“Review Article”

# Patient-reported outcomes in cardiac rehabilitation: What do we know about program satisfaction?

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Structured Abstract

Purpose: Patient satisfaction has become an important indicator of quality, and may be related to greater adherence to cardiac rehabilitation (CR). The objectives of this narrative review were to investigate: (1) patient satisfaction with CR, and its' relationship to adherence or health outcomes; and (2) assessment tools applicable to CR.

Methods: A literature search was conducted on key resource databases, including MEDLINE, HAPI and PROQOLID. A focused Internet and grey literature search was also conducted.

Results of data synthesis: Eight studies were included. Patient satisfaction was high overall, and pertained to education received. In 4 studies, patient satisfaction with treatment was compared in patients who attended CR versus those who did not. In 2 of these studies where items were investigator-generated, significant differences favoring CR were found. In the 2 studies where the treatment satisfaction subscale of the Seattle Angina Questionnaire was administered, no differences were observed. Only 1 study was identified which examined the relation of patient satisfaction to any outcome, and revealed greater satisfaction was related to greater program adherence. There was a dearth of valid assessment tools.

Conclusions: Despite recommendations in CR association guidelines to consider patient satisfaction, there is an absence of research assessing it. The studies that have assessed it administered tools of questionable psychometric rigour. It remains to be determined whether patient satisfaction is related to any meaningful outcomes.

Condensed Abstract

Cardiac rehabilitation Associations recommend assessment of patient satisfaction. Eight studies doing so were identified in this review. Results suggested patient satisfaction was high overall, however there was a dearth of valid assessment tools.. No studies assessed whether satisfaction was associated with greater program adherence or any other outcome.

## Introduction

Cardiovascular disease (CVD) is one of the leading contributors to morbidity, mortality, along with health-related costs [1]. As a result of advances in therapies, mortality rates have declined significantly [2,3]. There are now many people living with CVD. These patients are at high risk of experiencing a recurrent cardiac event, and therefore there has been major focus on optimizing the quality of secondary preventive care. Moreover, this focus on quality has pertained not only to patient health outcomes, but also patient-reported outcomes such as satisfaction. Indeed, interest in patient satisfaction has increased by 85 percent based on trends in peer-reviewed literature [4].

Patient satisfaction is inherently subjective, and assessments attempt to capture personal evaluations of care. It is often conceived as multi-dimensional, considering interpersonal manner, technical quality, accessibility / convenience, finances, efficacy / outcomes, continuity, physical environment and availability [5]. Patient satisfaction can also be conceived as the subjective perception and comparison made by the patient against standards which that patient has established [6]. Patient satisfaction is inconsistently defined, and does not often correspond with objective reality or the perceptions of providers or administrators of care. For the purposes of this paper, patient satisfaction is defined as a measure of cardiac rehabilitation (CR) program ability to meet patient needs and goals [7].

Several studies of patient satisfaction with acute cardiac care have been conducted [4,8]. Many of these studies have shown no relation between satisfaction, quality of care, and health outcomes [4,9,10]. Instead, patient satisfaction is often associated with variables such as age, socioeconomic status, functional status, as well as psychosocial factors, including depressive symptoms. For instance, the patients who are more likely to be satisfied with the care they receive are often older and have no college or university education [11].

Chronic cardiac care generally involves participation in CR. CR is an outpatient program typically offered for four to six months post-acute care [12]. Core program components include risk assessment, supervised exercise, education, and counselling to support patients to make lifestyle changes and achieve secondary prevention targets. Contrary to the acute cardiac care literature, patient satisfaction has been scantly investigated in the CR literature [13]. This is despite the fact that the policy statement from the CR section of the European Association for Cardiovascular Prevention and Rehabilitation recommends data on patient satisfaction be routinely collected [14]. The American Association of Cardiovascular and Pulmonary Rehabilitation recommends patient satisfaction be measured as part of the service domain of their outcomes assessment policy statement [7]. The Canadian Association of Cardiovascular Prevention and Rehabilitation guidelines also focus on patient satisfaction as an indicator of quality from a patient perspective [15], and a recent Canadian Cardiovascular Society working group to develop CR quality indicators considered a patient satisfaction indicator [16]. Moreover, following a rigorous process of quality indicator development in the Netherlands, patient satisfaction was incorporated [17]. Finally, the 2004 Framework Recommendations for CR developed by the Australian Cardiac Rehabilitation Association recommended patient satisfaction be considered in process evaluation [18].

