Introduction: Following sternotomy, heart transplant patients are recommended to limit activities that involve their upper extremities for 10-12 weeks due to concerns of sternal dehiscence. These conservative activity limitations perpetuate increased symptoms of anxiety. However, if patients practice a boxing exercise program in cardiac rehabilitation (CR), anxiety may be reduced.

Purpose: To measure anxiety outcomes on CR heart transplant patients before and after participation in a boxing exercise program.

Design: In a pilot study involving 3 CR heart transplant patients (2 male, 1 female), anxiety was measured using the Cardiac Anxiety Questionnaire (CAQ) before and after participation in a 4-day boxing exercise program.

Methods: During the first session of CR, patients were instructed on boxing techniques, footwork, punching (jab, cross, and uppercut), and proper breathing. Punching exercise selection was chosen in accordance with Keep Your Move in the TubeTM, a mindful movement model that avoids strain on the sternum. During CR sessions two through four, patients boxed for three, 2-minute rounds. Each round consisted of 30 seconds each of jabs, jab-jab-cross combination, uppercuts, and then jab-cross combination. Blood pressure, rate of perceived exertion, and heart rate were recorded after each round. A Century BOB XL boxing mannequin was used for targeting.

Results: The overall anxiety score decreased from (mean±SD) 37.67±6.81 to 30.33±7.51, resulting with a p-value of 0.037. Conclusion: Patients anxiety scores are typically high following heart transplant. Use of a boxing exercise program in a CR setting is a unique and nontraditional method for helping patients to reduce their anxiety.

Conclusions: Anxiety is a major contributor to cardiovascular disease and is commonly seen in heart transplant patients. During cardiac rehabilitation, traditional sternal precautions may contribute to sustained levels of anxiety and uncertainty. This is concerning because patients are told to limit upper-body use and have weight restriction of no more than 5lbs for 10-12 weeks post-surgery. This drastically reduces the ability of the patient to perform basic activities of daily living. After allowing heart transplant patients to participate in a boxing exercise program, and using the Keep Your Move in the TubeTM movement model, anxiety scores dropped significantly within four sessions of CR.

Implementation of a Boxing Exercise Program for Heart Transplant Patients in a Cardiac Rehabilitation Setting

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Abstract

Purpose: To measure anxiety outcomes on CR heart transplant patients before and after participation in a boxing exercise program. Design: In a pilot study involving 3 CR heart transplant patients (2 male, 1 female), anxiety was measured using the Cardiac Anxiety Questionnaire (CAQ) before and after participation in a 4-day boxing exercise program. Methods: During the first session of CR, patients were instructed on boxing techniques, footwork, punching (jab, cross, and uppercut), and proper breathing. Punching exercise selection was chosen in accordance with Keep Your Move in the TubeTM, a mindful movement model that avoids strain on the sternum. During CR sessions two through four, patients boxed for three, 2-minute rounds. Each round consisted of 30 seconds each of jabs, jab-jab-cross combination, uppercuts, and then jab-cross combination. Between each round patients, rested a minimum of two minutes. Blood pressure, rate of perceived exertion, and heart rate were recorded after each round. A Century BOB XL boxing mannequin was used for targeting. Results: The overall anxiety score decreased from (mean±SD) 37.67±6.81 to 30.33±7.51, resulting with a p-value of 0.037. Conclusion: Patients anxiety scores are typically high following heart transplant. Use of a boxing exercise program in a CR setting is a unique and nontraditional method for helping patients to reduce their anxiety.

Introduction

Traditional sternal precautions, intended to prevent sternal wound complications, vary widely but generally include limiting upper extremity use for up to 12 weeks. Frequently, such precautions cause high levels of anxiety with patients that have undergone sternotomy and place these patients in a position in which they are unable to take care of their normal activities of daily living. Patients who have had a heart transplant have the potential of having high levels of anxiety when starting a cardiac rehabilitation (CR) program. Having these patients regain the use of their upper extremities quickly after transplantation is essential for lowering anxiety levels.

Methods

The 3 subjects who participated in this study started CR 17 days, 23 days, and 102 days post discharge from the hospital after receiving a heart transplant. Each patient completed a Cardiac Anxiety Questionnaire (CAQ) before starting the boxing exercise program. During the first session of CR, patients were instructed on boxing techniques, footwork, punching (jab, cross, and uppercut), and proper breathing. Punching exercise selection was chosen in accordance with Keep Your Move in the TubeTM, a mindful movement model that avoids strain on the sternum. During CR sessions two through four, patients boxed for three, 2-minute rounds. Each round consisted of 30 seconds each of jabs, jab-jab-cross combination, uppercuts, and then jab-cross combination. Between each round patients rested a minimum of two minutes. Blood pressure, rate of perceived exertion, and heart rate were recorded after each round. At the conclusion of the fourth CR session patients completed a second CAQ.

Results

The overall anxiety score decreased from (mean±SD) 37.67±6.81 to 30.33±7.51, resulting with a p-value of 0.037.

Conclusions

Anxiety is a major contributor to cardiovascular disease and is commonly seen in heart transplant patients. During cardiac rehabilitation, traditional sternal precautions may contribute to sustained levels of anxiety and uncertainty. This is concerning because patients are told to limit upper-body use and have weight restriction of no more than 5lbs for 10-12 weeks post-surgery. This drastically reduces the ability of the patient to perform basic activities of daily living. After allowing heart transplant patients to participate in a boxing exercise program, and using the Keep Your Move in the TubeTM movement model, anxiety scores dropped significantly within four sessions of CR.