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Dealing with a life changing event: The influence of spirituality and coping style on quality of life after survival of a cardiac arrest or myocardial infarction☆

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ABSTRACT

Background: Survivors of a cardiac arrest often have cognitive and emotional problems. As a cardiac arrest is also an obvious life-threatening event, other psychological sequelae associated with surviving such as spirituality may also affect quality of life.
Objectives: To determine the relationship between spirituality, coping and quality of life in cardiac patients both with and without a cardiac arrest.
Methods: In this retrospective cohort study, participants received a questionnaire by post. The primary outcome measure was quality of life (LiSat-9). Secondary outcome measures were spiritual well-being (FACIT-Sp12), coping style (UPCC), emotional well-being (HADS, IES), fatigue (FSS) and daily activities (FAI). Statistical analyses included multiple regression analyses.
Results: Data were available from 72 (60% response rate) cardiac arrest survivors and 98 (47%) patients with a myocardial infarction. Against our hypothesis, there were no differences in spirituality or other variables between the groups, with the exception of more depressive symptoms in patients with myocardial infarction *without* arrest. Analysis of the total data set (170 participants) found that a better quality of life was associated with higher levels of meaning and peace in life, higher levels of social and leisure activities, and lower levels of fatigue.
Conclusions: Quality of life after a cardiac arrest and after a myocardial infarction without arrest are not different; fatigue, a sense of meaning and peace, and level of extended daily activities are factors related to higher life satisfaction.

Introduction

In the Netherlands, the overall incidence of cardiac arrest is 0.6–0.9 per 1000 persons per year.[1,2] During a cardiac arrest, the brain suffers from hypoxia, which may cause diffuse hypoxic–ischemic injury and often results in long-term cognitive impairments.[3–5] Furthermore, cardiac arrest survivors often report severe fatigue,[6] feelings of anxiety and/or depression[6,7] and posttraumatic stress reactions.[6] Fortunately, but also remarkably, quality of life (QoL) after cardiac arrest seems only slightly decreased compared to the general population.[8]

A closer look at QoL after cardiac arrest reveals that it is less associated with medical variables, but more with cognitive complaints, anxiety/depression, posttraumatic stress reactions and difficulties in daily activities.[6,9,10] This may implicate that differences in responding to the traumatic event of a cardiac arrest may account for variances in quality of life. Two examples of influence are spirituality and coping style.

Spirituality can be defined as a framework that provides people with a sense of ultimate purpose and meaning in life, offering people stability, support and direction in critical times.[11] Increas-

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ing interest has been shown in the association between spiritual well-being and QoL.[12–14] Patients with terminal cancer, HIV and heart failure and a higher level of spiritual well-being seemed less depressed.[15,16] Furthermore, higher spiritual well-being may result in better life satisfaction.[11,17] As surviving a cardiac arrest can be a life changing event, it may also change a patient's outlook on life and spirituality.[18]

Coping has been defined as 'the person's cognitive and behavioural efforts to manage the internal and external demands of the person-environment transaction that is appraised as taxing or exceeding the person's resources'.[19] In heart failure patients coping appeared to influence emotional state.[20] In patients with subarachnoid haemorrhage, a passive coping style influenced health-related QoL negatively[21] and in brain injury patients, both increases in active problem-focused coping and decreases in passive emotion-focused coping predicted a higher QoL.[22]

So far, the relationship between spirituality, coping style and QoL has not been studied in cardiac arrest survivors. The aim of the present study was to investigate how spiritual well-being and coping are related to QoL two years after a cardiac arrest.

We hypothesized that cardiac arrest survivors, as a consequence of their brain injury, would have a lower level of functioning regarding emotional well-being and fatigue than cardiac patients without a cardiac arrest. In addition, we hypothesized that cardiac arrest survivors would report higher spiritual well-being, as we considered that a cardiac arrest would influence life more as compared to a myocardial infarction. Moreover, we hypothesized a positive contribution of higher spiritual well-being and active coping style on QoL for both cardiac patients with and without a cardiac arrest.

Methods

For this study, data were collected from two groups: cardiac arrest survivors and patients who suffered from a myocardial infarction without cardiac arrest. Patients with a myocardial infarction without cardiac arrest were chosen as a control group, as they were considered most comparable in baseline characteristics such as age, gender and underlying cardiac pathology, and they also were likely to perceive a risk of sudden death. By comparing both groups, the additional impact on life of a cardiac arrest will be studied.