Despite these recommendations, it is not known how satisfied patients are with CR [18]. Moreover, it is unknown how patient satisfaction may relate to program adherence, and hence health outcomes. Finally, we do not know if there are psychometrically-validated tools to assess patient satisfaction in the CR setting. Without this information, recommendations to assess patient satisfaction routinely may be premature. Thus, the objectives of this study were to: (1a) review studies describing patient satisfaction with CR; (1b) review studies assessing the relationship between patient CR satisfaction and program adherence or health outcomes; and (2) review patient satisfaction assessment tools applicable to CR.

**Methods**

This literature review aimed to summarize what is known in the field[12]. Due to the dearth of available research, quality assessment was not formally undertaken. Synthesis of findings was narrative and tabular. Analysis was focused on the overall direction of effect of the literature and priorities for future investigation.

Criteria for considering studies for this review

The PICOs criteria informing the review are shown in Table 1. Studies of any design were considered. Participants eligible for CR based on Canadian Association of CR guidelines were included [15]. Eligible patients included those diagnosed with acute coronary syndrome, chronic stable angina and heart failure, or who had undergone percutaneous coronary intervention, coronary artery bypass graft surgery, valve surgery or cardiac transplantation.

For the first objective of this review, studies had to administer measures of patient satisfaction consistent with the definition applied in the introduction [5,7]. For the second aspect of this objective, all clinical events or other outcome measures reported were included in this review. This included mortality, morbidity, or related patient-centered outcomes such as access to or coordination of care, continuity and transition, emotional support, information and education, involvement of family, physical comfort, and respect for patient preferences.

For the second objective, measures had to be multidimensional (i.e., consisting of multiple items probing experience and / or satisfaction with different aspects of healthcare), to measure satisfaction through patient report, be relevant to inter-professional care, be developed using psychometric techniques (i.e., rigorous process for item generation and pilot testing), and, have demonstrated reliability and validity. We searched for scales that were both generic as well as disease and / or CR-specific.

Data sources and search strategy

A literature search was conducted for this review on key resource databases, including MEDLINE, EMBASE, CINAHL and DARE. Search terms in MEDLINE and EMBASE included "Patient Satisfaction/" and "patient satisfaction.tw.", and in CINAHL included "TI patient satisfaction" or "AB patient satisfaction" and (MH "Patient Satisfaction"). The Cochrane Library and numerous Health Technology Assessment databases were searched using the Evidence-based Medicines Review (EMBR-OVID) search engine. In addition, a focused Internet and grey literature search was conducted, and the websites for the Canadian Agency for Drugs and Technologies in Health, the Agency for Healthcare Research and Quality as well as the European Society of Cardiology were scanned for existing evidence reports.

A limited search of the Health and Psychosocial Instruments (HAPI) and Patient-Reported Outcomes and Quality of Life Instruments (PROQOLID) databases was also undertaken to identify applicable psychometrically-validated patient satisfaction measures. All searches were conducted by an Information Scientist (SK).

Methodological filters were applied to limit retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2002 and February 8, 2013. A date limit of 2007 was used for randomized controlled trials, as it was assumed older trials would be summarized in review papers identified. Where a review of patient satisfaction in CR was identified, the articles cited were retrieved and considered for inclusion in this review.

Study selection, data extraction and analysis

Titles and abstracts of the references located in the literature search were screened by two reviewers (SK and JP) against the inclusion criteria. Full publications of potentially-relevant studies were retrieved and considered for inclusion (SK). A second reviewer (SG) independently determined study eligibility.

Data from included studies were extracted by one reviewer (SG or GT) and checked by a second reviewer (DF or SK). Data on patient characteristics and details regarding elements of patient satisfaction and measurement were also extracted. Study authors were contacted where necessary to provide additional information. Data were synthesized qualitatively.

