Psychophysiotherapy

Role of Physiotherapy in Mental Health Disorders

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Introduction

Good mental health is fundamental to the well-being of individuals and their families whereas poor mental health is considered as one of the biggest causes of disability, poor quality of life and reduced productivity. In this era of exponential growth of metabolic syndrome, and obesity, lifestyle modifications could be a cost effective way to improve health and quality of life. Lifestyle modifications can assume great importance in individuals especially with serious mental illness. Many of these individuals are at high risk of chronic diseases associated with sedentary behaviour and medications side effects, including diabetes, hyperlipidemia and cardiovascular diseases.1 So, these individuals have a higher levels of mortality and morbidity.

Human suffering is high as mental illness is socially debilitating and associated with suicidal ideation and attempts, drug and alcohol abuse and homelessness. For every serious case, however, there are also many more individuals who suffer a general malaise of low mental well-being characterized by emotional distress, low self-esteem, poor body image, sense of hopelessness, chronic stress and anxiety. In addition, low activity levels of people with mental disorders are thought to be a major cause of obesity and a contributor to the rising incidence of diabetes and some cancers.1

People, who have serious mental illness, including major depression, schizophrenia, and bipolar disorder, often have poor physical health and experience significant psychiatric, social, and cognitive disability. Physical activity has the potential to improve the quality of life of people with serious mental illness through two routes—by improving physical health and by alleviating psychiatric and social disability.2

The role of physiotherapy in this field includes the evaluation and treatment of patients with pain, somatoform disorders, anxiety, depression, personality disorders, acquired brain injury, dementias, behaviour problems, eating disorders, addictions and others.

The literature supporting the effects of physical fitness on mental and emotional health is extensive. The level of physical fitness is correlated negatively with depression, anxiety and self centeredness and correlated positively with self satisfaction and social adjustments.3 Buffone also reports that improved cardiovascular function, as a result of fitness training, is associated with an increased sense of emotional well-being. In a study conducted at the C. F. Menninger Memorial Hospital in Topeka, Kan, clinical researchers found that a group exercise program, which consisted of three exercise periods a week for six weeks, reduced depression and anxiety and improved the physical health of the participating patients who were hospitalized for psychiatric care.4

There is also a role for the physiotherapist in the treatment of disorders such as anorexia nervosa that have a body image component. Using the non-verbal skills of relaxation and movement, it is possible to facilitate an internal as well as an external feeling of self awareness. This, combined with practical stress management coping skills,
induces a greater sense of acceptance and understanding of the body while the patient is undergoing a treatment package of weight restoration followed by psychotherapy.³

The relationship between physical activity and mental health has been widely investigated, and several hypotheses have been formulated about it. Specifically, during the aging process, physical exercise might represent a potential adjunctive treatment for neuropsychiatric disorders and cognitive impairment, helping delay the onset of neurodegenerative processes. Even though exercise itself might act as a stressor, it has been demonstrated that it reduces the harmful effects of other stressors when performed at moderate intensities. Neurotransmitter release, neurotrophic factor and neurogenesis, and cerebral blood flow alteration are some of the concepts involved.⁶

**Health Benefits of Regular Exercise**

1. Improved sleep
2. Better endurance
3. Stress relief
4. Improvement in mood
5. Increased energy and stamina
6. Reduced tiredness that can increase mental alertness
7. Weight reduction
8. Reduced cholesterol and improved cardiovascular fitness

**Goals of Physiotherapy**

There is evidence that exercise is beneficial for mental health; it reduces anxiety, depression, and negative mood, and improves self-esteem and cognitive functioning. Exercise is also associated with improvements in the quality of life.⁷

**Psychological Goals**

- To raise self esteem and confidence.
- To improve mood and promote wellbeing through a structured exercise program.
- To motivate the patients and promote self management in mental and physical health issues.
- To promote a more positive body image.
- To reduce social isolation.
- To address impaired body awareness and reduce dissociation associated with poor mental health.

- To improve quality of life.

