Chapter 17
Physical Activity and Severe Mental Illness

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Chapter Overview

Severe mental illness refers to a group of disorders that significantly impair a person's psychosocial functioning. Psychosocial functioning is a person's ability to engage in activities of daily life (work, socializing, and play) in a way that is meaningful. Although many other mental disorders can be severe, the term *severe mental illness* includes diagnoses of schizophrenia, bipolar disorder, and major depressive disorder. People living with severe mental illness can experience marginalization due to societal stigma in addition to poor physical health and reduced life expectancy. The impact of these disorders on a person's physical health will be explored throughout this chapter, along with the beneficial role that physical activity can play in their prevention and management.

The concept of *lifestyle psychiatry* will be explored, outlining the importance of addressing modifiable risk factors for people living with severe mental illness. In addition to physical activity, this chapter will also examine the vital role of sleep on a person's physical and mental health, the role of exercise professionals within mental health systems, and the process of integrating physical activity interventions as part of routine mental health treatment in real-world settings.

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What is Severe Mental Illness?

Many mental health conditions can be considered as *severe* for the people who experience them, as well as their support networks. However, the phrase *severe mental illness* refers to a specific group of mental health disorders including schizophrenia, bipolar disorder, and major depressive disorder, that significantly impact a person's functioning in daily life and in some cases, may be associated with a distorted sense of reality. Severe mental illness can also be defined by the length of duration and the subsequent disability it has on a person's life.

Here we outline some severe mental illness diagnoses as well as common symptoms, to provide a brief context for how physical health can be subsequently impacted and the role that physical activity can provide as part of a treatment plan. Examples of severe mental illnesses are schizophrenia, bipolar disorder, and major depressive disorder.

Schizophrenia

This complex disorder can impact a person's mental health, physical health, and cognitive function. Lifetime prevalence for developing schizophrenia affects approximately 1% of the population (Kessler et al., 2005). It can produce intense periods of psychosis and negatively impact long-term functioning. Symptoms of schizophrenia are generally divided into three broad categories: *positive symptoms*, such as hallucinations or delusions, which are "added" to someone's experience; *negative symptoms*, describing loss of experience, which can include social withdrawal, decreased enjoyment in activities, and reduced motivation; and finally, *cognitive impairment*, which is associated with changes in memory, attention, cognition, and executive function.

Bipolar Disorder

Bipolar disorder significantly impacts a person's mood or *affect* and is characterized by periods of elevated moods or *mania* where people can present with increased energy, impulsivity, and reduced sleep. This can be followed with interchanging significant depressive episodes. The lifetime prevalence for developing this disorder is approximately 0.6% (Merikangas et al., 2010). Bipolar disorder can also include experiences of psychosis.

Major Depressive Disorder

Major depressive disorder is a prevailing and debilitating mental health condition and is one of the leading contributors to the global burden of disease. Major depressive disorder has approximately a 16% lifetime prevalence (Kessler et al., 2005) and accounts for 8.2% of the global years lived with disability in 2010 (Ferrari et al., 2013). Symptoms that are commonly experienced with major depressive disorder include persistent low mood and reduced interest in activities or hobbies, in addition to poor sleep, changes in appetite, and in some cases suicidal ideation. People living with major depressive disorder may also experience declined social functioning, such as difficulties with maintaining relationships and employment.

Psychosis

Psychosis describes a group of symptoms which are experienced by people with a psychotic disorder (e.g., schizophrenia). Symptoms of psychosis impact an individual's thoughts and perceptions and are defined by a distortion in a person's perception of reality. This can include senses including smell, thoughts, visions, tactile sensations, and beliefs. Most people that develop a psychotic disorder will experience symptoms prior to 25 years of age (Morgan et al., 2012). It is important to recognize that psychosis is *a symptom of a mental disorder*, rather than an illness itself. While we do not fully

understand how psychosis develops, various factors can contribute to a psychotic episode including family history, mental or physical illness, extreme stress, trauma, and substance use.

