Continuity of Cardiac Care: Cardiac Rehabilitation Participation and Other Correlates

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Abstract

Background—Continuity of care refers to the ongoing management of a patient's care over time and across practitioners, and the patient's experience of this care as coherent and consistent with their medical needs and context. Continuity of cardiac care is integral to secondary prevention and improved health outcomes.

Design—This study examined patient perceptions of continuity, and how they relate to cardiac rehabilitation (CR) participation and other correlates.

Methods—Consecutive acute coronary syndrome (ACS) patients at 3 hospitals were approached, and 661 consented to complete a survey (504 men, 157 women; 75% response rate). Nine months later, 506 participants completed a survey including the Heart Continuity of Care Questionnaire (HCCQ), open-ended continuity perceptions, and self-reported CR participation (yes/no).

Results—The mean continuity perceptions were highly positive, and were equivalent to those found in another Canadian province, although open-ended responses revealed discontinuity with regard to outpatient visits and pharmacotherapy prescriptions. In a multivariate model ($p=.003$), the correlates of greater perceptions of continuity of cardiac care 9 months post-discharge were CR participation ($p<.05$), greater tangible support ($p<.05$), and less serious perceptions of illness consequences ($p<.001$) at the time of the ACS, after controlling for demographic and clinical factors.

Conclusion—Given the benefits of continuity of care, it is important to promote CR participation, a significant correlate of continuity, and to solicit various supports throughout the process of cardiac recovery.

Keywords

cardiovascular diseases; continuity of care; perceptions of care

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Introduction

Continuity of care refers to the ongoing management of a patient's care over time and across practitioners, and the patient's experience of this care as coherent and consistent with their medical needs and context {{39 Haggerty, J.L. 2003;}}. Continuity of care can improve the management of patient care between health care providers {{25 Anderson, M.A. 1998;52 Smoot, S.M. 1998; 58 Urden, L.D. 1998;}}, increase efficiency and cost-effectiveness within the health care system {{305 Brown, A. 2003;48 Probstfield, J.L. 2003; 868 De Maeseneer, J.M. 2003;}}, and decrease duplication of treatments {{27 Bestul, M.B. 2004;}}. Continuity of care has been shown to have beneficial effects on patient satisfaction {{58 Urden, L.D. 1998;838 Fan, S.V. 2005;}}, patient self-management, and most importantly on health outcomes {{24 Ahmed, A. 2003;203 Cabana, M.D. 2004;}}. When assessing continuity of care, it is important to incorporate patient perceptions {{955 Reid, R. 2002;}}, as it has been demonstrated that self-reported continuity of care is strongly associated with higher patient satisfaction {{838 Fan, S.V. 2005;}}.

Continuity of care may enable ongoing cardiac risk factor reduction. Although continuity of care has been investigated in a variety of patient populations {{853 Adair, C.E. 2005;839 Love, M.M. 2000;}}, the relationship between continuity and perceptions of care has received less attention in cardiac patients {{60 Young, W. 2003;42 Jolly, K. 1999;}}. This study examined patient perceptions of continuity of care, and how they relate to cardiac rehabilitation (CR) participation and other potential correlates of continuity. CR is an integral component of the care continuum for cardiac patients, and is supported through clinical practice guideline recommendations {{30 Canadian Association of Cardiac Rehabilitation 2004;404 Suskin, N. 2003;305 Brown, A. 2003;}}. These disease-specific education and behavior change programs are intended to provide CR participants with the necessary information to manage and reduce their risk, improve their health, and potentially ameliorate their continuity of care with specialists and primary care over time. The relationships between social support {{905 Husak, L. 2004;}} and illness perceptions {{903 French, D.P. 2005;}} and CR participation have been investigated. These concepts deserve exploration within a cardiac sample to increase our understanding of their impact on perceptions of continuity of care.

The objectives of this study were: (1) to describe continuity perceptions in a Canadian sample of cardiac patients under universal healthcare, (2) to compare these perceptions to those in another province, and (3) to investigate the correlates of positive continuity perceptions. It was hypothesized that CR participation, illness perceptions, and greater social support would have a positive impact on perceptions of continuity. By identifying the correlates of perceptions of continuity of care, secondary prevention may be improved by incorporating these findings into the care continuum for cardiac patients.

