

PHYSICAL EXERCISE REFLEXES IN PATIENTS OF DEPRESSIVE DISORDER

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Abstract: Depression has different types and causes and is considered a global health problem. In general, according to the DMS-5, the types of depression vary depending on the duration of the episodes, severity and set of symptoms present. For this study, regarding the consequences of this disorder, the definition used by DeCS (Descriptors in Health Science) for depressive disorder was considered: "Affective disorder that manifests itself both in a dysphoric mood and in the loss of interest or pleasure in usual activities". Depression is also related to impaired transmission in some central aminergic synapses, due to defects in the production, transfer or loss of amines, which negatively affect the individual in their daily activities, making them unproductive and depressed, which leads to carriers often commit suicide. Furthermore, this disorder can be discussed regarding the dysregulation of neurotransmitters and hormones that are important for the sensation of pleasure, reward and happiness. It is therefore inferred that this study's general objective is to determine the effects of physical exercise on the health – physical, mental and social – of people with depressive disorders. In order to present a clear and objective treatment alternative for carrier patients, the present study used the databases compiled in BVMS (MS Virtual Health Library) and PUBMED to explain the effects observed in individuals.

Keywords: Exercise. Depression. Neurotransmitters.

INTRODUCTION

It is public knowledge that depression is one of the most common psychiatric disorders in the world. According to research by UFPel, the number of people with depressive disorders increased by 41% with the pandemic. Depressive disorder presents with specific signs and symptoms: loss of sexual desire, loss of interest in basic daily

activities, anxiety, psychomotor dysfunction and suicidal thoughts.

In this scenario, treatment involves the use of antidepressants, anxiolytics and psychotherapy sessions, restricting the treatment of a common disorder to people with high financial income. Furthermore, even when these medication methods are used, failure to change the individual's habits ends up destroying this rehabilitation process, and the patient often returns to clinical depression. However, the practice of resistance physical exercise as a treatment for various diseases has been extensively studied in recent years. In September 2022, a study, published in the British Journal of Sports Medicine, pointed out that, for mild or moderate cases of depression, "exercise is as good as antidepressants" (Simons, 2022).

Therefore, the question arises: How does an improvement occur in the health-related quality of life (HRQoL) of individuals with depressive disorders after the implementation of resistance physical exercise in daily activities?

Thus, given the alarming increase in depressed people, there is a need to pay attention to the topic, as identifying the effects of implementing resistance physical exercise on the health – physical, mental and social – of people with depressive disorders could bring an alternative treatment for health professionals who care for these patients.

By knowing the scenario presented, the hypothesis is that the variables in the relationship between exercise and mental health are complex in terms of positive or negative results. According to a tracking study by *Universidade Federal de Santa Maria* – published in the Brazilian Journal of Psychotherapy –, individuals who performed physical exercise during the COVID 19 pandemic had a lower risk of acquiring depression. This is due to the fact that the

social interactions that sport promotes and the regulation of the body through physical activity.

In this context, it is essential to pay attention to those with depressive disorders, especially with a view to bringing alternatives to treatment, which is currently quite expensive, in relation to medications and psychotherapies, and even when done correctly it has a very negative influence from the environment. in which the person lives. Therefore, it is important to present more viable forms of rehabilitation and elucidate physical exercise as a possible solution for those with depressive disorder. In order to determine the effects of physical exercise on the health – physical, mental and social of individuals.

METHODS

This is an integrative review of the literature. This research used the construction of an integrative review as a theoretical framework following 6 steps: Formulation of the research question, sampling, data extraction, sampling, data extraction, critical evaluation, analysis and synthesis of results, synthesis of knowledge (Whittemore, 2005).

The elaboration of the research question will follow the PICO research method (P – population; I – phenomenon of interest; CO – context). Therefore, the research is guided by the following research question: Does physical exercise have positive effects on people with depressive disorders?

This research was conducted based on a literature search in the following database: VHL. The following health science descriptors (DECs) will be used for the searches: Depressive Disorder, Depressive Disorder, Depressive Syndrome, Depressive Neurosis, Exercise Training, Physical Exercise, Exercise physique, Physical Activity, Physical Training.

Articles in English, Spanish and Portuguese are included in the present study; free articles in full and published in the last 3 years. Any monograph, book, incomplete article, thesis, dissertation and study that does not contribute to the answer to this review article will be excluded.