## Results

Studies describing patient satisfaction with CR and its' relationship with outcomes

Following the literature search, 8 articles were identified that met inclusion criteria for the first objective. The studies are shown in Table 2. The CR programs varied across the studies, with regard to duration, session frequency, and program offerings.

Of the 8 studies, 3 were prospective cohort studies [19,20,21], 2 were cross-sectional studies [11,22],1 was a randomized controlled trial [23], one was registry-based [24], and finally one was a qualitative study [25]. Results of the randomized controlled trial demonstrated that patients attending CR had significantly greater satisfaction than those who did not. The matched sample of CR participants selected from the registry reported significantly greater satisfaction with medical care than non-participants. The one prospective cohort study which tested for change in patient satisfaction over time reported no significant differences in patients who went to CR versus those who did not [20].

Five studies incorporated a comparison group, of which 4 studies had a ‘no-CR’ control group [19,20,23,24]. The other study qualitatively compared satisfaction in patients attending home-based versus hospital-based CR [25]. Of the 4 studies with a no-CR control, 2 reported significant differences with greater satisfaction among those attending CR [23,24], and 2 did not [19,20]. The former 2 administered investigator-generated satisfaction items and the latter administered a psychometrically-validated scale.

Most studies used different assessment tools to measure patient satisfaction: 5 studies administered unique investigator-generated questionnaires [11,19,21,22,24], 2 studies administered the psychometrically-validated Seattle Angina Questionnaire, which has a treatment satisfaction subscale [19,20], and 1 study used a focus group interview guide [25]. The items of the treatment satisfaction subscale were deemed consistent with the operationalization of patient satisfaction herein. As outlined above, in these 2 studies no significant difference in satisfaction in CR participants and non-participants were observed. One of the investigator-generated scales, namely the CR Preferences Scale [22], was multidimensional and attention to psychometric properties was considered in its development. Here, satisfaction was operationalized by subtracting a patient’s “importance” rating on one of 17 items from their “experience” rating on the same item. Table 2 shows the elements of CR with which patients were most satisfied, and also describes men and women’s satisfaction.

Overall, the descriptive studies suggested that patient satisfaction with CR was high. Results also suggested that patient satisfaction may vary by sex, work status and CR program elements patients were offered (i.e., receipt of psychosocial counselling was related to greater patient satisfaction) [11]. Finally, the literature search yielded no articles for the second aspect of this objective.

Patient satisfaction assessment tools applicable in CR

For the final objective, no CR guidelines or policy statements recommended specific instruments for measuring patient satisfaction. The literature search identified 4 patient satisfaction tools that may potentially be relevant for CR. The patient satisfaction tools were: the Patient Assessment of Chronic Illness Care [26], the Seattle Angina Questionnaire treatment satisfaction subscale [27], Outpatient Satisfaction in Rehabilitation [28], and the CR Preference Form [22]. The first 3 tools are generic to outpatient care for chronic disease, while the latter is CR-specific. A summary of these tools is presented in Table 3, and more detail is provided below.

Vrijhoef et al [29], undertook a systematic review to identify the most appropriate generic tools to measure patient satisfaction in the context of integrated chronic care. They identified 37 tools for consideration, of which 2 were considered promising based on their multidimensionality and the consideration of psychometric characteristics during the scale development process. These were the Patient Assessment of Chronic Illness Care (PACIC) as well as the short-form of the Patient Satisfaction Questionnaire III (PSQ-18) [30,31]. The face validity of the latter scale was not considered appropriate to the CR setting (e.g., "I think my doctor's office has everything needed to provide complete medical care"). The PACIC on the other hand, is a 20-item patient report tool based on Wagner's chronic care model [26]. It collects patient reports of the extent to which they have received specific actions and care as per the model. Accordingly, the PACIC consists of five scales and an overall score, and each one has a good internal consistency (Table 3), and face, construct and concurrent validity have also been demonstrated [30]. In the primary study undertaken by Vrijhoef et al. [29] comparable median scores were observed among patients with various chronic conditions. Moreover, Schmittdiel et al. [32] demonstrated significant relationships between the PACIC and outcomes in cardiac patients (although CR was not considered). This scale would be the most recommended to assess patient satisfaction for the reasons outlined above, however there are no published studies of the PACIC in CR samples. This represents an important direction for future research.

