing, cooperation games, orienteering, futsal football, paddling, table tennis, skiing, handball, paddle tennis, maintenance gymnastics, badminton) and recreational activities (mountain bike, nature outings, exercising in the gym, Nordic walking, bike, yoga, meditation and bodywork) are some of the options that clinical users have. Some centers provide within their facilities interventions offering various choices of physical activity regarding intensity, modalities, individual, group, team, recreational, competitive, federated and popular. Additionally, recommendations are given regarding motivation through occupational therapy, household chores, and gardening for those facing motor difficulties, as well as walking and strolls for those who do not like to exercise in general or are at an old age. Finally, health care professionals suggest participation in events such as "Fit & Fun day" with a whole day of physical activities for everybody or easier activities, like going home by foot or just walking around in the town. However, centers that suggest such activities may lack equipment, a problem that limits the options (e.g. rackets, badminton nets, football goals)

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and undermines the implementation of the activities.

2.2. Benefits of physical activity

There is a great variety of benefits that sporting programs offer to participants. The professionals' views on the benefits clients gain through sports were overall grouped as social, physical, clinical, motor skill development, and psychological aspect.

The social aspect is considered as very important by all professionals. MH service users are encouraged to consider themselves as part of the local community. Thus, the feeling of belonging is considered as significant when a person joins a group; especially in collective sports, this role is decisive. Also, the communication, as expressed by the contact with other people "who share the same interests but experience their body differently", and the inclusion, help clients to reduce social exclusion situations, create a bridge to meet new people and help them getting out of the psychiatric setting. Experts suggest that PA creates a positive environment that facilitates relationships in a standardized natural open-air environment, offering the opportunity for social networks to be expanded, and creates inclusive opportunities within the communities. Finally, the social advantages through PA are confirmed through the improvement of rule acceptance, daily skills and the ability to vigorously ventilate emotions in success or failure.

The physical aspect is considered as another important element that is improved through PA, according to the experts. As mentioned, physical capacity, especially regarding the cardiovascular system, is boosted and the body weight gets in balance. Also, PA has the same effects as anti-depressives; it releases hormones which give positive effects on general mood while it reduces the tension. Moreover, the clinical picture of the patient is "depsychiatrized" meaning that the attention goes away from the disease; also, patients materialize on something other than their illness, they rehab and lead themselves to direct healing effect in depression and dementia. Additionally, PA reduces the risk of metabolic syndrome and decreases the need for pharmacology. The side effects of medications are counterbalanced, while, they preserve cognitive functions.

Motor skill development is the development of the fine and cross motor skills. Present research showed that experts believe PA affects positively the psychomotor activation in mental health patients and teaches them certain new skills which will certainly help their self-esteem and socialization. Moreover, competences (e.g. punctuality, personal commitment, responsibility, social interaction, attention, analytical skills) transverse in other useful areas of life.

Psychological aspect: According to experts, PA increases self-confidence, self-esteem and self-image, and, further, it seeks to correct wrong perceptions while helping patients to overcome them. Also, PA helps patients to face psychological obstacles, control stress levels, feel relieved, have fun and ventilate emotions in success or failure.

General well-being is the experience of health, happiness, and prosperity. PA helps patients break their clinic routine and establish a healthy one, advances them to behave

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more naturally during these activities and avoid hospitalization. Professionals suggest that while MH service users' body is more tired, PA helps them relax the body and sleep better, have a positive effect on the sleep-wake rhythm and a healing effect defeating the "sliding door". Moreover, simple daily routines, such as improvement of personal hygiene, perceptions of own health, physical appearance, and filling their spare time are clearly boosted.

2.3. Patients' characteristics that should be considered when creating physical activities

Experts describe some positive and some negative main characteristics of patients to be considered when creating PA protocols. Initially, experts who create programs should pay attention to the clinical characteristics. For example, patients' activity movement is delayed, caused by psychosis, catatonia and rigidity. Also, patients' activity coordination is undermined, linked in many instances to body image feelings, such as paresthesia. Other clinical characteristics, such as functionality level (mood and motives affect their function), poor executive functioning (difficulty understanding information and using it to repeat the exercises) and medication side effects (attenuation after medication), affect PA type due to decision making. Finally, mental issues, like scattered thoughts and great lack of concentration or metabolic syndrome (very hungry, eating a lot, overweight, etc) caused by their medication, negative feelings (e.g. anxiety, fear, tremor, frequent stress feelings and certain compulsions) and psychopathology (e.g. depression associated with a sort of psychic asthenia, lack of motivation to move and endless weariness) need further consideration when creating PA programs for mental health users.

Patients' psychosocial characteristics. Many experts supported the notion that the environment, the team, and the coach or therapist who leads the activity, are very important aspects to create the proper PA program. Patients often reveal uncertainty in decision making. Specifically, they found it difficult to answer positively and if this happened, patients would easily recall that decision, while they found it hard to plan. Moreover, patients do not prepare properly for sports, they do not have sports clothing or sports shoes and they easier engage with a bad life style; thus, they generally have bad physical condition (smoking, respiratory problems), combined with low motivation and a poor attention span (anxiety disorders). However, experts believe that physical and behavioral improvements through exercise depend on how much the patients are willing to exercise and whether they feel well disposed, ready to acquire social skills and be in contact with other people.

Furthermore, personal differences between patients' characteristics might affect choosing the right PA for patients with MH. The age and gender play a significant role, meaning that young people are more motivated. However, in recent years it seems that participants come from a variety of ages. Moreover, young people prefer team sports, like football and basketball, while older people respond better to PA programs. More specifically, PA (or the lack of PA) is more effective to older people making them more motivated than younger people. Moreover, men prefer gym exercises, outdoor activities and team

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sports, while women prefer dancing, aerobics, and Pilates. Additionally, men are more interested in increasing their strength levels through weightlifting exercises, while women are more interested in taking care of their body fitness level. Moreover, the level of education seemed to influence the perceived importance of PA/sports on the patients' general well-being and the importance of previous experience. Additionally, previous sporting experience reveals easier physical activation and motivation for a user who was physically active before the illness or when she/he was younger. However, it didn't seem necessary to have graduated from the university or to be in a good financial situation to understand the benefits of exercise. Finally, socioeconomic variables do not play an important role for people residing in shelters. Social status and educational level play significant role when related with the aspect of taking care of the self. Taking care of themselves appeared to be a very important aspect for patients, because, they might have neglected themselves in the past.

2.4 Barriers in physical activity programs

Mental health care professionals play an integral role in helping individuals with MH issues to engage in PA; yet there are numerous factors that impede the promotion of PA within clinical practice. Present research highlights a variety of barriers and difficulties that may undermine patients from engaging to PA, such as situational issues and patients' personal issues. Primarily, situational barriers are very important and need great attention. A variety of access issues (lack of access to facilities as a handicap, mobility problems), distractions (e.g. television), engagement difficulties ("we have to make individual accompaniments and to get in touch with them in advance"), environmental factors (exogenous environmental factors, compulsions such as agoraphobia, weather phenomena), misunderstanding framework (difficulties in understanding the rules, abstract thinking, need to learn by practice), family issues (their relationship with their families and the messages that they receive), delusional interpretation (the interpretation given by the person, since a psychotic patient interprets in a different way – in his/her own way - the stimulus), physical problems (caused by the mental distress, the medication, the life style), lack of resources (there are hardly enough prepared resources for these people to participate in standardized exercise programs), lack of trained sports instructors to work with MH patients and social fear (occasions of extreme difficulties with social relations).

Similarly, patients' personal issues play important role in undermining the PA engagement. Firstly, the clinical barriers and distractions discourage patients from engaging in PA and sports (e.g. medications, the question to participate can be threatening because of their psychosis/structure, anxiety, aggressiveness, paranoid thoughts, smoking "which is usually uncontrollable", difficulty when they are out of their comfort zone). Similarly, educational barriers, meaning the superiority of medication(is generally accepted/ widely spread) towards the limited psycho-education about the positive effects of physical activities is an important barrier too, leading sometimes to engagement and motivational

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difficulties(lack of ability to overcome minor problems, setbacks are ultimate for them, feelings of uselessness, lack of intrinsic motivation and the need of external motivation to continue etc).

Causes of barriers in physical activity programs. According to MH care professionals, barriers are addressed as far as the reasons affecting them are recognized. Answering in relevant questions (e.g. «which are the characteristics of the patients that you believe are complicating their participation in physical activities?") some of the experts responded that the psychopathology by itself, the medication provided (direct and side effects of psycho pharmaceuticals) and the cognitive dysfunction by itself, affect significantly a pathological situation and the responding to PA suggestions. For example, tremors, caused by the drugs, can originate embarrassing situations and hinder the patients' participation from many activities. Moreover, the psychological weaknesses, experienced by some patients, constitute a pitfall when patients have to face a specific situation that raises difficulties. These patients often quit or give up due to their insecurity and low self-esteem. Additionally, delusions and hallucinations that exist in their mind/thoughts, the fact that they lack structure, their negative thoughts like paranoia, anxiety, concentration difficulties and the fear they have for their body when it experiences exercising generate negative thoughts and responses. However, the above notion depends on patients' personalities and on the type/level of their disease. Another cause reported is the social aspect, where people with e.g. psychosis, are often more limited in their social choices, they have social incapacities and fears, thus being unable to participate in group activities (e.g. they feel that the 'other' -person- is threatening). Other factors that undermine patients' engagement in sports and create barriers towards PA are: motivational difficulties (lack of motivation, apathy, a poor physical condition which leads to early fatigue, and long-term activity abandonment), physiological parameters (obesities, general bad physical condition, negative and secondary effects caused by medication), economic factors ("most of our patients do not have the means to ensure basic needs") and environmental issues (exogenous factors affect decisions due to the interpretation given by the person and can "hinder the participation of those users who are in the hospital or who have just come out of a period of hospitalization").

2.5 Recommendations for physical activity programs

Finally, MH professionals were asked to advise community about the appropriate practices and provide recommendations that might enhance the success of sporting programs. Their answers were grouped in three main categories:

Healthy sport supplementary context. MH experts stressed the need for an ideal activity context and the suitable environment/space. Specifically, they mentioned context's characteristics, such as structured activity with novelty, collaborative activities, adequate and amusing ones, and activities under a certain safe context. Some others suggested that PA programs should encourage free choice, the option of competing, and be fairly struc-

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tured according to individual needs and programs that can be adaptive and tailored to an individual's needs and sustainable intensities. For example, "physical activity as part of a trajectory or a week planning can give structure, and this can become motivating!" Due to other experts, it is necessary to propose new initiatives because "the novelty activates our users and makes them more willing to participate" and to create options for collaborative sports activities, where patients and staff carry out physical activities together. An important element for obtaining a healthy sport supplementary context is the aspect of support. According to experts, patients must have the necessary support so that their participation as well as their perception of participation is successful, such as adequate equipment, access to facilities and budget for participation to help those with very few or no money. Additionally, experts refer to a suitable environment/space which might have short-term motivations (visiting different places, meeting new people), easily accessible and immediate spaces and environments, such as, gym, hall with mirror and air conditioning, exercise biking, rowing benches, mats, small balls, dumbbells, TRX belts, showers, sauna.

Factors that enhance patients' engagement. Engagement in PA refers to generalized positive affect and cognition for an activity. MH experts participating in the present research emphasized the necessity to achieve patients' engagement to PA. According to experts, the participation acceptance and engagement depends on (a) the time/phase when a patient is involved to a therapeutic process, (b) the proper sporting choices that will be made, and (c) the freedom/diversity of choice. For example, experts mention that "users welcome these initiatives when fit to them….we can't promote football to old people….a good balance between activities inside and outside the therapeutic center, indoor and outdoor activities…when symptomatology is in decline then patients are more ready to engage in activities". Moreover, motivation is another important element that boosts patients' engagement to PA programs; thus, efforts should be made to generate intrinsic motivation and avoid detours through a variety of elements creating a friendly and attractive environment. For example, the nature of the activity should contain a playful aspect, offering fun and keeping them involved. Staff and coaches need to motivate participants, sometimes one on one, by combining sport training with leisure time. Key points to this procedure are: the recognition of the subjective nature of people, the fact that forcing people to participate often has the opposite effect and the proper goal setting (e.g. specific and realistic goals). Also, interacting with other people in a standardized environment, communicating their experiences and giving advice, motivates them to try more (e.g. "being together with others and not staying in the segregated communities…mingling with normal people").

