

# A longitudinal study of patients and partners illness perceptions, beliefs about cardiac rehabilitation and quality of life at baseline and 6 months

Thomson P<sup>1</sup>, Angus N<sup>2</sup>, Rushworth G<sup>3</sup> Leslie SJ<sup>4</sup>

1. University of Stirling, Faculty of Health Science and Sport, Stirling, UK 2. University of the Highlands and Islands, Department of Nursing, Inverness, UK 3. NHS Highland, Highland Clinical Research Facility, Inverness, UK 4. NHS Highland, Cardiac Unit, Raigmore Hospital, Inverness, UK

## Background

- Negative illness perceptions can be a barrier to patients accessing Cardiac Rehabilitation (CR) services (Blair et al. 2013)
- Whilst partner support facilitates patient recovery and adjustment following an acute cardiac event (Randall et al. 2009) there is limited research examining how partners perceive the patient's illness and CR
- Exploring differences in patients and partners perceptions of the patient's illness and CR enables the experience to be understood in the context of the dyad, which is important in improving patient and partner adjustment and outcomes
- There is limited knowledge of patients and partners' perceptions of the patient's illness and beliefs about CR, and associations with their Quality of Life (QoL)

## Purpose

- To compare differences between patients' and partners' perceptions of the patient's illness and beliefs about CR at baseline and 6 months
- To examine associations between patients' and partners' perceptions of the patients' illness and beliefs about CR and QoL at 6 months

## Methods

- Design and sample:** A longitudinal, descriptive study of patients recruited from the CR service at Raigmore Hospital, NHS Highland. Partners were recruited via patients
- Data collection:** Parallel data was collected from patients and partners at TP1 and TP2
- Measures:** Brief Illness Perceptions Questionnaire (B-IPQ) (Broadbent et al. 2006), Beliefs about CR Questionnaire (BCR) (Cooper et al. 2007) and the SF-12 Health Survey (SF12) (Ware et al. 2005)
- Data analysis:** Descriptive statistics, chi squares, paired sample t tests, Pearson's correlations, multi-linear regression (Enter Method)

## Results

- 40 patients with a diagnosis of Acute Coronary Syndrome were recruited (70% male, mean age = 62.30, SD 7.8 years) and 40 partners (70% female, mean age = 59.55, SD 10.0 years ( $t = 1.73$ ,  $p = 0.09$ ). Most dyads (92.5%) were in spousal relationships.

### Differences in patients' and partners' perceived health status

- Patients' **physical health** was significantly poorer compared to partners at baseline (mean 47.03, SD 8.2 vs 53.55, SD 9.4,  $t = -3.39$ ,  $p = 0.002$ ) and 6 months (mean 48.50, SD 9.5 vs 54.2, SD 6.9,  $t = -3.793$ ,  $p = 0.001$ ).
- Patients' and partners' **mental health** was similar at baseline (mean 47.58, SD 8.8 vs 44.29, SD 14.6,  $t = 1.124$ ,  $p = 0.268$ ), and 6 months (mean 48.68, SD 10.1 vs 47.14, SD 11.3,  $t = 0.564$ ,  $p = 0.576$ ); but both scored below the population average of 50.

### Between group differences in patients' and partners' scores for illness perceptions

- Patients' and partners' illness perceptions (total scores) were similar at TP1 (mean 30.48, SD 11.9 vs 34.73, SD 9.9 ( $t = -1.817$ ,  $p = 0.077$ ).
- At TP2 partners' illness perceptions (total scores) were significantly higher compared to the patients' (mean 49.15 (SD 9.5) vs 29.43 (SD 12.8) ( $t = -7.869$ ,  $p < 0.001$ ), indicating a more threatening view of the patient's illness.
- Partners illness concerns** (individual item) were significantly higher than patients TP1 ( $p = 0.003$ ), TP2 ( $p = 0.010$ )

### Differences in patients' and partners' scores for beliefs about CR

- Patients' and partners' beliefs about the patient's CR were similar at TP1 and TP2.

### Within Dyad Agreement for Illness Perceptions

- There was more agreement (in green) between the patient-partner pairs (dyads) for timeline, treatment control and coherence; less agreement (in red) for consequences, identity, illness concerns and emotional response at baseline and 6 months
- Overall the results indicate that within dyads, the partner's perceptions reflect a more threatening view of the patient's illness

Table 1: Within dyad level of agreement in patient-partner scores for illness perceptions

Illness perceptions:	Time point	Agreement (same scores) (%)	Partner higher score (%)	Patient higher score (%)
Consequences	TP1	7.5	62.5	30.0
	TP2	12.5	45.0	42.5
Timeline	TP1	27.5	40.0	32.5
	TP2	35.0	37.5	27.5
Personal control	TP1	7.5	40.0	50.0
	TP2	17.5	35.0	47.5
Treatment control	TP1	30.0	35.0	35.0
	TP2	25.0	42.5	32.5
Identity	TP1	10.0	55.0	35.0
	TP2	17.5	37.5	45.0
Illness concern	TP1	7.5	57.5	35.0
	TP2	5.0	62.5	32.5
Coherence	TP1	32.5	45.0	22.5
	TP2	27.5	47.5	25.0
Emotional response	TP1	5.0	57.5	37.5
	TP2	17.5	50.0	32.5

### Level of agreement in patient-partner scores for beliefs about CR

- There was more agreement (in green) between the patient-partner pairs (dyads) for practical barriers, perceived suitability and concerns about exercise at baseline, but less agreement (in red) for necessity
- At six months, there was more agreement (in green) between the patient-partner pairs (dyads) for perceived suitability

Table 2: Within dyad level of agreement in scores for beliefs about CR

Illness perceptions:	Time point	Agreement (same scores) (%)	Partner higher score (%)	Patient higher score (%)
Necessity	TP1	12.5	45.0	42.5
	TP2	15.0	45.0	40.0
Concerns about exercise	TP1	20.0	40.0	40.0
	TP2	20.0	37.5	42.5
Practical barriers	TP1	45.0	25.0	30.0
	TP2	35.0	27.5	37.5
Perceived suitability	TP1	27.5	37.5	35.0
	TP2	32.5	37.5	30.0

### Correlations between illness perceptions, beliefs about CR and QoL

- There were significant weak to moderate negative correlations between patients' physical and mental health at 6 months and their concerns about exercise at baseline ( $r = -0.358$ ,  $p = 0.023$  and  $r = -0.457$ ,  $p = 0.003$ ).
- There was a significant weak negative correlation between partners' physical health at 6 months and perceived practical barriers at baseline ( $r = -0.317$ ,  $p = 0.046$ ).
- There were significant weak to moderate negative correlations between patients' and partners' mental health at 6 months and their illness perceptions at baseline ( $r = -0.343$ ,  $p = 0.030$  and  $r = -0.508$ ,  $p = 0.001$ , respectively).

### Regression Analysis

- Partners' poorer mental health at 6 months was predicted by their higher (total score) for illness perceptions at baseline ( $B = -0.578$ ,  $t = -3.635$ ,  $p = 0.001$ )

## Conclusions

- There were some differences between patients' and partners' perceptions of the patient's illness (total score) at 6 months; partners had a more threatening view of the patient's illness
- Both patients and partners should be targeted at the start of CR to modify their beliefs, especially partner's beliefs about necessity and perceived suitability
- Patients and partners perceptions of the patient's illness, and beliefs about CR, were mostly correlated with their own physical and mental health at 6 months
- Partners' perceptions of the patient's illness at baseline predicted their poorer mental health at 6 months
- More dyadic research is needed, with larger samples, to inform belief modification interventions and improve patient and partner outcomes