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Psychological Effects of Automated External Defibrillator Training A randomized trial

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Abstract

Objectives—The objective of this study was to test if an Automated External Defibrillator (AED) training program would positively affect the mental health of family members of high risk patients.

Methods—305 ischemic heart disease patients and their family members were randomized to one of four AED training programs: two video-based training programs and two face-to-face training programs that emphasized self-efficacy and perceived control. Patients and family members were surveyed at baseline, 3 and 9 months post ischemic event on demographic characteristics, measures of quality of life (SF=36) , self-efficacy and perceived control. For this study, family members were the focus rather than the patients.

Results—Regression analyses showed that family members in the face-to-face training programs did not score better on any of the mental health status variables than family members who participated in the other training programs but for an increase in self-efficacy beliefs at 3 months post training.

Conclusion—The findings suggest that a specifically designed AED training program emphasizing self-efficacy and perceived control beliefs is not likely to enhance family member mental health.

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Introduction

Cardiac arrest is a leading cause of mortality in the United States, accounting for hundreds of thousands of deaths annually.¹ Ventricular fibrillation is the most common initial arrhythmia of cardiac arrest, constituting up to three-quarters of initial rhythms in out-of-hospital cardiac arrest.² Early electrical defibrillation is the most important determinant of survival.³⁻⁵ Indeed, the chance of survival decreases on average by approximately 5% for every minute that elapses prior to attempted defibrillation.^{2,6}

Technological advances have led to the development of the automated external defibrillator (AED). This device uses computerized circuitry to accurately identify ventricular fibrillation and subsequently deliver defibrillatory shocks to cardiac arrest victims, thereby eliminating the need for rhythm recognition by the operator. As a consequence, many more persons may now be able to provide potentially lifesaving therapy.⁴

A family responder AED program, where family members of persons at relatively high risk of cardiac arrest are equipped and trained with AEDs, may offer the chance of increasing patient survival. The vast majority of cardiac arrests occur in private residential settings⁷⁻⁸ and are initially witnessed or found by a family member.⁹ Home AEDs are now available to the public essentially for “over-the counter” purchase. As such it is important to investigate how such technology can be optimized with regards to operational proficiency and psychological effects.

Few studies have investigated AED training methods for lay bystanders.¹⁰ Among lay persons, initial mastery of AED skills has been successfully accomplished with “hands-on” training sessions ranging from 45 minutes to 2 hours although skills decline considerably over time.¹¹⁻¹² AED training also offers an opportunity to address psychological distress about the AED and about the broader circumstances of heart disease.

Psychological status following a coronary event

Following hospitalization for acute coronary ischemia, a disproportionate number of patients have symptoms of depression while others experience psychological distress and relatively poor health-related quality of life.¹³⁻¹⁸ Importantly, psychiatric, psychological, and functional morbidity following an acute ischemic cardiac event is associated with poor health outcomes.¹⁹⁻²²

Family members, most often the spouse, play a critical role in helping cardiac patients successfully recover from acute cardiac events and adapt to a chronic illness.²³⁻²⁴ In addition to affecting the patient’s psychological status, spousal adjustment may also have important implications for the spouse of a heart disease patient; evidence suggests that the role of caregiver has been associated with caregiver psychological distress manifested as depressive and physical symptoms.²⁵⁻³¹ Caregiver psychological distress may subsequently be transferred to their partner (spouse),³¹⁻³² thereby potentially worsening patient psychological and functional status. Thus, an optimal family responder program would favorably affect psychological outcomes in the course of AED education and training while using the most efficient, resource-sensitive approach.

Theoretical framework for development of AED trainings: Increasing self-efficacy beliefs and perceptions of control

Beliefs of self-efficacy and perceived control have emerged as influential components of health behavior change and may affect the success of AED training with regards to skill retention and psychological status. Self-efficacy pertains to the belief that one has power to

effect change based on one's own actions.³³⁻³⁴ Self-efficacy has been positively related to disease management behaviors.³⁵⁻³⁶ Personal experience is typically the most important determinant of self-efficacy as well as positive feedback.³⁴ An AED training session might affect efficacy beliefs if it includes ample "hands-on" AED practice, opportunities for the trainee to observe correct AED operation and encouragement and verbal persuasion designed to increase confidence with regards to AED operation. These characteristics might be more easily accomplished in a face-to-face training program than a video-based program because of the opportunity for positive feedback during a face-to-face teaching event.