**Physical Goals**

- To provide non-pharmacological management of pain.
- To improve muscle strength and flexibility.
- To improve cardiovascular endurance.
- Prevention and management of falls and other mobility issues in older subjects.
- Advice on weight management.

**Physiological basis**

Exercise improves mental health by reducing anxiety, depression, and negative mood and by improving self-esteem and cognitive function. Exercise has also been found to alleviate symptoms such as low self-esteem and social withdrawal.⁷

Aerobic exercises, including jogging, swimming, cycling, walking, gardening, and dancing, have been proved to reduce anxiety and depression. These improvements in mood are proposed to be caused by exercise-induced increase in blood circulation to the brain and by an influence on the hypothalamic-pituitary-adrenal (HPA) axis and, thus, on the physiologic reactivity to stress.¹⁰ This physiologic influence is probably mediated by the communication of the HPA axis with several regions of the brain, including the limbic system, which controls motivation and mood; the amygdala, which generates fear in response to stress; and the hippocampus, which plays an important part in memory formation as well as in mood and motivation.¹

**Physical Activity Programmes**

**Recommended level of Physical Activity**

The American College of Sports Medicine (ACSM), a national organization interested in promoting the health of all Americans, has published a position statement that recommends appropriate amounts of exercise needed to attain minimal levels of physical fitness. According to ACSM guidelines, a minimal exercise program should consist of at least three 20 to 60 minute exercise sessions each week.³

**Exercises prescribed for patients with Mental health disorders**

- Relaxed deep breathing
- Muscle flexibility exercises
• Relaxation techniques
• Endurance training
• Hydrotherapy
• Biofeedback
• Ergonomics
• Cycle ergometry
• Muscle strengthening
• General mobility exercises
• Multi-sensory stimulation
• Balance and Equilibrium training
• Re-education of posture and motion associated with intense and chronic pain
• Gait Re-education

In addition, physiotherapist’s working field in mental health also involves possible problems of incontinence, skeletal muscle, orthopaedic and neurologic deficit.

Clinical evidence has demonstrated that exercise has a positive relationship with the outcome of different mental diseases, such as depression, Alzheimer’s disease and Parkinson’s disease, improving not only patients’ quality of life but the disease itself. Exercise is related to enhanced cognitive functioning and brain plasticity.

Designing Physical Activity Programme:
The major concerns while designing a physical activity protocol for the patient are:
• Structured versus lifestyle activities
• Individually tailored interventions
• Self monitoring
• Group versus individual sessions
• Self efficacy and patient’s safety

Participants’ safety

Concerns about safety, particularly with respect to adverse cardiovascular events, can be a barrier to the implementation of physical activity programs in high-risk populations. Moderate intensity activities, including walking, are relatively safe, but some pre-existing conditions may be exacerbated by moderate exercise, even walking. The Physical Activity Readiness Questionnaire (PAR-Q) is a simple tool which can be used in pre-participation screening for moderate-intensity physical activity programs. Individuals who have risk factors identified by the PAR-Q should get medical clearance before they participate in a physical activity program. Another risk involved during exercises is musculoskeletal injury. Risk of musculoskeletal injury can be minimized by gradually increasing the intensity and duration of activity, adding warm-up and cool-down periods to a session, and wearing proper footwear.

Physical exercise and Anxiety, Depression and Mood

Guszkowska reviewed the studies on the effects of physical activity on the emotional states—anxiety, depression and mood. He found that most improvements are caused by rhythmic, aerobic exercises, using of large muscle groups (jogging, swimming, cycling, walking), of moderate and low intensity. They should be conducted for 15 to 30 minutes and performed a minimum of three times a week in programs of 10-weeks or longer. The results confirm the acute effect of exercise i.e. the reductions in anxiety and depression after single sessions of exercise. The changes in anxiety, depression and mood states after exercise are explained most frequently by the endorphin and monoamine hypotheses. Exercise may also increase body temperature, blood circulation in the brain and impact on hypothalamic-pituitary-adrenal axis and physiological reactivity to stress. The possible psychological mechanisms include improvement of self-efficacy, distraction and cognitive dissonance.