Psychosis, which is not to be confused with psychoticism, typically develops in youth or adolescence and is typically accompanied by marked decline in functioning, changes in behaviour including difficulties concentrating, sleep disturbances, withdrawing from social supports, disorganized speech, depression, and anxiety. The first episode of psychosis or *FEP* is when someone experiences psychosis for the first time. Symptoms of psychosis can include *hallucinations, delusions,* and *disordered thinking and cognition.*

Hallucinations

Hallucinations occur when someone experiences sensations inconsistent with reality. Hallucinations are most commonly auditory (e.g., hearing voices), but may also be visual (e.g., seeing shapes or figures), in tactile form (e.g., experiencing sensations or feelings), olfactory (e.g., smelling odors that are not present), or gustatory (impacting taste).

Delusions

Delusions refer to beliefs that are not based on reality and may impact individual actions or functioning. Delusions can vary depending on the individual and the illness. Delusions may, for example, be paranoid, grandiose, somatic, persecutory, or romantic in nature.

Disordered Thinking and Cognition

Speech and thought patterns may become confused and mixed-up. People may experience problems with memory and other cognitive process (e.g., concentration). This can result in people behaving or communicating differently.

Early Psychosis and Ultra-High Risk

Those with *at-risk mental states* or *ultra-high risk* refers to a group of individuals who are at high risk of developing psychosis; this is often referred to as the *prodromal period* (Galletly et al., 2016). To meet criteria for ultra-high risk, individuals may exhibit a number of factors including genetics or family history, the presence of some brief limited intermittent psychotic symptoms (BLIPS), or attenuated (sub-threshold) symptoms of psychosis (Yung et al., 2005). Youth in these categories will be diagnosed by an experienced mental health clinician using a validated assessment tool (Nelson, 2014). Early intervention is a critical period, for both physical and mental health outcomes, to improve the future well-being for youth experiencing psychosis for the first time (Shiers et al., 2014).

Health Risks for People with Severe Mental Illness

People living with severe mental illnesses face high rates of premature mortality compared to members of the general population (Baxter et al., 2016). The major contributor to this early mortality is poor physical health, often linked to non-communicable diseases. In particular, people with severe mental illness have a 1.4–2.0x increased risk of developing cardiometabolic diseases compared to people without mental illness (Firth et al., 2019). This accounts for approximately 1/3rd of the premature mortality (John et al., 2018). This is associated with higher rates of diabetes, obesity, metabolic syndrome, and respiratory complications. Additionally, people living with severe mental illness face high levels of disability, with schizophrenia being the 12th largest cause of years lived with a disability worldwide (Vos et al., 2017).

Impact of Modifiable Risk-Factors

People living with severe mental illness are at high risk of cardiometabolic disease impacted, in part, by multifactorial lifestyle risk factors including cigarette smoking, physical inactivity, consuming poor diets, and experiencing poor sleep (Firth et al., 2020).

Cigarette Smoking

People with severe mental illness are more likely to smoke cigarettes, with approximately 1 in 2 people a smoker compared to approximately 1 in 10 people in the general population (Gilbody et al., 2015). People with severe mental illness are more dependent on nicotine and have increased difficulty engaging in smoking cessation programs compared to those in the general population (Ashton et al., 2013; Malpass et al., 2009).

Physical Inactivity

People with severe mental illness are less likely to be physically active than the general population and struggle to meet recommended physical activity guidelines of a minimum of 150 minutes of moderate-intensity physical activity per week (Vancampfort, Firth, et al., 2017). There are differences in physical activity engagement between differing severe mental illness diagnoses; people with bipolar disorder engage in more physical activity than people with schizophrenia or major depressive disorder. Symptomology and medication side-effects can affect engagement (this will be explored in greater detail later in this chapter). People with severe mental illness are more sedentary than the general population and on average are sedentary between 8–12 hours of the day (Vancampfort, Firth, et al., 2017). High levels of sedentariness may be further complicated by factors associated with the mental health disorders such as social isolation and obesity (Vancampfort, Firth, et al., 2017).

Poor Diet

Compared with the general population, people with severe mental illness tend to have diets that are low in nutritional quality and have a higher caloric intake. Medication side effects can increase a person's desire to eat; desire for energy-dense, low-nutrient foods is particularly increased (Teasdale et al., 2017).