Another important aspect highlighted by experts was the preparation before engaging in PA, that is the adequate individual work with every patient separately and the proper preparation before participating in PA. For example, patients should follow a preventative check-up of their health and physical condition before engaging in activity or/ and the adverse medication effects must be managed prior to engagement in PA. An expert said that if the patients engage in activities they cannot manage, then they become disappointed

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and thus, proper reaction to disorientation is greatly needed (e.g. indoor spaces which also help in protecting from weather phenomena and in periods that patients could be disoriented)".

Adequate experts' characteristics. Many of the interviewees highlighted the importance of adequate experts' characteristics. Specifically, it seemed important the experts to have the proper education as there is need to lend a sympathetic ear to patients, thus discovering the most effective activity tailored to each one and being able to refer patients to the correct sport center and activity. Also, patients' motives (such as, weight loss, making friends, and gaining muscular and cardiovascular strength) and positive effect when they have a 'mentor' or 'buddy' to concretely start the PA should be clearly reinforced. However, it seems more important the experts to be ready to understand their own goals (encouragement, instructions, motivation, awareness, bridge function, individualized treatment, dedication to PA) and to be advised / mentored by specialists who can help them in decision making procedure. In this direction, sharing their work with professionals is highly advantageous. In conclusion, experts need to possess knowledge and practice to succeed (e.g. evidence based guidelines and good structure of activity, self-awareness and dedication, patience and good mood, supervision and feedback, psycho-education and seminars, beware of boundaries, smooth contact and adjustment).

(3) Mental Health service users' perspectives

From the MH service users' perspective, a variety of behaviors and choices in practice seem to agree with health care experts' opinions and suggestions. The majority of MH service users had rather positive embedded attitudes towards exercise and perceived physical activity as a satisfactory treatment option.

According to their daily routines and motor activities, many service users chose to perform activities such as running, gym, football, and walking at a medium intensity.

Regarding the effect of exercise in their mood and physical condition, a variety of different feelings were mentioned. Most of the MH care users had been feeling well during and after the exercise. Some others reported that they experienced an alternative world away from their problems (e.g. "you are separated from your disease"), while, a few of them, felt little anxiety and a bit tired. However, most of them gained wellness and relaxation after exercise, experiencing tiredness, but at the same time, gratefulness and satisfaction, which led them to a "translated structure from sports to daily life".

Furthermore, MH service users recognized a variety of benefits coming from the sporting programs, such as, psychological, well-being, and clinical. For example, service users mentioned that they were feeling "more responsible and capable of taking charge", "more pleasant and comfortable", "it helps me very much mentally", "more happy", "glad", "stress and negative thoughts are released" even if they felt physical fatigue, lack of energy and a "sick feeling that I don't like at all".

Answering to the question "Which are the main and the most important obstacles or

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difficulties that you face for your participation in an exercise or physical activity program?" MH service users expressed situational and personal issues. Specifically, they mentioned factors, such as lack of time and energy, lack of energy due to medication, level of tiredness, and inability to easily commit to a PA program. Only few of them mentioned physical problems (e.g. painful leg, tennis elbow), while sometimes they reported that symptoms of their psychosis (e.g. hearing voices) prevented them from engaging.

Finally, MH service users were asked "what do you believe that would motivate you or facilitate your participation in an exercise or physical activity program?" Many of them emphasized the need for friendly and good atmosphere, well organized groups and facilities, exercises well-structured and programmed, so as to engage with feelings of happiness from their participation and to realize that exercise is followed by long-lasting happy moments.

Discussion

This is the first cross-cultural investigation to document health care professionals' as well as MH service users' perspectives on PA within the mental health care system. The fact that psychiatric disorders are highly common in Western societies and the frequent comorbidity with other diseases makes experts to consider whether health care system makes analogous efforts to the right direction. Present qualitative research advances the health care professionals' needs for more exercise promotion and practice in MH population.

Overall, present results indicate that health care professionals identify and recognize a variety of perspectives regarding PA in MH service users. In addition, they showed willingness to promote PA as part of psychological treatment for mental illnesses. Many of them promoted or tended to promote PA and felt confident to provide general activity advice and counseling as part of psychological treatment or to support any contingency. Health care experts emphasized the great variety of benefits of sporting programs for participants, such as social, physical, clinical, motor skill development, psychological. Additionally, they highlighted the fact that PA can strongly help patients to feel part of the local community. In that direction, they suggested that PA creates a positive condition, which facilitates relationships in a standardized natural open-air environment; however, it is a complicated situation that needs a variety of decisions and efforts taken properly and in time. In parallel, patients expressed similar perspectives towards PA programs and their effective implementation. Present research showed that participants are likely to participate in such PA programs, perceiving exercise as positive rather than negative.

From the side of health care professionals, they recognize important barriers and difficulties towards implementing PA/exercise programs, such as lack of equipment, patients' clinical and personal characteristics, and severe side-effects from drug use and from the disease itself; they also referred to their own incompetence to advise properly their patients regarding PA/exercise decisions. However, they greatly believe that boosting self-determined motivation and organizing a well-structured and safe environment,

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are important aspects, which could easily encounter the above concerns. Efforts should be made to generate intrinsic motivation, specific and realistic goal setting, and safety through a variety of elements creating a proper environment. Sports activities could work therapeutically helping the patients to overcome negative thoughts, insecurities, and anxieties.

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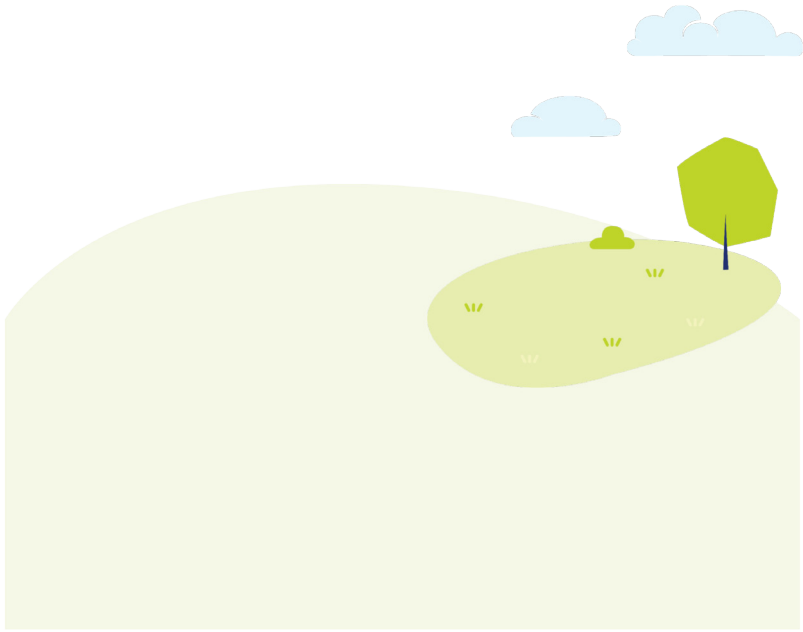

Appendix

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Workstream 2 – Research and Course development
Findings from the fieldwork in Belgium

Contents

Authors: Nicos Andreopoulos, Mike Michiels

ENALMH AISBL

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Methodological and ethical approach of the 6 interviews

ENALMH performed 6 face to face semi structured interviews. Five of them involved mental health experts/ service providers and more specifically: a social worker, a nurse, a fitness instructor leading physical activities- based programme in MH services, one psychologist, one of which is the Manager of a MH Therapeutic Center. We also contacted one MH services user. We followed the ethical values which demand that the interviews are and remain anonymous and got a signed consent for the interview recordings from the people who agreed to it. They had also been informed that they were entitled to withdraw if they wished (for any personal reason) without any consequences and still enjoying the respect of our organization.

The proposed questions have been followed but as the interviews were semi structured, sometimes we had to go back and forwards in order to follow the flow of the conversation and to prevent interrupting the interviewed person.

The following keys have been used to identify the respondents:

a) Nurse,

b) Fitness Instructor,

c) Social Assistant,

d) Manager of the Therapeutic centre,

e) Psychologist

f) MH services user

Interview report health expert/ service providers

1. To the question "Which are the usual, main mental diseases you face or treat in the therapeutic center you are working "we received the following answers:

   a) Psychosis

   b) Psychosis

   c) -main: psychosis

      -secondly: anxiety, personality disorder, drug abuse, double diagnosis.

   d) psychosis

   e) (young) adults with psychotic problems

2. To the question "Do you believe that the patients' participation in physical activities and exercise programs can improve their quality of life and how?" The answers were as follows:

   a) Absolutely

      Yes, it can became an important 'pilar', it gives structure

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It releases endorfines (= neurotransmitter) which works as a natural 'feel good drug'.

On the social level: it can work as a bridge to meet new people.

b) "Absolutely yes. We have been running football and volleyball activities for 15 years. We have noticed improvements on the **patients' socialization and self-esteem levels,** but also a **decreased need for pharmacological treatments**. Hospitalizations for these persons have practically disappeared, thus defeating the "sliding door " harmful and perverse cycle, i.e. hospitalization, treatment, improvement in the health status and sudden relapses requiring further hospitalization".

c) Sure! Especially for well-being. Physical activity has the same effects as antidepressives —> hormones release which give positive effects on the general mood.

d) Sure, our patients are often very inactif -> on the other hand they do feel better after physical acitivity but are difficult to motivate. They often don't have an own need for physical acitivity.

e) Yes, a lot patients have Metabolic Syndrome (very hungry, eating a lot, overweight, etc) caused by their medication. Physical activities can improve their condition.

By doing group (sports) activities there can happen a shift of roles: from patient to sportsmen/women

3. To the question "What's your opinion regarding the importance of exercise and physical activity for patients suffering of mental health issues?" The answers were as follows:

a) important (see question 2)

This goes for everybody, patient or not.

b) "They are very important because, in some cases, they can avoid hospitalization. In addition, they are used as relief valves and have in general a good impact on the patient moral."

c) See question 2

You feel physically better, you can control your stress level better, positive effect on appetite, positive effect on the sleep wake rhythm

Improvement on general physical condition, libido, physical appearance, confidence

Positive effects on mental level

d) -gives self confidence

-empowerment

-physical effects on weight, diabetes, Metabolic Syndrome.

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-positive hormones that liberate by being physical active. "They are very important because, in some cases, they can avoid hospitalization. In addition, they are used as relief valves".

e) Very important for different levels in life (physical, mental, social)

No obligation, important is the MOTIVATION. Obligation keeps the person in the 'patien' role. If they can choose themselves: rol shift, away from the patient status

4. To the question "What's the role of sports and physical activity in patients' social skills, and their social reintegration? In which way these are affected by their exercise participation?" The answers were as follows:

a) By participating in PA/sport activities the person has contact with other people who share the same 'interests', a part from psychiatry.

Social skills: for our group of patients it's not always simple to set up social relations —> sports can have a bridge function here.

b) "Sports leads to social contact. Groups are formed to 'play' together. They are stimulated and sports support social re-integration. Sport activities happen ev erywhere, in every city so there is always an opportunity near for patients to participate, even when they leave the hospital.

c) Break social isolation, the importance of the group context —> to do things to gether, to work together, ..

d) -social skills: team sports: learn to decide together, to collaborate, a way from their own individual.

-social integration: participating in sport activities could help getting out of the psychiatric setting and make new social contacts. Sports has a communal purpose -> connection between people. "The SOLLIEVO project, as an example, brings together MH patients and normal people creating information and exchanges between these two groups"

e) In psychosis every relation is 'dual' -> sports is a different way to get in contact with others and themselves (experience their body differently)

In group sports there are different relations towards each other —> collaborate, roles become more clear. Sports is the 'frame' (which is difficult to set up by themselves, which is missing in daily life)

5. To the question "What's patients' attitude in your therapeutic center regarding their engagement in physical activities and exercise programmes? Do you think they are willing to participate in an exercise program?" We took the answers:

a) That is very individual, different. Often the 'intention' to to PA/sports is present but the internal motivation to actually start the activity is absent.

