

# Prevention of Heart Attack with Exercise Intervention



**GNRS 507: Scientific Writing**

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# INTRODUCTION AND BACKGROUND INFORMATION

- For adults above the age of 65, Heart Attack is a major cause of death in US.
- According to the Center for disease Control and Prevention [CDC] (2018) ;
  - 647,000 Americans Annually die from heart disease.
  - Approximately \$316.6 billion is annually spent in healthcare cost associated with heart disease and stroke.
- For elderly people, WHO recommends 150 minutes of weekly moderate intensity exercise for healthy living.
- However, adoption of exercise by the elderly population has been fairly low.
- Individual or supervised exercise training intervention is among effective strategies of preventing heart attack (Giedrimiene & King, 2017).

(CDC, 2018) (Giedrimiene & King, 2017)

# PICOT QUESTION AND LITERATURE

- Exercise is potentially associated with reduced risks of heart attack.
- PICOT Question
  - For adults over age 65, does a daily 30-minute exercise regimen reduce the future risk of heart attack compared with no exercise regimen in 6 months as measured by daily measurement of blood pressure and application of Pender's Health Promotion Model to heart attack patients?

## KEY POINTS FROM LITERATURE

- Daily exercise comprising of aerobic and resistance training reduced the risks of heart attack by;
  - Reducing systolic and diastolic pressure
  - Improved cardiorespiratory fitness
  - Increasing upper and lower body strength (Schroeder et al., 2018).
- This resulted in overall improvement in the quality of life.
- Resistance training exercises alone increased lower body strength and reduced waist circumference.
- Aerobic training alone slightly improved cardiorespiratory fitness and reduced body weight.

(Schroeder et al., 2018)

## KEY POINTS FROM LITERATURE **continued**

- Supervision and group approach is effective in enhancing compliance to exercise regimen.
- Web-based monitoring and validation of exercise training improved the adherence rates.
- Incorporation of lifestyle behaviors such as quitting smoking/drinking resulted into higher quality life.
- Implementation of daily exercise intervention in urban community settings is more effective (Cole et al., 2016)

(Cole et al., 2016)

# GRADING OUTCOME

Research Design	Articles	Level of Evidence
Randomized Controlled Trials	Arrieta et al., 2019; Howden et al., 2018; Schroeder et al., 2019; Duscha et al., 2018; Cao et al., 2018	Level I Evidence- all are primary research (Dearholt and Dang, 2017).
Quasi-experimental Studies (With non-randomized selection of subjects)	Sibel Sevic et al., (2018) and Torry et al. (2018)	Level II evidence (Dearholt and Dang, 2017).
Systematic Reviews	Cole et al. (2016), conducted a reviews of randomized controlled trials.	Level I evidence (Dearholt and Dang, 2017).

# CLINICAL IMPLICATIONS: PLAN FOR CHANGE IN PRACTICE

- The proposed change in practice is the implementation of Community-based Exercise Training program.
- The program will Provide daily 30 minutes of aerobic and strength training exercises for eight weeks.
- The participants will comprise of adults aged 65 years and above.
- A Geriatric Nurse, Physiotherapist and Exercise Instructor will implement the program in Community setting (Cao et al., 2018).
- The program will encompass multicomponent exercise modes including;
  - Walking, jogging, chest press, quadriceps extension, leg press, and hip abduction.
- Primary measure of outcome- based on twice daily measure of blood pressure, quality of life (Questionnaire +Pender's model)
- Secondary measure of outcome- incidence of heart attack (Control group- non-participants)

(Schroeder et al., 2019) ( Cao et al., 2018)

# POTENTIAL BARRIERS

- Financial constraints
  - Well wishers/ charity organizations/community support
- Reluctance of the elderly to join the program
  - Family support and encouragement.
- Difficulty in sustained adherence
  - Incentives and prizes for compliant participants
  - Continual support until new health and monitoring habits are created

(Schroeder et al., 2019)



# ETHICAL CONSIDERATION & CULTURAL INTEGRATION

## ETHICAL CONSIDERATIONS

- In consideration of health disparities in cardiovascular disorders,
  - The program provides an equal opportunity for high risk and low risk populations.
  - Motivated by the egalitarian theory of justice.
  - Provides equal access to opportunities and resources (Beauchamp & Childress, 2009).

## CULTURAL INTEGRATION

- The program would adopt cultural competence by training the staff and participants on cultural competency.
- This will enable them appreciate the cultural/spiritual diversity of people in the health promotion plan.
- Staff would be trained on respectful and non-judgmental communication (Beauchamp & Childress, 2009)

(Beauchamp & Childress, 2009)

# EXPECTED OUTCOMES & METHOD OF MEASUREMENT

## Primary outcome measures

Reduced incidences of heart attack: Regular daily assessment, and physical examination by the nurse which will include twice daily blood pressure measurement.

Improved quality of life: Measured through a pre/post test health-promoting lifestyle profile II (HPLP II)

## Secondary outcome measures

Incidences of heart attack or other cardiovascular disorders reported.

The general non-participant population will be used as the control group.

(Sibel et al., 2018)

# CONCLUSION

- Heart attack is a fundamental healthcare concern in the United States,
- The research explored the effectiveness of daily 30 minutes of aerobic and strength training exercise on heart attack.
- Based on results, 30 minutes of exercise;
  - Reduces systolic and diastolic pressure,
  - Improved cardiorespiratory fitness
  - Increased upper and lower body strength,
- This resulted in improved life quality and reduces incidence of heart attacks.
- From the research, a combined exercise training will be implemented.
- The measured outcomes are the quality of life and incidence of heart attacks.

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