

# Effectiveness of cardiac rehabilitation in preventing a second negative cardiac event for 15 years.

*This project is for educational purposes only.*

By: Kaylin Schuda



## Abstract

The purpose of this study was to determine if cardiac rehabilitation was effective in reducing risk of the participant undergoing a second negative cardiac event for up to 15 years. Participants between the ages of 65 and 75 underwent 12 weeks of cardiac rehab. The 12 weeks of cardiac rehab consisted of 3 sessions a week and each session had an educational component to it. The participants would then return to their daily living and live as they normally would. Approximately 15 years after the completion of cardiac rehab for the participants, researchers would access their medical records. This was to see if the participants suffered a cardiac event after the completion of cardiac rehab. The participants had to sign an informed consent prior to participation in this study. The study was conducted at the Edward Elmhurst Hospital cardiac rehabilitation center. It was hypothesized that cardiac rehab was effective in reducing risk of a second negative cardiac event.

## Introduction

- According to Rubin (2019), only 20% of eligible Americans take part in cardiac rehabilitation (CR) each year.
- CR has six different components: aerobic training, counseling in nutrition, stress management, psychological counseling, a decrease in smoking and cardiovascular disease (CVD) education (Rubin, 2019).
- Participants who underwent the proper training program through CR decreased the chances of the participants suffering from a cardiovascular disease (Kitajima et al., 2019).
- CR had a great effect on preventing mortality due to a negative cardiac event but not hospital readmission (Sumner et al., 2017)
- CR helps patients reduce risk of having cardiovascular disease (Bobenko et al., 2019)
- Independent Variable: Cardiac Rehab.
- Dependent Variable: Whether or not the subject was readmitted into the hospital.

- Operational Definition
  - Cardiac rehab is defined as an exercise program that is medically supervised in an attempt to improve cardiovascular health for patients who have suffered from a heart attack, heart failure, angioplasty or heart surgery
  - Cardiac rehab: 12 week program that meets 3x a week.

## Methods

### Participants

- Subjects from Edward Elmhurst Hospital Cardiac Rehabilitation.
- Reached out while subjects were hospitalized.
- Study was approved by IRB.

### Criteria

- Men and women.
- Ages 65-75 years old.
- Had a negative cardiac event.

### Research Design

- All subjects volunteer to undergo CR.
- CR is 3 times a week for 12 weeks.
- Subjects are monitored for 15 years after graduation of CR.

### Data Analysis

- SPSS was used for correlation data.
- Hospital records are pulled for a yes or no on rehospitalization.

## Purpose Statement & Hypothesis

The purpose of this study is to determine whether or not patients who have participated in cardiac rehabilitation (CR), are less likely to return to the hospital later on after suffering a negative cardiac event. It is hypothesized that those who undergo a full cardiac rehab program with education will be less likely to be hospitalized from another cardiac event.

## Discussion

- Limitation: The population sample was too low.
- Limitation: The participants could have died from something else, making them invalid data points.
- Limitation: Different underlying health issues.
- Bias: Participants were between the ages of 65 and 75 rather than all aged participants.
- Assumption: Participants were healthy despite their negative cardiac event

The main consideration for future research is that the population sample should be higher.

## Acknowledgements

I would like to thank the participants in the study for volunteering to undergo this study. I would like to thank the fellow researchers for the aid in collecting and analyzing the data. I would like to thank Dr. Granniss and Dr. Hartman for assisting me and giving me the necessary knowledge and tools to conduct the study. I would like to thank Kylie Ameres for assisting me in my proposal and lastly, I would like to thank Weslyn Almond for supporting me and assisting my writing throughout the project.

## References

- American Heart Association. (n.d.). What is Cardiac Rehabilitation? Retrieved from <https://www.heart.org/en/health-topics/cardiac-rehab/what-is-cardiac-rehabilitation>
- Bobenko, A., Schoenrath, F., Knierim, J. H., Friede, T., Verheyen, N., Mehra, M. R., Haykovsky, M., Herrmann-Lingen, C., Duvinage, A., Pieske-Kraigher, E., Halle, M., Falk, V., Pieske, B., Edelmann, F. (2019). Exercise training in patients with a left ventricular assist device (Ex-VAD): rationale and design of a multicentre, prospective, assessor-blinded, randomized, controlled trial. *European Journal of Heart Failure*, 21 (9), 1152–1159. doi: 10.1002/ehfj.1431
- Kitajima, K., Fujimi, K., Matsuda, T., Fujita, M., Kaino, K., Teshima, R., Ujifuku, Y., Horita, T., Sakamoto, M., Arimura, T., Shiga, Y., Shiota, E., Miura, S. I. (2019). Possibility of Cardio-renal Protection by Long-term Cardiac Rehabilitation in Elderly Patients with Cardiovascular Diseases. *Internal medicine*, 58 (15), 2133–2138. doi:10.2169/internalmedicine.2281-18
- Rubin, R. (2019). Although Cardiac Rehab Saves Lives, Few Eligible Patients Take Part. *Jama*, 322(5), 386. doi: 10.1001/jama.2019.8604
- Sumner, J., Harrison, A., & Doherty, P. (2017). The effectiveness of modern cardiac rehabilitation: A systematic review of recent observational studies in non-attenders versus attenders. *PloS one*, 12 (5), e0177658. doi:10.1371/journal.pone.0177658