Sleep and Mental Illness

As in the general population, sleep is a significant component of maintaining good physical and mental health and represents a growing facet of mental health research (Firth et al., 2020). When sleep is impaired, it can lead to weight gain, increasing a person's risk of the development of obesity and metabolic abnormalities. For people with severe mental illness, sleep disturbances are a highlighted risk factor that can lead to the development of psychiatric symptoms in addition to the exacerbation of known symptoms. For people with a mental disorder, up to 90% report abnormal sleep behaviour, which can include difficulty initiating sleep or insomnia (Abad et al., 2005). Symptoms of severe mental illness such as paranoia can impact sleep quality (Afonso et al., 2014), and medications can impact sleep duration and as such decrease sleep quality (Correll et al., 2011). Given the prevalence of poor sleep within this population group, providing interventions that promote good sleep practices is paramount. Importantly, regular physical activity is associated with improvements in self-reported sleep quality in people with mental illness (Lederman et al., 2018).

Social Determinants of Health

High rates of early death and cardiometabolic risk are prevalent in people with severe mental illness even once lifestyle risk factors are accounted for (Hamer et al., 2008). This suggests that physical health is influenced by external factors including the provision and availability of health care,

socioeconomic status, and geographical location. People with severe mental illness are less likely to have access to and engage in quality health care services compared to the general population. Social determinants of health, which includes employment and financial insecurity, homelessness, poor education, and poverty, increase a person's risk of developing mental and physical illnesses (Marmot, 2005).

Learning Exercise One

Describe some common symptoms of the main diagnoses of severe mental illness and include how these symptoms may affects a person's daily functioning.

Current Treatments for Severe Mental Illness

Clinical approaches to managing symptoms of severe mental illnesses vary according to symptom presentation, comorbidities and medical history, demographic factors, and severity of symptoms. People with severe mental illness may experience a combination of treatments including medications (typically antidepressants and antipsychotic medications), talking-based therapies (such as cognitive behavioural therapy), and occupational and social recovery therapies. Physical activity is becoming increasingly recognized as an adjunct treatment for severe mental illness, which will be explored throughout this chapter.

Impact of Anti-Psychotic Medications

The high rates of cardio-metabolic conditions in people with severe mental illness are in part due to the side-effects of antipsychotic medications that are prescribed to treat people with severe mental illness. These medications, whilst effective in reducing symptoms of severe mental illness and reducing risks of readmissions to hospital, have significant negative effects on physical health including the cardiometabolic, endocrine, and neuromotor systems.

Cardiometabolic

Weight gain is a commonly reported side effect from many antipsychotic medications, and increases a person's risk of developing metabolic syndrome, diabetes, and cardiovascular complications (Alvarez-Jimenez et al., 2008). Almost 80% of people who commence antipsychotic medication will experience clinically significant weight gain (more than 7% of their initial weight) within their first year of beginning the medication (Correll et al., 2009).

Endocrine

Abnormally high level of prolactin, or *hyperprolactinemia*, is a side effect of antipsychotic medications (Peuskens et al., 2014). This may cause unwanted side-effects such as sexual dysfunction and menstruation issues in people taking this medication (Knegtering et al., 2003).

Neuromotor

Side effects are more common of the older, first generation *typical* antipsychotics and may include muscle spasms, restlessness, and involuntary movements which can be socially stigmatizing for people it affects and can be associated with a reduced quality of life (Angermeyer et al., 1999; Briggs et al., 2008).

Learning Exercise Two

Outline how a person's physical health may be impacted if they are receiving treatment for schizophrenia.

Benefits of Physical Activity for Severe Mental Illnesses

A robust body of evidence exists documenting the bidirectional relationship between physical activity and mental health (Firth et al., 2019). In addition, physical activity is increasingly recommended as a routine component of treatment for people with severe mental illness, to protect and promote physical and mental health.

