

## Correlates of health-related quality of life in patients with myocardial infarction: A literature review



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### ABSTRACT

**Background:** By the increasing emphasis on health-related quality of life (HRQoL) in patients with myocardial infarction (MI), it is necessary to explore factors that affect HRQoL in this population.

**Objectives:** This study aimed to identify correlates of HRQoL in patients with MI.

**Design:** A literature review of the factors that affect HRQoL in patients with MI (1995–2016).

**Data sources:** Three main databases—CINAHL, MEDLINE and PsychINFO—were searched to retrieve relevant peer-reviewed articles published in English.

**Review methods:** In consultation with a medical librarian, we identified relevant MeSH terms and used them for searching the literature: health-related quality of life/quality of life/HRQoL/QoL, myocardial infarction/heart attack/MI and predict\*/factor. Data elements were extracted and narratively described variables synthesised into four categories.

**Results:** A total of 48 studies met the inclusion criteria and were included in the review. Correlates of HRQoL in patients with MI were identified in the following categories: demographic, behavioural, disease-related, and psychosocial factors. Specific correlates included age and gender-identity for demographic factors; physical activity and smoking for behavioural factors; severity of MI, symptoms, and comorbidities for disease-related factors; anxiety and depression for psychosocial factors.

**Conclusions:** Identifying correlates of HRQoL can help identify patients who are at risk for poor HRQoL in the recovery or rehabilitation stage of post-MI. Future intervention should focus on adjustable correlates such as behavioural and psychosocial factors to promote HRQoL among patients after experiencing MI.

### What is already known about the topic?

- Several demographic, behavioural, disease-related and psychosocial factors were related to HRQoL in patients with heart disease.
- Anxiety, depression, and stress consistently showed a significantly negative impact on MI patients' HRQoL throughout the literature.

### What this paper adds

- Several demographic, behavioural, disease-related and psychosocial factors were found out to affect HRQoL, whereas demographic and disease-related factors are unlikely to be modifiable. Altering or preventing modifiable factors can be more effective strategies for the recovery of HRQoL in patients with MI.
- Early identification and interventions for depression, anxiety, and stress in cardiac patients, as recommended by American Heart Association, may improve HRQoL of patients with MI.

- A single study of investigating all the factors, including demographic, behavioural, disease-related and psychosocial ones, is needed to identify the relationship between the variables and HRQoL among patient with MI.

### 1. Introduction

Myocardial infarction (MI) is the most frequent manifestation of coronary heart disease (CHD) and one of the leading causes of death worldwide (Saeed et al., 2011; Wang et al., 2014a). The life-threatening nature of the disease, the need for long-term lifestyle changes and medical regimens after MI (Boersma et al., 2006) often result in reduced health-related quality of life (HRQoL) among patients (Kang et al., 2016; Wang et al., 2014b). Relevant literature indicates that once HRQoL decreases post-MI, patients rarely recover to the level preceding to MI (Wang et al., 2014) or to the standard of the general population (Sakai et al., 2011).

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Health-related quality of life (HRQoL) is a multidimensional concept that examines the physical, emotional, and social impacts of a disease/illness on the patients' life (Sertoz et al., 2013). One of the most popular patient-reported outcomes, quality of life (QoL) is used as a means of assessing the overall well-being of patients in the recovery stage of MI (Lidell et al., 2014; Wang et al., 2014b). In particular, HRQoL provides a patient-centred assessment of one's health condition (Norris et al., 2007), which in turn, can be used to evaluate an individual patient's experience and to predict the reoccurrence of cardiac events, rehospitalisation, and mortality (Rumsfeld et al., 2013). Thus, the American Heart Association recommends that the assessment of HRQoL needs to be included as one of the routine evaluations of health status among patients with cardiovascular disease (Rumsfeld et al., 2013).

By the increasing emphasis on HRQoL in patients with CHD, in particular MI (Rumsfeld et al., 2013), it is necessary to explore factors that affect HRQoL in this population. Knowledge about these factors may help identify patients who are likely to experience poor HRQoL at the time of hospital admission and during recovery and hence, provide a window of opportunity to eventually improve clinical outcomes associated with MI (Hawkes et al., 2013).

To the best of our knowledge, there are no reviews integrating correlates of HRQoL in patients with MI. This study was designed to collect, review and critically synthesise the results of research on factors affecting HRQoL in patients with MI.

## 2. Methods

A comprehensive electronic search was performed using CINAHL, MEDLINE and PsychINFO databases. In consultation with a medical librarian, we identified relevant MeSH terms and used them for searching the literature: health-related quality of life/quality of life/HRQoL/QoL, myocardial infarction/heart attack/MI and predict\*/factor. Only peer-reviewed studies published in English were searched. To ensure relevancy of the studies, articles were restricted to those published in the last 20 years, from 1995 to July 2016. This was because the management of MI and assessment of HRQoL has drastically improved over the past two decades.

