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The effect of cardiopulmonary resuscitation training on psychological variables of cardiac rehabilitation patients☆

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Summary As a component of cardiac rehabilitation (CR), cardiopulmonary resuscitation (CPR) training is widely recommended. These recommendations advocate the importance of offering CPR training to cardiac patients' families. Prior research examining the effect of CPR training on the cardiac patients spouse or family member, suggests that receiving CPR training within a supportive environment such as cardiac rehabilitation causes no adverse psychological effects in the family members. Patients are often excluded from CPR training due to fears of the possible physiological consequences. Conversely, there may be negative psychological consequences for patients who are excluded from CPR training. Although cardiac patients are at high risk of cardiac arrest themselves this should not preclude them from having the ability to help another.

The aim of this study was to assess the impact on anxiety, depression and perception of control (POC) of CPR training for the cardiac patients as an integral part of an 8-week phase III Cardiac Rehabilitation Programme.

Fifty-eight patients and 54 family members or partners attending an 8-week CR programme were offered optional CPR training during the final week of the programme. Forty-nine patient subjects were evaluated at four time points, using the hospital anxiety and depression scale and the control attitudes scale. Seventy-five percent ($n = 37$) of patients participated in the CPR training. Teaching CPR to cardiac patients did not affect anxiety levels adversely. There was an overall significant decrease in anxiety scores for both patient groups over time ($p = 0.0071$). Both patient groups showed an average moderate level of POC at baseline but the POC level in those who did the CPR training continued to increase slightly throughout the

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study period. If the patient agreed to undertake CPR training approximately 61% of their relatives or partners also undertook the training, but when the patient did not avail of the CPR training only 20% of their relatives or partners participated.

Cardiac patients would appear to have a desire to learn CPR. It is recommended that cardiac patients be involved in CPR training as it poses them no adverse psychological consequences and may improve their perception of control. Inclusion of the patients in the CPR training may help increase the participation in CPR training by cardiac patients' families.

Introduction

It is estimated that 700,000 Europeans will suffer a cardiac arrest annually.[1] Coronary artery disease is the major structural abnormality found in most sudden cardiac arrest victims.[2,3] In Scotland, known cardiac disease causes 82.4% of out-of-hospital cardiac arrests[4] and in the United States sudden death is responsible for more than 60% of adult deaths from coronary artery disease.[5] The majority of fatalities from an acute coronary event occur out of hospital.[6–9] Of these out-of-hospital cardiac arrests, it is estimated that up to 80% occur in the home,[10–12] during daytime[13] with the spouse or family member being the witness.[10,11]

There is a body of evidence showing that bystander cardiopulmonary resuscitation (CPR), provided promptly at the scene of an out-of-hospital cardiac arrest significantly improves long-term survival.[14–17] The International Liaison Committee on Resuscitation (ILCOR) states that a trained lay rescuer who is ready and willing may be the most important determinant of survival from sudden cardiac arrest.[18] It is a fact however, that a significantly lower rate of bystander CPR commences in the home.[11,18–20]

Cardiac rehabilitation (CR) and secondary prevention programmes are recognised as an integral component of the comprehensive care of patients with cardiovascular disease.[21] A feature of CR is education on the management of angina and on the signs and symptoms of myocardial infarction. Cardiac rehabilitation is an appropriate environment in which to enhance this education by providing CPR training. Indeed, in the past, the British Association for Cardiac Rehabilitation (BACR) recommended that high-risk patients should be offered the option of CPR training for their spouse, partner or close relatives.[22]

Research examining the effect of CPR training on the cardiac patients spouse or family member,[23–25] suggests that receiving CPR training within a supportive environment such as cardiac rehabilitation poses no adverse psychological consequences for family members.[24] Patients are often excluded from this CPR training due to fears of the possible physiological consequences.[23] Conversely there may be negative psychological consequences for patients who are excluded from CPR training.[23]

Although cardiac patients are at high risk of cardiac arrest, this should not preclude them from having the ability to help others. Such patients live in the community as everyday citizens and many of them will have relatives with cardiovascular disease. In the Framingham Study, those who had a brother with cardiovascular disease (CVD) had more than double the risk of developing CVD, independent of shared risk factors.[26] When questioned as to whether they would be interested in learning CPR, 46%[27] and 58%[28] of previously untrained patients in coronary care units said they would participate in CPR training. Only one study by McLauchlan et al. evaluated the psychological effect of offering the patient CPR training[29] and found no adverse effects on anxiety.

To the knowledge of the authors, apart from the study by McLauchlan et al. cited above, there is no research examining the effect of CPR training on cardiac patients. The aim of this study is to assess the impact on anxiety, depression and perception of control (POC) of CPR training for the cardiac patients as an integral part of an 8-week phase III Cardiac Rehabilitation Programme.

Materials and methods

Subjects for the study were recruited over a 5-month period from consecutive phase III cardiac rehabilitation programmes in The Adelaide and Meath Hospital (AMNCH) which is a university teaching hospital situated in Dublin. Phase III CR in the AMNCH consists of an 8-week programme of education and exercise, three times per week lasting 2–3 h per session. Family members are actively encouraged to attend the educational component. The inclusion criteria for the study were patients who commenced the phase III CR programme with a diagnosis of myocardial infarction, following cardiac surgery, i.e. post-coronary artery