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b) Their attitude is rather positive.

c) Yes. The motivation is big but to make the concrete step to start moving is some thing else. Much more difficult for a lot of them.

Problems: stigma, medication, self esteem, the mental distress itself (hallucina tions/delusions).

Sports can have a positive effect on the self esteem!

d) Depends on the individual and the level.

e) "Yes, people engage themselves.

(... continuing the previous question) ..... What can motivate the patients' for a systematic participation in an exercise program? We took the answers:

a) There is a big responsibility for the staff: motivating people, participating them selves, …

The freedom of choice (to participate, start, continue or stop an activity) is important for the patients

b) -Extra stimulation from the total therapeutic team (also psychologists, psychia trist, etc) is necessary. This could improve the willingness of people to partici pate.

-Extra points of attention: diversity in the offer of activities, a good balance be tween activities inside and outside the therapeutic center, indoor and indoor ac tivities,..

c) To point out the positive effect to them —> the use of a 'mentor' or 'buddy' to concretely start the physical acitivity/starting sports.

d) Reward afterwards and/or the good feeling they'll have.

e) The way people are motivated is very important. It differs from person to per son. Every individual has a different reason to participate, it is very SUBJECTIF.

6. To the question "Do you ensure that patients' daily program at your therapeutic center includes physical activities? Please indicate." We received the following answers:

a) There is an offer which we try to point out in a positive and motivating way to ward the patients.

Walking, football, fitness, badminton, table tennis, dancing, swimming, biking, running/jogging, stretching, relaxation, Zumba, indoor cycling (home trainer), ex cursions (walking!). "Yes, every Monday from 2.30 pm to 4 pm"

b) "The Yes. For now the focus is on:

-badminton (1x)

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-table tennis (2x and in free moments)

-swimming (2x)

-jogging (2x)

-football (1x and regularly tournaments)

-stretching (2x)

-Zumba (1x)

-walking (2x)

- aerobics (1x) tought by 1 of the residents/patients

-relaxation (1x)

-party atelier (dancing ; 1x)

c) Yes: walking, swimming, running/jogging, badminton, football, Zumba, stretching.

d) Yes: jogging, swimming, dancing, stretching, Zumba, football, walking, …

e) Yes, in the activity program we offer: jogging (1x/week), football (1X and tournaments), swimming (2x/week), stretching (2x/week), Zumba (1X/week), Badminton (1X/week), table tennis, Aerobics (1x/week, given by one of the patients), walks (2x/week) + 2x/year Fit&Fun day with a whole day of physical activ ities for everybody.

7. To the question "Is there a properly designed environment / or suitable equipment for applying physical activities in your center" we received the following answers:

a) *Positive*:

-there is a garden where you can organise some PA

-there is a big space (old chapel) which can be used also for PA.

-1h/week we rent a sports hall (for the football)

-there is some sports material present: for ex: punching bag.

Negative:

-present bikes: only 1 of 3 can be used. Others need to be fixed

-indoor bikes (home trainers): only 1 of 3 functions

-the space (old chapel) is the general meeting point of the therapeutic center so there is not much privacy. "No, we have to go to the municipal gyms or private facilities.

b) Could be better. No proper sports space, field. Some small material (rackets; foot balls; table tennis table) but no good space to practice physical acitivities

c) -In basis there are no special sports facilities/environment. However we have

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some options to use for limited physical acitivities: a big chapel, a garden.

-Idealy: have a seperate space for the sports activities + more and better material (fitness equipment, rackets) + looking for external sport facilities we can use/ rent + extra budget (for ex: to go swimming etc. Now patients need to pay this themselves which is not always easy given their often limited budget).

d) No possibilities: some small materials available (badminton net, football,..) + rent of sports infrastructure 1h/week. Maybe possibility for more hours outdoors.

e) -in house: footballs, football outfits, yoga mats, badminton net/rackets

-rent of sports infrastructure for 1h/week for the football training.

8. To the question "Which are these physical activities? Indicate" we received the answers:

a) -included: see question 6.

-to be included:

sometimes: wall climbing, obstacle course, ice skating, horse riding

Weekly: squash, basketball, biking

"For volleyball we are doing 15 min. of warm up involving arm work out and back work out. After that we play volleyball in teams of 7 people each."

b) See question 6

+

Willing to include: basketball, running/jogging (more often, on track training)

c) In principle everything: participation in existing activities. Getting budget for par ticipation to help people with very few or no money.

Dancing, stretching, Zumba already exist and can offer a nice step up to activities outside the institution.

d) Team sports that are always those with the most positive results on patients

e) Group and individual activities

There is a good balance of actities in the program now.

Physical possibilities are important.

Combat sports?

9. To the question "Which are the most common psychomotor characteristics of patients characterized by severe psychological and psychiatric illnesses" we received the answers:

a) -delayed movements: caused by psychosis, medication?

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-scattered thoughts, a lack of concentration

-no preparation: no sports clothing, no sports shoes,..

-shorter time span

-the urge to move —> possible to cannalise through sports?

Dementia?

b) "They usually get stuck and are hard to involve (Depression/Bipolar disorder/ Psychoses). Use of medicines may slow the patient's movement"

c) -Katatony

-rigidity because of their medication

-negative symptones

-anhedony: feeling no pleasure while doing activities

-bad general life style

-limited motivation

-physical problems, for ex Metabolic Syndrome, smoking

-'filling' empty feeling: bad life style —> lack of self esteem

-fatigue (caused by medication), increased appetite, increased weight, decreased motiviation to move

-high stress level —> eating, smoking a lot, isolating him/her- self.

-other worries (for ex financially)—> physical activities/sports have no priority.

d) Psychoses? Caused by medication or negative symptoms: getting slow, gaining weight, tremor, dystonia, experiencing their own body, need to move —> all very indivual. Physical damage after suicide attempt.

e) Psychoses? Difficult relation to the body -> subjectif. Because of medication or psychosis: movements become more slow

10. To the question "Indicate the patients' characteristics that causes difficulties in their participation in physical activities" and "which are the main causes of these obstacles" we took the answers:

a) -lack of intrinsic motivation

-attention disorders

-difficult social relations (for ex: with people suffering from paranoia: the 'other' is a threat —> group sport is very difficult or even impossible)

-anxiety in general

-mobility problems: to go to the sports hall is an obstacle for some people. "Already answered at Q. 9"

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b) Often also physical problems caused by the mental distress, the medication, the life style.

c) The use of medication is generally accepted/widely spread. The positive effects of physical activities/sports are underestimated —> psycho-eduction about this is generally missing.

d) See 9).

+motivation to continue

-financial

-social fear (going outside)

e) For a lot of patients this isn't the first experience in psychiatry -> often they have a rather negative experience -> less motivation to participate. The question to participate can be threatening because of their psychosis/structure. They have a different consiousness. Their delusions can can be too dominant to be able to participate in physical activities. There can be a preoccupation with their suf fering/hallucinations etc which makes it impossible to participate in physical ac tivities/sports.

11. To the question "Which are the main causes of these obstacles? Psychological, physiological, social, environmental? Some others? Is there any biological/scientific explanation for this?" we received the answers:

a) -psychological: lack of structure, paranoia, anxiety, concentration difficulties

-physical: obesitas, general bad physical condition, secondary effects from the medication.

-social: the 'other' is threatening which makes it difficult to participate in group activities. Extra motivation is necessary, one on one by staff/coach.

-environmental: no 'privacy' in available space in therapeutic center. "To date no related causes are known"

b) -medication

-social: sports gives another energie —> people with psychosis are often more limited in their social possibilities

-psychological: dilusions and hallucinations fill their mind/thoughts. They just don't think at the option to sport/move enough.

c) -the social component is very important to became active and to keep the motivation going.

d) Psychological: fear, delusions, hallucinations, body experience

Physiological: negative effects caused by medication.

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e) Mainly: psychological. Social: no money, limited social capacities.

12. To the question "Which are the characteristics that should be taken into consideration and the elements that could facilitate patients' participation in an exercise or physical activity programs?" we took the answers:

a) -1 on 1 motivation by the staff/coach

-the staff has a bridge function between people with the same interests.

-improve the privacy

-time: not too long

-try to be aware of possibilities of the participant

-diverse: create a diversity in the offer, also space for competition (could be mo tivating for some people).

b) -low threshold —> everybody is welcome, no age discrimanation

-to join in later is ok, to stop early is also possible

-limited time span

-regularly (smoking) pauses.

-a well adapted environment (which feels safe) + create sage conditions "As al ready mentioned, I strongly believed that the key for their activation is to have fun: if they have fun, they get involved, react and stay involved throughout the entire sport program. It is more effective make them play freely like throwing a ball in a basket than an hour of walking or stretching . In this perspective, the team sport are much more effective than individual sport training."

c) -psycho-education + coach/motivated staff

-clear goals, procedure of the activity (start, middle, end)

-the activity needs to be inviting —> a good focus and space for 'relaxation', also after the activity. Physical activity can 'relax ', can be 'fun'.

-physical acitivity as a part of a trajectory or a weekplanning + it can give struc ture —> this can become motivating.

-PA can offer structure

-special attention for the social aspect of PA and sports!The socialization, being together with others and above all not staying in the segregated communities but mingling with normal people

d) Free of choice to participate is important. Individual work/needs

e) Careful not to be too intrusif -> choose an individual approach. Difficult relation to language', the body and the other -> search for a specific entrance to motivate people to participate.

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13. To the question "Are there differences in the motor ability of these patients based on their gender /age/social level/ financial level/ educational level ... Is there any scientific interpretation/explanation of these differences?

a) In psychiatry more people have limited income so less possibilities in choice. Some have external administrator so cannot decide themselves what they can spend on PA or Sports

educational level?

Other levels comparable to the broader society.

b) "Gender? Men have more power

age?

social level?

financial level? Possibilities for the kind of sport acitivity they'll do.

educational level?

c) Gender? No

age? Older people often have more effects/results of PA (or the lack of PA) which makes them more motivated then younger people.

social level?

financial level? Often a more limited income : sports/PA isn't a priority

educational level? The level of education can have an influence on the importance of PA/sports on the general well-being.

d) "I see no differences based on gender, age, social, financial and education level. It is easier to activate a user who was physically active before the illness or when she/he was younger. It is a kind of "physical memory" that is activated immediately and that makes he/she willing to participate to any kind of physical activi ties/exercises programme. To date no related causes are known".

e) Gender? Same as outside of psychiatry

f) age? Same as outside of psychiatry

g) social level?

h) financial level? A lot of the patients have less financial possibilities

i) educational level?

14. To the question "Is there anything else you would like to point out about psychomotor ability of patients with mental health issues" we received the following answers:

a) -

b) -There should be more space given to physical activities. Also possible to gener

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ate motivation through other elements/detours (for ex: a sports magazine in the center, extra attention for big sports events for ex: Tour de France which starts in Brussels this year,…)

-from the management point of view: create options for collaborative sports ac tivities where patients and staff do physical activities together. Physical activities would also work well for the staff.

c) Thanks to this interview the necessity of PA/sports has become clear again.

d) The aim can't be too big (competition) —> participation should be up front. Other wise there is more chance for stopping.

Look at the invidual and his/her possibilities and interests.

Which is your target group

e) Keep an eye on the freedom of choice and the individual approach to activate people for sports activities

Forcing people to participate has the opposite effect.

15. To the question "Is there any other issue that you believe is important for an external partner to be aware of in case he/ she comes to work in this psychiatric structure" we received the answers:

a) information on the target group: to come too close/too personal, respect the specificity of the population/group
Respect their freedom, don't force them to participate
Humor is important.

b) -beware of boundaries

-extra attention for introduction of the activities —> build up more slowly

-looking for a balance between 'soft' physical activity and more 'stronger' sports activities. Create a balanced offer to reach as many as possible people in the therapeutic center.

c) -structure

-top sport isn't the goal: built in a part of 'relaxation' so it becomes fun.

-accesible! (For ex: the type of PA)

-to things 'together'

-motivation and psychoeducation are necessary!

d) See 14)

e) Don't be afraid of people you meet and approach patients as 'normal' human be ings, look further then their 'disease'.