VHL		
Acronym	Keywords	Descriptors
P	People with depressive disorders	Mentally Ill Persons OR Mentally Ill Persons OR Mentally Ill Persons.
I	Depressive Disorder	Depressive Disorder OROR Depressive Disorder; Depressive Syndrome OR Depressive Neurosis.
Co	Physical exercise	Exercise or Training OR Physical Exercise OR Physical Activity OR Physical Training.
Search strategy	Depressive Disorder or Depressive Disorder; Depressive Syndrome OR Depressive Neurosis and Exercise or Training OR Physical Exercise OR Physical Activity or Physical Training.	

Table 1: PICO strategies used to search the VHL database, Codó Maranhão, Brazil, 2024.

RESULTS

In the research carried out in the VHL, 54 articles were found in the review with selection of full texts, main subjects (Depressive Disorder, Depression and Physical Exercise), language (English, Spanish and Portuguese), publication interval (2020-2023). The 54 articles were read for the title and, when necessary, the abstracts, methods and conclusions to verify the quality of the articles. After this stage, 49 articles were discarded, as they did not correspond to the guiding objectives of this study. This way, 5 articles were selected for full reading and, thus, all of these articles were chosen to form the basis of the analysis of this study, as detailed in the flowchart.

All articles aimed to provide a guiding analysis for the review.

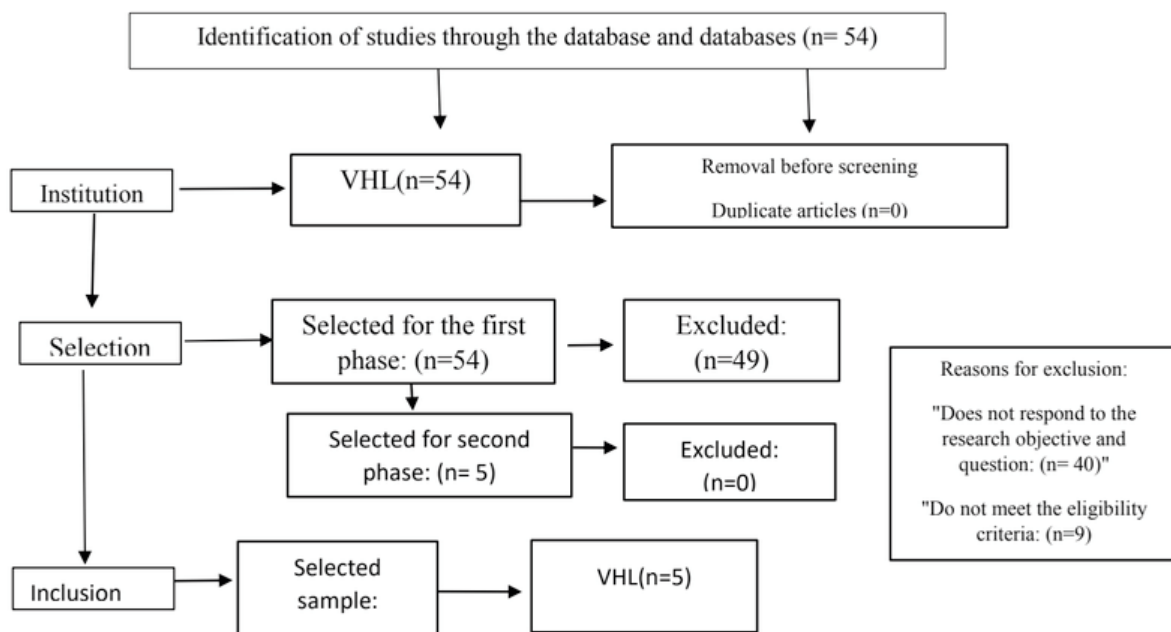


Figure 1: Flowchart of the selection process for primary studies adapted from PRISMA; Codó, Maranhão, Brazil, 2024.

Authors and year of publication	Magazine, location and year of study	Language	Objectives
Kim, Kyungjin; Koo, Kyo-Man, 2022	Frontiers in Public Health - Volume 10, South Korea, 2022	English	investigate the influence of different types of exercise (e.g., flexibility exercise, strength exercise, and walking) on health-related quality of life in men with Depressive Disorder in South Korea.
Koo, Kyoman; Kim, Kyungjin, 2021	International Journal of Environmental Research and Public Health- Volume 18, South Korea, 2021	English	identify the effects of different types of PA (e.g., walking, strength exercise, flexibility exercise) on the HRQoL responses of Korean women with depressive disorder.
Saran, Tomasz; Mazur, Anna; Lukasiewicz, Jacek, 2021	Psychiatria Polska - Volume 55, Poland, 2021	English	present the importance of physical activity in the prevention and treatment of depressive disorders
Bueno-Antequera, Javier; Munguía-Izquierdo, Diego; 2020	Advance in Experimental Medicine and Biology - Volume 1228, Germany, 2020.	English	summarize and discuss the progress of physical activity and exercise research in the prevention and treatment of depressive disorder.
Choi, Karmel W; Smoller, Jordan W. 2020	Lancet Psychiatry - Volume 7, London, 2020	English	Make the right moves to prevent depression in young people.