Perceived control refers to the belief that one has the internal and external resources to exert positive changes over one's illness (or caregiving situation) and has been related to improved psychological adjustment for patients with heart disease and their family members/caregivers.^{23,37-40} Perceived control in dealing with a spouse's health problem has been related to less anxiety, less depression, and better psychological adjustment. Thus, specific training measures that appropriately address the role of the AED in a family responder program may serve to promote perceived control while limiting psychological distress. Moser and Dracup found that an intervention that focused on teaching spouses how to respond appropriately if their partner suffered a cardiac emergency increased perceived control. High levels of control were in turn associated with less anxiety, depression, and hostility among spouses of heart disease patients.²³

Taken together, training that specifically incorporates health behavior theory to influence perceived control and self-efficacy may positively affect family and patient psychological adjustment following a heart disease event. These effects could improve both family member and patient mental and functional status and in turn improve health.

We conducted a randomized trial to assess whether 4 distinct AED training approaches differentially affected mental health status among family members of high-risk patients participating in an AED training program.

We hypothesized:

1. Family members randomized to AED training that included face-to-face self efficacy and perceived control (training arms 3 and 4) would have better mental health as reflected by standard survey measures compared to family members who received video-based training (training arms 1 and 2).
2. Family members randomized to AED training that included face-to-face self efficacy (training arms 3 and 4) would experience greater self-efficacy beliefs regarding AED use compared to family members who received video-based training with and without self-efficacy content (training arms 1 and 2).
3. Family members randomized to AED training that included (face-to-face) perceived control content (training arm 4) would experience greater perceived control compared to family members who received face-to-face or video-based training without perceived control content (training arms 1-3).

Method

Study design

The study procedures were reviewed and approved by the Human Subjects Division of the University of Washington and other pertinent review boards. The study design was a randomized controlled trial including 305 subject pairs: each pair consisted of one subject who was recently hospitalized for an acute cardiac event, and one subject who was the patient's family member. After completing the baseline assessment, subject pairs were

randomized to receive one of four AED trainings. All participant pairs received an AED designed for layperson AED programs. AED training was directed to the family member (as opposed to patient). The training varied with regard to mode of delivery (video versus face-to-face), supporting practice materials (manikin), inclusion of self-efficacy (video without self-efficacy, video with self efficacy, face-to-face with self efficacy), and inclusion of perceived control (see Table 1). Participant pairs kept the AED and the training materials provided as part of the randomization. Participants filled out baseline, 3 and 9 month surveys assessing demographic characteristics and health beliefs.

Study sample and setting

Subjects were recruited from 10 area hospitals located in western Washington State. The 3-county region has a population of 3 million persons and is comprised of urban, suburban, and rural areas. Eligibility required a community-dwelling individual hospitalized in the prior 3 months for an acute cardiac syndrome to include myocardial infarction, unstable angina, or congestive heart failure and their domiciled family member. The patient and family responder had to be 18 years of age or older, live within the three-county area, and provide written, informed consent. Specific exclusion criteria included the existence of a complicating terminal condition (i.e. cancer) or condition that significantly affected cognition (dementia), therapy with an implantable cardioverter defibrillator, non-English speaking, no telephone, or nursing home residence.

Instruments

All participants (patients and family member subjects) received baseline (prior to randomization), 3-month, and 9-month surveys. These surveys included:

Demographics—Subjects' age, marital status, educational level, and race.

Mental health measure—Subjects completed the Medical Outcome Study Short Form (SF-36). The Medical Outcomes Study Short Form-36 is a short-form health survey which contains 8 subscales that describe general health, physical function, mental health, pain, vitality, social functioning and role limitations due to physical functioning or due to emotional problems. This instrument has been used extensively to evaluate persons with heart disease and caregivers.⁴¹ A difference of 10 points in subscale score is considered clinically important. We used the mental health subscale as the measure for mental health status. Published reliability statistics for the SF-36 scales have exceeded 0.70 and most have exceeded 0.80. In addition, studies to date have yielded content, concurrent, criterion, construct and predictive evidence of validity for the SF-36.⁴²

Perceived control and self-efficacy—Subjects completed a four-item control attitudes scale³⁷ (reliability coefficient, $\alpha = .72$ for both family and patient). Family members also completed a measure of self-efficacy involving AED performance. We developed four questions using a seven-point Likert-type scale to assess confidence in 1) ability to recognize signs and symptoms of cardiac arrest, 2) ability to quickly apply the AED, 3) ability to successfully use an AED, and 4) ability to remember correct steps over time (reliability coefficient $\alpha = .87$).

Study Procedures

Potential participants were initially identified during hospitalization by hospital-based study coordinators. Patients and a family member (spouse, partner or child of patient) were approached to consider participation when patient was medically stable and provided an information packet about the study. Subjects who were interested in participating were

contacted by study staff during the first two weeks after discharge to answer questions and discuss their decision regarding participation. Patient and family member pairs who agreed to participate were asked to review and sign the informed consent and complete the questionnaires found in an enrollment packet. Upon receipt of the signed consent and completed baseline surveys, participants were randomized to one of four training programs. Participants were informed by phone contact of their assignment. The process of identification, enrollment, and randomization required an average of 4 to 6 weeks.

