The Effectiveness of Cardiac Rehabilitation Programs in Females Following Acute Myocardial Infarction

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Abstract: Introduction: The incidence of myocardial infarction (MI) is increasing yearly as well as the concurrent morbidity (ie, disability) and mortality resulting from these events. While cardiac rehabilitation programs (CRP) have shown success in reducing risk factors for secondary events, the majority of these successes have been reported in males. Whether or not the same outcomes occur for female MI patients as a result of CRP has not been adequately addressed. The purpose of this study is to evaluate the literature in an attempt to determine if current CRP are equally effective for both genders. Methodology: A systematic review of the literature was performed in order to evaluate the data on the outcome of CRP between genders during the time frame of 1986-2006. Articles included were related to female inclusion in CRP and the resulting effectiveness in CRP outcomes. Results: Twenty-one articles met the inclusion criteria. Based on the literature, CRP are not as effective for females. Conclusion: While the incidence of myocardial infarction is increasing dramatically in females, CRP still fail to understand and address the multidimensional differences between males and females in terms of responding to and adhering to CRP. In addition, clinical profiles vary from females in that females present at an older age with more comorbidities. As a result, this review hopes to shed more light on the need for CRP more specifically designed to meet the needs of females.

1. Introduction:

In order to decrease morbidity and mortality associated with myocardial infarctions and enhance overall quality of life, cardiac rehabilitation programs (CRP) offer a viable option for improving physical capacity, reducing emotional distress, and modifying risk factors. [1] Unfortunately, many eligible patients are not referred or do not utilize CRP [1-4] despite the demonstrated benefits. [3,4] Understanding the components, purpose, and goals of CRP will help to identify the overwhelming need for people who suffer from coronary artery disease or a myocardial infarction to participate in such programs. A primary concern is determining if current CRP are as effective for females as for males, and if not, the ways to improve CRP. The focus of cardiac rehabilitation has always tended to favor males, particularly since cardiovascular disease is more often associated with males, despite evidence of cardiovascular disease as a leading cause of morbidity and mortality in both genders. [5-7] Given that “Optimal treatment is not necessarily the same treatment for all,” [7] differences exist between male and female patients with coronary heart disease. For instance, males frequently present with the defined, classical symptoms of a myocardial infarction (i.e., chest pain, pain down the left arm and shortness of breath) [8-9] during the 6th or 7th decade of life. [2] On the other hand, females usually do not present with these classical symptom and their symptoms (atypical chest pain and concurrent comorbidities like hypertension and diabetes) do not usually occur until the 8th or 9th decade. [10] Additionally, gender differences also exist for risk factors and health concerns associated with myocardial infarction. [10]

2. Methodology:

A systematic literature review was performed to identify quality, evidence-based studies that addressed gender differences in three areas of CRP: clinical profiles, referral patterns and utilization, and outcomes. Articles included in the study were related to female inclusion in CRP and the resulting effectiveness in CRP outcomes following a myocardial infarction. The following electronic databases were searched: MedLine, CINHAL, Psyclnfo and Cochrane. The databases were searched for articles which met the inclusion criteria from 1986-2006. The following MeSH terms were used: cardiac rehabilitation, gender differences, compliance, effectiveness, myocardial infarction, women, females and outcomes. Each study was reviewed for quality and application to the current question of interest.
3. Results:

Twenty-one articles met the inclusion criteria. Nine of the articles related directly to gender outcomes and results of CRP. [6-14] These articles addressed specific parameters of CRP, such as functional capacity, emotional changes, anxiety, quality of life, and coping with stress. Six of the articles indirectly addressed CRP results through referral and utilization patterns. [2,4,5,15-17] These articles primarily focused on referral and utilization rates for CRP between males and females. Each of these articles support the problem that females are less likely than males to be referred to, utilize, or adhere to CRP. Therefore, females are not experiencing the potential benefits of CRP. Six of the articles contained background information regarding CRP. [1,3,18-21] Levels of evidence for these articles can be seen in Figure 1.

![Levels of Evidence by Percentage](image)

Figure 1. Levels of Evidence by Percentage

4. Conclusion:

While the incidence of myocardial infarction is increasing in females, the present CRP practices still fail to understand and address the multidimensional differences between males and females in terms of responding to and adhering to CRP. Since clinical profiles vary from males and females in that females present at an older age with more comorbidities, a more specialized CRP for females may be more effective. As was illustrated in this review, females do benefit from CRP, even though the extent is unclear since females have not been the focus of many high-quality studies. Therefore, it is important for health care professionals to recognize the unique needs of females so optimal cardiac rehabilitation opportunities are encouraged in order to minimize the negative effects of myocardial infarctions and the associated comorbidities.

References