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Interview report of the mental health service user

Gender: male

Age: 27

Weight: 90 kg **Height:** 1m67

Marital status: single

Occupation: X Sedentary (student) ☐ Standing / walking while at work

☐ Light manual labor ☐ Heavy manual labor

How long you remain in the therapeutic center / mental health hospital?
3 year

OR

How long you are under any psychiatric treatment?

Do you participate in physical activities, exercise or sport programs?
Yes

A. If he/she **participates** in any program, we can continue in order to get more information:

1. Do you want to explain your answer more?
2. How often do you exercise?
3. What kind of exercise do you choose?
4. How long does your exercise session usually last?
5. How intense is the exercise you usually do?

➔ -fitness/power lifting: 4x/week, 45 minutes per session

-walking: 10.000 steps/day

-before: Brazilian Jiu Jitsu: 2x/week. Stopped now because of problems with his leg

6. How do you feel DURING the exercise?

   During fitness you go to a 'different world', you are separated from your 'disease'.

7. How do you feel AFTER the exercise?

   -you feel 'light'

   -you have a nice feeling at your muscles

   -he translates the structure and motivation from sports to daily life and his studies.

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-you feel that your body is getting stronger

-nutrition: nutrition pattern shifts towards a more healthy nutrition pattern.

8. What's the effect of exercise in your mood and psychological condition? Can you explain it in more detail?

   You feel more happy when you exercise: certain hormones (dopamine etc) re lease. This feeling lasts also a couple of hours after the exercises.

9. Do you prefer to exercise alone or together with other people?

   Alone is nice but he wouldn't mind going in with somebody else or a group but only when they motivate each other (don't criticize).

10. Which are the main and the most important obstacles or difficulties that you face for your participation in an exercise or physical activity program?

    -medication: less energy, tired, to get up is difficult.

    -physical problems: painfull leg, tennis elbow.

    -sometimes the symptomes of the psychosis (hearing voices, anxiety,..) prevent him of going to the fitness.

11. What motivate you or facilitate your participation in an exercise or physical activity program? (environment, facilities, programs etc.)

    -To have a program motivates to actually go to the fitness and follow this pro gram.

    -seeing examples by others (tv, internet, magazines,..) : he also want a body like that.

    -to be in a different environment, amongst other people (no patients)

    -sometimes the external motivation by the staff of the therapeutic center.

12. What's your opinion regarding the role of exercise and physical activity in your life? (quality of life, social skills etc.)

    -helps a lot to control my stress level

    -very important: i get motivated to study, more social and am more positive.

B. If he/she **does not participates** in any program, we can continue in order to get more information:

1. Do you want to analyze your answer more?
2. Do you know the benefits (physical and mental benefits) you can have participat ing in a physical activity program?
3. Why you avoid participating in a physical activity? (…we can encourage them to talk more; e.g. Are there emotional reasons or health issues?)

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4. Which are the main and the most important obstacles or difficulties that you face for your participation in an exercise or physical activity program?
5. What do you believe that would motivate you or facilitate your participation in an exercise or physical activity program?

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Workstream 2 – Research and Course development
Field report: Czech Republic

Contents

Author: Mária Mlatičeková

FOKUS ČR

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Methodological and ethical approach of the 6 interviews

We have conducted 5 interviews with the professionals working in the field of mental health (health expert /service provider) and with 1 user of the mental health services. We have chosen people that have experience with using physical activities in the recovery process of the people with mental health problems.

For conducting the interviews we have followed the guidelines of the workstream co-ordinator. The interviews were semi structured and different frame for the mental health professionals and different for the mental health service user.

By contanting and interviewing the respondents we fully kept the ethical standard. The respondents were informed about the reason and goals of the research and about the way how their gathered answers are furtherly proceed. All of them were informed about their remaining anonymity and were offered for signing the consent note regardign the itnerview recordings. They had also been informed that they were entitled to withdraw if they wished (for any personal reason) without any consequences and still enjoying the respect of our organization.

The interviewed MH professionals were in positions:

1) Psychiatrist
2) Director of Mental Health organization
3) Nurse
4) Physiotherapist
5) Social worker

The sixth interviewed person was a person with the experience of the severe mental health illness.

Interview report – professionals in the field of mental health care

1. To the question "Which are the usual, main mental diseases you face or treat in the therapeutic center you are working " we received the following answers:

- PSYCHIATRIST: "In our center we most often encounter people who are treated for schizophrenia, bipolar disorder, obsessive compulsive disorder and severe depression."
- DIRECTOR OF MENTAL HEALTH ORGANIZATION: "SMI-psychoses, schizophrenia, personality disorders, anxiety-depressive disorders, dual diagnosis and OCD."
- NURSE: "Psychotic disorders, mood disorders, OCD, personality disorders."
- PHYSIOTHERAPIST: "Schizophrenia, bipolar disorder."
- SOCIAL WORKER: "Schizophrenia, bipolar disorder, ocd, depression, personality disorders, dual diagnosis."

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2. To the question "Do you believe that the patients' participation in physical activities and exercise programs can improve their quality of life and how?" The answers were as follows:

- PSYCHIATRIST: "Definitely yes. There is now evidence that regular exercise has a positive effect on some mental disorders. Especially talking about depression and dementia. This is a direct healing effect. Other effects are indirect. Alleviation of side effects of medication. They often increase appetite and reduce the activity of the patient and thus lead to obesity and metabolic syndrome."
- DIRECTOR OF MENTAL HEALTH ORGANIZATION: "I think yes. All focus on the body can affect the psyche. Sport promotes resilience, gives people a sense of control. People are reinforcing the sense of self-confidence - they push the boundaries."
- NURSE: "Definitely, it helps to keep the daily routine, increases competence, distributes attention away from the disease, helps keep body weight, and reduces the risk of metabolic syndrome."
- PHYSIOTHERAPIST: "Definitely yes. Linking the physical and mental side is the best."
- SOCIAL WORKER: "It improves quality of life. People have physical activity and do sport, they don't have to think about the disease. The team helps them because they have friends."

3. To the question "What's your opinion regarding the importance of exercise and physical activity for patients suffering of mental health issues?" The answers were as follows:

- PSYCHIATRIST: "I think the meaning is big. Exercise contributes to a more active lifestyle and increased self-esteem, which is very important for the successful recovery of people with chronic severe mental disorders."
- DIRECTOR OF MENTAL HEALTH ORGANIZATION: "The meaning is great and it is very beneficial. People should be involved in organizing sports activities."
- NURSE: "The importance is to develop clients' motor skills, increase human activity. physical activity improves mood. The body is more tired, sleep is better."
- PHYSIOTHERAPIST: "The meaning is great. Very important is contact with people and activation in the collective."
- SOCIAL WORKER: "People with mental illness take the medicaments and they gain weight, so sport can help with weight loss. Physical activity brings them joy and sports with someone so they are not alone."

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4. To the question "What's the role of sports and physical activity in patients' social skills, and their social reintegration? In which way these are affected by their exercise participation?" The answers were as follows:

- PSYCHIATRIST: "Especially in collective sports, this role is decisive. Within this microworld, with the rules and the ability to more vigorously ventilate your emotions in success or failure, sport is a great place to train social skills and interactions."
- DIRECTOR OF MENTAL HEALTH ORGANIZATION: "Clients meet other clients. Interesting is the diversity and team activities (arrangements, joint action and team spirit)."
- NURSE: "The role is significant. A person joins a group. Communication- less shyness and increased self-confidence."
- PHYSIOTHERAPIST: "The role of sport - Communication with other people is important in collective sports. One does not have to invent themes, but sport forces him to communicate anyway. Even nonverbally."
- SOCIAL WORKER: "Social skills and integration are definitely increasing. Even people who do not have great social skills are forced to communicate when they want to be part of the collective."

5. To the question "What's patients' attitude in your therapeutic center regarding their engagement in physical activities and exercise programmes? Do you think they are willing to participate in an exercise program? What can motivate the patients' for a systematic participation in an exercise program?" We took the answers:

- PSYCHIATRIST: "It's different. In general, I think people with a serious mental disorder need to be more motivated to get involved. It is not only typical for sport, but these people often suffer from amotivation syndrome and can also be more anxious, harder to plan, and so on."
- DIRECTOR OF MENTAL HEALTH ORGANIZATION: "The interest is great, but it is important not to push them and not to force them. Mainly positive motivation is important."
- NURSE: "Clients' attitudes vary. Some are very active and are trying to try new things, others are not. Motivation is a financial side, clients often don't have enough money. What matters is the environment, the team and the coach or therapist who leads the activity."
- PHYSIOTHERAPIST: "The main issue is motivation. Of course, it is very difficult to motivate clients to do sports. Therefore, the relationship between client and therapist is very important."
- SOCIAL WORKER: "They can be motivated by physical condition, the joy of do sports."

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6. To the question "Do you ensure that patients' daily program at your therapeutic center includes physical activities? Please indicate." We received the following answers:

- PSYCHIATRIST: "It certainly is possible, though it may not always be easy. Especially when it comes to securing suitable facilities and equipment, this is not much thought about in the provision of psychiatric services and we often have to look for financial resources elsewhere than the normal budget."
- DIRECTOR OF MENTAL HEALTH ORGANIZATION: "The interest is great, but it is important not to push them and not to force them. Mainly positive motivation is important."
- NURSE: "Yes, it is possible."
- PHYSIOTHERAPIST: "It is possible in Center for Mental Health. We have spaces for that. In the summer we have more possibilities."
- SOCIAL WORKER: "We try to refer people to the community to practice with healthy people. We do not have sports programs for our clients in our center."

7. To the question "Is there a properly designed environment / or suitable equipment for applying physical activities in your center" we received the following answers:

- PSYCHIATRIST: "In our center we can do sports only outdoors in our fenced area. We try to do other activities in the common community. This can also partially support the destigmatization of mental disorders in society."
- DIRECTOR OF MENTAL HEALTH ORGANIZATION: "I don't think activities should take place right in the center. (rather, we try to engage clients in the community and among healthy people, the neighborhood) Multi-purpose would be appropriate for our clients. Playgrounds, fitness machines, collective and individual exercises."
- NURSE: "The environment is not adapted. The equipment is very limited. The ideal environment is gym, hall with mirror and air conditioning, exercise bike, rowing benches, mats, small balls, dumbbells, TRX belts, showers, sauna."
- PHYSIOTHERAPIST: "The equipment is here, but it is not sufficient. We also have the opportunity to address the management that can provide us with sports aids. We currently have bicycles, Nordic walking, badminton. Ideal environment from the physiotherapist's point of view - room with mirrors, gymball, overball, deck chair, facilitation aids, balls."
- SOCIAL WORKER: "The exercise room is here, but the equipment is not. The idea of an ideal environment - gym, fitness machines, exercise aids."

8. To the question "Which are these physical activities? Indicate" we received the answers:

- PSYCHIATRIST: "Football, Cycling, Hiking, Gym, Swimming, Badminton, Petangue,

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Yoga, etc."

- DIRECTOR OF MENTAL HEALTH ORGANIZATION: "Pin pong, exercise bike, ball sports and gym."
- NURSE: "Running, Nordic walking, bike, swimming, yoga, football, gym, TRX belts."
- PHYSIOTHERAPIST: "Back Pain Exercise"
- SOCIAL WORKER: "Running, yoga, Pilates, football, Zumba."

9. To the question "Which are the most common psychomotor characteristics of patients characterized by severe psychological and psychiatric illnesses" we received the answers:

- PSYCHIATRIST: "Most often psychomotor retardation, worsening coordination of movements, extrapyramidal manifestations."
- DIRECTOR OF MENTAL HEALTH ORGANIZATION: "Muscle stiffness, side effects of drugs like tremor and noncoordination. Anxiety people have mainly muscle tone."
- NURSE: "Muscle stiffness, fine motor skills are worse, anxiety, fear, attenuation after medication, fatigue, tremor, restlessness."
- PHYSIOTHERAPIST: "Anxiety disorders - mainly stiffness, Bipolar disorder - it is good to calm down clients rather than activate them."
- SOCIAL WORKER: "Muscle stiffness after taking medication, overweight."