Methods

Procedure and Design

Ethics approval was obtained from participating institutions. This study constitutes a longitudinal component of a larger prospective study on cardiac rehabilitation referral models (See {{317 Grace, S.L. under review;}}). Participants were recruited from three hospitals, namely the Trillium Health Centre (THC) and University Health Network (UHN: Toronto General and Toronto Western Hospitals), all large, urban tertiary care facilities in the Greater Toronto Area, Ontario, Canada, within a universal health coverage system. Inclusion criteria were a confirmed diagnosis of Acute Coronary Syndrome (ACS) and age 18 years or older. Exclusion criteria consisted of being medically unstable, too confused to participate, ineligibility for or previous participation in CR, or lack of English language proficiency. Those who met study criteria and agreed to participate signed a consent form and were provided with a self-report questionnaire. Consent was also obtained to link participant's self-report questionnaire data with clinical charts. Nine months from their index cardiac hospitalization, participants completed a questionnaire in person or by mail. Dillman's tailored design method {{35 Dillman, D.A. 2000;}} was used to maximize response rate.

Participants

Thirteen hundred and sixty-two consecutive patients from THC or UHN who were diagnosed with ACS between September 2003 and August 2004 were approached for the study. ACS diagnoses were confirmed based on indication in patient chart of detailed history, focused physical examination, and diagnostic ECG changes (i.e., Q waves, and/or ST-T segment changes), and/or troponin levels above the 99th percentile of normal. Of these patients, 661 consented to participate and 483 were ineligible (response rate = 661/879 = 75%). Reasons for ineligibility were as follows: previous attendance at CR (n = 123; 25.5%), lack of English language proficiency (n = 119; 24.6%), too ill to participate (n = 98, 20.3%), condition not indicated for referral to CR (n = 70; 14.5%), patient too confused or experiencing cognitive impairment (n = 42; 8.7%), comorbid musculoskeletal condition which precludes ambulation (n = 19; 3.9%), patient already participating in 2 studies (n = 5, 1.0%) and other (n = 7, 1.4%) reasons.

Characteristics of participants and non-participants are shown in Table 1. There were no significant differences in participant status based on site of recruitment or marital status. Of the patients approached, participants were significantly younger than those who refused or were ineligible to participate ($F(2) = 33.59, p < 0.001$; post-hoc LSD $ps < .001$). Significantly more males agreed to participate than females ($\chi^2(2) = 31.44, p < 0.001$).

Of the 661 consenting participants, 61 were ineligible and 506 were retained at the 9-month assessment (retention rate = 506/600 = 84.3%). The characteristics of participants at 9 months are shown in Table 2. Reasons for ineligibility were as follows: deceased (n = 8; 1.2%), too ill to participate (n = 10; 1.5%), unable to reach patient/incorrect contact information (n = 34; 5.1%), previous participation in CR (n = 4; 0.6%), change in cardiac condition (n = 3; 0.5%) and other (n = 2; 0.3%).

Measures

Dependent Variable—The 9 month questionnaire included the Heart Continuity of Care Questionnaire (HCCQ) {{38 Hadjistavropoulos, H.D. 2004;}}, which assesses participants' perceptions of continuity of cardiac care along 3 dimensions: informational, management and relational continuity {{39 Haggerty, J.L. 2003;}}. Informational continuity is the use of information on prior events and circumstances to make current care appropriate for the individual. Management continuity refers to the provision of timely and complementary services within a shared management plan. Relational continuity refers to the ongoing relationship between a patient and one or more health care providers. The HCCQ is a 36-item self-report questionnaire, with 19 items assessing informational, 10 items assessing relational, and 7 items assessing management continuity. Items were rated on a 5-point Likert-type scale from 'strongly agree' to 'strongly disagree', with a sixth option for 'not applicable'. A mean continuity of care score was computed, with higher scores denoting greater perceptions of continuity. Cronbach's alpha for total continuity of care, and the three subscales of informational, relational, and management continuity were 0.95, 0.93, 0.78 and 0.88, respectively in the current sample.

Independent Variables Measured at Baseline—Self-reported sociodemographic data included age, sex, ethnocultural background, marital status, work status, level of education, gross annual family income, smoking status, height and weight (to compute body mass index; BMI). Clinical data extracted from medical charts included cardiac condition/procedure, blood pressure, New York Heart Association class (NYHA) {{199 The Criteria Committee of the New York Heart Association 1994;}} as an indicator of ACS severity, and presence of selected comorbid conditions, including diabetes and arthritis.