Potential participants with a cardiac arrest were derived from a database of a prospective cohort study called Activity and Life after Survival of a Cardiac Arrest (ALASCA).[23] The inclusion criteria for the ALASCA study were: (1) survivor of a cardiac arrest, (2) living within 50 km of a participating hospital, (3) age 18 years or older, and (4) sufficient knowledge of the Dutch language. Patients were recruited from coronary care units and intensive care units of Dutch hospitals from April 2007 till 2010 and followed for one year. For the present study, ALASCA-participants with a cardiac arrest before April 2009 who had given consent to be approached for follow-up studies were invited to participate two years after the event.

Participants with a myocardial infarction without cardiac arrest were identified out of patient files of the Department of Cardiology of the University Hospital Maastricht, The Netherlands. Patients admitted to the department between July 2008 and January 2009 with myocardial infarction, aged 18 years or older and with sufficient knowledge of the Dutch language were identified as potential participants and were also invited to participate two years after the event.

Data collection

Two years after their cardiac event, all potential participants were invited to participate in the study by sending them an information letter, a set of questionnaires and an informed consent form by post. One reminder was sent. The study protocol was approved by the Medical Ethics Committee of the University Hospital Maastricht.

Measurement instruments

Socio-demographic variables regarding marital status, living situation and work situation were collected by self-report.

Quality of life, the main outcome of interest, was measured using the **Life Satisfaction Questionnaire (LiSat-9)**, designed to assess the level of satisfaction with the present living situation. It consists of nine items (satisfaction with life in general and with eight life domains), scoring from 1 (very dissatisfied) to 6 (very satisfied). Its internal consistency is satisfactory (Cronbach alpha 0.74).[24]

Spiritual well being was measured using the **Functional Assessment of Chronic Illness Therapy—Spiritual Well Being (FACIT-Sp12)** scale, a 12-item questionnaire measuring overall spiritual well-being divided over 2 subscales (meaning/peace and faith) with item scores ranging from 0 (not at all) to 4 (very much). Both subscales have a high internal consistency, and show good reliability and validity.[15,25]

Coping style was measured using the **Utrecht Proactive Coping Competence scale (UPCC)**, a questionnaire assessing an individual's competency with regard to proactive coping, using 21 items with scores ranging from 1 (not at all capable) to 4 (capable). Cronbach alpha ranges from 0.83 to 0.95.[26]

Emotional well-being was measured using the **Hospital Anxiety and Depression Scale (HADS)**, a questionnaire designed to assess mood disorders in non-psychiatric hospital outpatients. It consists of 14 items divided in two subscales, directed at measuring signs of anxiety and depression. Validity, internal consistency and reliability are good.[27]

The **Impact of Event Scale (IES)**, a 15-item questionnaire assessing stress reactions after traumatic events was used to measure the significance of the event to the particular patient. Validity and reliability are good.[28]

Fatigue was assessed using the **Fatigue Severity Scale (FSS)**, a 9-item questionnaire assessing the impact of fatigue on patients' functioning. Each item is scored on a 7-point scale and the total score is the overall mean (range 1–7). The scale has good psychometric properties.[29]

Extended activities of daily living were measured using the **Frenchay Activities Index (FAI),** a 15-item questionnaire for instrumental activities of daily living (ADL) with item scores ranging from 0 to 3. It is valid and reliable measure as assessed in stroke.[30,31]

Statistical analysis

Possible age- or gender related differences between responders and non-responders in both groups were investigated using *t*-test or Mann–Whitney testing (depending on parametric distribution) for age and chi-square testing for gender. To detect baseline differences between groups, similar tests were performed for age and gender, Mann–Whitney testing for time since event and chi-square testing for current marital status and living situation.

In case of <15% missing values, missing data were imputed by the mean score per instrument. In case of ≥15% missing values in a questionnaire, a total score was not calculated. In the cardiac arrest group, scores on all questionnaires, except the FAI, showed a non-parametric distribution.

To detect statistical significant differences between variables in both groups, Mann–Whitney 2 testing was performed. A p-value of ≤0.05 was considered statistically significant.

Multiple linear regression analyses (ENTER method) were carried with independent variables spiritual well-being (subscales

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