10. To the question "Indicate the patients' characteristics that causes difficulties in their participation in physical activities" and "which are the main causes of these obstacles" we took the answers:

- PSYCHIATRIST: "Amotivation syndrome, drug fatigue, social anxiety, obesity"
- DIRECTOR OF MENTAL HEALTH ORGANIZATION: "These include shame, low self-esteem, laziness, maybe anxiety, also stigma and often times are a big deal of finance."
- NURSE: "Loss of will, depression, anxiety, manic mood, exhaustion and insomnia, depression after medication, finance."
- PHYSIOTHERAPIST: "The main thing is motivation. Often times it is laziness, fear or side effects of drugs."
- SOCIAL WORKER: "Anxiety, OCD, aggressiveness, paranoid thoughts, manic mood."

11. To the question "Which are the main causes of these obstacles? Psychological, physiological, social, environmental? Some others? Is there any biological/scientific explanation for this?" we received the answers:

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- PSYCHIATRIST: "Psychiatric, related to the disease and then pharmacological, side effects of psychopharmaceuticals, which are mostly to calm people. Finance - Most of our patients do not have the means to ensure basic needs. "
- DIRECTOR OF MENTAL HEALTH ORGANIZATION: "It is mainly a social problem. It is difficult to step out of the patient's or client's role and integrate. Plus, the financial side of things is very complicated."
- NURSE: "I think all of them."
- PHYSIOTHERAPIST: "Social-leisure activities are a lot about money."
- SOCIAL WORKER: "It's very different. It also depends a lot on the personality of the person and on the course of the diseas."

12. To the question "Which are the characteristics that should be taken into consideration and the elements that could facilitate patients' participation in an exercise or physical activity programs?" we took the answers:

- PSYCHIATRIST: "Finance, community support. More sensible medication by psychiatrists, they should think more about making their patients able to cope with physical activity."
- DIRECTOR OF MENTAL HEALTH ORGANIZATION: "What is important is motivation, volunteering, and support for the organization. It is important to participate in joint plans and a common organization."
- NURSE: "Finance - affordable price, availability, time flexibility, relationship with program manager."
- PHYSIOTHERAPIST: "Finance - acceptable price, regularity - same time and same therapist."
- SOCIAL WORKER: "Accessibility, a low-threshold facility, an exercise program associated with a nutritional program, clients should be rewarded."

13. To the question "Are there differences in the motor ability of these patients based on their gender /age/social level/ financial level/ educational level ... Is there any scientific interpretation/explanation of these differences?

- PSYCHIATRIST: "I do not know about it"
- DIRECTOR OF MENTAL HEALTH ORGANIZATION: "To me, women are more inclined to sport because they want to look good. Maybe the men are more lazy. There is also a question of finance again. Not everyone has sports equipment."
- NURSE: "I think, financial level is very different. Many people are not doing sports because of the bad financial situation."
- PHYSIOTHERAPIST: "In my opinion, the approach is the same, but the plan is indi-

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vidual."

- SOCIAL WORKER: "Young people like collective sports like football, basketball. Women prefer dancing, zumba, aerobics, pilates.
- Clients with a better financial side can afford more."

14. To the question "Is there anything else you would like to point out about psychomotor ability of patients with mental health issues" we received the following answers:

- PSYCHIATRIST: "I think everything was said"
- DIRECTOR OF MENTAL HEALTH ORGANIZATION: "I think, no"
- NURSE: "Regular physical activity improves psychomotor activation. "
- PHYSIOTHERAPIST: "The beginning is difficult, but it is good to start with something simple. For example: walks"
- SOCIAL WORKER: "Because of bad psychomotor activation, slower sports as yoga and pilates are better."

15. To the question "Is there any other issue that you believe is important for an external partner to be aware of in case he/ she comes to work in this psychiatric structure" we received the answers:

- PSYCHIATRIST: "To be patient, not to lose hope, to treat patients as normal people and not as second-class members of society. To present hope, to allow sporting participation, where possible, in international meetings, etc."
- DIRECTOR OF MENTAL HEALTH ORGANIZATION: "The teacher's motivation and partnership approach is important."
- NURSE: "Regular physical activity improves psychomotor activation."
- PHYSIOTHERAPIST: "Patience is important. It may not be a great success. Do not push clients to activity, but try to motivate them."
- SOCIAL WORKER: "To accept people as they are, to approach them humanly and with respect."

Interview report – mental health service user

We interviewed a man with severe mental ilness, 28 years old, 88 kg and 1.80 height, single, with mainly sedentary occupation.

To the question "How long you are under any psychiatric treatment?"

10 years and I live 1 year in sheltered housing

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Do you participate in physical activities, exercise or sport programs?

Yes, I do

How often do you exercise?

Roller skates and Football. Roller skates twice a week and football once a week. It depends on the circumstances (weather, illness, school)

What kind of exercise do you choose?

Roller skate and football

How long does your exercise session usually last?

Roller skates twice a week for two hour and football once a week for one hour and 30 minutes.

How intense is the exercise you usually do?

Very intensely, sometimes I take a break for 5- 10 minute

How do you feel DURING the exercise?

During the exercise I feel very good. I have been skating for about 10 years and it is one of my favorite activities. It is my hobby. I like football and play in any weather and it helps me to the psyche because I have no bad thoughts in my head.

How do you feel AFTER the exercise?

I feel better psychically and physically.

What's the effect of exercise in your mood and psychological condition? Can you explain it in more detail?

I am glad that I did a particular activity and I feel happy and satisfied.

Do you prefer to exercise alone or together with other people?

I prefer doing sport alone but I also participate in team sports

Which are the main and the most important obstacles or difficulties that you face for your participation in an exercise or physical activity program?

Sometimes I have a weak will, sometimes laziness, sometimes a paranoia that is affected by my illness (fear of strangers)

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What motivate you or facilitate your participation in an exercise or physical activity program? (environment, facilities, programs etc.)

Because I enjoy it and I am interested. Also a team of people.

What's your opinion regarding the role of exercise and physical activity in your life? (quality of life, social skills etc.)

Sport has influenced my life completely. Especially filled my free time, I met new people. For the last two years I have been intensely sporting and my life has improved every time. I would like to start running.

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Workstream 2 - Research and Course development
Findings from the fieldwork in Greece

Contents

Author: Angeliki Manioti

EDRA

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Methodological and ethical approach of the 5 interviews

We contacted 5 face to face semi structured interviews. Four of them concerned mental health experts/ service providers and more specifically: a social worker / administrative staff, two nurses, one of which is an athlete himself and a psychologist. We also contacted an interview on a mental health service user experiencing schizophrenia.

We followed the ethical values which demand that the interviews are and remain anonymous and we offered to the people who agreed to give us an interview, a consent note regarding the interview recordings. They have been also noticed that they were entitled to withdrawn their interview if they wished (for any personal reason) without any consequences and still enjoying the respect of our organization.

The proposed by the IO's leader questions have been followed but as the interviews were semi structured sometimes we had to go back and forwards in order to follow the flow of the conversation and to prevent interrupting the interviewed person.

Interview report health expert/ service providers

1. To the question "Which are the usual, main mental diseases you face or treat in the therapeutic center you are working " we received the following answers:

   Schizophrenia, depression, bipolar disorder, heavy mental deficiency, patients in the autism spectrum, psychoses, anxiety disorders, personality disorders

2. To the question "Do you believe that the patients' participation in physical activities and exercise programs can improve their quality of life and how? "The answers were as follows:

   - "Social rehabilitation and deinstitutionalization are very important. Participation in sports is closely linked to the element of socialization. This aspect is largely enhanced by group exercising. It also helps in well-being, mood-boosting, in reducing tension especially in hyperactive individuals (in terms of reducing energy) but also in reducing mental tension".
   - "I believe that it could. This kind of activities please them because they escape routine as well as producing hormones such as serotonin - hormone of happiness. Also help persons dealing with problems of physical health such as cardiac problems or hypertension".
   - "I believe that exercising is important. it has to do to with self-image which is very important for everybody and for those people as well. Also, self-esteem, the fact that an individual will engage in an activity and will have a good time".
   - "Of course it can. It is observed that people suffering from mental health problems usually do not have good physical health, thus physical activity can help, and also exercise will contribute to learning certain new skills which will certainly help their

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self-esteem and socialization. It contributes to the reductions of symptoms of mental health problems such as social withdrawal, low self-esteem, emotional well-being and opportunities for social interaction".

3. To the question "What's your opinion regarding the importance of exercise and physical activity for patients suffering of mental health issues"?

   All of the interviewed had very positive opinions.

4. To the question "What's the role of sports and physical activity in patients' social skills, and their social reintegration? In which way these are affected by their exercise participation?" The answers were as follows:
   - "Exercising with the aim of socialization is also a demand by the patients. They say that the want to socialize, to exercise, to be in contact with other people. Thus, we subscribe them to sport centers such as gyms, sport events that we implement as an organization but also events that are being implemented by other organizations. In these cases, we observe the interaction they develop with other spaces but also with other recipients of mental health services from other organizations. When referring to gyms we can see their interaction with the community in general (trainers - co-athletes)".
   - "I believe that the space of exercise plays a role in this. In outdoor spaces they met people, they mimicked people that were exercising (they said that they also wanted to try this). In a closed space specially designed only for the group these possibilities would not exist. That is to exercise in spaces that everybody is exercising and not be isolated".

5. To the question "What's patients' attitude in your therapeutic center regarding their engagement in physical activities and exercise programmes? Do you think they are willing to participate in an exercise program?" We took the answers:
   - "Patients with a high level of functionality can detect the benefits of exercise in the aspect of socialization. It is also relevant to the type of psychopathology. In case of a patient with depression, which means a person with low energy and bad mood, he/she will not ask to get involved in a physical activity".
   - "In most cases they are very positive and as soon they include it in their schedule they even expected it".
   - "It is difficult for some of them…Physical exercise has usually never been a part of their lives; it frightens them at the beginning, but when they begin exercising they tend to seek to continue engaging in physical activity".

6. To the question "Do you ensure that patients' daily program at your therapeutic cen-

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ter includes physical activities? Please indicate." We received the following answers:

Dancing, occupational therapy, gardening, walking, exercising in open community gyms, house chores

7. To the question "Is there a properly designed environment / or suitable equipment for applying physical activities in your center" we received the following answers:
   - "No"
   - "Just a yard and a bicycle"
   - "Not really"
   - "No, we use open community gyms"

8. To the question "Which are these physical activities? Indicate" we received the answers:

   Dancing, occupational therapy, gardening, walking, exercising in open community gyms, house chores and planning for drama therapy

9. To the question "Which are the most common psychomotor characteristics of patients characterized by severe psychological and psychiatric illnesses" we received the answers:
   - "In depression – bad mood, In psychoses – the side effects of each psychiatric medication"
   - "The majority of them have stress (this is the most frequent) as well as certain compulsions - psychoses such as "I cannot go out today""
   - "Variety of symptoms – in general we are referring to hyperactivity and hypo activity, a difficulty in coordination linked many times with body image (that is paraesthesia in relation to the body. That means a feeling in the body without being very real".

10. To the question "Indicate the patients; characteristics that causes difficulties in their participation in physical activities" and "which are the main causes of these obstacles" we took the answers:
    - "Mood, psychiatric medications, environmental factors, relationship with their families and messages that they receive. We must remember that a psychotic patient interprets in a different way – in his/her own way - the stimulus. There is not only one interpretation in how a psychotic patient or a person with a diagnosed disorder could react. In essence we are dealing with a vicious circle· treatment – cure – psychopathology of the patient as symptomatology – exogenous factors. A vicious circle – a domino situation".
    - "Age, pathological matters as a stroke), compulsions such as agoraphobia, environ-

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mental factors (weather phenomena)".

- "Pharmaceutical treatment such as fatigue or sleepiness, smoking which is usually uncontrollable (If someone smokes a lot), generally mood when someone does not feel well or is in the middle of an acute phase of the disease. Meaning that there might be activation, but may be non-controllable".

11. To the question "Which are the characteristics that should be taken under consideration and the elements that could facilitate patients' participation in an exercise or physical activity programme" we received the answers:

- "Contact and intimacy, constituting the means of approaching. A therapist who would join only for physical exercise could help".
- The existence of indoor spaces which help in protecting from weather phenomena and in periods that patients could be disoriented and it might be dangerous for them to exercising outdoors. Also, encouragement and explaining of exercise long term benefits
- The relationship with them is very important. (If there is a good structured relationship, then the other person is more ready to participate and to follow). Also, general health status is important (like frequent check-ups, controlling smoking and diet). When symptomatology is in decline then patients are more ready to engage in activities.

