EXTENDED SUMMARY:

EFFECTS OF PHYSICAL EXERCISE ON PATIENTS WITH EATING DISORDERS

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Abstract

Eating disorders have different relationships with physical exercise. Anorexia, bulimia, and binge eating disorder are associated with considerable physical health and psychosocial morbidity, as well as an increased risk of mortality. A systematic review has been conducted to determine the effect of exercise on physical and mental fitness in the population suffering from this type of psychopathology. For this, first, the differences between problematic and healthy exercise were established. At present, there are discrepancies regarding the prescription of physical activity in the treatment of this type of patients, since compulsive exercise is present, above all, in two of these disorders: anorexia and bulimia.

Keywords: *Anorexia, Bulimia, Binge Eating Disorder, Eating Disorders, Exercise, Physical Activity.*

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Eating Disorders (EADs) are psychiatric pathologies that contribute great damage to health: psychological, social and physical (Stice, 2002). In the latest edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5, Diagnostic and Statistical Manual of Mental Disorders) anorexia is defined on the basis of three criteria: (1) excessive restriction of intake according to nutritional requirements; (2) fear of gaining weight and (3) alteration of body image perception, exaggeration of the importance of self-evaluation or denial of the danger of low body weight.

On the other hand, according to the DSM-5, bulimia is characterized by recurrent episodes of binge eating, inappropriate and recurrent compensatory behaviours to avoid weight gain and self-evaluation unduly influenced by weight and body composition. The main differences between binge eating disorder (BED) and bulimia are inappropriate compensatory behaviours occur to prevent weight gain in bulimia and in binge eating disorder the patient's self-assessment is not practically influenced by body image and weight (it is not an essential criterion for diagnosis). Binge eating disorder is estimated to be much more prevalent than anorexia or bulimia, but less so diagnosed and is almost twice as common as anorexia and bulimia nervosa (Hudson et al., 2007). Binge eating disorder could reach up to 30% of people who seek weight-loss treatment for obesity (Baile & González, 2016).

Although exercise is an effective tool for many psychological conditions (e.g. anxiety or depression), its possible inclusion in the treatment of these types of disorders has often been overlooked (Cook, 2016). Incorporating exercise can be considered controversial, because among the most common behavioural characteristics that occur in such disorders is the practice of excessive or compulsive physical exercise (Noetel et al., 2016). Physical activity is known to have positive effects on psychological and physical health, but little has been studied about the association between non-compensatory (healthy or non-compulsive) physical activity and compensatory (problematic or compulsive) physical activity in different eating disorders: binge eating disorder, anorexia, and bulimia.

As Goodwin, Haycraft and Meyer (2016) state, problematic/compulsive or unhealthy exercise could be dangerous, especially when it is done in excess and becomes the protagonist of a person's life. The "compulsive" element of exercise is very common and is not necessarily related to the frequency and intensity of exercise, but is characterized by its execution according to a rigid schedule. It is an activity that has priority over other daily activities (Martínez, 2017). In the specific case of anorexia, high levels of physical activity occur in 31%-80% of patients (Hebebrand et al., 2003). Anorexia, bulimia and binge eating disorder involve a series of medical complications that should be taken into account when prescribing physical exercise (see Table 1). In the case of anorexia, these complications come from having low weight and malnutrition, in bulimia the type of purging used and in binge eating disorder from obesity and being overweight (Gabler, Olguín, & Rodríguez, 2017).

More research suggests that professionally supervised physical exercise

within a multidisciplinary team of doctors, nurses, physiotherapists, psychiatrists, psychologists, endocrinologists and nutritionists may be safe and beneficial for individuals with eating disorders (Cook, 2016). In the case of binge eating disorder, a review shows that, although still limited, there is evidence that aerobic and yoga exercises may reduce the amount of binge eating and the body mass index (BMI) of patients (Vancampfort, Vanderlinden, Stubbs, Soundy, Pieters, & Probst, 2014).

Method/Design

We conducted a systematic review of the relevant literature on the three pathologies: Anorexia, bulimia and binge eating disorder. For inclusion, articles retrieved from Medline (PubMed), EBSCO (Sportdiscus) and Google Scholar had to be published in English between 2014 and 2019. The search was conducted on 2 September 2019. Some additional studies were retrieved from the reference lists of included studies. Research on rats and professional athletes was excluded.

Results

Physical exercise is beneficial for the improvement of states of anxiety, depression, negative mood and body image (Kerrigan, Lydecker, & Grilo, 2019). The results (see table 2) seem to indicate that, by improving physical fitness through regular, healthy exercise, patients with eating disorders may experience improved self-esteem, body image, and mood, as well as a reduction in binge eating episodes. In addition, exercise, as shown by these results, promotes self-regulation of physical activity.

A supervised physical exercise programme for patients with eating disorders may include low intensity exercises (such as walking, stretching, mobilization of different joints, or learning to perform strength exercises) at an early stage, with low volume and frequency. The volume or amount of training could be increased progressively and in a supervised manner only when patients understand their body sensations, psychological motivations (away from problematic exercise) and the importance of exercise as a tool for healthy living.

Other aspects to consider when practicing sports with patients with EAD are as follows (adapted from Tabares & Alvarado, 2019):

1- Communication with the patient and therapists. In cases where the sports educator detects symptoms of an EAD, it should be referred to a therapist. If the patient arrives referred by a psychologist or psychiatrist, it is recommended that coaches maintain communication with them.
2- Be aware of alterations in body image that some patients with EAD have, focus the training on the techniques and avoid quantification.
3- To individualise and introduce the modifications of the loads in a progressive way, each patient needs a specific type of training.
4- Educate in health. Exercise is not a tool to change the body; it is a tool for health and quality of life. Avoid compensatory and/or compulsive

behaviours.

5- Nutritional requirements. They must be covered to support an energetic expense.

Conclusions

Physical exercise can be an effective therapeutic tool. Patients with anorexia, bulimia and binge eating disorder are a unique population and therefore a specific prescription is needed for them in order to increase the positive effects that exercise can have.

In the case of binge eating disorder, there are three variables, in view of the studies analysed, that are repeated quite frequently: the concept of exercise as a vehicle towards compensation, compulsion or rejection of it. In this sense, the adoption of motivational strategies may be essential to increase the acceptance and adherence of physical activity in people with binge eating disorder. It is important to determine at what point it is more advisable to introduce the exercise regime into the treatment; the type of exercise, at what intensities and the frequency, in order to be most effective in helping these types of patients increase their levels of physical activity or to incorporate it in a healthy way into their daily life. Therefore, more research is needed to ascertain the efficacy and acceptability of physical activity interventions in the treatment of this type of patient.

The main objective of a supervised physical activity programme should be to convert the problematic exercise pattern (compulsive, obsessive) present in patients with anorexia and bulimia into healthy physical exercise, necessary for a good quality of life, and should be supported by an interdisciplinary team of experts.

The content of the exercise programme could focus on re-education of patients, the introduction of appropriate exercise methods, an analysis of the motivations that lead to exercise and information on the health benefits and possible harms of compulsive (problematic) exercise. Strength training can also be an ally against the loss of bone and muscle mass. After carrying out this review, there is a lack of consensus on which type of exercise is the most beneficial for this type of patient.