The Duke Activity Status Index (DASI) {{371 Hlatky, M.A. 1989;}} is a brief 12-item self-administered survey to determine functional capacity. This measure was investigated as an indicator of disease severity and as a potential correlate of perceptions of continuity of care. Participants are asked about their ability to perform common activities of daily living, such as personal care, ambulation, and recreational activities, which are each associated with specific metabolic equivalents (METs).

The Medical Outcome Study (MOS) Social Support Survey {{Sherbourne, C.D. 1991;}} is a brief self-administered 19-item scale survey to assess perceptions of social support. This measure was incorporated in the model as an indicator of the social resources available to patients as a potential correlate of perceptions of continuity of care. Emotional support, informational support, tangible support, positive social interaction and affection are the 5 domains measured on a 5-point Likert-type scale. A total mean score was computed minus the item regarding number of friends, as this data was not normally distributed. Cronbach's alpha for the MOS domains of tangible, affectionate, positive social interaction, emotional/informational, and total support are .87, .65, .88, .93 and .97, respectively, in the current sample.

The Illness Perception Questionnaire (IPQ-R) {{122 Moss-Morris, R. 2002;}} was administered to assess cognitive representations of cardiovascular disease as a potential correlate of continuity perceptions. The following 4–6 item subscales were administered:

timeline, cyclical or episodic course, consequences, personal control, and treatment cure/controllability. All items were scored on a 5-point Likert-type scale, which ranged from 'strongly disagree' to 'strongly agree'. A mean subscale score was computed, with higher scores denoting greater endorsement of the given construct. Cronbach's alpha for the subscales were 0.82, 0.84, 0.80, 0.71, and 0.61, respectively in the current sample.

Statistical Analyses

Following data cleaning and screening, a descriptive examination was performed. Differences between participating, ineligible and refusing patients were tested by Pearson's chi-square and analyses of variance as appropriate. Mean continuity of care scores were computed, and compared to the results obtained by Hadjistavropoulos and colleagues (2004) using equivalency tests {{753 Rogers, J.L. 1993;}}. The bivariate relationship among continuity of care perceptions and the hypothesized correlates was performed using Pearson's correlations and t-tests as appropriate. The data was then analyzed using the General Linear Model in SPSS 13.0 to relate mean total continuity of care scores to the correlates outlined above.

Results

Perceptions of Continuity of Care

Mean HCCQ subscale scores are shown in Table 3. The mean and standard deviation of the total continuity of care score for the current sample was 3.89 ± 0.57 . HCCQ data from the current study were compared with the results obtained by Hadjistavropoulos and colleagues (2004). Significance tests were used to evaluate the equivalence of subscale scores between the two study populations {{753 Rogers, J.L. 1993;}}. The equivalency test statistic for the domains of informational, relational and management continuity were 0.50, 0.48 and 0.50, respectively. All subscale scores were determined to be equivalent for the two study populations.

Correlates of Perceptions of Continuity of Care

A univariate analysis of correlates of continuity of care was performed. Table 4 presents t-tests, and Table 5 presents correlational analyses of mean total continuity of care scores with potential correlates. As shown, CR participants reported significantly more positive perceptions of continuity than those who did not participate in CR ($t = 2.56$). Mean total continuity of care scores were significantly correlated with the timeline, consequences, and cure/controllability subscales of the IPQ, and all subscales of the MOS. This demonstrated that more positive perceptions of continuity were significantly related to all measures of perceptions of greater support (tangible, affectionate, positive social interaction, and emotional or informational), less grave perceived consequences, a more acute perceived timeline and greater perceived treatment cure/controllability of their heart condition.

The General Linear Model was used to investigate the correlates of perceptions of continuity of cardiac care 9 months post-discharge. Sex, age and condition/procedure were entered in the model to control for potential selection biases, as well as significant variables identified in bivariate analyses. Due to the correlations within the IPQ subscales and the MOS

subscales, only the subscales from each measure which were most highly correlated with continuity were included in the model. There was ample power for this analysis. The results are presented in Table 6. Based on this model ($F=1.652$, $p=.003$; $\text{adj } R^2=10.9\%$; $\eta^2=27.6\%$), CR participation, tangible support, and perceptions of illness consequences were significant correlates of perceptions of total continuity of care after controlling for: sex, age, BMI, condition/procedure, systolic blood pressure, marital status, ethnocultural background, family income, and smoking status. This suggests that participants who attend CR, perceive greater tangible support, and fewer illness consequences perceive greater continuity of cardiac care.