12. To the question "Are there differences in the motor ability of these patients based on their gender /age/social level/ financial level/ educational level"

The only relativity they refereed was with age factor. The scientific explanation of the above is Pharmaceutical and biological link.

13. To the question "Is there anything else you would like to point out about psychomotor ability of patients with mental health issues" we received the following answers:

"Certainly a preventative check-up of their health and physical condition is needed in addition in order to engage them in activities they are capable of the and become disappointed. That means an individualized program so that the accomplishment would help them to keep trying and participating in activities. Achievement makes all of us feel important".

14. To the question "Is there any other issue that you believe is important for an external partner to be aware of in case he/ she comes to work in this psychiatric structure" we received the answers:

- "Training from the existing therapeutic group in order to have a smooth contact and adjustment with the people and the space"

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- "Previous experience from psychiatric units, and not by afraid by the users. Personality is important as well as the notion of participation in such a unit"
- "Work without prejudice and good attitude inside the working space. From personal experience these contacts go extremely well. The residents are usually very eager to meet new people".

Interview report of the mental health service user

We interviewed a woman experiencing schizophrenia, 51 years old, around 68 kg and 1.57 height, divorced and unemployed at the time we took the interview. She is leaving at a boarding house for seven years and to our question about her exercising she answered that she is going to a local gym from two – four times every week. The duration of her exercise sessions is around 50 minutes in medium intense with often intervals. It was very interesting that she told us that although sometimes she feels tired (mostly her legs) exercising helps her to feel more relaxed and the feeling of well-being lasts during the whole day. Her exact wards describing how she feels are "It is like sometimes when we take a bath and we feel that the stress is relieved as well as any bad or negative thoughts. That's the feeling".

To the question about her preference of exercising alone or in a group she said she doesn't mind. She also told us that she doesn't face any specific obstacles on concern exercising just when she feels tired form house chores.

What motivates her are the moments after exercising. "This time I feel wonderful" she said. "I know that although I feel a little bit lazy in the beginning this feeling will pass and I will feel much better".

She strongly believed that exercise have a positive impact in her life and her social life as she gets to talk with the other people exercising at the gym.

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Workstream 2 - Research and Course development
Findings from the fieldwork in Italy

Contents

Authors: **Francesca Cesaroni, Mara Morici, Filippo Triccoli**

COOSS MARCHE ONLUS

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Methodological and ethical approach of the 7 interviews

COOSS performed 7 face to face semi structured interviews. Five of them involved mental health experts/ service providers and more specifically: a social worker, a nurse, a fitness instructor leading physical activities- based programme in MH services, two psychologists, one of which is the Manager of a MH Therapeutic Center. We also contacted two users assisted by COOSS mental health services. We followed the ethical values which demand that the interviews are and remain anonymous and got a signed consent for the interview recordings from the people who agreed to it. They had also been informed that they were entitled to withdraw if they wished (for any personal reason) without any consequences and still enjoying the respect of our organization.

The proposed questions have been followed but as the interviews were semi structured sometimes we had to go back and forwards in order to follow the flow of the conversation and to prevent interrupting the interviewed person.

The following keys have been used to identify the respondents:

a) Nurse,

b) Fitness Instructor,

c) Social Worker,

d) Psychologist/Manager of the Therapeutic centre,

e) Psychologist

Interview report health expert/ service providers

1. To the question "Which are the usual, main mental diseases you face or treat in the therapeutic center you are working " we received the following answers:

   a) Mostly schizophrenia and psychosis

   b) Mostly schizophrenia, psychosis, depression and mental retarded

   c) Schizophrenia, depression, psychosis, disorders characterized by cognitive delays. Also users suffering from delusional disorder and delirium. Most are patients with multiple diseases.

   d) The 90% of the diagnoses are "residual schizophrenia", but there is a high number of patients with double diagnosis of "mild mental retardation with graft psychosis".

   e) Mostly schizophrenia, psychosis and depression

2. To the question "Do you believe that the patients' participation in physical activities and exercise programs can improve their quality of life and how?" The answers were as follows:

   a) "Yes, patients are more happy when they do sport and that is very good also for their social relationship".

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b) "Yes, volleyball for example increase the chances of being able to relate and not be isolated"

c) "Absolutely yes. Physical activities and sport help our users supporting : an individual change in their daily routine (interact with others), better fitness , improved physical health and mood. Team practice and sports provide socializing options and develop positive relationship. The key is to have fun, the playful aspect of the physical activities should be emphasized: they have fun, play and materialize on something other than their illness".

d) "Absolutely yes. We have been running football and volleyball activities for 15 years. We have noticed improvements on the patients' socialization and self-esteem levels, but also a decreased need for pharmacological treatments. Hospitalizations for these persons have practically disappeared, thus defeating the "sliding door " harmful and perverse cycle, i.e. hospitalization, treatment, improvement in the health status and sudden relapses requiring further hospitalization".

e) "Yes, group sports such as football, volleyball and soft gymnastics increase the chances of being able to relate and not be isolated".

3. To the question "What's your opinion regarding the importance of exercise and physical activity for patients suffering of mental health issues?" The answers were as follows:

a) "They are very important because they are used as relief valves"

b) "They are very important because, in some cases, they can avoid hospitalization. In addition, they are used as relief valves and have in general a good impact on the patient moral."

c) "Physical activity is essential, sport is good for everyone and especially for our patients. It would be even more incisive if we had more time to spend to practice sport and exercise programme."

d) "The mentioned improvements are only observations, not supported by a scientific structured research, but the periodic reports on the patients' conditions have always been validated by psychiatrists, who have always acknowledged the therapeutic value of these sports activities. Therefore, my opinion on the therapeutic power of sports and physical exercise is extremely positive".

e) "They are very important because, in some cases, they can avoid hospitalization. In addition, they are used as relief valves".

4. To the question "What's the role of sports and physical activity in patients' social skills, and their social reintegration? In which way these are affected by their exercise participation?" The answers were as follows:

a) "Of course, they play in teams and develop social skills and collaboration skills"

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b) "Patient are paying with other people, that reduces the stigma and help them to feel normal and accepted."

c) "Physical activities creates inclusive opportunities within the communities. Some sports activities are organized with the involvement of citizens, such as the soccer and volleyball team in which both MH users and normal people play together. MH users are encouraged to feel themselves part of the local community . Normal people have the opportunity to learn about the disease and remove the distance between "us" and "they"

d) "The football team is a well settled reality, which attracts many patients with heterogeneous ages and conditions. Competition and agonism are able to attract patients, particularly young ones, who come from all over the territorial area. Given the success of the initiative, a convention has been done with a sports club, with the aim to de-psychiatrize and de-medicalize the interventions. The team is composed of patients, operators and volunteers (and probably it is not correct to call them volunteers, as they are players to all effects), all registered to the sports club and participating to tournaments organized to activate their wellbeing. They participate to local and national tournaments, and in July they will take part to the international one to be held in Prague (organized by Fokus)."

e) "The SOLLIEVO project, as an example, brings together MH patients and normal people creating information and exchanges between these two groups"

5. To the question "What's patients' attitude in your therapeutic center regarding their engagement in physical activities and exercise programmes? Do you think they are willing to participate in an exercise program?" We took the answers:

a) "Some of them feels uncomfortable in doing sport because they are embarrassed of doing mistakes".

b) "Users always welcome these initiatives".

c) "Some are willing to participate, others less. Those who are more reluctant to participate, then have fun. The difficulty is getting out of their comfort zone. To motivate them more, we organize a walk after the training session, we go to the bar and this motivates them a lot."

d) "When physical activities other than football are interested, motivating and promotional initiatives are needed. First of all, it is necessary the collaboration of Municipalities or sports clubs, so to guarantee the dignity of the proposed activity. It has happened, in the past, to have run sports activities in disused gyms or not adequate places, which decreased the interest and participation.

e) "Users always welcome these initiatives."

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(... continuing the previous question) ..... What can motivate the patients' for a systematic participation in an exercise program? We took the answers:

a) "The constant presence of the educators playing with them"

b) "In my experience users always welcome these initiatives, they enjoy more when those experiences are fitted for them. Also the presence of the educator is mandatory because they have a very strong bond with them"

c) "As said above, I motivate them by combining sport training with leisure time. After physical activities and before returning to the center, we stop at the bar and spend some time talking together."

d) "Other initiatives can work to leverage motivation: in our case, the participation to the volley team was declining, the educators running it frustrated because of this lack of motivation, but it flourished again thanks to a project proposed by a school, where 4 students and 2 teachers (one of whom is a sports professional) joined the volley group in their training and tournaments, bringing new vitality, integration and dignity to the team."

6. To the question "Do you ensure that patients' daily program at your therapeutic center includes physical activities? Please indicate." We received the following answers:

a) "Yes, at least two times a week as football volleyball and soft gymnastics"

b) "Yes, every Monday from 2.30 pm to 4 pm"

c) "The weekly program of our center includes physical activity: once a week gymnastics, additionally users participate in training sessions for the soccer and volleyball team.

d) "Presently, the sports activities are performed once a week, plus the match. They are trying to include a second session a week, as the users would like to do it, but the availability of the right places is still a problem. Besides, the service schedule should be changed to have this second session, but the health team do not have objections to this organizational change, provided that dignitous spaces are made available and suitable conditions are met. "

e) Yes, at least three times a week as football volleyball and soft gymnastics

7. To the question "Is there a properly designed environment / or suitable equipment for applying physical activities in your center" we received the following answers:

a) "Unfortunately no, we have to go to the municipal gyms or private facilities"

b) "No, we have to go to the municipal gyms or private facilities. Moreover this is good because reduce the stigma of patients with mental problems".

c) "We do not have an environment and specific equipments, our users practice physical activity in a gym in our city. But we have a lot of countryside around the center

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and they can take a walk outdoors. The fact that they must leave the center to practice physical activity is not entirely negative, it allows them to spend time in another environment and this makes them feel good. An ideal environment should have some equipment, for instance an indoor cycling bike to allow them to move daily. It would be nice to have also a space/room where to practice physical activities."

d) "At the centre there is a field which can be used for tennis, volley and five-a-side football matches, and they mainly use it in summer to organize events, but in general, for a programmed sport activity, they prefer to go out of their premises and use resources and spaces more suitable for sport and used by the collectivity."

e) "Unfortunately no, we have to go to the municipal gyms or private facilities"

8. To the question "Which are these physical activities? Indicate" we received the answers:

a) "Warm up is very important and is also very difficult to do because patients are bothered from it and they want to play immediately"

b) "For volleyball we are doing 15 min. of warm up involving arm work out and back work out. After that we play volleyball in teams of 7 people each."

c) "We include gymnastics, soccer and volleyball. It would be nice to include swimming because our users have positive effects from this activity, the water relaxes them."

d) Apart from football and volley, they have a "gentle exercise" program, which is particularly appreciated by older patients, or users who constantly take neuroleptics, often with overweight problems. In summer, they have a "mountain-therapy", which consists in long but gentle walking in the surrounding mountainous areas. The high value of these trips consists in the participatory approach: participants and operators meet one week before it takes place, to define length, destination and equipment together. The real walking occurs one week after, but they feel already part of it because of their active participation to its organization. What is missing, but they are seriously taking into consideration, is the inclusion of the "bowls" among the proposed sports activities: bowls require oculo-manual coordination, as well as balanced mobility, which would be particularly useful for patients suffering from psychosis. In fact, when in critical peaks, these patients experience depersonalization deliria, which means that they lose the perception of part of their bodies, and bowls can help in this sense. In their premises they have a table football and a billiard, and it has been noticed that both of them can help people under the effect of strong neuroleptics, as uncontrolled responses, tremors and Parkinson-like reactions, to control these effects.

