

Exercise-Based Cardiac Rehabilitation Outcomes: A Meta-Analysis of Gender Differences

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BACKGROUND

Differences in cardiovascular disease incidence and manifestations between males and females has been reported. However, few studies have examined gender differences in cardiac rehabilitation (CR) outcomes. No meta-analyses were identified.

PURPOSE

The purpose of this meta-analysis was to determine if there is a difference in CR outcomes between genders

METHODS

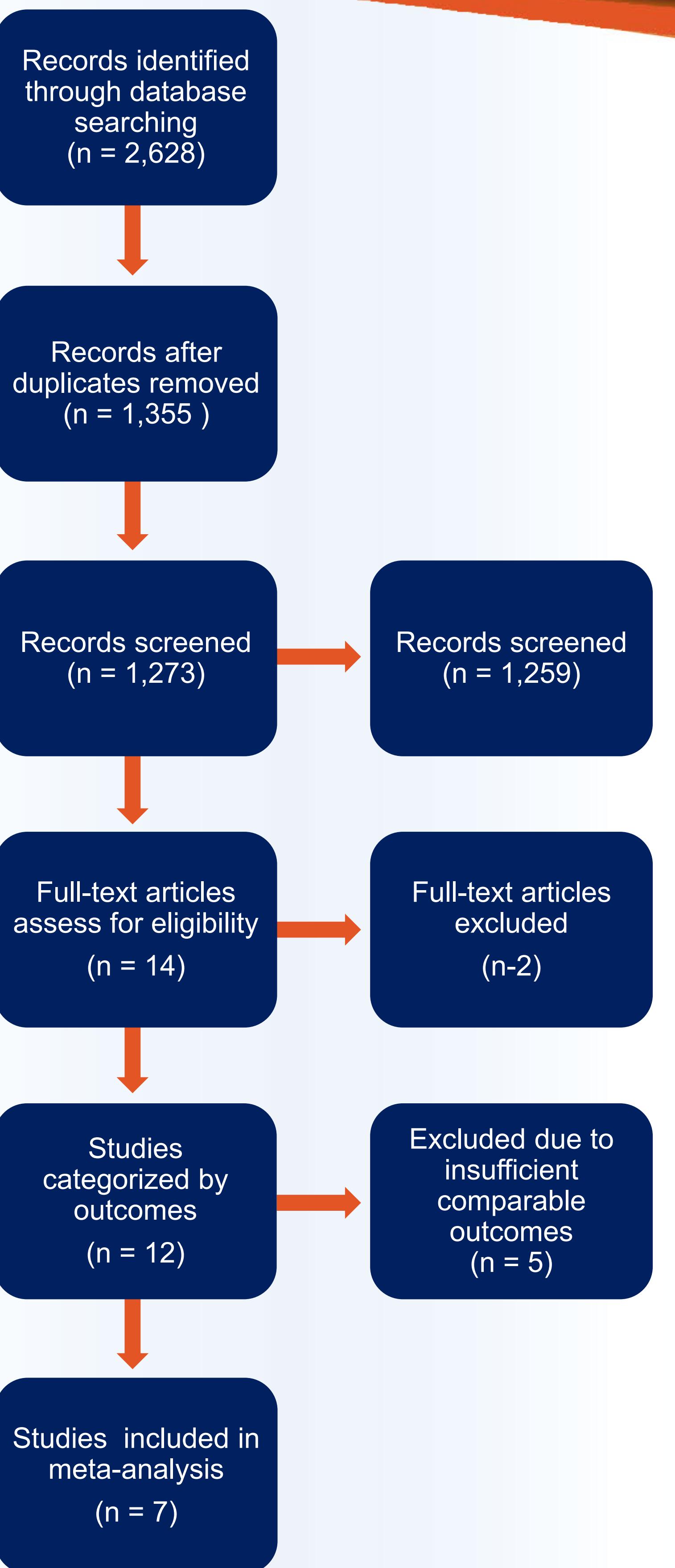
Following PRISMA guidelines, a protocol for completing the meta-analysis was established.