The Seattle Angina Questionnaire is a disease-specific tool with high validity and reliability to measure health-related quality of life [27,33]. The 19-item self-administered tool consists of five subscales, of which one is treatment satisfaction. As outlined above, indeed this scale has been administered in CR and general cardiac samples. Reliance however on one subscale is questionable. Moreover, the scale does not address other elements of patient satisfaction, and thus is also limited. Finally, considering that no significant difference in patient satisfaction was observed in patients who attended CR versus those who did not in the Goss et al. [19] and Tavella et al. [20] studies, it is unknown whether this is a true effect or whether the tool is not sensitive and specific enough to the CR setting.

The Outpatient Satisfaction in Rehabilitation measure [28] is premised on Ware's conceptualization of patient satisfaction [5]. It is a 26-item telephone survey assessing patient satisfaction with scheduling, transportation, session wait time, quality of the provider's care and patient-centeredness, progress achieved, and costs. A model of Outpatient Satisfaction was tested in order to eliminate some of the acquiescent bias that is associated with satisfaction surveys. Demographic characteristics such as age, sex and education were found to reliably relate to satisfaction ratings. However, considering this scale was developed in a rehabilitation setting serving patients with more debilitating health conditions such as stroke and brain injury, validation in the CR setting would be needed prior to broad application.

Finally, one CR-specific patient satisfaction measure was identified, namely the CR Preferences Form [22]. This scale was developed in the United States, and a revised version was developed in Australia by Fernandez, Salamonson, Juergens, Griffiths, and Davidson [34]. Patient satisfaction is derived by subtracting patient ratings of “importance” and the extent to which they had experienced each of 17 elements. In the CRPF-R, 2 items were removed and this comparison to derive patient satisfaction was not undertaken. Psychometric properties of both scales are described in Table 3. Unfortunately it appears the CRPF has not been administered to assess patient satisfaction in any other studies.

**Discussion**

Despite recommendations by leading national CR associations to consider patient satisfaction [7], surprisingly little is known about how programs are performing in this regard. In the few identified studies where patient satisfaction was considered, non-psychometrically validated tools were generally administered. Previous reviews have indeed noted how common this is, and how this often results in uniformly high satisfaction ratings lacking variability [35], as was observed herein. Even less is known about the association of patient satisfaction with CR and indicators of care quality or patient outcomes. Finally, following a thorough search of the literature, we are unable to recommend an appropriate assessment tool.

<u>Application to Practice</u>

More research is needed before we understand patient satisfaction with CR. Research is needed on the association between patient satisfaction and adherence to the program or self-management. These types of outcomes are related to ultimate health outcomes such as morbidity and mortality for CR participants [36]. The relationship between patient satisfaction, program adherence and health outcomes is likely highly complex and understanding these associations will be complicated by questions of directionality and unmeasured confounders (e.g., cardiac care received prior to CR, disease severity).

Future research is needed to first establish a psychometrically-validated generic, and second a CR-specific tool, to assess patient satisfaction with CR. The generic tool will be necessary to enable comparisons in patient satisfaction between patients who attend CR and those who do not. This is needed to answer the question of whether patients are satisfied with CR. The CR-specific tool will then enable cross-program comparison of patient satisfaction, so that we can begin to understand what elements of CR programs result in the greatest patient satisfaction, or also we could assess whether changes in programming to better satisfy patients expectations can result in improved patient satisfaction ratings. As outlined herein, the PACIC and CRPF, respectively, show promise as potential tools. However, the CRPF does not consider all the core CR components, so another revision of this scale or creation and validation of another scale is warranted.