### 2.1. Study selection

A total of 640 articles were identified from the database searches. Ninety articles were removed as duplicates. The title and abstract of the remaining 550 articles were reviewed. Articles were included: 1) if study subjects were patients with MI exclusively; 2) if a dependent variable was HRQoL; and 3) if a study examined factors or predictors of HRQoL. The exclusion criteria were irrelevant articles, scientific letters, or posters, studies of validation or reliability of measurements or qualitative studies. One author extracted articles according to the predetermined inclusion and exclusion criteria, and results were discussed with the other authors for accuracy of the extracted articles. The selection process led to inclusion of 48 articles for the review. One additional article was identified through manual searching of the reference lists of the included studies, increasing the number of the articles for full-text screening to 49. After excluding one irrelevant study of a medical intervention, the total number of the reviewed articles was 48 (Fig. 1).

### 2.2. Data extraction and quality assessment

A pre-developed table template (Table 1) was used for data extraction, and extracted data were examined, compared, discussed and agreed with the other authors. Data elements were extracted and narratively described variables synthesised into four categories. Data of study characteristics were countries where the studies were conducted, study designs, sample size, mean age, MI diagnostic criteria, tools that

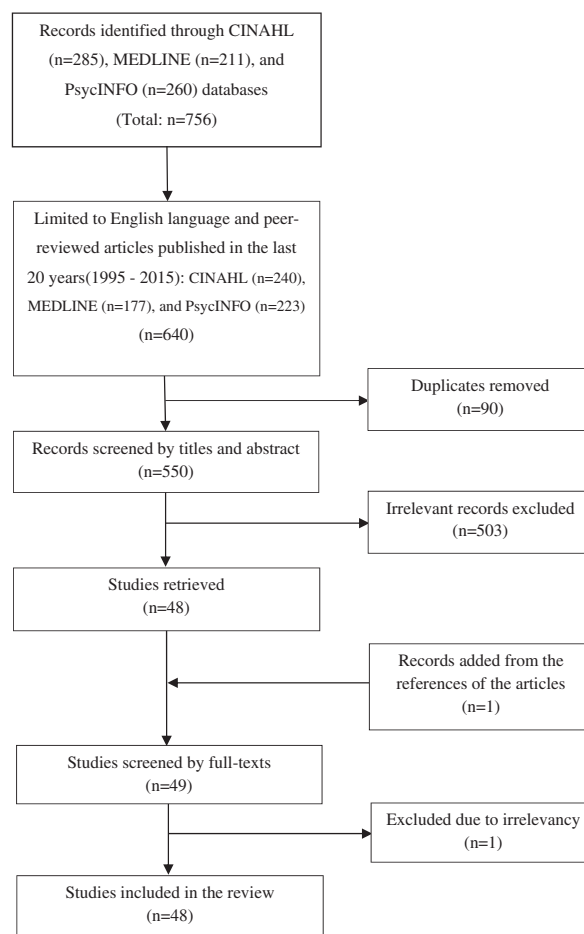


Fig. 1. The process of article selection.

assessed HRQoL, instruments examined variables, follow-up periods and factors that affected HRQoL in patients with MI.

The quality of all included articles were evaluated and rated using the Quality Assessment Tool for Quantitative Studies of the Effective Public Health Practice Project (EPHPP) (National Collaborating Centre for Methods and Tools, 2008). This tool comprises six criteria—selection bias, study design, confounders, blinding, data collection method, and withdrawals and dropouts. Each section rates 'strong (1)', 'moderate (2)' and 'weak (3)'. Then, the global rating for the paper and the final decision of the reviewers can be determined as 'strong (1)', 'moderate (2)' and 'weak (3)' (National Collaborating Centre for Methods and Tools, 2008). The final scores of the articles included in the current review are presented in Table 1.

## 3. Results

The studies were conducted mostly in European countries (n = 33; 6 studies each in Sweden and the UK, 4 in the Netherlands, 3 in Poland, 2 in Norway, and 1 study each in France and Hungary) including one multinational study that included data from 18 European countries. In addition, there were 10 studies undertaken in the USA, 3 studies conducted in Canada, and one international study involving the USA and Spain. Of the 48 studies, 28 studies used cohort, longitudinal, prospective designs, or a combination of them, whereas 10 studies applied a cross-sectional design. Two studies did not report the study design explicitly; however, these studies were prospective in nature in that the participants of these two studies were followed for three months (Mayou et al., 2000; Williams et al., 2012) or up to a year (Mayou et al., 2000). Among the ten cross-sectional studies, the time since MI was not reported in two studies, whereas the

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