

Reflections on the Optimization of Health Behaviors and Exercise Modes in Chronic Disease Management for Obese Populations

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ABSTRACT

Obesity is associated with various serious diseases such as high blood pressure, diabetes mellitus type 2, hyperlipidemia and coronary heart disease; therefore, to promote good health behaviour and exercise, one or more of these diseases must be addressed. Consider how to optimise the health behaviour and exercise pattern of an obese person with a chronic disease. Based on the above analysis, it has been proposed that instead of simply advising more exercise, tailored behavioural changes that are both sustainable for the individual and medically appropriate should be developed. Based on recent research and clinical studies, the five optimisation areas of this paper are: adjusting the intensity and type of exercise; improving compliance through specific action plans; reducing sedentary behaviour; integrating wearable device data; and adapting programmes according to the patient's co-morbidities and willingness to change. Therefore, based on the contents of this paper, the management of chronic diseases for obese individuals should be personalised, multidisciplinary and include aerobic exercise, resistance training and behaviour modification.

KEYWORDS

Obesity; Chronic disease management; Physical activity; Exercise prescription; Health behavior; Adherence.

1. INTRODUCTION

Obesity is now one of the primary causes of long-term diseases around the world. It is related to heart and blood vessel disease, diabetes, musculoskeletal diseases, depression and increased all-cause mortality. Since lifestyle behaviour can cause both the start of and changes in chronic diseases, exercise and other changes in behaviour are necessary to help obese people manage these diseases [1-2].

Although recent studies have shown that exercise can help alleviate the symptoms of many long-term diseases, there is still a problem: how to ensure that the exercises people with obesity and multiple health problems can do over the long run in a safe and realistic way [3, 4]. Many people are aware that they need to exercise but are unable to do so regularly due to pain, fatigue, low self-efficacy, lack of time, or no personalised guidance. Therefore, the optimisation needs to cover both behaviour and exercise modes.

This paper discusses the optimisation of health behaviour and exercise mode in chronic disease management for obese people. The discussion first presents the logic of health behaviour for chronic disease control, then studies exercise modes and adherence strategies, and finally puts forward an all-encompassing optimisation path for practice.

2. HEALTH BEHAVIOR

The foundation of health behaviour is the management of chronic diseases. Exercise will not be effective if it is not repeated, and repetition is due to habit, motivation and support. For obese people, the first changes in behaviour are usually small but continuous, such as reducing the time spent sitting, walking more often, climbing stairs, and scheduling exercise at regular intervals [5][6]. These changes are relatively stable and will be carried out in the future.

Behavioural plans can be used to manage chronic illnesses more effectively. A 2022 systematic review and meta-analysis determined that a particular action plan was effective in improving the physical activity and healthy-eating habits of obese and overweight patients with chronic diseases and their complications [5]. Therefore, the design of the intervention should not be based on a single recommendation. Make the plan specific and give prompts or other behavioural cues to the patient.

The other is a lack of exercise [8]. Although the overweight group exercises regularly, there is a considerable risk of metabolic diseases due to a long absence of exercise. Therefore, the management of chronic diseases should aim to increase organised exercise and reduce prolonged sitting by increasing light exercise throughout the day. It can be used for people who have trouble moving or other illnesses [4, 7, 9].

3. EXERCISE MODES

3.1. Aerobic Exercise

Aerobic exercise is still a good choice for the obese with chronic diseases. Improve the cardiorespiratory and insulin-sensitive abilities of the heart. In 2024, a network meta-analysis showed that exercise can help moderate disease indicators in overweight or obese people; specifically, aerobic exercise lowered insulin and HbA1c, and resistance training improved lipid levels and blood pressure [6].

Walking, cycling, swimming and other low- to moderate-intensity aerobic exercises are generally very feasible. They are easy to use and low-cost; they are also simple to maintain. For many obese patients, they are focused on forming a safe, regular exercise habit rather than increasing intensity.