Physical activity is effective in improving cardio-metabolic health through various mechanisms including reduced blood pressure, improved glucose metabolism, and increased cardiorespiratory fitness (Henson et al., 2013). Cardiorespiratory fitness is a key risk factor contributing to the premature mortality in people with severe mental illness (Vancampfort, Rosenbaum, Probst, et al., 2015). Cardiorespiratory fitness is the ability of the heart, circulatory system, and lungs to supply oxygen to the skeletal muscles during physical activity. In the general population, improvements in cardiorespiratory fitness can reduce mortality by up to 13% and impact cardiometabolic risk reduction by 15% (Kodama et al., 2009). For people with severe mental illness, reduction in cardiometabolic risk following participation in an exercise program can occur in as little as 8 weeks of structured exercise (Firth et al., 2015; Vancampfort, Rosenbaum, et al., 2017; Vancampfort, Rosenbaum, Ward, et al., 2015). Additionally, it has been demonstrated that lifestyle interventions incorporating both physical activity and dietary components are effective in preventing the medication-induced weight gain associated with anti-psychotic medication (Alvarez-Jimenez et al., 2008; Curtis et al., 2016; Shiers et al., 2014). Severe mental illness-specific mental health benefits of physical activity are outlined below.

Schizophrenia

Physical activity, particularly performed at a moderate-to-vigorous intensity, can lead to improvements in both positive and negative symptoms for people with schizophrenia (Stubbs et al., 2018). Additionally, global cognition (which refers to a person's functioning and working memory) improves following physical activity engagement. These cognitive improvements can occur with as little as 90 minutes of physical activity weekly that is of moderate-to-vigorous intensity (Firth et al., 2017). Structured exercise that elicits increased fitness is correlated with increased brain volume, which may impact neurogenesis (the process by which new neurons are formed), through plasticity in the volume of the hippocampal brain region (Pajonk et al., 2010; Scheewe et al., 2013).

Major Depressive Disorder

Physical activity is effective in improving mood and well-being in people with depression following a single session of exercise, particularly those that are of moderate or higher intensity (Schuch, Deslandes, et al., 2016). Additionally, regular participation in physical activity in healthy people is beneficial for reducing future risk of developing depression (Firth et al., 2018). Studies indicate that physical activity is effective in treating mild-to-moderate depression with effects similar to traditional treatments including antidepressant medication and with fewer negative side-effects (and many adjunct positive effects; Schuch, Vancampfort et al., 2016). For people with major depressive disorder, physical activity and exercise is recommended as adjunct to standard care by the World Health Organisation (World Health Organization, 2018). While the mechanisms for how physical activity improves depressive

symptoms are not fully clear, research indicates that physical activity can improve abnormal biomarkers associated with major depressive disorder; this can include cortisol reduction and decreases in chronic inflammation (Kandola et al., 2019). For more on the relationship between exercise and depression, see Chapter 15 (Brush & Burani, 2021).

Bipolar Disorder

Early evidence related to the role of physical activity for people with bipolar disorder suggests that physical activity is protective for cardiovascular disease; however, more evidence is needed regarding the impact on mood symptomology (Vancampfort et al., 2018). Research suggests that physical activity may be beneficial for mood fluctuations for people with bipolar disorder due to potential links to improvements to the brain's functional connectivity (Douw et al., 2014). Cardiorespiratory fitness is associated with health-related quality of life in people with bipolar disorder for both physical and mental health domains (Vancampfort, Hagemann, et al., 2017).

Fitness vs. Fatness

People with severe mental illness are more likely to be overweight and obese, which can also impact participation in physical activity, due to not only reduced fitness, but also perceived pain and poor self-esteem (Mishu et al., 2019; Vancampfort et al., 2011). Achieving significant weight loss is difficult for the general population with only one in 210 males and one in 124 females achieving a healthy BMI (under 25 kg/m2) without surgery (Fildes et al., 2015). Exercise professionals and mental health clinicians should encourage people living with mental illness to engage in physical activity regardless of their body weight and perceived body image. It is important to note that without specialized dietary input, exercise is likely to be ineffective in achieving weight loss for people with severe mental illness (Firth et al., 2015). While this may seem disheartening for people, particularly when trying to engage in physical activity, research tells us that improving fitness can reduce cardiometabolic risk and improve mental health, sleep quality, functional capacity, and cognition, regardless of change in weight. This can be a useful educational and motivational strategy for clinicians to assist clients in increasing physical activity levels.

