



# Exploring prostate cancer survivors' self-management behaviours and examining the mechanism effect that links coping and social support to health-related quality of life, anxiety and depression: A prospective longitudinal study



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## ABSTRACT

### Keywords:

Prostate cancer  
Coping  
Social support  
Self-management  
Health-related quality of life  
Anxiety  
Depression  
Survivorship

**Objective:** Little is known about the influence of psycho-social factors on health-related quality of life (HRQoL), anxiety and depression in men affected by prostate cancer. Developing an understanding in this area can help to identify men who are at high risk of inadequate support and suggest directions for appropriately targeted interventions. Moreover, little is known about how men affected by prostate cancer mobilise social support in their self-management behaviours over time. This is the first study to test the effects of coping and social support on HRQoL and emotional outcome, and assessed the self-management behaviours of men affected by prostate cancer overtime.

**Methods:** The study population was 74 prostate cancer patients with a mean age of 67.3 (SD 7.9) years and mixed treatment modalities. The EORTC QLQ-C30, PR25 and HADS were used to assess the dependant variables before treatment and at six months follow-up. Statistical analysis was performed in SPSS version 17.0 using parametric tests and non-parametric tests.

**Results:** A significant decline in quality of life was observed at 6 months post diagnosis ( $p < 0.001$ ). Perceived social support before radical treatment was the most important social support construct that predicted better global quality of life and less depression at six months, explaining approximately 30% of the variance. Despite men's self-management efforts and use of social support overtime, self-management self-efficacy significantly reduced at six months ( $p < 0.05$ ).

**Conclusion:** These findings provide support towards the development of a psycho-social intervention study to improve quality of life, self-management self-efficacy and improve patients' symptom management.

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## Introduction

Prostate cancer is the most prevalent type of cancer in men in developed countries (excluding non-melanoma skin cancer (Jemal et al., 2011)). Prostate cancer for the most part is a disease of older men, and a diagnosis is less common for men below the age of 50 years (Burford et al., 2009). Now, not only is quantity of life important, but patients' quality of life of survivors is crucial as men are living longer with the consequences of this disease and its treatment (Chen et al., 2008; Couper et al., 2009; Sanders et al.,

2006). The delicate nature of treatments means that men with prostate cancer often face a host of after effects including urinary, bowel and sexual dysfunction which can negatively affect health-related quality of life (HRQoL) (Cockle-Hearne and Faithfull, 2010). Health-related quality of life is defined as a multi-dimensional concept that encompasses physical, emotional and social components associated with an illness or treatment (Bowling, 2001). The physical aftermath of this disease has been well documented; but the extent to which coping and social support influence HRQoL and emotional outcome is still limited (Paterson et al., 2013).

Men with prostate cancer have reported a number of difficulties and these include: psychological distress, sexuality-related issues, self-management of enduring lower urinary tract symptoms, informational support particularly regarding the on-going issues of

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recurrence and the after effects of treatment (Ream et al., 2008). There is some evidence to support that men living with and beyond prostate cancer are keen to engage as active partners in the management of their disease (Mroz et al., 2010), but remain inadequately supported to do so (Department of Health Macmillan Cancer Support & NHS Improvement, 2010).

Little is known about the self-management behaviours performed by prostate cancer survivors, or the effectiveness of such strategies over time (Paterson et al., 2014; Wilson et al., 2010). Self-management is a term used to describe an iterative process whereby individual responses and behaviours are used to cope with the physical and psychological consequences of cancer (McCorkle et al., 2011). Social support has been linked to improved coping efforts, self-management, and HRQoL in men affected by this disease (Kershaw et al., 2008; Scholz et al., 2008) but little is known about the mechanisms through which social support influences the relationship between coping and health outcome, or which type of social support is mobilised in self-management (Paterson et al., 2014; Zhou et al., 2010). The link between social support and improved health outcomes can be explained by the propositions of social support theory.