e) Team sports that are always those with the most positive results on patients

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9. To the question "Which are the most common psychomotor characteristics of patients characterized by severe psychological and psychiatric illnesses" we received the answers:

a) "They usually get stuck and are hard to involve (Depression/Bipolar disorder/ Psychoses). Use of medicines may slow the patient's movement"

b) "They usually get stuck and are hard to involve (Depression/Bipolar disorder/ Psychoses). Use of medicines may slow the patient's movement"

c) "The psychomotor characteristics of users affected by Anxiety Disorders, Depression, Bipolar disorder, Psychoses and Dementia are similar: Uncoordinated movement, lack and loss of coordination (especially for anxiety disorders); Poor executive functioning (difficulty understanding information and using it to repeat the exercises); Slow processing speed; Movement disorders; Slowing of movement (such as users affected by depression moving and speaking slowly)"

d) Each disorder has different psychomotor characteristics, but trying to generalize, we can say that: Anxiety disorders is associated to psychomotor restlessness and difficulty to concentrate: for these subjects sports and physical activities might be extremely beneficial. Depression is associated to a sort of psychic asthenia, lack of motivation to move and endless weariness. Psychoses are not associated to specific problems, if not in the difficulty to concentrate and the drug's effects, which usually make body and movements stiff. Dementia doesn't create big problems if not at an advanced level of seriousness. The main difficulty can consist in conceiving the body scheme and in being able to perform the exercise. This can happen in the psychoses as well.

e) "They usually get stuck and are hard to involve (Depression/Bipolar disorder/ Psychoses). Use of medicines may slow the patient's movement"

10. To the question "Indicate the patients' characteristics that causes difficulties in their participation in physical activities" and "which are the main causes of these obstacles" we took the answers:

a) "Already answered at Q. 9"

b) "Already answered at Q. 9"

c) "The causes are related to the psychomotor obstacles they face in sport training (as described in Q9)"

d) "A difficulty consists in working in groups, relating to others: in these cases, sharing the changing room or having the shower together was perceived as an obstacle, which can hinder participation, and it is an important aspect to work upon with the ASAL training".

e) "Already answered at Q. 9"

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11. To the question "Which are the main causes of these obstacles? Psychological, physiological, social, environmental? Some others? Is there any biological/scientific explanation for this?" we received the answers:

a) "To date no related causes are known"

b) "To date no related causes are known"

c) They are mainly physiological causes. Besides, they need a medical certificate and an electrocardiogram to practice physical activities. Social and environmental cause can hinder the participation of those users who are in the hospital (acute mental illness) or who have just come out of a period of hospitalization. I am not aware of scientific/biological explanations of this issue.

d) "Among the psychological causes, shame is an important one. Tremors caused by the drugs can originate embarrassing situations and hinder the patients' participation to many activities. Environmental causes have a role as well: exposure to others in public places can create problems and patients might prefer to feel safe and protected in their own small circle. Physical, psychological and social causes are all correlated and strongly linked, and they all deserve attention. The therapeutic aspect of sports activities is correcting these wrong perceptions and help the patients to overcome them."

e) "To date no related causes are known".

12. To the question "Which are the characteristics that should be taken into consideration and the elements that could facilitate patients' participation in an exercise or physical activity programs?" we took the answers:

a) "The socialization, being together with others and above all not staying in the segregated communities but mingling with normal people. Also the relation with the educators is very important."

b) "First thing is the bond with the educator, his role is fundamental for the patient that trust him and believe in his decisions."

c) "As already mentioned, I strongly believed that the key for their activation is to have fun: if they have fun, they get involved, react and stay involved throughout the entire sport program. It is more effective make them play freely like throwing a ball in a basket than an hour of walking or stretching . In this perspective, the team sport are much more effective than individual sport training."

d) "Football shows an heterogeneous group of participants, but the greatest part of them are at the beginning of their treatment or have healed. Gentle gym is usually attended by patients with chronic pathologies, but they willingly attend the exercises. Mountain walking is heterogeneous in the groups composition as well: participants have different age or pathologies, and it is an interesting hint for the ASAL

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training course."

e) The socialization, being together with others and above all not staying in the segregated communities but mingling with normal people

13. To the question "Are there differences in the motor ability of these patients based on their gender /age/social level/ financial level/ educational level ... Is there any scientific interpretation/explanation of these differences?

a) "To date no related causes are known"

b) "It's easy to involve them if they're young/ To date no related causes are known"

c) "I see no differences based on gender, age, social, financial and education level. It is easier to activate a user who was physically active before the illness or when she/ he was younger. It is a kind of "physical memory" that is activated immediately and that makes he/she willing to participate to any kind of physical activities/exercises programme. To date no related causes are known".

d) "Participation to the sports activities varies depending on the age and, most of all, on the time one person is following a therapeutic process."

e) "It's easy to involve them if they're young".

14. To the question "Is there anything else you would like to point out about psychomotor ability of patients with mental health issues" we received the following answers:

a) -

b) "Sport is very important and one day per week is not enough in my opinion. At least three times a week."

c) "It is necessary to propose new initiatives, the novelty activates our users and makes them more willing to participate (e.g. recently a new instructor arrived and this motivated them a lot); it is necessary to emphasize the playful aspect of the physical activities, as I have said many time in this interview."

d) "No"

e) "There are two major issues: 1. The difficulty in finding adequate facilities and with the necessary safety standards. 2. Lack of trained sports instructors to work with MH patients".

15. To the question "Is there any other issue that you believe is important for an external partner to be aware of in case he/ she comes to work in this psychiatric structure" we received the answers:

a) "To be trained also from the social/health point of view in order to be able to fulfill to the maximum their educational function."

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b) "Yes of course, for example give the opportunity to the citizenship to be involved in sport activities with patients could reduce the stigma."

c) "She/he should have a specific knowledge / awareness of the mental disorders of the users: training people with mental disorders is not like training normal people. Despite the physical conditions of our users, she/he should always expect improvements and encourage patients to do more and better. He must always confront having a daily relationship with the operator. She/he should create a collaboration relationship with the Centre's educational, medical and social staff and organizes periodic meeting in order to include the sport/physical activities in the multi-faceted therapeutic strategy for treatment of MH disorders."

d) "To have clear in mind the difference between psycho-physic disability and mental health problem. To harmonize one's thought on the mental health is, and not on the mental disease. Who approaches these persons should be aware of the fact that the MH patient has a momentary problem in a given period of his/her life, but it is reversible. If you think that the damage is permanent, the approach is the wrong one. A disabled person (i.e. with Down syndrome) and a schizophrenic patient require different approaches, the second one has to be kept a little at distance, where with a disabled person the relationship can be much more affectionate and physical. Many of the MH patients have a very high IQ quotient (see Nash, the famous mathematician who suffered from schizophrenia but had an excellent mind), so that if schizophrenia doesn't turn into hebephrenia (i.e. a permanent decay), the relation has to be adequate to a different level. Finally, schizophrenia, bi-polarism, paranoia are only diagnostic labels, but the patient is first of all a person with its own dignity, duties and rights, and who comes here has to have a respectful attitude. "

e) "To be trained also from the social/health point of view in order to be able to fulfill to the maximum their educational function."

Interview report of the mental health service users

We interviewed a man experiencing addiction, 45 years old, 75 kg and 1.82 height, widower, employed at the time we took the interview, with an occupation that allows him to walk and stand.

He has been under psychiatric treatment for twelve years and to our question about exercising he answered that he is practicing volleyball once a week.

The duration of his exercise sessions is around two hours in normal intensity.

He told us that he feels very well during exercises and very tired after the training session. His exact words describing the effect of exercise in his mood are ***"I feel warm and very well"***.

To the question about his preference of exercising alone or in a group he said he prefer exercise together with other people. He also told us that he doesn't face any specific

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difficulties in exercising.

What motivates him is **"*to be in a group*"** and he believes that exercise has a positive impact, increasing the quality of his life and keeping him in good physical shape.

We interviewed also a second MH user, a man experiencing addiction, 44 years old, 70 kg and 1.70 height, employed at the time we took the interview, with an occupation that allows him to walk and stand.

He has been under psychiatric treatment for sixteen years and to our question about exercising he answered that he trains volleyball for two hours every week, with very intensive exercise.

He feels "Very tonic and in shape" during the sport training and "very tired" after. It was very interesting that he told us that exercising helps him to increase his mood, his exact words describing the effect of exercise in his psychological condition are **"*It keeps me away from bad thoughts*"**.

To the question about her preference of exercising alone or in a group he said he prefers group activities. To the question on the main and the most important obstacles or difficulties that he faces for participating in physical activity program, we received the answer: " I find very complicate to have interaction with people that do not participate to sport activities".

What motivates him is **"*a good environment*"** and he strongly believes that exercise has a positive impact in his life, being **"*a training for everyday life*"**.

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Workstream 2 - Research and Course development
Findings from the fieldwork in Spain

Contents

Author: María Carracedo

FUNDACIÓN INTRAS

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Methodological and ethical approach of the 8 interviews

We contacted 8 face to face semi structured interviews to following profiles of people:

- 3 users (2 women and 1 man):
- 1 women with anxiety disorders
- 1 women with dementia
- 1 man with dementia
- 4 mental health experts/ service providers and more specifically:
- a social worker
- a psychologist
- the coordinator of the social inclusion services
- a personal assistant

We followed the ethical values which demand that the interviews are and remain anonymous and we offered to the people who agreed to give us an interview, a consent note regarding the interview recordings. They have been also noticed that they were entitled to withdrawn their interview if they wished (for any personal reason) without any consequences and still enjoying the respect of our organization.

Main findings from interviews to health expert/ service providers

1. To the question "Which are the usual, main mental diseases you face or treat in the therapeutic center you are working " we received the following answers:

   People with any kind of mental disorders: Psychosis, depression, bipolar disorders, borderline personality disorders, phobias, addictions, and dual diagnosis related to the use of addictive substances and mental disorder, homeless people with mental health issues...

2. To the question "Do you believe that the patients' participation in physical activities and exercise programs can improve their quality of life and how? "The answers were as follows:

   - (PSICOLOGIST) "Yes, sports and physical activities are motivating activities for users. They are no formal activities in which they feel more relaxed than in other activities (like training for employment, for instance), they behave more naturally during these activities. Moreover, the physical activities improve their interpersonal relationships and their transversal competences that contribute to their employability, such as punctuality, personal commitment, responsibility, social interaction, attention, and even analytical skills, because they have to understand the rules. Besides, their mood gets better.
   - (PERSONAL ASSISTANT) "Physical activity enhances their life quality in several aspects, not only in terms of physical health but also it positively affects to their social

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environment (their social networks are expanded) and all aspects of personal hygiene improve, in addition, it establishes a routine and fills their spare time..."