Caution must be exercised when interpreting these findings, as this study was not conducted as a systematic review. Although the literature search was comprehensive, the included date, language and other limits placed on the search may have impacted the number of studies located. In addition, findings were not synthesized quantitatively, and the quality of the articles included was not considered in our results.

## Summary

Despite calls to consider patient satisfaction as a key indicator of care quality, unfortunately it is rarely assessed in the CR setting. This could be due to the lack of investigation of the relation between patient satisfaction and any objective patient outcomes, and the lack of psychometrically-validated tools established as appropriate to the CR setting. Given that research in other settings have suggested that patient satisfaction is related to health behaviours and healthcare utilization, it is important that future research is undertaken so that an empirical basis for recommendations to assess patient satisfaction can be established.

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Table 1. PICOs Defining the Research Question

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| Population | Eligible patients referred for cardiac rehabilitation. |
| Intervention | Assessment of patient satisfaction with cardiac rehabilitation program. |
| Comparator | Standard care |
| Outcome | Mortality, morbidity, or related patient-centred outcomes (scores for: Overall care received, access to or coordination of care, continuity & transition, emotional support, information and education, involvement |

Table 2. Summary of studies describing patient satisfaction with cardiac rehabilitation (N=7)

| Author, year Country | Study Design | Participants | Satisfaction Assessment Tool | Results |
|---|---|---|---|---|
| Goss et al. 2002 [12] USA | Prospective Cohort Participants who reported attending CR (n=239) were compared with those who did not (n=452) at 6 and 12 months post-surgery | N= 691CABG patients from 14 cardiac surgery centers | Seattle Angina Questionnaire (SAQ) Treatment Satisfaction Subscale | CR participants (91.7) reported similar treatment satisfaction as non-participants (90.1) at 12 months post-surgery (p=0.27). |
| Jones et al. 2008 [25] United | Qualitative Focus groups: 3 with | N=16 who attended a hospital-based program and N=10 | The topics covered in the focus groups included views on the different components | All patients reported they had enjoyed CR, in particular feeling an improvement in their health and confidence to return to activities they enjoyed. They appreciated learning about lifestyle changes and medication. |

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| Kingdom | hospital-based participants and 2 with home-based participants | patients who participated in home-based CR using the Heart Manual | of their program | Hospital-based program patients liked exercising in a group setting, as they gained motivation and support from the others, whereas home program patients reported satisfaction with the Heart manual and valued the one-on-one support given by the nurse facilitators. |
| Moore et al. 1996 [37]<br><br>USA | Cross-sectional | Convenience sample of N= 65 33 Men and 32 Women<br>60% CABG patients, 54% MI patients | Cardiac Rehabilitation Preference Form (CRPF)-a 35 item instrument they developed. Participants were asked to indicate the importance of each of 17 CR program features and the extent to which they had experienced each of these features. | The preferences that were well-met for both men and women were: transportation, drive time, exercises easily learned, no interference with other activities, cost, not being bored while exercising, encouragement provided from professionals, and parking convenience.<br>The expectations that were not well-met for men included: the ability to set own goals, ability to choose own exercises, and discussing progress. The expectations that were not-well met for women included: ability to choose own exercises, preferences for discussing progress, not tiring, flexible hours, and setting goals. |
| Simchen et al. 2001 [24] | Registry of CABG surgery | Of N= 2,085 CABG patients in | Investigator-generated item on satisfaction | Patients who participated in CR reported significantly higher satisfaction with medical care (p=0.02) versus the matched controls |

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| Israel | patients from all 14 centers that perform the procedure in Israel, with 1 year follow-up | 1994 between 45-64 years of age, who survived for one year, n=124 who participated in CR where matched on age and gender to n=246 controls | with medical services since CABG operation (from entirely dissatisfied to very satisfied) | who did not |
| Soja et al. 2005 [23]<br><br>Denmark | Randomized Controlled Trial<br>Participants randomized to CR or usual care.<br>Patient satisfaction was a pre-specified secondary | N= 104<br>Patients with cardiac disease and either type 2 diabetes or impaired glucose tolerance.<br>95 participants were retained at 12 months | Standardized interview questionnaire covering overall satisfaction and level of information, with closed-answer response options | Among patients receiving CR, 92% reported a high level of overall satisfaction with follow-up treatment, compared with 30% among patients receiving usual care (p<0.00001).<br>The CR group reported a higher level of satisfaction with regard to information about their disease (CR: 94%, Usual Care[UC]: 42%; p<0.0001), information on diagnosis and treatment (CR: 91%, UC: 47%; p<0.00001), self-management of lifestyle (CR: 84%, UC: 43%; p=0.01), and self-management of medicine (CR: 36%, UC: 17%; p<0.05).<br>Subgroup analysis showed no differences in degree of satisfaction according to gender, age or ethnic group. |