Inclusion criteria:

- experimental and quasi-experimental studies;
- included coronary artery disease patients that underwent CR; and
- studies reported outcomes based on gender.

A search of CINAHL, Medline, PubMed, and Google Scholar electronic databases was conducted using the keywords gender, sex, male, female, cardiac rehabilitation, exercise, secondary prevention coronary disease, and myocardial infarction. the search was limited to those published in English since 2008.

The review process and data entry were completed by three evaluators based on the set inclusion criteria. Meta-analysis was performed to determine any differences in the effect of CR on clinical outcomes between men and women and over time.



RESULTS

Eight clinical outcomes meeting the required minimum of three studies for analyses:

- Anxiety
- Depression
- Body mass index (BMI)
- Functional capacity (METs)
- Total cholesterol
- High-density lipoprotein (HDL)
- Low-density lipoprotein (LDL)
- Triglycerides

Significant difference between genders (ES = -0.33, $p <.01$ in Figure 1); no change over time:

- LDL

Significant difference over time (ES = 0.48, $p <.01$ in Figure 2); no difference between genders:

- HDL

Difference over time and between genders:

- Functional capacity (METs) (ES = -0.93, $p <.01$ in figure 3)
- Total cholesterol (ES = 0.42, $p <.01$)

No significant differences within or between genders:

- Anxiety
- Depression
- BMI
- Triglycerides.