- (COORDINATOR) "Undoubtedly, even though motivation and access facilities are an important handicap, in my opinion, it is one of the most efficient tools to ease the rehabilitation processes of these people."
- (SOCIAL WORKER) "Physical activity is an incentive for improving the life quality of people with mental health issues, since the sport is an easier way to build social relationships with other people. Furthermore, it also improves physical qualities and is a key element for successful integration into a standardized environment"

3. To the question "What's your opinion regarding the importance of exercise and physical activity for patients suffering of mental health issues" ?
   - (SOCIAL WORKER) "Physical activity is a great way for people with mental health issues to overcome the monotony, to build a standardized environment where people feel like they are part of a team."
   - (PSICOLOGIST) "It is very important, especially because it promotes their activation: people with mental illness used to be very sedentary and lazy, the sport and physical activity activates them physically and also mentally."
   - (PERSONAL ASSISTANT) "Exercising is important and necessary, just as for people without any condition, since it can be tailored to any level and it improves many aspects of their life. Whenever they do exercises in an organized and structured way with a professional."
   - (COORDINATOR) "It is a key factor for rehabilitation"

4. To the question "What's the role of sports and physical activity in patients' social skills, and their social reintegration? In which way these are affected by their exercise participation?" The answers were as follows:
   - (COORDINATOR) "Physical activity and sport, each one with its own particular characteristics, are generally firmly embedded in communities. In this sense, it is a way of sharing not only the exercise, but also it is an opportunity to discuss and participate in sports and physical activities. There is an increasing number of popular physical activities that create comfortable environments for interaction. In terms of physical effects, these activities improve their physical capacity, especially regarding the cardiovascular system. Moreover, they counterbalance the side effects of medications, preserve cognitive functions... there is an increasing number of studies that detail all these benefits.
   - (PSICOLOGIST) "Physical activity carries on the contact with other people (without mental health problems), in community and natural open-air environments. These

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activities make them to get closer to the rest of society, to go out of the institution (INTRAS), and thus promote their inclusion "

- (SOCIAL WORKER): "Social skills have an important role when it comes to sport, as they facilitate relationships with other people in a standardized environment. Also through the travels of the club, it helps to improve social skills, by feeling like a part of a group it helps to its empowerment and to interact with others."
- (PERSONAL ASSISTANT) "Speaking about the cases I have worked with, physical activity and routines in some types of sports generate a fairly strong social environment. Social relationships among peers are widened as inside so outside the activity. Intrinsically, sport entails communication, rule acceptance, and empathy... skills that are useful for their everyday life"

5. To the question "What's patients' attitude in your therapeutic center regarding their engagement in physical activities and exercise programmes? Do you think they are willing to participate in an exercise program?"
   - (PSICOLOGIST) "They have a very good attitude. They are very motivated and willing to do it, because it is an activity that breaks their routine, it supposes a relief, a discharge and a change of activity. They enjoy with that."
   - (SOCIAL WORKER): "In sport, the participants discover a way of escaping from monotony and a way of interacting with other people in a standardized environment. In most cases, after participating in a sports activity, they are interested in this activity."
   - (PERSONAL ASSISTANT) "Everybody is unique, although generally speaking, sport is accepted by them and furthermore, in many cases, they want to do even more activities. These are the moments of breaking away and having fun, which result necessary for them to feel good".
   - (COORDINATOR) "They are well-disposed, but as mentioned before, they need more support in order to start these physical activities or programmes. Any setback is ultimate for them and we intend to make people avoid them. At the same time, motivation can often disrupt because of the side effects of medications, and it takes a long time to bring that motivation back."

6. To the question "Do you ensure that patients' daily program at your therapeutic center includes physical activities? Please indicate." We received the following answers:
   - (PSICOLOGIST) "Yes. The Sport plan is complementary to training and employment programs. It is performed during the afternoons-evenings and weekends. There is also one sport activity on Wednesday mornings (from 12.00-13.00). They take part in an inclusive league in which professionals, family, friends and users play in the same team."
   - (SOCIAL WORKER): Yes, we have a one-week sports programme at the centre

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which includes the following activities: Indoor football, 7-a-side football, padel (different from the US paddle), swimming, athletics, cycling, and basketball.

- (PERSONAL ASSISTANT)" Personally, most of my work is focused on making suggestions for physical activity with users, both in groups and individually, for example: Football, paddle, basketball, swimming, athletics, games..."
- (COORDINATOR) "INTRAS Foundation has a sports club that provides many sports activities on a weekly basis. Moreover, within the centre, during the day, there are two programmes of physical activity that start the accompaniment that I have spoken about earlier. Physical activity with different intensity and modalities, individual, group, team, leisure and recreational, competitive, federated, popular... there are interventions tailored for each one".

7. To the question "Is there a properly designed environment / or suitable equipment for applying physical activities in your center" we received the following answers:
   - (PSICOLOGIST) "No, sport and physical activities are not carried on in the center, but in public and normalized venues, in community environments like the sport club of the neighborhood or in municipal sport centers."
   - (SOCIAL WORKER)"The C.D.Duero (Inclusive sports Club created within Intras) is located in a distinct environment of the center, with a professional team that manages the activities. Sports activities take place in spaces within the community and they are accessible to everyone"
   - (PERSONAL ASSISTANT)" Regarding the equipment, it is appropriated because we used the standardized sport centers; and we work with dedicated professionals in the physical activity and sports fields. So the team is also appropriate; however, due to the number of activities proposed by the Foundation and the Sports Club Duero (Club Deportivo Duero), it is becoming increasingly essential to have more professionals in this area in order to achieve a higher number of users"
   - (COORDINATOR) "The persons in charge of physical activities are professionals with a dual qualification in education and physical activity. This team is really impressive since they complement each other and have very high motivation and adaptation features. They are also trainer's educators, so they share their way of working with professionals who have never been in contact with the world of mental health"

8. To the question "Which are these physical activities? Indicate" we received the answers:

   Cooperative games

   Futsal

   Football – 7

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Paddle

Ping-pong

Tennis

Athletics

Skiing

Swimming

Basketball

Badminton

Mountain Cycling

Nature outing

Running

(COORDINATOR) "The activity is tailored to each person, and we should aim to fulfill the person's needs and wishes in order to develop a relationship that gives us confidence and motivation. From roller skating, hiking, jogging, tennis, padel (different from the US paddle tennis), climbing, cooperation games, orienteering... Physical activity and sport have a powerful feature: there are many modalities that are appropriate for everyone."

9. To the question "Which are the most common psychomotor characteristics of patients characterized by severe psychological and psychiatric illnesses" we received the answers:

- (PSYCOLOGIST) "It is not possible to match the psychomotor characteristics with a mental illness, there is no correlation. Psychomotor characteristics depend on the personal physical condition of each one and have nothing to do with the mental problems. It is impossible to generalize by type of illness. Some of them have coordination problems and also the medication may cause laziness and somnolence, but the get over once they start the activity".
- (COORDINATOR):

Anxiety disorders - a low motivation and a poor attention span,

Depression- a low motivation, if it is a long-term course they show a low mobility, sedentary lifestyle.

10. To the question "Indicate the patients; characteristics that causes difficulties in their participation in physical activities" and "which are the main causes of these obstacles" we took the answers:

- (PSYCOLOGIST) "Commonly, all of them have difficulties in understanding the rules of the games or activities. It is difficult for them to understand abstract thinking; they need to learn by practice.

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They also feel themselves as useless, and they are apathetic because they think they are not able of doing anything, they are very insecure and have low tolerance to frustration.

The main causes are psychological and social:

Psychological: by the reasons about explained: insecurity, low self-esteem, etc.

Social: They fear the unknown and to be rejected by the group because of their previous experiences. They also find an obstacle when they need to move out of their neighborhood for going to the sport center when it is sited far from the place they live (they think they do not know how to get there).

But these obstacles are forgotten once they start the activities, once there are not unknown factors."

- (SOCIAL WORKER) "The main difficulties faced when practicing a sporting activity would be the demotivation of certain athletes throughout time. The causes may be the result of several factors, mainly due to temporary circumstances and crisis that appear throughout time".
- (PERSONAL ASSISTANT) "The major difficulty is the absence of motivation, which leads to a lack of assistance. It is essential to stay ahead of the users in advance and until the routine is established with a huge effort, we have to make individual accompaniments, foresee the absence and to get in touch with them in advance...

  The main cause is the lack of motivation, apathy, a poor physical condition which leads them to get tired earlier, and long-term activity abandonment. When the social environment is not familiar to them, they just do not attend to those activities"
- (COORDINATOR) "Motivation, sedentary lifestyle, side effects of medications, resource accessibility. There is also a lack of ability to overcome minor problems that make them quit. Not enough support or accompaniment during the activities"

11. To the question "Which are the characteristics that should be taken under consideration and the elements that could facilitate patients' participation in an exercise or physical activity programme" we received the answers:

- (SOCIAL WORKER) "For the patients it is essential to find sports where persons will do well, because of the participants or whether they are individual or collective sports.

  Motivational efforts towards participants are also significant."
- (PSYCOLOGIST) "The feeling of being part of a group is an important motivation for continuing with the sport activity. For the majority of them this is a new feeling, they have never felt part of a group because the social rejection and because they realized that they are different… at school, at home. "
- (PERSONAL ASSISTANT) "It should be taken into account an individual work, aiming

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for what really attracts their attention and create a relaxed and friendly environment where they would certainly stay. And the activities have to be amusing; patients have to share space with other mates and have short-term motivations such as visiting different places, meeting new people."

- (COORDINATOR) "I think that patients might be motivated by means of easily accessible and immediate spaces and environments, where there is no need to give many explanations of space use and where they are not indicated by it. At the beginning, patients should also be accompanied by reliable people who can help them if they ever get lazy or lose motivation.

  Moreover, it is important to listen to them and to find out exactly in which sports activity they can achieve a positive, pleasant result."

12. To the question "Are there differences in the motor ability of these patients based on their gender /age/social level/ financial level/ educational level"

- Gender-

  (PSYCOLOGIST) "In general there are more men than women in the sport activities, one of the multiple reasons may lay on the fact that the sports and activities offered are not of their interest (mainly football). But why they do not find interest on it is a sociological question."

  (PERSONAL ASSISTANT) "Yes"

  (SOCIAL WORKER) "Generally speaking, in the case of women, gender often makes it harder for them to practice sport. This fact may be related to the patriarchal traditional education pattern"

  (COORDINATOR) "yes"

- Age-

  (PSYCOLOGIST) In general young people are more motivated, but there are participants of all ages"

  (PERSONAL ASSISTANT) "No"

  (COORDINATOR) "Yes"

- Social level-

  (PSYCOLOGIST) "No"

  (PERSONAL ASSISTANT) "No"

  (COORDINATOR) "Yes"

- Financial level –

  (PSYCOLOGIST) "These activities have a cost, but it is quite economical. Nevertheless, when someone wants to take part and cannot pay it the institution search the way to cover this costs"

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(PERSONAL ASSISTANT) "Yes"

(SOCIAL WORKER) "The nice point about sports activity is that is easy to access for people with low economic, social or cultural status"

(PERSONAL ASSISTANT) "Regarding the financial level, it is true, since many of the possibilities of sports practice are paid and not all of them are available despite the fact that the Foundation aims to support them economically."

(COORDINATOR) "Yes"

- Educational level –

(PSYCOLOGIST) No

(PERSONAL ASSISTANT) "No"

(COORDINATOR) "Yes"

(COORDINATOR) "Each person is unique and has its own conditions and history, therefore it is essential to take these elements into account and analyze each situation. In our intervention approach, the relationship development depends on people's needs and desires, and thus each one is different."

13. To the question "Is there anything else you would like to point out about psychomotor ability of patients with mental health issues" we received the following answers:

- (PSYCOLOGIST) "It is very beneficial".
- (PERSONAL ASSISTANT) "I think that it does not have so much to do with the type of specific mental disorder of a user, but rather it is necessary to treat each case individually and to identify the support needs that the user requires; this is the key to long-term participation in any type of activity."
- (COORDINATOR) "They are stigmatized. This stigma is sometimes so intense that they face anticipated discrimination, in other words, before being rejected these people avoid the places where it can occur. It happens often in the case of physical activity, so accompanying these persons is essential."

14. To the question "Is there any other issue that you believe is important for an external partner to be aware of in case he/ she comes to work in this psychiatric structure" we received the answers:

- (COORDINATOR) "In this context, I think that the most important task is to raise the professional's awareness and to give him or her specific and brief guidelines on the main aspects to bear in mind regarding this group."

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Main Findings Interviews with Service User

Profile of users interviewed:

- 2 Women: 1 with dementia and 1 with anxiety disorders
- 1 Men with dementia

All of them taking part in sport activities with these general characteristics:

- 1-2 hours, 2 or 3 times per week.
- Moderate intensity: Gymnastics, running, walking, football…
- In groups.

Obstacles

The obstacles for practicing sports or physical activities are lack of time and energy in the case of the person with anxiety but for those with dementia there is no obstacle at all.

Motivating factors

The atmosphere of the group is a key motivating factor, because they receive support and encourage from peers, together with the feeling of being more agile on body and mind

Feelings and mood

In general they feel well during the practice of sports and after all of them feel satisfied because they are proud of themselves for advancing in the sport activity and for taking care of themselves.

Importance of sports

The people interviewed give in general high importance to the sport activity they practice, because it gives them relief, improves their quality of life, enhances their social relationships, and makes them feel happier, cheerful and able of doing things by themselves.

Conclusions

- Physical activity promotes the wellbeing of PWMHI by a combination of health, social and educative factors:
- Main obstacles are derived from: medication; cognitive problems; and fear to unknown.
- Motivating factors: support from professionals and encouragement from their peers.

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- There are gender differences in participation in sport activity: there more men than women. Possible reasons: sociological (patriarchy); the type of activities offered.

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ADVANCED SKILLS FOR ACTIVE LIVING

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