A longitudinal study of the factors that influence patients' medication adherence at the start of cardiac rehabilitation (CR) and 6 months later

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Introduction

- Non-adherence to prescribed medications is common among cardiac patients (Maddox & Ho 2009)
- Self-reports of medication non-adherence are strongly associated with adverse cardiac events including CHD death, MI and stroke (Ho et al. 2008)
- Patterns of medication taking behavior may be linked to other behaviours and conditions such as motivation, capability and opportunity (CR)
- There is limited knowledge of the associations between patients' illness perceptions, beliefs about CR, quality of life and medication adherence

Purpose

- To compare changes in patients medication adherence at the start of CR (TP1) and 6 months (TP2)
- To examine the associations between patients' illness perceptions, beliefs about CR and quality of life at TP1 and medication adherence at TP2

Methods

- *Design & sample*: Longitudinal, descriptive study of patients with a diagnosis of acute coronary syndrome (ACS) recruited from a CR service at Raigmore Hospital, NHS Highland
- *Data Collection*: At start of CR programme (TP1) and 6 months later (TP2)
- *Measures*: Medication Adherence Report Scale (MARS-5) (Horne 2004); Morisky Medication Adherence Scale (MMAS–8) (Morisky et al. 2008); Brief Illness Perceptions Scale (B-IPQ) (Broadbent et al. 2006), Beliefs about CR Questionnaire (BCR) (Cooper et al. 2007) and the SF-12 Health Survey (SF–12) (Ware et al. 2005)
- *Data analysis*: Descriptive statistics, chi squares, independent sample t test, Spearman's correlations, logistic regression (low vs medium / high adherers)

Results

- 40 patients with a diagnosis of ACS (70% male, mean age = 62.3 years (SD 7.8 years)
- Patients' physical health score at TP1 (SF-12) - mean 47.03 (SD 8.2) and mental health - mean 47.58 (SD 8.8) i.e. both dimensions scoring below the population average of 50.

Patients' medication adherence

- No significant changes in patients' total scores on MARS-5 and MMAS-8 from baseline to 6 months

Patients illness perceptions and beliefs

- For illness perceptions (B-IPQ) there were higher scores for **perceived consequences** and lower scores for **personal control** compared to previous populations of MI patients on hospital discharge (Broadbent et al. 2006)
- For beliefs about CR (BCR) the scores for **necessity** were higher compared to Cooper et al. (2007) and lower for **concerns about exercise**, **practical barriers** and **perceived suitability**

Unintentional and intentional non-adherence

- MARS-5 distinguishes between unintentional and intentional non-adherence to medication
- Results suggest no intentional / conscious non-adherence e.g. not taking medication causing side effects by patients at TP1 or TP2
- Most patients reported 'never' being unintentionally non-adherent i.e. forgetful at TP1 or TP2
- Patients that they were 'sometimes' or 'rarely' unintentionally non-adherent at TP1 and TP2 but never 'always' or 'often'

Specific medicine taking behaviours

- The 8 item MMAS measures specific medication taking behaviours. 3 categories of adherence are high (score, 8), medium (score, 6 to <8) and low (score, 6)
- Most patients (55.0 – 57.5%) had high levels of adherence at TP1 and TP2.
- At 6 months, more patients reported medium adherence compared to baseline (40% v 35%) and at 6 months less patients reported low adherence than baseline (2.5 vs 10.0%) **(Fig 1)**

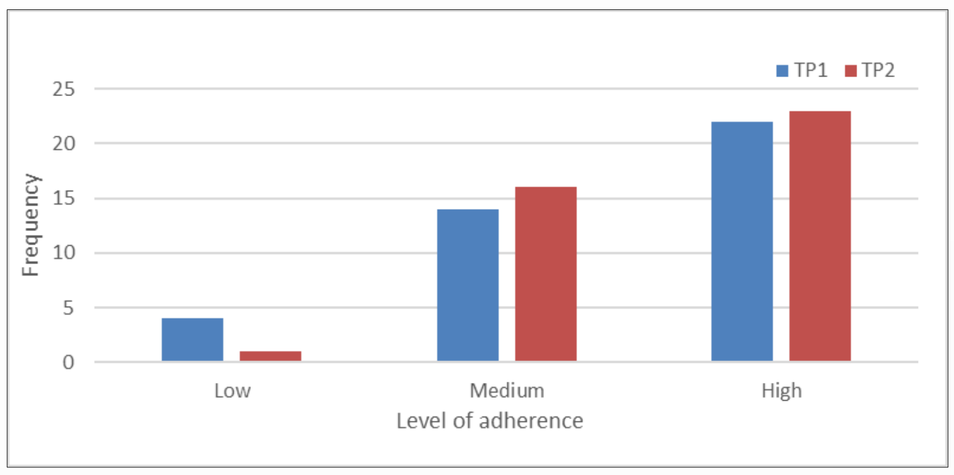

Figure 1: Level of adherence at baseline and 6 months

Correlations among illness perceptions, beliefs about CR and QoL

- Patients' perceived practical barriers to CR at baseline were moderately negatively correlated with levels of adherence at 6 months (r = -.355, p = 0.025) (MMAS-8)
- Results indicated greater perceived practical barriers to CR were related to lower levels of medication adherence
- Patients' total scores for MARS-5 and MMAS-8 were strongly positively correlated at 6 months (r = .593, p<0.001)

Regression Analysis

No significant (baseline) predictors of medication adherence at 6 months

Conclusion

- Greater perceived barriers to CR were related to lower levels of medication adherence (MMAS)
- Overall there was sub-optimal medication adherence in this group of CR patients which is disappointing considering the risk post ACS
- Although there was no intentional non-adherence, 11 patients (27.5%) were non-intentionally non-adherent i.e. forgot to take their medication (MARS-5)
- 17 of patients reported medium to low levels of adherence at 6 months
- There were differences in self-reported adherence between the two scales, MARS and MMAS-8, which warrants further investigation
- More longitudinal research is needed with a larger sample size to explore whether illness perceptions and other beliefs about CR are associated with medication adherence

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