Intervention: Four different training interventions

Training arm #1: Video-only (from the manufacturer)—Participants randomized to training arm 1 received an AED and the accompanying instructional video provided by the manufacturer. Once participants were notified of their training assignment, the AED and video were delivered by mail. Participants were contacted by phone a week after mailing to confirm receipt and to address any questions.

Training arm #2: Video + manikin—Participants randomized to training arm 2 also received training materials by mail. However, the content of these training materials was distinct from arm 1 and included an AED training video enhanced in self-efficacy messages regarding training and response in a cardiac arrest. Specifically, the video was designed to provide a(n):

1. demonstration of how to recognize signs and symptoms of a cardiac arrest,
2. demonstration of how to respond to a cardiac arrest (calling 911, AED, CPR),
3. vicarious experience (demonstration of correct AED/CPR performance),
4. education regarding physical and emotional responses of caring for a cardiac arrest victim,
5. education regarding the chain of survival of cardiac arrest and how early defibrillation by the AED is a critical step for improving outcomes,
6. education regarding the 9-1-1 emergency dispatcher assistance program for AED and CPR,
7. practical steps for maintaining life-saving skills, and
8. confidence-building messages.

Participants in training arm 2 also received a practice manikin and AED practice supplies so that the participant could undertake hands-on practice.

Training arm #3: Face-to-face + self-efficacy training—In addition to the training manikin and self-efficacy training video, participants randomized to training arm 3 received face-to-face training with an instructor. During this session, the instructor tailored specific feedback to increase self efficacy in AED performance and emphasized the critical step of early defibrillation in the chain of survival. The instructor reviewed several instructional materials to enhance self-efficacy involving AED performance. The instructor and trainee watched and reviewed the enhanced self efficacy training video together. Other materials included a fact sheet on signs and symptoms of a cardiac arrest, a calendar for keeping track of AED practice session, and a “check your AED” reminder form. The training method required approximately 30 minutes of face-to-face time.

Training arm #4: Face-to-face, self-efficacy + perceived control training—In addition to the training materials provided to arm 3, participants randomized to training arm 4 also received education and materials aimed at enhancing perceived control of cardiac

illness. The instructor engaged the family member in a series of open-ended questions regarding his/her perceived control and coping methods, and subsequently reviewed resources to address areas of concern:

- Are you anxious about (your family member's) heart condition?
- Do you feel like you have new responsibilities of helping to provide care?
- Does the AED add to the responsibilities?
- Do you feel you can manage situations that may arise from (family member's) heart condition?
- What issues do you feel are hardest too manage (discuss day-to-day and crisis issues i.e. cardiac arrest)?
- How are you coping with (your family member's) health condition?
- Are there things that might help you cope (even better?)

Several of the questions revolved around the AED but they also enabled the family member to address the broader scope of the heart disease circumstance. In addition, participants received a "resource manual" that included resources and steps to enhance perceived control.

Analysis

Descriptive, bi-variate and multi-variable analyses were used to assess biases in recruitment of study participants, describe the characteristics of the study sample and test the main hypotheses. Since we expected the effect to be greatest right after the training we focused our analyses on the baseline and 3-month assessments. However, we also present the results of the regression analyses for the 9-month assessments in the text. To test for over-all change from baseline to 3 months (and 9 months) we used a one-sample paired t-test. To compare the amount of change among treatment arms, we regressed the amount of change in the outcome variable (coded so that higher values were better) on the baseline value plus a dummy variable indicating the treatment group (1+2 versus 3+4 for hypotheses 1 and 2, 1+2+3 versus 4 for hypothesis 3). Supporting analyses that also controlled for variables where there were baseline differences among the arms made no substantive changes in the results, and we have presented results from the simpler regression. Repeated measures analyses of variance were also performed and provided similar findings.

Results

Six hundred and thirty participants were recruited over the study period. Of the N=630 eligible participant pairs, 48% (N=305) agreed to participate and completed the enrollment requirements. A comparison of participants who enrolled and those who refused showed that type of hospital was related to enrollment (i.e. patients identified at the Veterans administration were less likely to participate (35%) than patients identified from other hospitals (range of 47% to 65%), $p<0.05$) as well as race (African Americans were less likely to participate (38%) than whites (54%), Asians (54%), Hispanics (50%) or "other races" (40%), $p<0.05$), controlling for patients age and gender.

Of the 305 pairs who participated, 87.5% of the "family members" were spouses, similar across the four arms (varies from 85.9% to 89.5%). The remainder were child (3.9%), other (.7%) parent (.7) partner (5.6) roommate (1.3%).

Missing Data

For the SF-36 mental health subscale (MH), 12 persons had no baseline data and 12 had no follow-up data. These subjects were omitted. An additional 13 persons had no data at 3 months, which was imputed as the mean of the baseline and 9-month scores. This left a total of 288 persons who could be analyzed to test hypothesis 1, 283 for hypothesis 2, and 284 for hypothesis 3. Table 2 and Table 3 present the data for the entire study population $n=305$.