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| | outcome. | | | |
| Tavella & Beltrame, 2012 [20]<br><br>Australia | Prospective, observational<br><br>Assessments made at angiography and 6 months post. | N=221 patients who underwent angiography for angina with documented coronary artery disease who were eligible for CR. N=68 (31%) who completed CR were compared with those who did not. | SAQ Treatment Satisfaction Subscale | There were no significant differences at 6 months cross-sectionally or in terms of improvements from the time of angiography in satisfaction between those who went to CR and those who did not. |
| Wittmer et al. 2012 [21]<br><br>Switzerland | Prospective Cohort of all CR patients at a single-center since 1999 | N= 2371patients with acute coronary syndrome, post-revascularization or valve | investigator-generated item: To what extent were your expectations satisfied with the CR program? Responses ranged from | Degree of satisfaction was 80% or greater in the majority of patients. |

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| | | procedures who enrolled in CR | 1-100%. | |
| Wurgler et al. 2012 [11]<br><br>Denmark | Cross-sectional study from population of N=8002 ischemic heart disease patients sampled from all municipalities | N=4371 patients with ischemic heart disease who received at least some CR | investigator-generated items where CR participants were asked to the degree to which they agree with the following 3 statements: (1) “my rehabilitation has been well planned”, (2) “I always knew who to address in relation to my rehabilitation”, and (3) “due to my rehabilitation I have regained an every day life with the same quality as before my heart | 52.5% of CR participants were satisfied, and 10% were dissatisfied. Female patients (p<.001), those who were working (p=.016) and those who did not receive any psychosocial CR programming (p<.001) were significantly less satisfied than their counterparts. |

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| | | | disease". Participants who partly or fully agreed to all statements were considered "satisfied". | |

USA, United States of America; CR, cardiac rehabilitation; CABG, coronary artery bypass grafting; SAQ, Seattle anginaquestionnaire; CRPF, cardiac rehabilitation preference form; UC, usual care.

Table 3. Summary of multidimensional and psychometrically-developed generic and CR-specific patient satisfaction tools that may be appropriate for CR

| Tool | Description, Item Composition and Scoring | Psychometric Properties |
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| <u>Generic (potential for comparison to those who do not attend CR)</u> | | |
| Patient Assessment of Chronic Illness Care (PACIC)(Glasgow et al., 2005) [30] | The PACIC is tool assessing patient's reception of clinical services and actions for chronic illness care. It includes 20 items combining 5 subscales based on key components of the chronic care model.(Wagner et al., 1996) These sub-scales are: Patient Activation (items 1-3), Delivery System Design/Decision Support (items 4-6), Goal Setting (items 7-11), Problem-solving/Contextual Counseling (items 12-15), Follow-up/Coordination (items 16-20). Each PACIC item is scored on a scale from 1= 'almost never' to 5= 'almost always'. Each subscale is scored by averaging the items completed within that scale. The overall PACIC is scored by averaging scores across all 20 items. | Vrijhoef et al. (2009)<br>In this literature review the authors identified the PACIC as one of the most promising instruments for assessment of integrated chronic care. They found it was highly internally-consistent and found comparable median scores among patients with various chronic conditions. For the total scale, a Chronbach's α of 0.91 was found, which indicates good reliability.<br><br>Glasgow et al. (2005)<br>The PACIC demonstrated moderate test-retest reliability ($r$ =0.58 during the course of 3 months) and was correlated moderately, as predicted ($r$ = 0.32– 0.60, median = 0.50, $P$ <0.001) to measures of primary care and patient activation.<br>The internal consistency α for the overall PACIC score was 0.96.<br><br>Schmittdiel et al. (2007)<br>The PACIC was administered in a sample of chronic disease |

