

The effect of physical activity on the mental health of the individual

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Abstract

Background: Sport and exercise are known to play a relevant role in the prevention and treatment of a wide range of diseases and, in the spirit of „Exercise is Medicine,“ can also be described as an effective therapeutic agent - with already very good evidence - for several mental illnesses. The use of physical and sport practice is used in a widespread manner in the world of mental health. Objective: The purpose of this article is to highlight current and developing knowledge of the positive effects of exercise on mental health. Methods: In our research, we used various reliable international articles and research. This review article presents current knowledge of the benefits associated with exercise on mental health and the physiological and psychological mechanisms contributing to these benefits. Conclusions: Exercise appears most effective for depressive disorders and may also improve mental well-being and physical health in individuals with serious mental disorders. Participation in a one-off bout of physical activity can result in a reduction in anxiety levels and self-reported feelings of increased well-being. Improved self-esteem, self-efficacy and perceived competence result from long-term participation in an exercise programme.

Keywords: Sport, exercise, mental health, therapeutic agent, physical health.

Introduction

Mental health lies on a continuum from having no symptoms and being fully functioning to having a severe mental disorder. Mental disorders are not categorically distinct, but rather label the part of the continuum where symptoms are longer lasting and cause disability. They are characterized by problems in thinking, emotional state, and behavior (Morgan et al., 2013).

Common mental disorders include depression, generalised anxiety disorder, panic disorder, phobias, social anxiety disorder, obsessive-compulsive disorder and post-traumatic stress disorder (Ströhle, 2019).

Anxiety: Anxiety is a form of negative self-appraisal characterized by worry, self-doubt, and apprehension (Landers, 1997).

Panic disorder: with or without agoraphobia, is one of the most common and important anxiety disorders in the general population in the Western

world with a prevalence in one year of 2-3% in Europe.¹ Agoraphobia without panic occurs in another 1% of the population. Patients with panic disorder have a high use of medical services, an impaired social and work life, and an overall reduced quality of life (Taylor, 2006).

Depression: Depression is a state of being associated with feelings of hopelessness or a sense of defeat. People with depression often feel “down” or “blue” even when circumstances would dictate otherwise. All people feel “depressed” at times, but a “depressed” person feels this way much of the time (Landers, 1997).

Sport: “participating in sport can improve the quality of life of individuals and communities, promote social inclusion, improve health, counter anti-social behaviour, raise individual self-esteem and confidence, and widen horizons.”

“Sport means all forms of physical activity which, through casual and organised participation, aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels.” (Coalter, 2005).

Physical exercise is increasingly being advocated as a means to maintain and enhance good mental health. In general, findings from research indicate that exercise is associated with improvements in

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mental health including mood state and self-esteem (Raglin, 1990).

There is a strong relationship between physical activity and mental health. Cross-sectional studies show that regular physical activity is associated with better mental health and emotional well-being, and lower rates of mental disorders (Galper et al., 2006).

1. Historically

Sports psychiatry has developed for the past 3 decades as an emerging field within psychiatry and sports medicine. An International society has been established in 1994 and also national interest groups were implemented, mostly within the national organizations for psychiatry, some also containing the topic of exercise treatment of mental disorders (Ströhle, 2019).

2. Positives of sport on the body and mental health

Exercise has been investigated for its potential to improve mental health outcomes in a variety of mental disorders, but there is a paucity of high-quality research. Apart perhaps from depression, exercise is not considered an established treatment for mental disorders, and it is typically evaluated as an adjunctive treatment to pharmacotherapy or psychological therapy. Nevertheless, the Royal Australian and New Zealand College of Psychiatrists recommends that exercise may complement other treatments and be used as a stress management strategy to improve recovery, help prevent recurrences, to manage the side effects of some medications, and to improve lifestyle practices and overall health (Australian, 2005).

Exercise is also moderately effective for anxiety (Wipfli, Rethorst, & Landers, 2008).

Research in adults with schizophrenia shows that exercise programs can improve certain kinds of mental health symptoms (e.g., blunted emotions, loss of drive, and thinking difficulties), but are less effective for other symptoms (e.g., delusions and hallucinations) (Firth et al., 2015).

Exercise programs may also improve other psychological outcomes, such as social competence, self-esteem, and well-being (Holley et al., 2011).

Exercise is also important in improving the physical health of individuals with serious mental disorders (e.g., schizophrenia), as these individuals die 16 to 20 yrs earlier than the general population, with this differential mortality gap growing in recent decades (McGrath et al., 2004).

For healthy individuals the principal psychological benefit of exercise may be that of prevention, whereas in those suffering from mild to moderate emotional illness exercise may function as a means of treatment (Raglin, 1990).

When discussing the effects of exercise on mental health it is pertinent to consider the psychosocial aspects at play. Exercise routines and physical activity through sport have been shown to provide a distraction from negative thoughts and ruminations, and a boost in self-esteem through self-efficacy or mastery (Mikkelsen et al., 2017).

Roberts et al. (1992) found that minor increases in sporting activity can lead to increases in positive self-assessments (Coalter, 2005).

It is accepted that regular physical activity can contribute to a reduction in the incidence of the following:

- **Obesity:** Obesity is recognised as a medical condition and as a major contributor to a number of serious chronic illnesses – heart disease, diabetes, high blood pressure, stroke and cancer (Welk & Blair, 2000).

- **Cardiovascular Disease:** It is now well established that regular physical activity and increased cardio-respiratory fitness reduce the risk of cardiovascular disease mortality in general, and of coronary heart disease mortality in particular (Roques et al., 1999).