Discussion

This study prospectively examined patient perceptions of continuity of care in a large multi-site sample of patients hospitalized for an ACS event or procedure. Overall, the participant's perceptions of the continuity of care received were quite positive in all domains of informational, management, and relational continuity.

HCCQ data from the current study were compared with the results obtained by Hadjistavropoulos and colleagues (2004) to test the psychometric properties of this tool in a different cardiac sample, and using a different format of administration. Both studies were conducted within the Canadian health system of universal coverage. However, a 36-item self-report version of the HCCQ was administered in the current study, while Hadjistavropoulos and colleagues (2004) administered a 41-item interviewer-administered measure. Also, the cardiac population studied by Hadjistavropoulos and colleagues (2004) consisted of patients with CHF and atrial fibrillation, whereas the current study consisted of ACS patients who could be considered to have better prognosis. Despite these differences, the HCCQ maintained its reliability. In the current sample, Cronbach's alpha for the three subscales of informational, relational, and management were 0.93, 0.78 and 0.88, respectively, compared with 0.93, 0.86 and 0.84, respectively, reported by Hadjistavropoulos and colleagues (2004). These values suggest that the HCCQ is also applicable to an ACS population. Although more psychometric testing is warranted including confirmatory factor analyses and further assessment of construct validity, the HCCQ may serve as a psychometrically-valid tool applicable to patients with a range of cardiovascular diseases which can be reliably administered in self-report format.

Correlates of Continuity of Care

Results supported our postulated positive relationship between continuity perceptions and CR participation. Regular interactions with the multidisciplinary staff for approximately 6 months enables the establishment of a relationship and ongoing rapport, thus meeting the relational continuity needs of the CR participant. Relational continuity is further enhanced by the camaraderie created among CR participants {{335 Grace, S.L. 2005;}}. The CR staff provide informational continuity by caring for CR participants in a manner that is appropriate and tailored to the specific needs of the participant based on their previous health issues, since referral forms to CR contain acute care information pertaining to the patient {{324 Stewart, D.E. 2004;}}. The information continuum is further facilitated by a

CR discharge summary, which provides a link between the CR program and the primary care physician for long-term risk reduction {{908 Riley, D.L. 2005; 118 Grace, S.L. in press;}}. CR participation also facilitates management continuity of care, as CR participants are provided with timely, complementary services within the program. All of these facets of continuity assist the patient with adopting and maintaining health promoting behaviours necessary for secondary prevention {{32 Cannistra, L.B. 1992;45 Lavie, C.J. 1995;}}, such as physical activity {{252 Marchionni, N. 2003;}}, proper nutrition and adherence to pharmacotherapies {{55 Stewart, K.J. 2004;}}.

Our results confirm the importance of illness perceptions, specifically perceived illness consequences, as a correlate of perceived continuity of care. Regardless of disease severity assessed via NYHA class in clinical charts or via self-report on the DASI, perceiving more grave consequences was associated with lower perceptions of continuity of care. Patients who perceive greater consequences of their illness may be less satisfied with their care or desire more intensive coordination of care among providers. This suggests that providers should be attuned to patient's perceptions of the consequences of their disease be they financial, relational, or other.

Perceived tangible support from both healthcare providers and non-healthcare providers can lead to greater perceptions of continuity, considering the continuous relationship that is established provides the patient with stability and consistency as they move through the healthcare system. Empathetic patient-provider communication is an integral component of the care continuum, and this ongoing communication assists in creating the tangible support network of the patient. In a critical review of the medical literature investigating the relationship between relational continuity and patient satisfaction, Saultz and Albedaiwi (2004) found that, despite methodological limitations, there is a consistent and significant positive relationship between these two constructs. This tangible support may be especially important during patient transition periods, such as between hospital discharge and subsequent outpatient care, as previous research has shown positive associations between measures of continuity of care and client outcomes in transitional treatment situations {{848 Greenberg, G.A. 2005;}}.