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| | | patients including cardiac outpatients. However, CR was not considered in this study. Results showed that PACIC scores were significantly and positively associated with some of the outcomes under consideration under objective 2: the use of the self-management services (odds ratio [OR]=1.40, 95%CI=1.30, 1.53), greater engagement in all self-management behaviors (ORs ranged from 1.21 to 1.41), higher patient rating of their health care (OR=2.36, 95%CI=2.18, 2.56), and higher quality of life (OR=1.20, 1.13, 1.27; Table 1). There was no significant association between the PACIC and adherence to medications (OR=1.06, 95%CI=0.98, 1.15). |
| <u>Disease-Specific</u> | | |
| Seattle Angina Questionnaire – Treatment Satisfaction Subscale (SAQ; Spertus et al., 1995) [27] | The SAQ is a 19-item self-administered questionnaire which measures five dimensions, including treatment satisfaction.<br>The SAQ is scored by assigning each response an ordinal value. The response options range from: 'not satisfied at all' to 'highly satisfied'. An example of a relevant item in the subscale concerned with treatment satisfaction is | Validity<br>The SAQ treatment satisfaction subscale highly correlated with the Medicine's Patient Satisfaction Questionnaire (r=0.67, p<0.0001).<br><br>Reproducibility<br>No statistically significant differences were found among the questionnaire responses of patients with stable coronary artery disease over the 3 month study period. |

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| | "Overall, how satisfied are you with the current treatment of your chest pain, chest tightness, or angina?" Scale scores are converted to a 0 to 100 range, this is done by subtracting the lowest scale score, dividing by the range of the scale, and then multiplying by 100. | |
| Outpatient Rehabilitation-Specific | | |
| Outpatient Satisfaction in Rehabilitation (Winter & Keith, 1988) [28] | Patient satisfaction measure was constructed based on the conceptualization suggested by Ware et al.[5] Satisfaction in the following dimensions is assessed: scheduling, transportation, sessions, therapists, progress, and funding, The outpatient satisfaction rehabilitation measure is administered via telephone. 14 out of 26 items are assessed on a 4-point Likert scale ranging from "strongly disagree" to "strongly agree", while the remaining questions used other forced-choice response options or were open-ended. | The face validity of the scale is supported as it was developed based on Ware's conceptualization of patient satisfaction. Reliability of the measure has not been considered. However the validity of the measure was tested through exploratory factor analysis of variables shown to affect patient satisfaction. The resultant model was then supported through confirmatory factor analysis. |
| CR-Specific | | |

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| Cardiac Rehabilitation Preference Form (CRPF; Moore et al., 1996) [22] | A 35 item instrument was developed to measure the extent to which client preferences for specific CR program features were met. It included 17 features of the CR program. Participants are asked to indicate the importance of these features and the extent to which they experienced each of these features. Both the importance and the experience measures used a Likert-type scale. The importance measure ranges from 0= strongly disagree to 4=strongly agree. The experience measure ranges from 0=not at all to 4=most of the time. The listed features include items such as "set own goals" and "exercise with someone". The extent to which subjects' preferences for each program feature were met was computed by subtracting subjects' importance scores from their experience scores. | Content validity of the instrument was assessed by a clinical nurse specialist working in a CR program, a nurse researcher familiar with the literature and 3 members of a Mended Hearts Club who had attended a CR program. These reviewers assessed the validity of the listed features based on comprehensiveness and confirmed they represented features of a CR program. Test-retest correlations over a 1-week period indicated a correlation coefficient of 0.91.Internal reliability cannot be assessed for this scale. |

CR, Cardiac Rehabilitation; PACIC, Patient Assessment of Chronic Illness Care; OR, odds ratio; SAQ, Seattle angina questionnaire; CRPF, cardiac rehabilitation reference form.