- **Non-insulin Dependent Diabetes:** There is a strong link between type II diabetes and sedentary lifestyles. Physical activity would seem a prudent strategy for all people, especially those who are at risk of type II diabetes (Coalter, 2005).

- **Colon Cancer:** Evidence linking inactivity and a variety of cancers has grown over the last decade (Thune & Furberg, 2001). The evidence for a positive relationship between regular physical activity and reduced risks of colon cancer is “convincing”, and for breast and prostate cancer “probable” (King, Marrett, & Woolcott, 2000).

There is much evidence that inflammation and inflammatory diseases contribute to mood disorders and poor mental health, and it seems that exercise may help to lower inflammation and be beneficial in contributing to better mental health outcomes in patients who suffer from inflammatory disorders (Mikkelsen et al., 2017).

- Effects of Exercise in Healthy Pregnancy:

In an uncomplicated pregnancy, current guidelines recommend moderate exercise at a

frequency of two to four times a week and with an exercise duration of 30 min, throughout pregnancy (Savvaki et al., 2018).

Overall, both aerobic and resistance exercises do not exert any adverse effects during pregnancy. However, evidence on resistance training is scarce and exercise with heavy loads is discommended (Savvaki et al., 2018).

Most recreational exercise is safe, but sports that may cause abdominal trauma, falls or excessive joint stress and scuba diving should be avoided (Witvrouwen et al., 2020).

Whereas the guidelines generally recommend 30 min of moderate exercise two to four times per week, 85% of pregnant women are exercising below these levels (Witvrouwen et al., 2020).

There is no evidence for the induction of preterm delivery by regular physical activity. On the contrary, even a reduction in preterm birth of 20–50% in women performing exercise during pregnancy compared with sedentary pregnant women has been shown (Witvrouwen et al., 2020).

Moreover, it has been shown that regular exercise improves both maternal cardiovascular adaptations and placental function to maintain sufficient fetal oxygenation and growth and does not adversely affect fetal heart rate (Witvrouwen et al., 2020).

Fetal adverse effects have only been shown in athletes exercising at more than 90% of the maximal maternal heart rate (Songstad et al., 2015).

- Sports and chest diseases

"Asthma has been considered for a long time as one of the diseases that restrict the affected person from exercising, especially team sports such as football, volleyball, or doing hard work. »But with the progress of science and the accompanying discovery of many drugs that helped control asthma, as well as knowledge of prevention methods From it, the asthmatic patient can enjoy practicing sports". *

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3. The Social Nature of Sport

The opportunities afforded by exercise might also lead to wider social networks and social cohesion." "It has been suggested that people with good social networks live longer, are at reduced risk of coronary heart disease, are less likely to report being depressed or to suffer a recurrence of cancer, and are less susceptible to infectious illness than those with poor networks. Such social processes are

also central to sport's ability to contribute to aspects of mental health (Coalter, 2005).

4. The other side of the impact of sports

Exercise may also result in detrimental changes in mental health. Some individuals can become overly dependent on physical activity and exercise to an excessive degree. This abuse of exercise can result in disturbances in mood and worsened physical health. In the case of athletes the intense training, or overtraining, necessary for endurance sports consistently results in increased mood disturbance. Extreme cases of overtraining may result in the staleness syndrome; a condition associated with deteriorating performance and behavioural disturbances including clinical depression (Raglin, 1990).

Major negative life events, including injury, may increase the risk of mental ill-health in elite athletes. They are vulnerable to profession-specific stressors as well as life events similar to the general population. Although male athletes will discuss psychological issues whilst they are undergoing treatment for injury, more work needs to be done to encourage them to open up and discuss their emotions, concerns and anxieties. Male athletes are under constant performance pressure in relation to the sport, although the literature suggests that they do not prioritise their emotional wellbeing. Many of them also have the additional pressure of living their life in the public eye which can be an additional challenge that some athletes are not used to. It can become a vicious circle when men suffer emotionally, it can impact on their personal and sporting life; this can then lead to performance issues and in turn increase their injury risk. And as the literature suggests, injuries can then increase the risk of mental health issues and adverse behaviours. Although there are a number of help-seeking campaigns particularly supported on social media, there should be further education and awareness of mental health issues aimed at elite male athletes. Male athletes cannot be mentally tough all of the time but if they are supported and encouraged to seek help and share their experiences, this will significantly improve their mental fitness and give them a greater sense of emotional wellbeing (Souter, Lewis, & Serrant, 2018).

During exercise, peripheral vasodilation in the skin and exercising muscles can lead to reduced placental blood flow. In addition to poor autoregulation of the placental circulation, this may cause reduced oxygen and nutrient delivery to the fetus. Other proposed mechanisms for possible fetal distress during maternal exercise include vagal reflex, cord compression or fetal head compression related to malposition (Witvrouwen et al., 2020).

Conclusions

There is a strong relationship between physical activity and mental health. Exercise may help improve symptoms of mental disorders such as depression and anxiety, and improve functioning and physical health in individuals with psychotic disorders.

Exercise can result in either beneficial or detrimental changes in mental health, and the outcome appears to be largely dependent on the 'dosage' employed. Although recent studies have provided promising findings regarding the efficacy of exercise in clinical samples, additional research is clearly needed.

This research repeatedly suggests that regular physical activity can significantly improve mental health and lessen symptoms of depression anxiety and stress.

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