



Information need

Healthcare providers' awareness of the information needs of their cardiac rehabilitation patients throughout the program continuum



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ABSTRACT

Objective: To (1) describe cardiac rehabilitation (CR) participant information needs, (2) investigate whether CR providers are cognizant of patient's information needs and preferred delivery formats, and (3) investigate whether patient information needs change over the course of CR.

Methods: In this cross-sectional study, 306 CR patients and 28 CR providers completed a survey. The survey consisted of the Information Needs in CR (INCR) questionnaire, and items about preferred education delivery formats.

Results: Low-income CR participants had significantly greater information needs than high-income participants. CR providers were cognizant of patient information needs, except patients did desire more information on diagnosis and treatment than providers perceived ($p < 0.01$). Books, lectures and discussion were identified as the preferred delivery formats by both patients and providers. There were some significant differences in patient information needs over the course of the program, particularly in relation to concerns and risk factors.

Conclusion: CR patients desire information in many areas, particularly regarding emergency/safety and diagnosis/treatment. CR providers were highly cognizant of patient information needs; however, these do change over time.

Practice implications: These findings could inform evaluation and improvement of CR education programming, to ensure programs are meeting patient information needs across all stages of recovery.

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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]. Patient participation in cardiac rehabilitation (CR), a comprehensive outpatient risk reduction program, mitigates this burden [3–5]. Given the complexity of CVD management, including physical activity, nutrition, medication adherence and smoking cessation, education is necessary to support patients in achieving risk reduction and ultimately secondary prevention [6–9]. Indeed, a core component of CR programs is patient education [10,11].

Patient education has been formally defined as “the process by which health professionals and others impart information to patients that will alter their health behaviors or improve their health status” [12, p. 788]. As a facilitator of behavior change, patient education therefore plays a key role in the management of CVD [9]. The effectiveness of patient education has been demonstrated, such that patient CVD knowledge has been shown to strongly influence their symptom recognition [13,14], advocacy for physician screening [15], attitudes toward their disease [16], to promote their motivation for self-care and ultimate behavior change [16,17], improve health-related quality of life, and decrease costs through reductions in downstream healthcare utilization [9]. Conversely, inadequate patient understanding of their disease may cause unwarranted emotional distress, inappropriate coping behavior, non-compliance with medical advice [18,19], and unnecessary disease progression [13,20].

To deliver effective patient education, educators need to address patients' information needs. The information needs of cardiac patients immediately following revascularization [21–23],

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acute coronary syndrome [24,25], myocardial infarction (MI) [26–31], and heart failure [32,33], have been previously described, and include knowing how to manage signs and symptoms, knowing how to modify or change risk factors, and knowing the names, dosages and side-effects of medications. However, the information needs of CR participants have only recently been described [34]. This is a major gap, considering many CR participants understand or recall little of what happened in hospital (due to anxiety and sedation for example), they would have received information primarily related to acute recovery from their therapies [6–9,35], and that information needs change across the continuum of care [36].

To be effective, patient education should be comprehensive, planned, supportive and, in particular, patient-centered [9,12,37,38]. Unfortunately, much previous literature on cardiac and non-cardiac patient education has demonstrated that healthcare providers' are often unaware or inaccurately perceive patients' educational needs [26,27,39–41]. Clearly, this can result in less engaged and informed patients, and thus potentially negatively impact their health outcomes. Accordingly, understanding what patients identify as information needs and concerns, especially early in CR, can ensure that education provided is relevant to the learner [42]. Thus, the objectives of this study were to: (1) describe CR patient information needs and their relation to patient sociodemographic and clinical characteristics, (2) investigate whether CR providers are cognizant of patient's information needs and preferred delivery formats, and (3) investigate whether patient information needs change over the course of CR.

2. Methods

The framework for this study was based on Knowles's assumptions regarding the nature of the adult learning process [43]. Specifically, it was assumed that adults are able to identify their own learning needs, and that they are motivated to learn when they see the content as relevant.

2.1. Design and procedure

This was a cross-sectional study. Ethics approval was obtained from the local review board, and written consent to participate was provided by all respondents. Data was collected between January and August, 2012.

CR patients were approached by a research team member at the beginning of their group classes to participate in the study. They were provided the option to complete the survey while in the CR center, or to take it home to complete, and bring it back at their next visit. The survey included sociodemographic items, the Information Needs in CR (INCR) instrument [34], and items assessing patient preferences for educational delivery formats. Clinical data were extracted from their medical charts. CR providers were asked to complete an adapted version of the same survey.

2.2. Participants

This study included CR patients and healthcare providers recruited from a large academic CR center in Toronto, Canada. The CR program is 6-months in duration. Upon starting CR, each patient undergoes a comprehensive assessment, they are provided a CR book, and are provided pamphlets as applicable to their needs. Participants then come to the center for weekly exercise classes, in addition to their home exercise. In conjunction with these weekly visits, an interdisciplinary team provides approximately 15 h of patient education including information on exercise safety,

nutrition, risk management, medications, stress management, and lifestyle management. This is delivered in large and small group lectures.

A convenience sample of 500 CR patients was approached to participate in this study. Patients from all CR classes were approached to solicit responses across all months of the program. The exclusion criteria for patients were: age less than 18 years, lack of English language proficiency, and any visual, cognitive or psychiatric condition that would preclude the participant from completing the survey. All 59 healthcare providers from the CR center were emailed the survey to complete, namely nurses, registered dietitians, exercise physiologists, kinesiologists, physicians, physiotherapists, social workers, and psychologists. Administrative and exercise testing staff were excluded from participation.

2.3. Measures

Patients' clinical characteristics were obtained from the medical chart, and included cardiac history, comorbidities, risk factors and months in CR. Patients and CR providers' socio-demographic characteristics were also assessed: age, sex, educational level and family income for patients; and age, sex and years working in CR for providers.

The INCR assessed CR patients' information needs in 10 areas: the heart (physiology, symptoms, and surgical treatments), nutrition, exercise/physical activity, medication, work/vocational/social, stress/psychological factors, general/social concerns, emergency/safety, diagnosis and treatment, and risk factors. Participants were asked to rate the importance of each of the 55 information items in increasing their knowledge about CVD. Items were rated on a 5-point Likert-type scale, that ranged from 1 = *really not important* to 5 = *very important*, and accordingly higher scores indicated greater information needs. The INCR has been psychometrically validated in the CR setting, and demonstrated good reliability and validity [34].

The INCR was adapted to be administered to CR providers, through minor revision to the instructions. Providers were asked to rate the importance of each item to their patients on the same 5-point scale.

Next, patients were asked to report their preferences for educational delivery formats, checking their preferences from a list of options. There was also space to report "other" preferred formats, in open-ended fashion. CR providers were similarly asked to denote their perceptions of their patients preferred delivery formats. Finally, providers were also asked to describe the most common questions asked by patients, to describe perceived education gaps in the program, in open-ended fashion.

2.4. Statistical analyses

SPSS Version 20 was used (IBM Inc 2011, NY). Descriptive statistics were used to describe sociodemographic and clinical characteristics of patients and CR providers. To test the first objective, INCR scores were explored. Pearson's correlation, *t*-tests and ANOVAs (as applicable) were computed to test for significant differences INCR scores based on patient and provider characteristics.

To test the second objective, a descriptive examination of mean total information needs scores and mean item scores by sample (patients vs. CR providers) was performed. To test for differences between samples, non-parametric tests (Mann–Whitney *U*) were applied, due to difference in size between samples. A similar approach was also undertaken for preferred delivery formats.

Open-ended questions (preferences for educational delivery formats, the most common questions patients asked, and gaps in

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