This study is limited in generalizability, due to differences in characteristics of participants and non-participants. More specifically, participants were younger, were more likely to be male, and the majority were admitted to hospital for PCI. However, these differences were controlled in statistical analyses. There may be further selection bias, such that patients who are more or less satisfied with their care may be more likely to return the survey. However, one study of nonresponse bias in a survey of patient perceptions of hospital care found that increasing response only modestly influenced the final conclusions of the study {{847 Perneger, T.V. 2005;}}. Moreover, our response rate and retention rate were both high. Future research is needed to replicate these findings, and further explore correlates of patient's perceptions of continuity.

In conclusion, within the universal healthcare system we observed highly positive patient perceptions of cardiac continuity of care. Given the benefits of continuity, the promotion of CR participation, the solicitation of various supports throughout the process of cardiac

recovery, and attention to patient's perceptions of their illness consequences deserve emphasis. Considering the current burden of cardiovascular diseases, improvements in the continuity of care perceived by cardiac patients could lead to improved secondary prevention.

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Table 1

Characteristics of Participants, Refusers, and Ineligibles at Baseline Recruitment

Characteristic	Participants (n=661)	Refusers (n=218)	Ineligibles (n=483)
Site (%THC)	331 (50.1)	126 (59.8)	271 (56.1)
Condition/Procedure [†] (%PCI)	405 (61.3)	109 (50.2)	184 (38.3) ***
Sex (%Female)	157 (23.8)	77 (35.6)	186 (38.6) ***
Marital Status (%married)	503 (76.1)	160 (76.2)	339 (71.5)
Age (mean ± SD)	61.22±11.30	65.96±11.96 ***	66.48±11.39 ***

P<0.001

[†] Extracted from medical charts.

THC, Trillium Health Center

PCI, percutaneous coronary intervention

Table 2

Characteristics of Participants, Refusers, and Ineligibles at 9-Month Assessment

Characteristic	Participants (n=506)	Refusers (n=94)	Ineligibles (n=61)
Site (%THC)	241 (47.6)	57 (60.6)	33 (54.1)
Condition/Procedure [†] (%PCI)	316 (62.5)	55 (58.5) **	31 (50.8) **
Sex (%Female)	116 (22.9)	29 (30.9)	12 (19.7)
Marital Status (%married or common-law)	397 (78.5)	64 (68.1) *	40 (65.6) *
Age (mean ± SD)	62.38 ± 10.75	55.71 ± 12.35 ***	60.61 ± 11.73 ***
Body Mass Index (mean ± SD)	28.31 ± 4.73	29.77 ± 5.36 *	29.01 ± 5.36 *
Activity Status (mean ± SD)	34.46 ± 17.18	32.65 ± 18.71	29.79 ± 16.35
NYHA [†] (%Class 1)	425 (88.7)	76 (84.4)	54 (98.2)
Systolic BP [†] (mean ± SD)	129.2 ± 21.4	125.4 ± 19.4 *	134.4 ± 17.6 *
Diabetes [†] (%yes)	111 (21.9)	26 (27.7)	17 (27.9)
Arthritis [†] (%yes)	116 (22.9)	22 (23.4)	17 (27.9)
Smoker (%current)	73 (14.6)	24 (25.5) **	17 (28.3) **
Ethnocultural Background (%white)	404 (84.0)	62 (71.3) *	42 (79.2) *
Education (%some post-secondary or greater)	258 (51.9)	50 (53.8)	31 (50.8)
Family income (% \$50 000CAD)	242 (58.3)	39 (48.8) **	17 (33.3) **

*
P<0.05**
P<0.01***
P<0.001[†] Extracted from medical charts.

THC, Trillium Health Center

PCI, percutaneous coronary intervention

BP, blood pressure

NYHA, New York Heart Association

Equivalency Test for Mean Scores on the Heart Continuity of Care Questionnaire Between Current Study and Hadjistavopoulos et al. (2004)

Table 3

Domain	Current Study		Hadjistavopoulos et al.	
	Mean $\pm$ SD [‡]	N	Mean $\pm$ SD	Total N
Informational	3.89 $\pm$.63	443	3.89 $\pm$.99	759
Relational	3.72 $\pm$.56	443	4.36 $\pm$.73	745
Management	3.83 $\pm$.77	441	3.93 $\pm$ 1.11	765

[‡]Assessed at 9 months post-discharge.

Note. Scores range from 1 to 5 with higher scores denoting more positive continuity perceptions.