Learning Exercise Three

Discuss (a) the benefits of physical activity in people with schizophrenia and (b) the mechanisms of how physical activity affects depressive symptoms.

Barriers to Engagement in Physical Activity

Low engagement in physical activity is prevalent in the general population and this may be influenced by many factors, including socioeconomic status, low confidence and knowledge about exercise, and lack of enjoyment (Stutts, 2002). Further, people living with severe mental illness experience additional barriers to being physically active that can be categorized into physical health, mental health, and social factors (Firth et al., 2016).

Physical Health

The high rates of co-morbid physical health conditions can negatively impact engagement in physical activity (Firth et al., 2019a). Obesity, associated chronic pain and musculoskeletal problems, can make physical activity difficult and less enjoyable, thus impacting exercise participation (Firth et al., 2016). Low cardiorespiratory fitness, seen in people living with severe mental illness, can also impact a

person's ability to engage in long periods of physical activity, particularly if aerobic in nature. Other issues including low energy and lethargy as a result of antipsychotic medication can be impactful (Firth et al., 2016).

Mental Health

Common barriers from a mental health perspective include depressive symptoms, stress, low motivation, and acute psychotic symptoms (hallucinations, delusions and paranoia, avolition, anhedonia). Additional reported barriers include feeling unsafe when exercising or concerns about being injured, and low interest in exercise (Firth et al., 2016). Long-term engagement in physical activity is impacted by a person's autonomous motivation, that is, an internal desire to participation (Vancampfort et al., 2015e). Given the unique barriers that people with severe mental illness face regarding physical activity participation, developing individual strategies specific to members this population group that target improvements in intrinsic motivation (e.g., health coaching and motivational interviewing) is paramount when aiming to increase engagement (Farholm & Sørenson, 2016).

Social Factors

Strong social support networks assist in the uptake and regularity of physical activity, and individuals with severe mental illness are more likely to experience social isolation which can affect engagement (Daumit et al., 2005). Additionally, the financial costs, lack of resources, and time pressures associated with exercising are common reasons why people with severe mental illness may not engage in physical activity (Chapman et al., 2016; Firth et al., 2016; Stanton et al., 2015).

Learning Exercise Four

What are the key barriers for people with severe mental illness engaging in physical activity?

Photo by Munbaik Cycling Clothing from Pexels

Contraindications to Exercise

Unless a person with mental illness has been diagnosed with severe physical issues, physical activity and exercise is generally safe and effective to prescribe, particularly if of low-to-moderate intensity (Stubbs et al., 2018). The unique barriers to engaging in physical activity should be taken into consideration when promoting activities and an individualized approach (including referral to an exercise professional) should be encouraged.

Prior to beginning structured exercise programs, particularly if they are of high intensity, a person with mental illness should be screened for absolute and relative contraindications to engaging in physical activity, as per guidelines recommended by the American College of Sports Medicine (American College of Sports Medicine, 2017). The Physical Activity Readiness Questionnaire (PARQ) is a series of short questions that identifies any absolute contraindications to exercise (Thomas et al., 1992). Additionally, people experiencing higher levels of mental distress or poor mental health symptoms may need additional support to engage in appropriate and safe exercise. Like the general population, people with mental illness should be screened for typical contraindications to exercise (such as hypertension or a recent cardiac event). See Table 17.1 for a list of precautions that should be considered specific to this population (Firth et al., 2016).