Figure 2. HDL - Post

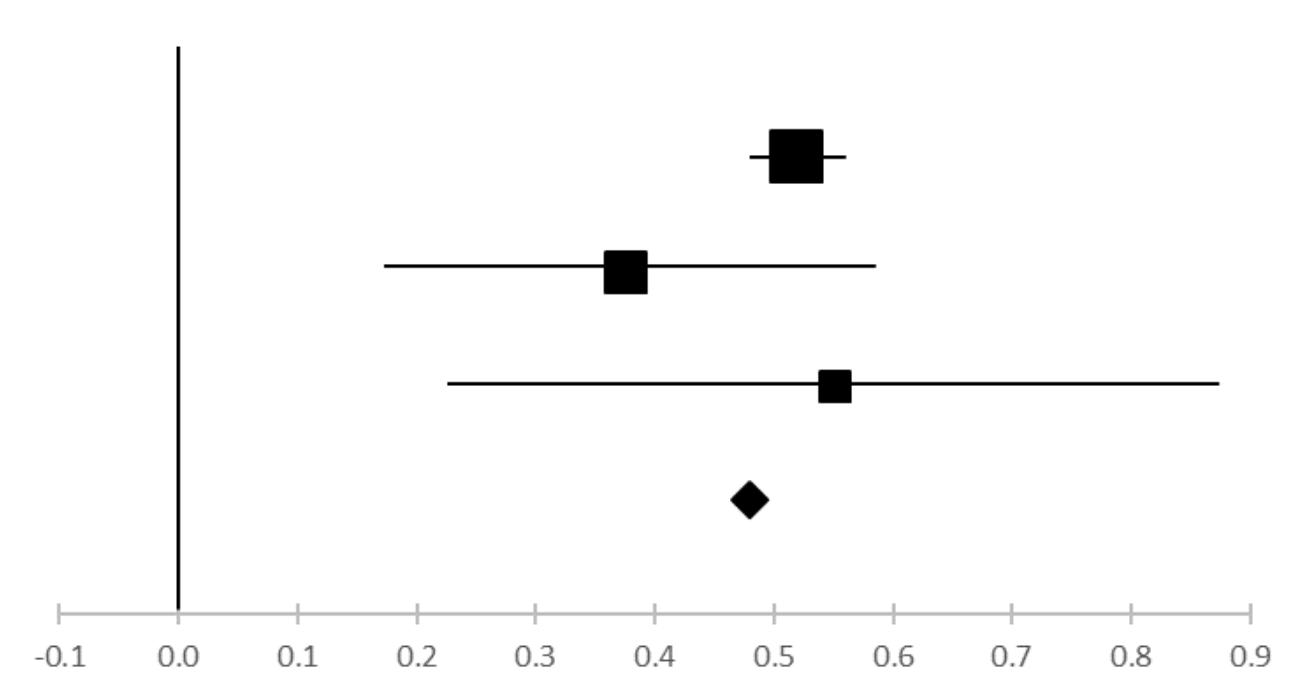
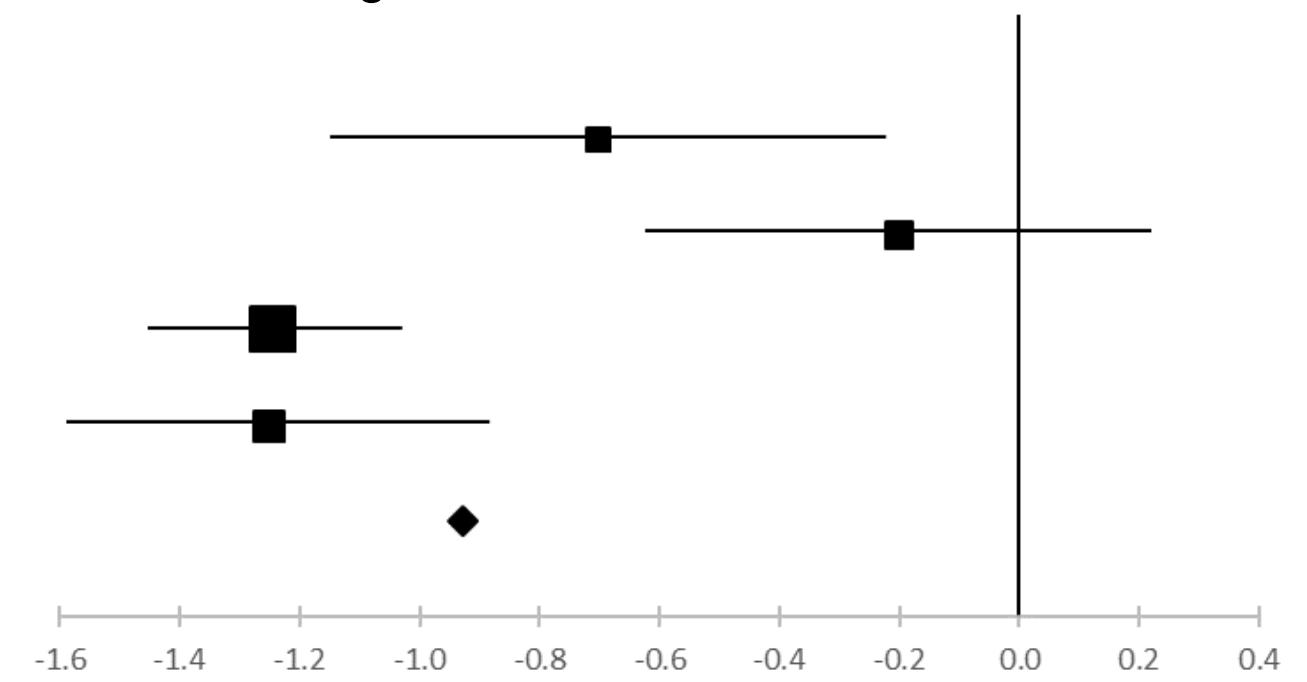


Figure 3. METs - Post



CONCLUSIONS

Very few studies report outcomes based on gender; sample sizes of women were much smaller than men.

Women are less likely to participate in CR but appear to benefit in a similar manner as men.

Additional research comparing effectiveness of CR is needed. Interventions to engage women in CR should be explored.

Figure 1. LDL - Women