Table 2: Characterization of the primary studies included in the integrative review, Codó Maranhão, Brazil, 2023.

DISCUSSION

EPIDEMIOLOGICAL DATA, CAUSES AND CLINICAL PICTURE OF DEPRESSION

Depression, among all mental disorders, is one of the most diagnosed disorders in people in adulthood. According to the World Health Organization, around 322 million people worldwide suffer from depression (Saran; Mazur; Łukasiewicz, 2021). Thus, these data show how alarming this disease is and reveal the high level of importance that must be given to it, in terms of studies, therapeutic approaches and social actions to discuss this serious social problem. This disorder has several causes, the main etiologies reported by studies are stressful events throughout life - mainly in childhood and adolescence, due to the unmaturing nervous system -, genetic factors and disorders in brain biochemistry.

Faced with different causes, there are different subtypes of depression with their specific characteristics: Dysthymia, Endogenous Depression, Atypical Depression, Seasonal Depression, Psychotic Depression, Secondary Depression and Bipolar Depression. The main signs and symptoms of depressive syndrome are a patient with relatively decreased attention and motor function, depressive thoughts, depressed mood, depersonalization, secondary delusional ideas and often occurring together with another syndrome, for example anxiety.

RISK FACTORS AND ENVIRONMENTAL INFLUENCES ON DEPRESSIVE DISORDERS AND PATIENT HRQOL

According to the World Health Organization, HRQOL (Health-related quality of life) is a concept with social, physical, emotional and mental dimensions. This measure is important for this study, as it measures the well-being of the population, which is greatly affected by diseases, such as depression (Koo; Kim, 2021). HRQoL is also related to the socioeconomic status of a given population, as social and financial conditions are some of the risk factors for the development of depression. In addition to these two factors mentioned, family history, chronic stress, drug dependence and metabolic syndromes contribute to an individual's depressive state, progressing to major depressive disorder. It is clear in the studies that served as the basis for this work, that the practice of physical exercise is an excellent way for patients with the disorder to progress, in terms of physiological improvement due to the social interactions that exercise can promote and hormonal regulation and biological clocks. However, a categorization of which exercises, frequency and intensity of these exercises is necessary, as data from the South Korean randomized study concluded that high-intensity walking (classified as more than 5 days/week), performed by women with depressive symptoms, does not have a significant effect on HRQoL, but in flexibility exercises, a significant improvement was noticed in the subfactors (sleep, rest and nutrition) of women with symptoms of depressive disorder (Koo; Kim, 2021).

Therefore, it is understood that the intensity and frequency for each type of physical exercise must be strictly controlled, since high intensity can have a negative effect and negatively evolve the patient's clinical

condition. According to theoretical findings, it is observed that intense physical activity and a sedentary lifestyle can lead to oxidative stress, with increased synthesis of free radicals, which have an inflammatory process, reduced immunity and can cause disturbances in homeostasis.

However, people who regularly practice physical activities have a body with greater antioxidant potential than people who do not do so. (Saran; Mazur; Łukasiewicz, 2021). Thus, people who practice sports, with lower cortisol spikes, lower rates of free radicals, adequate release and inhibition of hormones such as serotonin, endorphin and dopamine, have better functioning of the nervous system, with low neurotoxicity and systemic inflammations that are factors of high risk for developing depressive disorders.

FINAL CONSIDERATIONS

In view of the above, it can be concluded that physical exercise has positive effects on people with depressive disorders, improving their quality of life and showing the evolution of the disorder. In other words, physical

exercise - combined with adequate nutrition and schedules with the circadian cycle - is capable of reestablishing the patient's mental health through social interaction in sport and an improvement in the release of neurotransmitters such as dopamine and endorphins, related to satisfaction and pleasure, as it can regulate the individual's entire metabolism, reducing levels of systemic inflammation and neurotoxicity. However, it is noted from the studies that patients' adherence to physical exercise, due to socioeconomic and psychological factors, together with the lack of studies that categorize the type of physical exercise, in terms of frequency and intensity, are an impasse for implementation, by doctors, of this therapeutic approach in patients with depressive disorders. Therefore, it is necessary for doctors to provide attention and better assistance to patients, understanding their social environment and considering the feasibility of including physical exercises and nutritional monitoring to refine therapy, increasing the likelihood of successful rehabilitation of people with depressive disorders.

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