Table 17.1

Precautions to Consider for People with Severe Mental Illness

Potential Issues	Precautions and Considerations
Fatigue	Prolonged tiredness and poor concentration are common for people and are influenced by factors including side effects of medication, sleep troubles, and symptomology. An individualized approach to an exercise plan tailored to times when a client may be more energetic is ideal.
Social anxieties	Public places and larger groups of people can act as a deterrent to engaging in physical activity. Setting small goals around exercise and establishing a routine is important initially, and gradually progressing may help with familiarity for clients
Side-effects of medications	In addition to extreme tiredness, other side effects of taking anti-psychotic medication can include visual problems, increased sweating and salivation, and issues with balance. Close monitoring of the client is important throughout the exercise session and adapting to the client's changing needs will assist with increasing their confidence.
Psychotic symptoms	While symptoms such as auditory and visual hallucinations may present complications to engaging in physical activity, they do not preclude a person from participating. Instead, choosing activities that are lower intensity in nature should be considered. Exercises and activities such as body-weight resistance training, walking, and light stretching may be helpful. If people are presenting as manic or with extreme elevated moods, limiting distractions including music or television is encouraged. Exercising in a quiet space without people around can also be helpful.

Learning Exercise Five

What are the key safety concerns for people with mental illness engaging in structured physical activity?

Motivation and Physical Activity

Physical inactivity is not just an issue for people with mental illness as many people in the Australian general population also do not meet the recommended guidelines for physical activity (150 minutes of moderate or 75 minutes of vigorous physical activity weekly; Australian Bureau of Statistics, 2015). In Australia, a little more than half of adults meet the guidelines for physical activity (Australian Institute of Health and Welfare, 2018). Less than half the population in the United States meet the recommended levels of physical activity (Carlson et al., 2015) and rates of inactivity are higher in Europe, where almost 60% of adults do not engage in appropriate levels of activity (Oja et al., 2010). Given the robust evidence demonstrating the benefits of physical activity in improving the physical and mental health of people living with severe mental illness, it is important to examine the ways in which people can be supported to engage in exercise throughout the life course. Examining people's internal perceptions and motivation to exercise is a vital component of physical activity prescription (Chapman et al., 2016; Firth et al., 2016; Vancampfort, De Hert et al., 2015; Vancampfort et al., 2016).

Negative symptoms that are associated with schizophrenia can be associated with lower levels of motivation towards physical activity (Vancampfort, Stubbs, et al., 2015). These low levels of motivation may be related to a person's own priorities towards exercise and their physical health, past experiences with engagement, or beliefs about structured physical activity. Competing interests and priorities including work, study, and family can also be factors that affect motivation, in addition to socioeconomic factors such as lack of access to resources (Ussher et al., 2007). Education about how to engage effectively and safely in structured exercise and fostering self-determined motivation through building self-confidence and a sense of competency can improve participation. People may have had previous negative experiences with exercise, which may affect future performance (Ladwig et al., 2018). The influences that may dissuade people with mental illness from engaging in physical activity should be discussed by their health care providers to formulate an exercise plan that is based on the person's interests and preferences.

Self-Determination Theory

Examining the research into what motivates people to exercise is important for understanding how to support those with severe mental illness with long-term healthy behaviours (for more discussion on physical activity and exercise behavior, see Chapter 2 [Rebar et al., 2021], Chapter 4 [Brand & Ekkekakis, 2021], and Chapter 5 [Delli Paoli, 2021]). Utilising the self-determination theory (Deci et al., 2008) can be an effective way of facilitating long term enjoyment in physical activity (see Chapter 3; Quested et al., 2021). This theory is regularly used by many health professionals, including exercise specialists, to ascertain factors that guide someone's motivation to engage in a particular behaviour (e.g., exercise). It is applicable in the well-being and recovery of people with severe mental illness and can be used in the identification of external and internal forms of motivation. This theory examines specific basic psychological needs including autonomy, relatedness, and competence, and when applied to exercise can help people understand the reasons why they may or may not exercise. The theory states that *intrinsic* motivation is more conducive with exercise participation. Self-determination has been identified as important in people with schizophrenia for engaging in long-term exercise participation (Vancampfort, Stubbs, et al., 2015). So how does this work in practice? Motivational

interviewing can be used with clients that have a mental illness to assist in promoting positive attitudes towards exercise and to help in discovering what motivates them to engage (Farholm & Sørensen, 2016).

Transtheoretical Model of Health Behaviour Change

The transtheoretical model (Table 17.2) suggests that making changes to health behaviours are typically achieved through five stages of change (Prochaska et al., 1997). These stages of change can assist in guiding conversation, education topics, and eventually exercise prescription (Prochaska et al., 1994).