Table 4

Mean Total Continuity of Care Score by Sample Characteristics (N=506)

Characteristic	Total Continuity of Care Score (mean $\pm$ SD) [‡]	n
Sex		
Male	3.92 $\pm$ 0.55	389
Female	3.81 $\pm$ 0.62	116
Ethnocultural Background		
white	3.90 $\pm$ 0.58	403
other	3.85 $\pm$ 0.58	77
Family Income		
Under \$50000 CAD/yr	3.91 $\pm$ 0.57	173
Over \$50000 CAD/yr	3.93 $\pm$ 0.57	242
Education		
Up to high school	3.90 $\pm$ 0.57	239
Some post-secondary	3.88 $\pm$ 0.57	257
Marital Status		
Married/common-law	3.91 $\pm$ 0.58	397
All others	3.82 $\pm$ 0.54	108
Participation in CR [‡]		
Yes	3.97 $\pm$ 0.55 [*]	215
No	3.84 $\pm$ 0.57	281
Aspirin Use [‡]		
Yes	3.91 $\pm$ 0.56	436
No	3.81 $\pm$ 0.56	55
NYHA [‡]		
Class I	3.90 $\pm$ 0.56	424
Class II-IV	3.93 $\pm$ 0.54	54
Condition/Procedure [‡]		
PCI	3.87 $\pm$ 0.57	315
Other	3.93 $\pm$ 0.56	190

* P<0.05

[‡]Extracted from medical charts.[‡]Assessed at 9 months post-discharge.

Table 5

Pearson's Correlations Among Mean Total Continuity of Care Score at 9 Months Post-ACS Discharge with Continuous Variables, N=506

	Total Continuity of care [†]	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Activity Status	.083											
(2) Age	-.012	-.140 **										
(3) IPQ timeline	-.121 **	-.119 **	.071									
(4) IPQ consequences	-.122 **	-.069	-.219 **	.293 **								
(5) IPQ cure/control	.155 **	.077	.002	-.442 **	-.171 **							
(6) IPQ timecycle	-.047	-.076	-.030	.163 **	.233 **	-.126 **						
(7) IPQ personal control	.072	.128 **	-.087 *	-.122 **	.059	.437 **	-.096 *					
(8) MOS Total mean support	.220 **	.016	.045	-.068	-.037	.152 **	-.115 **	.152 **				
(9) MOS Tangible support	.213 **	.016	.038	-.055	-.017	.145 **	-.115 **	.169 **	.957 **			
(10) MOS Affectionate support	.090 *	.033	.060	-.122 **	-.062	.213 **	-.038	.191 **	.361 **	.321 **		
(11) MOS Positive social interaction	.210 **	.026	.048	-.063	-.058	.134 **	-.087 *	.192 **	.950 **	.869 **	.354 **	
(12) MOS Emotional or information support	.201 **	.031	.034	-.062	-.033	.127 **	-.099 *	.186 **	.982 **	.931 **	.355 **	.902 **

* P<0.05

** P<0.01

[†] Assessed at 9 months post-discharge.

IPQ, Illness Perceptions Questionnaire

MOS, Medical Outcome Study Social Support Survey

Table 6

Analysis of Variance of Factors Affecting Perceptions of Continuity of Cardiac Care 9 Months Post-ACS Discharge, N=506

	F	p	η^2
Sex	.097	.755	.000
Age	1.108	.300	.163
Body Mass Index	.006	.937	.000
Condition/Procedure [†] (PCI vs. other)	1.589	.208	.006
Systolic Blood Pressure [†]	1.334	.249	.005
Marital Status	.714	.399	.003
Ethnocultural background	1.449	.230	.005
Family Income	1.263	.262	.005
Smoking Status	1.961	.143	.014
CR Participation [‡]	3.973	.047	.014
MOS Tangible Support	5.465	.020	.019
MOS Positive Social Interaction	.008	.930	.000
IPQ Cure/controllability	.039	.844	.000
IPQ Consequences	11.261	.001	.039
IPQ Timeline	.201	.654	.001

[†] Extracted from medical charts.

[‡] assessed at 9 months post-discharge.

PCI, percutaneous coronary intervention

CR, cardiac rehabilitation

MOS, Medical Outcome Study Social Support Survey

IPQ, Illness Perceptions Questionnaire