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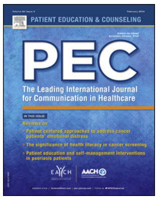

Review article

Health literacy and coronary artery disease: A systematic review

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ABSTRACT

Objective: Identify health literacy (HL) screening instruments available to CAD patients; describe the prevalence of low HL; explore the predictors of low HL; and, identify the association between HL, health behaviors, and outcomes among these patients.
Methods: A literature search of electronic databases was conducted for published articles from database inception to February 2017. Eligible articles included the assessment of HL in CAD patients. Health behaviors and outcomes included diet, exercise, smoking, medication use, hospital readmission, knowledge, health-related quality of life (HRQoL), and psychosocial indicators.
Results: Overall, ten articles were included, of which two were RCTs, and seven were considered “good” quality. The most used screening instruments were REALM and TOFHLA. The average prevalence of low HL was 30.5%. Low HL participants were more likely to be older, male, from a non-white ethnic group, have many CVD comorbidities, lower educational level, disadvantaged socioeconomic position, and less likely to be employed. Low HL was consistently associated with hospital readmissions, low HRQoL, higher anxiety and lower social support.
Conclusion: The literature on HL in CAD patients is very limited.
Practice implications: Healthcare providers should start adopting strategies that can potentially mitigate the impact of low HL in the care of CAD patients.

Contents

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1. Introduction

Cardiovascular Diseases (CVDs) are the leading cause of mortality worldwide [1], and are a significant contributor to morbidity and health-related costs [2]. Coronary Artery Disease (CAD) – the most common type of CVDs – is considered a chronic condition and, hence secondary prevention is key to controlling this preponderant chronic disease [3–6]. CAD patients must make multiple lifestyle changes, adhere to treatment recommendations to optimally reduce risk, and sufficiently understand health information to enable them to participate actively in the management of their health condition [3,6,7].

Health literacy is defined as "the degree to which individuals can obtain, process, understand, and communicate about health-related information needed to make informed health decisions" [8]. Therefore, it is a critical component in the care of CAD patients. There are many personal and system factors that contribute to an individual's health literacy, such as knowledge about their condition and accessibility and complexity of health information [9,10]. Low health literacy has been observed to be a problem not only in low- and middle-income countries, but also in affluent societies [11–14]. Everyone can experience low health literacy [8,11–14].

Systematic reviews on health literacy have shown the association of this characteristic with outcomes and health-related behaviors in chronic conditions such as heart failure [15], diabetes mellitus [16,17], asthma [18], cancer [19,20], and chronic musculoskeletal diseases [21]. Inadequate health literacy is associated with less understanding of their medical conditions [22], lack of compliance with recommended treatments [23], adverse effects on health outcomes [24], and increase in medical costs [25,26]. Therefore, health literacy is a critical component in the care of chronic patients, including CAD patients.

The purpose of this study is to systematically review research literature to explore the role of health literacy in the care of CAD patients. Specifically, this systematic reviews aims to: (1) identify health literacy (HL) screening instruments available to CAD patients; (2) describe the prevalence of low HL among CAD patients; (3) explore the predictors of low HL among CAD patients; and, (4) identify the association between HL, health behaviors, and outcomes. To the best of our knowledge, there is no systematic review that specifically addresses these questions in a population of CAD patients.

2. Methods

2.1. Search methods for identification of studies

Literature published from database inception until February 2017 was searched using the MEDLINE, Embase, PsycINFO, CINAHL, CCTR (Cochrane Central Register of Controlled Trials), CDSR (Cochrane Database of Systematic Reviews) and PubMed computerized databases. Search results were downloaded into bibliographic software. The search strategy incorporated two concepts: (1) condition (i.e. CAD); and (2) outcomes (i.e. any study assessing health literacy). Search terms were specific to each database. The search strategy for two databases is shown in Appendix A (online) in the Supplementary material. A snowball hand-search was undertaken after the first selection of articles.

2.2. Inclusion and exclusion criteria

The criteria for considering studies for this review were:

(1) Design: peer-reviewed studies in print or published-ahead of print were considered for inclusion. Primary or secondary studies were included, whether they were observational or interventional in design. Reviews were identified as a source of additional primary studies. Qualitative studies were not included because the objectives of this review was to identify HL screening instruments available to CAD patients and they are usually developed and tested in quantitative studies. The use of these instruments to assess and categorize HL is usually simpler and require less resources (e.g. do not need to have a room to interview patients, less time required for healthcare providers since patients mostly complete questionnaires by themselves, less interpretation errors, among others).
(2) Participants: cardiac patients with primary diagnosis of CAD, myocardial infarction (MI), or who have undergone coronary artery bypass graft surgery (CABG), or percutaneous coronary intervention (PCI). These patients are indicated for cardiac rehabilitation (CR), which is an outpatient, chronic disease management care model proven to reduce death and disability among CAD patients [4]. Heart failure and diabetes patients were excluded from this review.
(3) Health literacy: any study with CAD patients assessing their health literacy. In order to be included the study should also assess a health behavior (e.g. medication use) or outcome (e.g. hospital readmission).
(4) Outcomes: studies had to either report the impact on knowledge, behavior, psychosocial indicators (i.e., anxiety, self-efficacy, social support), and outcomes. Some examples of behaviors associated with CAD patients include: smoking, physical activity, dietary habits, response to cardiac symptoms, and medication adherence. Some examples of outcomes associated with CAD patients include: morbidity (e.g. rehospitalisation), mortality, and quality of life. We did not restrict our search strategy and we were looking for any type of knowledge, behavior, psychosocial indicators, and outcomes assessed in CAD patients in combination with the assessment of health literacy.
(5) Language: published in English, Spanish or Portuguese.

2.3. Data collection and analysis

Two reviewers (GLMG and GSSC) independently screened the references identified by the search strategy by title and abstract. To be selected, abstracts had to clearly identify CAD participants, the assessment of health literacy and one of the outcomes described above. The full-text reports of all remaining citations were obtained and assessed independently for eligibility by these two reviewers, based on the defined inclusion criteria. Any disagreements were resolved through discussion between the two investigators and, if needed, consultation with a third author (RRB).

Data extraction was undertaken by a single reviewer (GLMG) and checked by a second reviewer (GSSG). The Downs and Black scale [27] was selected to assess the quality of the studies, as it is appropriate to evaluate non-randomized studies, and it contained

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