Table 17.2

Stages of Change Based on the Transtheoretical Model

Stage	Stage Description
Pre-contemplation	During this period, people are not generally considering the practical steps to beginning exercise, so it is a good time to provide basic education. Identifying what is most important to them is of importance and gradually relating these goals back to the benefits of physical activity may be appropriate. As a clinician, you may then be able to get a level of understanding as to the client's thoughts towards physical activity.
Contemplation	As a clinician you can use this time to provide more detailed education and challenge beliefs that the person may have about what participating in physical activity might look like. Motivational interviewing should continue.
Preparation	During this stage, the client should engage in goal setting around future planned physical activity, planning next steps, and exploring barriers and strategies to overcome challenges.
Action	The client should begin regular physical activity and ideally in an activity that is enjoyable to them. Work with your client to identify ways in which they might adhere to their schedule. These may include the use of activity trackers or finding a friend or partner to exercise with. Reflecting on past experiences can be helpful to manage mood and psychological states. Providing positive reinforcement should be a focus of the clinician. Working towards maintaining current physical activity levels should be a goal of this period. This includes increasing goal setting to long-term periods in addition to reviewing goals to overcoming obstacles to participation.
Maintenance	At this stage, the client should be able to maintain their current physical activity levels independently and identify what are the internal motivating factors to their participation. New activities can be introduced and a plan to return if lapses occur can be developed.

Throughout these stages, it is important to openly discuss and listen to the client's needs and goals so that a recovery-focused approach to exercise prescription can occur (Slade, 2010). Understanding that symptoms of a person's mental illness may mean that the process may not be linear, and flexibility may be necessary. It can often take multiple attempts before someone succeeds in adopting lifestyle changes for the long term and as such, these stages can often be cyclical in nature. These components should be key in the education provided to clients to manage expectations and assist the client in adherence to the physical activity program.

A typical approach of health professionals when educating people in lifestyle behavior change is to initially educate and then persuade them to adopt new behavior through prescriptive directions. However, this approach is not typically effective as the simple act of providing information does not result in long-term behavior change. *Health coaching* is a method of utilizing the motivational theories previously discussed (such as the self-determination theory and the transtheoretical model) and practically applying them in a real-world context (Table 17.3).

Table 17.3

Consider the Ways in Which People with Mental Illness Might Benefit from a Motivational Health Coaching Approach to Physical Activity Education Compared to a Traditional Model

Traditional Interviewing Style	Health Coaching
Clinician is the expert in health topic	Client is the expert in their own life experience and is respected to make autonomous decisions
Clinician give advice and prescribes solutions to solve problems	Client identifies areas of health they would like to work on, and clinician works through options available providing information as requested
Clinician decides that client is at the stage to make health changes	Client leads change and clinician uses strategies to increase client confidence and self-determination
Clinician focuses on why things are not being achieved and solutions to this	Clinician provides positive encouragement at whatever stage client is in

Learning Exercise Six

Imagine a person with schizophrenia has been referred to you for lifestyle intervention. Utilising the concepts of the self-determination theory, outline the key concepts of your interview and physical activity prescription, given the person is in the preparation phase of the transtheoretical model of health behaviour change.

Exercise Professionals in Mental Health Services

There is overwhelming evidence supporting the benefits of physical activity for people living with severe mental illness, yet there are simultaneously significant barriers to participation. As such, embedding exercise professionals within mental health services to promote the integration of exercise interventions has been of growing interest to expand upon the treatment options available to people with severe mental illness.

Exercise professionals are experts in physical activity prescription, particularly for people living with chronic disease (including mental illness) and provide assessment, prescription, and delivery of exercise and physical activity interventions (Lederman et al., 2016; Stanton et al., 2018; Stubbs et al., 2018). Throughout Europe, physiotherapists have performed these roles and in the United States there are a growing number of clinician exercise physiologists working in mental health settings (Fibbins et al., 2019; Stubbs, Probst, et al., 2014; Stubbs & Rosenbaum, 2018).

