Physical Exercise Prescription for Mental Disorders

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Context

Just as physical exercise is admittedly recommended in the prevention and treatment of many cardiovascular and metabolic diseases, the same should be applied for mental disorders. However, this therapeutic approach, which has no costs for the patient, is widely neglected by mental health practitioners [1].

Objectives

The aim of this work is to provide a physical exercise prescription tool for outpatients with mental disorders.

Methods

It was made the literature review on the physical exercise benefits in mental disorders and on the physical exercise prescription guidelines.

Benefits

Several inpatient studies show that physical exercise, namely aerobic exercise, promotes a positive mental health, is a short-term effective treatment for mild to moderate depression [2], has results compared to the cognitive behavioral therapy in the treatment of anxiety [3], promotes an hippocampal volume increase in schizophrenia [4] and delays the age related cognitive deficits [5]. There are several prescription guidelines targeted to the general population. However, specific considerations regarding the prescription for the mentally ill in the outpatient setting are lacking.

Prescription

Do no harm

Although the information that a physician possesses about a patient's medical history is often sufficient to screen for safety to begin or increase exercise, it is helpful to use a screening tool to help quickly identify those at increased risk [6].

Both the American College of Sports Medicine (ACSM) and American College of Cardiology do not recommend screening in healthy, asymptomatic individuals unless they are at moderate risk for suffering a cardiac event [7]. Moderate risk is defined as evidence of cardiac risk factors, men over 40 engaging in vigorous intensity exercise and women over 50 engaging in vigorous intensity exercise.

However, within the special population of the mentally ill, each patient's level of risk should be carefully assessed, with a focus on cardiovascular, pulmonary, and metabolic health [8].

Figure 1. Risk stratification of patients and exercise considerations in each risk category [8]. CAD, coronary artery disease.

Apply the Transtheoretical Model of Health Behavior Change [9]

One of the most challenging aspects of medicine is how health care practitioners approach a sedentary patient and attempt to recommend and prescribe an exercise program. Clearly, not all patients are willing to accept a provider's advice to start exercising. Others may desire to exercise, yet lack the knowledge or motivation. It is vital to identify the patient's stage of change and what to do in each stage [10].

Figure 2. Application of the transtheoretical model to physical exercise.

Precontemplators have no desire to exercise, therefore, counseling should be aimed at identifying potential personal benefits of an active lifestyle and the risks of sedentarism. The goal is to encourage the individual into the contemplator category.

Contemplators are patients who do little or no regular physical activity, yet are interested in becoming more active. These individuals are ready for change, but may require additional knowledge, skill or encouragement. Counseling goals should be directed at reinforcing benefits of exercise, addressing barriers and changing patient behavior. Contracting and setting realistic goals is an effective counseling method designed to increase activity in this group.

Actives are patients already participating in physical activity at various levels of intensity. This group should be praised for their self-motivation and encouraged to continue an active lifestyle. Benefits of exercise, pitfalls in their current exercise program, and short-term goals should be reviewed and established.

Customize the American College of Sports Medicine Position Stand [11]

Frequency of training - 3 to 5 days per week.

Intensity/Duration - 65% to 90% of maximum heart rate, 20 to 60 minutes of continuous aerobic activity. A realistic goal should be to expend 700 to 2 000 kilocalories per week.

Intensity	Subjective measures		Physiological/relative measures	
	"Talk test"	Perceived exertion (10-point scale)	% HRR	Maximal HR (%)
Light	Able to talk and/or sing	< 3	< 40	< 64
Moderate	Able to talk but not sing	3 - 4	40 - 60	64 - 76
Vigorous	Difficulty talking	≥ 5	> 60	> 76

Figure 3. Measuring exercise intensity [8]. HRR, heart rate reserve. Maximal HR calculation made simple: 220 minus the patient's age (220 - age) or 206.9 - (0.67 × age).

Mode of activity - any activity that utilizes large muscle groups in a continuous and rhythmic nature such as walking, running, cycling, swimming and various endurance game activities.

Resistance training - one set of 8 to 12 exercises that condition the major muscle groups 2 to 3 days of the week. Persons under 50 years of age should complete 8 to 12 repetitions of each exercise and persons over 50 years and older, 10 to 15 repetitions or until volitional fatigue, whichever occurs first.

Flexibility training - major muscle/tendon groups should be developed using static stretches held for 10 to 30 seconds. At least 4 repetitions per muscle group should be completed 2 to 3 times per week.

Conclusions

A three-step physical exercise prescription is an inexpensive and a lesser time consuming procedure than other techniques, e.g., psychotherapy, feasible to be applied on a psychiatric consultation. The benefits of physical exercise are already known, yet the effectiveness of the prescription procedure on the psychiatric outpatients has to be shown. The author is currently developing a research on this subject.

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