



Depressed people and physical exercise

Personas deprimidas y ejercicio físico

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Abstract

Depression is a mental disorder that is increasing each year, according to statistics over the world. Sports has become a good method to prevent and encourage the treatment of the mental disorder. The aim of this article to determine the benefits of sports in the treatment of depression. Method: The information was taken from Science Direct with the keywords (depression or mental disorders) and (physical exercise OR physical activity). The information was analyzed through systematic literature analysis. It was given priority to articles, that were published in the last 5 years. The number of the total articles was 498 which is related to the objective of this investigation. From 498 articles 24 were selected to develop the research. Results: Sports, according to studies, help people who have depression symptoms. Conclusion: Physical exercise is a method, which can prevent and help medical treatment, however, it is necessary to increase the research in this area.

Resumen

La depresión es un trastorno mental que aumenta cada año, según las estadísticas en todo el mundo. El deporte se ha convertido en un buen método para prevenir y fomentar el tratamiento de los trastornos mentales. El objetivo de este artículo es determinar los beneficios deportivos en el tratamiento de la depresión. Método: La información se tomó del Science Direct con las palabras clave (depresión o trastornos mentales) y (ejercicio físico o actividad física). La información se analizó a través de un análisis sistemático de la literatura. Se dio prioridad a los artículos publicados en los últimos 5 años. El número total de artículos relacionados con el objetivo de esta investigación fue 498. De ellos se seleccionaron 24 para desarrollar la investigación. Resultados: Los deportes, según estudios, ayudan a las personas que tienen síntomas de depresión. Conclusión: El ejercicio físico es un método, que puede prevenir y ayudar al tratamiento médico, sin embargo es necesario incrementar la investigación en esta área.

Keywords/ Palabras clave

Exercise; physical activity; depression; mental disorder/Ejercicio; actividad física; depresión; trastorno mental

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Artículo recibido el 24 - 03 - 2021 Artículo aceptado el 28 - 04 - 2021 Artículo publicado el 30 - 04 - 2021

Conflicto de intereses no declarado.

Fundada 2016 Unidad de Cooperación Universitaria de la Universidad Técnica de Manabí, Ecuador.

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1. Introduction

Depression is a disorder, which affects about 300 million people over the world. It represents 4,4 % of the world population. Generally, depression appears in young people, who are from 15 to 29 years old (Organización Mundial de la Salud, 2018a). This mental disorder affects people's development during their daily activities. When depressed people have a high level of depression, they can kill themselves, so there are 800.000 suicides, and the figures increase (Organización Mundial de la Salud, 2018b). There has been an approximate increase of 308 % in cases of adolescents' depression in the last decade (Organización Mundial de la Salud, 2017).

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), depressive disorders appear in different ways. One of the main disorders are: Major Depressive Disorder and the Persistent Depressive disorder (Distimia) (American Psychiatric Association, s.f.).

The Major Depressive Disorder's symptoms are:

- Sadness
- Lack of self-esteem
- Culpability
- Loss of appetite
- Sleep disturbances
- Lack of concentration
- Tiredness

The Persistent Depressive disorder (Distimia) symptoms are the same as the depressive disorder with lower intensive but they tend to be more durable (American Psychiatric Association, s.f.).

According to the World Health Organization, severe depressive episodes are the fifth most disabling state of human health worldwide. Meanwhile in the America region that depressive episodes are the first after of acute schizophrenia, untreated cervical spinal cord injury, severe multiple sclerosis, and severe heroin dependence (Organización Panamericana de la Salud, 2018).

According to the Ministry of Public Health (MSP) of Ecuador, the health professionals attended 42.823 cases of mental disorders in January 2018. Most of the disorders were related to stress and affective and neurotic disorders (World Health Organization, 2018).

The number of suicides according to the INEC and the MSP registers a total of 1,205 cases in 2017. The majority of the cases correspond to the female sex (Instituto Nacional de Estadísticas y Censos, 2017).

Those kinds of disorders have been studied and they had represented an investment to the public system in different countries. It is considered that 50 % of people, who had the symptoms of depression, don't receive any medical attention (Álvarez, Pereira & Ortuño, 2017), because there is not money to spend in those kinds of sickness. 1 % of the annual state budget is allocated to patient care who have depression in many countries (Organización Mundial de la Salud, 2018a).

There is not a law about mental disorders in Ecuador, but there are terms, objectives, principles, and strategic guidelines that allow to control, try and prevent mental disorders (Ministerio de Educación, 2015).

Mental disorders should be attendant by professionals, moreover the usage of medication, and psychotherapy must be done with care. The professionals usually prescribe medications which are inhibitors that allow serotonin and norepinephrine reuptake. The usage of antidepressants is common too (Álvarez, Pereira & Ortuño, 2017).

Psychotherapy is a term used for the treatment of a disorder based on the conversation about the problems that happen to the patient, this

method allows them to adapt to an emotional crisis and be able to overcome the difficulties. This way, the person can take control of their life again, set their goals, and acquire healthier behaviors (Domènech & Odriozola, 2016).

As preventive methods and in cases where depression occurs in a mild form, it could be treated without medication, so in these cases, physical activity could be used as a complement to the treatment of different types of disorders.

This review aims to evaluate the existing literature about mental disorders and physical activity.