Australia has an increasing number of exercise professionals working in private and public health systems, particularly in mental health services. Accredited Exercise Physiologists (AEPs) are university-qualified health professionals that lead physical activity interventions for people living with mental

illness. There are robust referral schemes that people can access for evidence-based exercise counselling and prescription through universal-health care. AEPs have growing representation in many mental health care settings including community health centers and inpatient wards. They work to provide specialized services to mental health clients delivering individualized interventions in addition to upskilling the mental health workforce to be more knowledgeable regarding the benefits of lifestyle interventions.

In response to this rapidly growing industry, exercise professionals specializing in mental health are represented internationally by peak bodies and organizations. A joint consensus statement by peak professional organizations throughout Australia, the U.S, the U.K, and New Zealand determined that integrating physical activity interventions lead by exercise specialists was key to improving the physical health of people living with mental illness (Rosenbaum et al., 2018). The International Organization of Physical Therapists in Mental Health (IOPTMH) supports exercise professionals and upholds them as experts in lifestyle management and integral members of the multidisciplinary health team (Stubbs, Soundy, et al., 2014b). Exercise and Sports Science Australia (ESSA) is the peak organization that represents and provides accreditation to AEPs within Australia and promotes their services to mental health bodies and the wider community. Promotion through these organizations is critical to promoting the services of exercise professionals and as such there have been emerging recommendations for exercise to be included as part of standard mental health care treatment. This is represented in documents published by the American Medical Society for Sports Medicine, Canadian Network for and Anxiety Treatments (CANMAT), the National Institute for Health and Care Excellence (NICE), and the Mental Health Commission of NSW (Chang et al., 2020; Mental Health Commission of New South Wales, 2016; Stanton et al., 2014).

The Importance of Culture and Organizational Leadership

Despite the overwhelming evidence demonstrating the need for integrated physical activity interventions in mental health settings, there are significant challenges to their practical implementation. Traditionally, physical health in mental health settings has not been prioritized despite key principles, processes and standards to do so enshrined in international policies and guidelines (Shiers et al., 2014).

Clinician and workplace culture has been identified as a novel and targeted way of bridging the traditional siloed structure between physical and mental health. There is evidence suggesting that health workers that partake in healthy lifestyle behavior are more likely to promote such behaviors to their patients and refer them to exercise professionals (Rosenbaum et al., 2018; Stanton et al., 2015). As such, designing workplace lifestyle interventions, incorporating exercise and diet, and providing them to mental health staff may be a key strategy to improve outcomes for patients. Such interventions in mental health settings are feasible and acceptable (Fibbins et al., 2018) and do not negatively impact productivity. Additionally, improvements to workplace satisfaction, morale, and workforce capacity can be improved through such interventions (Forsberg et al., 2008; Hjorth et al., 2016; Tucker et al., 2016).

A Real-World Lifestyle Intervention for Youth with Mental Illness

The Keeping the Body in Mind (KBIM) program (Curtis et al., 2016) is a lifestyle intervention implemented as part of routine clinical care in a public mental health service in Sydney, Australia. The service includes weekly individualized consultations with a physical health team including a nurse, exercise physiologist, dietitian, and peer support worker. There is a free onsite gym that is serviced by student exercise physiologists, in addition to cooking and sports groups.

Initially evaluated as a pilot research project, youth with psychosis were offered this innovative program over a 12-week period and results were compared to another mental health service offering standard care (medication and psychotherapy).

The KBIM program successfully prevented antipsychotic related weight gain following the intervention while participants in the control group gained almost 8kg in weight and 7.0cm in waist circumference over the same time. Additional improvements were also evident, including improved cardiorespiratory fitness and significant improvements in discretionary food intake and increases in diet quality. As a result, the pilot program was implemented as part of standard care and now delivers interventions by multiple KBIM teams employed on a full-time basis across a large mental health district.

Conclusion

Physical activity interventions should be a key component of the standard treatment for people living with severe mental illness. These interventions can be safe, are highly acceptable, and result in improvements in both physical and mental health outcomes. Exercise professionals should be included within multidisciplinary mental health treatment teams and be referred to by primary care physicians and mental health team members. The uptake of such services is vital to improving health outcomes for people living with severe mental illness.

Further Reading

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