Physical exercise and Major Depression

The exercise prescribed in case of major depression include Strength training and Aerobic training. A recent study has shown the overall prevalence of depression in the elderly to be 22%, and that a sedentary lifestyle is significantly correlated to depression morbidity. Reviews have suggested that exercise is an effective treatment for depression. Other studies have also examined the effect of physical exercise on the prevention of depression.

Mutrie conducted a meta-analysis and concluded:
(a) Physical activity is associated with decreased risk of developing clinical depression.
(b) Experimental studies show that aerobic and resistance exercises are effective in treating depression.
(c) The effect is of the same magnitude as
psychotherapeutic interventions.

Sufficient evidence now exists for the effectiveness of exercise in the treatment of clinical depression. Additionally, exercise has a moderate reducing effect on state and trait anxiety and can improve physical self-perceptions and in some cases global self-esteem. Also there is now good evidence that aerobic and resistance exercise enhances mood states.2

Physical exercise and Alzheimers Disease

Alzheimer’s Disease, is a neurodegenerative disease which is characterized by the formation of amyloid plaques, neuronal loss in the hippocampus, reduced cholinergic function and cognitive deterioration. The onset of the disease is influenced by environmental stimuli along with genetic factors. Among the lifestyle changes associated with AD prevention, exercise is seen as one of the most important ones. Several studies have reported the relationship between physical activity and reduced incidence of dementia or cognitive deterioration.4,17,18

Exercise is considered as one of the most important factor in prevention of the disease. Several studies have reported the relationship between physical activity and reduced incidence of dementia or cognitive deterioration. In another study, Teri et al. observed that daily 30 min of physical training (aerobic, flexibility and strength) reduced the number of hospitalizations in 153 AD patients. It also decreased depressive symptoms and improved quality of life.10 Rolland et al.9 evaluated 134 patients and demonstrated that, after a year of exercise intervention, the exercise group improved quality of life, as compared to the sedentary group. Other studies showed significant mood improvement in older adults with AD.

Physical exercise and Parkinsons Disease (PD)

Exercise might help by protecting against the disease as well as an adjunctive treatment. Epidemiological studies have suggested that exercise is related to a reduced risk of developing PD. Specific core areas for physical therapy in Parkinson’s are: transfers, posture, reaching and grasping, balance, gait and physical capacity. This includes cueing strategies to improve gait, cognitive movement strategies to improve transfers, exercises to improve balance and training of joint mobility and muscle power to improve physical capacity.11,19 Researches support exercise as being beneficial with regards to physical functioning, health related quality of life, strength, balance and gait speed for people with PD.

Physical exercise and Schizophrenia

Exercise is especially important in patients with schizophrenia20 since these patients are already vulnerable to obesity and also because of the additional risk of weight gain associated with antipsychotic treatment, especially with the atypical antipsychotics. In a study by Fogarty et al.21 patients suffering from schizophrenia who participated in a 3-month physical conditioning program showed improvements in weight control and reported increased fitness levels, exercise tolerance, reduced blood pressure levels, increased perceived energy levels, and increased upper body and hand grip strength levels. Thirty minutes of exercise of moderate intensity, such as brisk walking for 3 days a week, is sufficient for these health benefits. Moreover, these 30 minutes need not to be continuous; three 10-minute walks are believed to be as equally useful as one 30-minute walk.1,22

Conclusions

Physical Therapy can be used as a measure of upgrading the quality of life of patients with mental disorders through enhanced self-esteem, improved mood states, reduced state and trait anxiety, resilience to stress, or improved sleep. Thus, physiotherapist acts as a facilitator for the improvement of the mental health in conjunction with the physical health of their patients.

Further studies should be done to understand the impact of combining physiotherapy interventions with traditional mental health treatment including psychopharmacology and psychotherapy.

References
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