2. Methods and Materials

A systematic review was carried out in this investigation, so there are scientific articles which focus on the benefits that physical activity can offer in mental disorders such as depression. The reports from the ministry of public health and the world health organization were analyzed to do this article. Moreover, the clinical practice guidelines and articles, which were published in the last five years, considered too. The inclusion criteria (IC) used for the selection of the bibliography were:

IC-1: Publication date between 2014-2019.

IC-2: Scientific review and related experimental articles.

IC-3: Reports and studies conducted by organizations focused on public health, both national and international.

IC-4: Newspaper, opinion articles, and all articles that are not found in selected databases.

The keywords and descriptors used to generate the search in Spanish were Exercise, Physical activity and Depression.

3. Results

A total of 498 articles were obtained from the database but 24 articles were used for this research after applying inclusion and exclusion criteria. 19 articles from the Scencedirect database and 5 articles came from reports and studies carried out by organizations dedicated to the study of public health in Ecuador and other countries.

Causes

There is not a unique cause for depression. It seems to be a result of a combination of various factors such as genetic, psychological or biochemical. (Pérez *et al.*, 2017). On the other hand, various studies also indicate a close relationship between depressive disorders and a sedentary lifestyle (Villegas, 2010).

In order to make a proper diagnosis, several methods can be used, among the main ones we have (Departamento de Psiquiatría y Salud Mental Sur, 2016):

- Physical examination: There are cases in which depression may be related to some physical health problems that have not been diagnosed.
- Psychiatric evaluation: The professional will be able to ask questions about the symptoms. The patient must answer the questions. The professional will try to find out about patient's thoughts, what kinds of feelings are frequently presented, as well as an evaluation about the behavior.

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- Laboratory tests: Complete blood count tests are usually performed to determine that the thyroid gland is working incorrectly.
- DSM-5: These are criteria on which the professional can be based on the diagnosis of depression, which is found in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), published by the American Psychiatric Association from the United States.

Prevention

There are many treatments for depression as well as medicine which must be associated with secondary effects such as: weight gain, insulin resistance, among others. It is important to get healthy habits such as proper diets, avoiding tobacco use, and regular medical check-ups (Álvarez, Pereira & Ortuño, 2017). Therefore, for these purposes, the practice of exercise can be used as a complementary treatment, also helping the symptomatic control of other associated diseases.

Relationship between physical exercise and depression

There is a study with 364 adult people who were in a community intervention program of physical activity. The adults frequently used to make walks and included socio-cultural activities for 9 months. It showed that there is a favorable effect on self-esteem in adults as well as favorable effects on hypertension, dyslipidemia, excess weight and anxiety/depression (Villalobos *et al.*, 2019).

Another study, with 371 students for the university, showed the physical activity is closely related to levels of anxiety and depression, so students, who made physical activity, showed lower levels of anxiety and depression than sedentary students (Olmedilla, Ortega & Candell, 2015).

However, it is important to consider the type of exercise, because the patient must enjoy the activity without violence, extreme competitiveness, or some form of intensity or compulsory work that, on the contrary, could worsen psychopathological conditions (Leiva *et al.*, 2017).

4. Discussion

Physical activity has a positive effect on people with depressive disorders, but its effectiveness lies more in the type of activity that is carried out than in the frequency with which it is practiced (Riahia *et al.*, s/f).

The types of exercise that are carried out are mainly of three forms:

- Aerobic exercises, which produce a high consumption of oxygen. It is also called oxidative, so the cardiorespiratory system is worked to a greater extent.
- Anaerobic or glycolytic exercises such as weightlifting, so resistance muscle is the main form of work (Berlanga & López, 2015).
- Flexibility exercises such as yoga or tai chi where breathing is combined with movements and body postures allowing the body to relax (Gallego *et al.*, 2016).

The benefits of those types of exercises are many. Hallgren shows in his research that exercises of various types have an effectiveness rate of 78 % from a total of 946 patients (Alonso, Pérez, S. & Pérez, R., 2018).

Brain. There are neurotransmitters that are responsible for mood swings in people such as dopamine, serotonin, norepinephrine. (Goodale, 2007). Sports practice allows better brain irrigation, allowing neurons to

oxygenate and the brain synapse to perform properly (Curtelin, 2016).

Adherence. People with depression show a lack of interest, demotivation, or pessimism, so they have problems creating adherence to the application of treatments. In those cases, professionals can help them to develop a link between the patient and treatment through therapy. As a result, it will increase the confidence of the patient, so it could be possible to generate adherence and motivate sports practice (American Psychiatric Association, 2014).

The rates of people with depression and increased illnesses have caused that the World Health Organization promotes sports as a preventive treatment. The idea is that the government and people make aware of the importance of healthy life.

Several studies show the benefits that exercise offers to patients with depressive symptoms, so physical exercise is considered as a preventive method and complementary for the treatment of said disorders. However, some clinicians abstain from recommending sports practice as a complement to patient treatment.

On based on this research it is not recommended that physical exercise supplies the medical advises because they are professionals in the area, so they prescribe drugs and therapeutic interventions which should be joined will exercise. The information obtained in this study had made it possible to demonstrate the positive results that sports practice offers for people with depression. For example, aerobic exercise plays an important role thanks to the cardiovascular effort that encourages blood circulation without forgetting the importance of enjoyment the patient must feel.

It is important to promote sport as a preventive method to some illness because it allows creating healthy habits which will reduce the risk of the development of depression.

Finally, it is necessary to increase studies about this topic to get more information that will permit the applicability in disease prevention programs.

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