There are two dominant theoretical frameworks that link social support to improved physical and mental well-being: the *Main Effects Model* (Cohen et al., 2000) and the *Stress Buffering Model* (Cohen and Wills, 1985). According to the main effects model, people with high social support (perceived or received social support) have better physical and mental health compared to those with low social support, regardless of the levels of stress (Cohen et al., 2000). Social support studies have identified the main effects of social support on HRQoL and are in keeping with the main effect theoretical model (Mehnert et al., 2010; Zhou et al., 2010). The relationship between social support and HRQoL for the main effects model is believed to be linear (Helgeson, 2003), whereas, the stress buffering model states that social support (perceived and received social support resources) are associated with improved physical and mental health only when individuals are exposed to stressful conditions (Christie et al., 2009; Cohen et al., 2000). Thus, under conditions of high stress, social support is believed to act as a buffer (moderator) against the adverse effects of that stressor. The stress buffering perspective states that coping performances are enhanced when social support (Cohen et al., 2000) is high, and is very closely related to Lazarus and Folkman's (1984) theory on stress and coping. The transactional process of stress and coping theory dominates social support literature (Lakey and Orehek, 2011) and has been applied to cancer studies and details the central importance of social support on improving HRQoL and emotional outcome (Laubmeier et al., 2004) (see Fig. 1 for social support theoretical model used in this study).

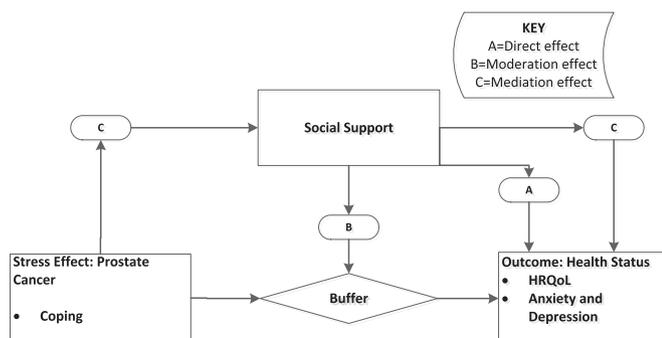


Fig. 1. Social support theoretical model.

Developing and refining our theoretical understanding of the mechanism effects of how coping and social support influence HRQoL, anxiety and depression can inform the first stage of the Medical Research Councils framework for complex interventions (Craig et al., 2008) to develop interventions that are appropriately targeted, and theoretically driven to address areas of unmet support needs. Therefore, in this study we aimed to test the propositions of social support theory as detailed in Fig. 1, and to detail the actual self-management behaviours performed by men affected by prostate cancer using a prospective longitudinal design.

## Methods

### Participants

After ethical approval was granted (10/S1402/7) this study recruited participants from two teaching hospitals in the UK using the following inclusion criteria: confirmed diagnosis of prostate cancer (PC) all stages and treatments, before radical PC treatment commenced, ability to read and write English, and able to give informed consent. Exclusion criteria were those individuals unable to meet the inclusion criteria or those patients identified by their clinical care team to be physically or psychologically unfit to take part in the study. Recruitment took place at 2 hospital out-patient settings, and demographic and clinical data were collected. Participants were asked to complete validated questionnaires at baseline (before radical treatment) and at six month follow-up. A second questionnaire pack was sent to participants if they did not return their questionnaire within 2 weeks. A sub-sample of men were asked to complete an electronic behavioural diary which captured real-time patient reported outcome measures, and they also participated in qualitative interviews but these data will be published elsewhere.

### Outcome variables

#### Demographic and clinical

Age, marital status, education, employment, and deprivation (assessed using the Scottish Index of Multiple Deprivation [SIMD], (Scottish Government, 2009)) data was collected. Cancer stage, Prostate Specific Antigen (PSA), Gleason score, treatments and comorbidity were collected from medical records.

#### Perceived Stress Scale (PSS) (Cohen et al., 1983)

This questionnaire measures how unpredictable, uncontrollable, and overloaded respondents find their lives; in particular, it measures the perceived degree to which environmental demands exceed abilities to cope. Validity and reliability has been demonstrated in previous studies (Stone et al., 1999; Surwit et al., 2002) and reliability was acceptable in this study (Cronbach's  $\alpha = 0.88$ ).

#### Hospital Anxiety and Depression Scale (HADS) (Zigmond and Snaith, 1983)

This questionnaire assesses anxiety and depression in non-psychiatric patients. Validity and reliability has been previously demonstrated (Brindle et al., 2006; Gerbershagen et al., 2008) and was acceptable in this study (Cronbach's  $\alpha \geq 0.74$ ).

#### Berlin Social Support Scale (BSSS) (Schulz and Schwarzer, 2003)

This instrument assesses perceived, received, and satisfaction with social support in cancer patients. In addition, this instrument

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