3.2. Resistance Training

Obese patients also have poorer muscle quality, reduced functional ability and impaired metabolism, so resistance exercises are recommended. Exercise can reduce the amount of lean muscle mass in a weight-loss program and thus is not conducive to regulating blood sugar. According to the 2024 meta-analysis, exercise interventions improved lipid and blood pressure indicators in overweight and obese individuals, reducing total cholesterol, triglycerides, LDL and systolic blood pressure while increasing HDL [6].

Resistance exercises are suitable for older obese people or those with osteoarthritis in daily life to increase their strength and joint stability. Therefore, the exercise mode should aim to promote the specific effects of illness and improve the quality of life for sick people.

3.3. Combined Training

Aerobic exercise and weight-bearing exercise can be chosen alone. Address metabolic risk and functional decline. Obese people with chronic diseases can also combine the two types of exercise to help regulate blood pressure and glucose levels and boost their physical strength, thereby reducing boredom from doing only one kind of exercise [6-7].

The combined programmes are more suitable for the clinical goals because they can be modified in terms of intensity, duration and frequency. Thus, they are more suitable for people at various stages of illness and different fitness levels. Many obese people are too large to train together at this time.

4. ADHERENCE FACTORS

4.1. Readiness and Personalization

Exercise programs should match readiness and ability. Research on the exercise-as-a-form-of-therapy shows that before prescribing an exercise plan, healthcare providers need to assess whether a patient is fit to exercise [3]. Obesity can lead to pain and shortness of breath, and people are also hesitant to exercise. Therefore, personalisation should consider the disease burden, age, physical condition and previous exercise history.

4.2. Monitoring and Feedback

Wearable devices and pedometry-based monitoring can be used to track the activity level and sedentary behaviour of patients and clinicians. A 2024 review shows that step counters and smartphone monitoring can support personalised chronic disease management by displaying and recording a person's daily activities [4]. Feedback is useful because people are more likely to continue a behaviour when they can see progress. Monitor and adapt the exercise recommendations dynamically.

4.3. Social and Clinical Support

Support from society and the clinic can help more people change their behaviour. Obese people with chronic diseases often need to be motivated by doctors and other people in their daily lives. Generally, the most effective interventions are those that incorporate education, set goals, provide supervision and follow-up, and do not offer a one-time recommendation [5, 7, 10].

5. OPTIMIZATION PATH

The optimisation of health behaviour and exercise mode should adopt a layered model. First, the intervention should determine the extent of the disease and physical restrictions. Second, set an achievable behaviour objective, such as walking after eating, strength training twice a week, or reducing time spent sitting down during the day. Third, it should select the exercise mode that suits the medical condition and preferences better. Fourth, a relatively simple device that records logs or is worn can be used for monitoring. Fifth, periodically review the progress and adjust the plan when facing obstacles [3,4,5,6].

The above model does not fall into the trap of a single exercise plan for all people. Obese people are varied, and the severity of chronic disease varies too. Optimisation is therefore the selection of a behaviour system and exercise type suitable for an individual, rather than a general recommendation.

6. PRACTICAL ISSUES

There are also some actual problems. First, some obese patients need to do low-impact exercise to reduce the stress and pain of their joints. Second, some people will be more likely to choose interval walking or aquatic exercise instead of traditional gym-based courses. Thirdly, if people are embarrassed or lack self-confidence, they may not be able to participate in learning activities. Fourth, medication use and comorbidities may require clinical monitoring before increasing exercise [1-3, 4].

The other is a problem of sustainability. The short-term exercise benefits will not be realised if the patient cannot maintain the habit. Given that there is an expanded welfare system, I will make more time out of it and develop a habit of exercise. Therefore, behaviour design is also an issue for exercise physiology.

7. CONCLUSION

Optimization of health behaviour and exercise mode in chronic disease management for the obese population should focus on sustainability, personalisation and medical safety. Research shows that exercise can improve indicators of disease in overweight or obese people, and various types, such as aerobic and resistance training, are all suitable for different patients. Behavioral tools can help set specific action plans, monitor progress, and offer other healthcare supports.

Therefore, the general recommendation for the management of chronic diseases in the obese population is inadequate. Tailor the exercise plan and provide behavioural modification support. By combining optimal health behaviour and exercise mode optimisation, better compliance will be achieved, strong disease control will be realised, and more stable health improvement will be realised.

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