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Clinical paper

Health status and psychological distress among in-hospital cardiac arrest survivors in relation to gender[☆]

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ABSTRACT

Aim: To describe health status and psychological distress among in-hospital cardiac arrest (IHCA) survivors in relation to gender.

Methods: This national register study consists of data from follow-up registration of IHCA survivors 3–6 months post cardiac arrest (CA) in Sweden. A questionnaire was sent to the survivors, including measurements of health status (EQ-5D-5L) and psychological distress (HADS).

Results: Between 2013 and 2015, 594 IHCA survivors were included in the study. The median values for EQ-5D-5L index and EQ VAS among survivors were 0.78 (q1–q3 = 0.67–0.86) and 70 (q1–q3 = 50–80) respectively. The values were significantly lower ($p < 0.001$) in women compared to men. In addition, women reported more problems than men in all dimensions of EQ-5D-5L, except self-care. A majority of the respondents reported no problems with anxiety (85.4%) and/or symptoms of depression (87.0%). Women reported significantly more problems with anxiety ($p < 0.001$) and symptoms of depression ($p < 0.001$) compared to men. Gender was significantly associated with poorer health status and more psychological distress. No interaction effects for gender and age were found.

Conclusions: Although the majority of survivors reported acceptable health status and no psychological distress, a substantial proportion reported severe problems. Women reported worse health status and more psychological distress compared to men. Therefore, a higher proportion of women may be in need of support. Health care professionals should make efforts to identify health problems among survivors and offer individualised support when needed.

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Introduction

In Europe, approximately 275 000 people suffer an out-of-hospital cardiac arrest (OHCA) annually,¹ while the prevalence of in-hospital cardiac arrest (IHCA) is unknown. Major improvements in survival have been reported over the last decades. In Sweden, more than 1 300 people survive cardiac arrest (CA) annually. The majority of patients suffering CA with a resuscitation attempt in Sweden are men (OHCA 69% and IHCA 62%).²

Brain injury develops within minutes after the cessation of blood flow³ and may explain several complications often seen after CA.⁴ Cognitive problems and psychological distress (e.g., anxiety and depression) are some of the most reported complications.^{5–8}

According to the WHO definition, health is multidimensional and can be defined as “a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity”.⁹ However, the definition has been questioned for its “absoluteness” and the inclusion of “adapting to and self-management of challenges” have been proposed.¹⁰ Patient reported outcome measures (PROMs) of health are widely used to describe the impact of disease/illness and to evaluate health-care interventions from a patient perspective.¹¹

Knowledge about health status and psychological distress among CA survivors is scarce. Some studies have reported negative effects on health and poorer outcome among CA survivors compared to a general population,^{7,12} while others have reported no differences.^{13,14} A review on psychological distress reported high prevalence of anxiety and depression.⁸ Another review reported that health and quality of life (QoL) among survivors appear to be acceptable, but with major variations in methodology and results between studies.¹⁵ A review of outcome measures in clinical CA trials reported a considerable lack of health related outcomes and highlighted the need for a core outcome set for CA survivors, including PROMs of health and QoL to capture the patient perspective.¹⁶

Recent studies in larger populations have confirmed the findings of high prevalence of psychological distress but acceptable health and QoL among survivors.^{6,14} However, most studies on health-related outcomes are performed in populations where the CA occurred in an out-of-hospital context, with only a few small studies including IHCA survivors.^{17,18} Compared to those suffering OHCA, the IHCA population is older, has more comorbidity and is resuscitated earlier.² Therefore, IHCA survivors may experience other health problems.

Previous studies have demonstrated differences in age and survival between men and women in CA populations.^{19,20} Despite the fact that a vast majority of existing research, independent of disease, shows that women have poorer health^{21,22} and more psychological distress,^{23,24} few studies have investigated health status and psychological distress among CA survivors in relation to gender. Women surviving OHCA report more health problems and psychological distress than men.^{6,14} To our knowledge, no studies have investigated these aspects in IHCA survivors.

The aim of the current study was therefore to describe health status and psychological distress among IHCA survivors in relation to gender.

Methods

Design

This register study had a cross-sectional design and was approved by the Regional Ethical Review Board in Gothenburg (No. 406-13).

Sample and procedure

The sample for the present study was taken from the Swedish national register of cardiopulmonary resuscitation (<https://www.hjartstoppsh.se>). This Internet-based register includes data from 95% of Swedish emergency hospitals. Data is registered on three occasions. The first registration includes data on patient characteristics and the CA event. The second is a follow-up registration performed at 30-days post CA and includes data on aetiology, comorbidity, post resuscitation care, survival and cerebral performance. As of August 2013, a third registration is performed 3–6 months after resuscitation and includes PROMs of health status and psychological distress in survivors. For this third registration, a questionnaire and an invitation to a telephone follow-up interview are sent to the survivors. The survivors are instructed to complete the questionnaire during the interview while data are entered in a web-form by the interviewer. The interviews are performed by resuscitation coordinators or cardiac rehabilitation nurses per a written manual. In addition, a scoring of cerebral performance is conducted based on information from the interview using the Cerebral Performance Category (CPC) scale.

Data for the present study was collected between August 2013 and December 2015 in 47 emergency hospitals (64% of all eligible hospitals in Sweden). During this period, 1 061 30-day survivors were initially identified for the third registration. After exclusion 773 survivors remained eligible and 594 (76.8%) were included in the study (Fig. 1).

The questionnaire

The questionnaire included the EQ-5D-5L²⁵ and the Hospital Anxiety and Depression Scale (HADS).²⁶

The EQ-5D-5L

The EQ-5D-5L questionnaire includes the EQ-5D-5L descriptive system and the EQ VAS. The descriptive system measures health status in five dimensions; mobility, self-care, usual activities, pain/discomfort, and anxiety/depression.²⁵ Each dimension is rated on a five-point scale, ranging from 1 “no problems” to 5 “extreme problems”. A score of ≥ 2 indicate problems (regardless of severity). These dimensions can be used to describe a health state profile and to calculate a preference-based utility index. The index value is based on value sets for the EQ-5D-3L version. Higher index values indicate better health status. The index values in this study were calculated by a crosswalk procedure using the Danish value set (no Swedish available) and the EQ-5D-5L Crosswalk Index Value Calculator (www.euroqol.org). Using this crosswalk calculator, the possible index values range between -0.624 and 1, where 1 is perfect health and a value less than 0 is a health state worse than death. The EQ-5D-5L also includes a visual analogue scale (the EQ VAS) for self-rated health, ranging from “the worst health you can imagine” (0) to “the best health you can imagine” (100). The EQ-5D-5L has not previously been applied in the CA population.

The Hospital Anxiety and Depression Scale

The HADS was developed to detect anxiety and/or symptoms of depression.²⁶ It consists of 14 items, of which seven measure anxiety and seven depression. Each item has four response categories, from 0–3. The item responses within each domain are summarized, with a total score ranging between 0 and 21 for anxiety and depression respectively. Higher values indicate more anxiety and/or symptoms of depression. Different cut-off scores have been suggested.⁸ In the present study the following were used: normal (0–7), mild (8–10), moderate (11–14) and severe (15–21).²⁶

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