Sample characteristics

Table 2 shows the baseline characteristics of the family member participants enrolled in the study according to training arm assignment. Family member participants were mostly female, white and middle aged. Baseline characteristics were mostly similar across the 4 training arms with significant differences among the four groups for two of the 10 SF-36 scales. For Role limitations due to emotional problems, arms 3 and 4 were marginally significantly different ($p=0.062$). For Energy/Vitality, arms 1 and 2 were significantly different ($p=0.026$). For perceived control, arms 2 and 3 were significantly different ($p=0.014$).

Family member subjects had significantly better scores on all the SF-36 subscales as well as perceived control than the patient subjects (data not shown). None of the patients enrolled in the study suffered a cardiac arrest during the study period.

Results for changes at 3-months

Family members randomized to AED trainings 3 and 4 did not have statistically significantly better mental health compared to family members who were randomized to training arms 1 or 2. The mean change in the MH score was .26 points with a standard error of .82 (not significantly different from zero, $P=0.75$). The mean changes in arm 1+arm 2 (.66) and arm 3+arm 4 (-.14) were not significantly different (adjusted difference = -.44, $p = .77$, 95% c.i. -3.44, +1.06), based on a regression that controlled for the baseline MH score. In secondary analyses of the other SF-36 components, there were marginally significant results only for role limitation– physical function (adjusted difference = 6.96 points, $p=.053$ two-tailed) and PCS (adjusted difference = 1.37 points, $p=.098$ two-tailed). (data not shown)

Family members randomized to AED trainings 3 and 4 did experience statistically significantly greater self-efficacy beliefs at 3-months post training regarding AED use compared to family members who were randomized to arms 1 or 2. To compare self-efficacy scores of participants who were trained by one of the two face to face training programs that included an emphasis on self-efficacy and perceived control (arm 3+arm 4) with those who were trained by a video-based program (arm 1+arm 2) we compared the change in self-efficacy from baseline to 3-months. The mean change in the self-efficacy score was 2.44 points with a standard error of 0.35 (significantly different from zero, $P=.000$). The changes in arm 1+arm 2 (1.94) and arm 3+arm 4 (2.95) were significantly different (adjusted difference 1.16, $p = .020$), based on a regression that controlled for the baseline self-efficacy score (95% confidence interval 0.16, 2.16). (see Table 3)

Family members randomized to training arm 4 did not experience greater perceived control than family members randomized to any of the other 3 training arms. The mean change in the perceived control score was 0.58 points with a standard error of 0.25 (significantly different from zero, $P = .023$). The changes in arm 1+arm 2+arm 3 (0.63) and arm 4 (0.44) were not significantly different (adjusted difference = -0.24, $p = .64$), based on a regression that controlled for the baseline perceived control (95% c.i. -1.25, +.78). (see Table 3)

Results for changes at 9 months

Family members randomized to AED trainings 3 and 4 did not report greater mental health compared to family members who were randomized to arms 1 or 2. The mean change in the MH score at 9-months was .82 points with a standard error of .82 (not significantly different from zero, $P=0.316$). The changes in arm1+arm2 (.5035) and arm3+arm4 (1.13) were not significantly different (adjusted difference = .959, $p = .527$, 95% c.i. $-2.00, 3.92$), based on a regression that controlled for the baseline MH score. In secondary analyses of the other SF-36 components, there were no significant differences.

Family members who were randomized to AED trainings 3 and 4 did not experience greater self-efficacy beliefs at 9-months post training than family members who were randomized to arms 1 and 2—The mean change in the self-efficacy score at 9-months was 2.47 points with a standard error of 0.386 (significantly different from zero, $P<.001$). The changes in arm 1+arm 2 (2.30) and arm 3+arm 4 (2.64) were not significantly different (adjusted difference .503, $p = .374$), based on a regression that controlled for the baseline self-efficacy score (95% confidence interval $-.60, 1.61$).

Family members randomized to arm 4 did not experience greater perceived control at 9-months post training than family members randomized to any of the other 3 training arms. The mean change in the perceived control score at 9-months was 0.6901 points with a standard error of 0.256 (significantly different from zero, $P = .008$). The changes in arm 1+arm 2+arm 3 (0.7972) and arm 4 (0.3750) were not significantly different (adjusted difference = -0.474 , $p = .353$), based on a regression that controlled for the baseline perceived control (95% c.i. $-1.47, +.52$).

Discussion

The main objective of this randomized trial was to test whether AED training approaches that incorporated measures of perceived control and self-efficacy improved family member mental health as primarily measured by the SF-36 Mental Health subscale, perceived control and self-efficacy. The results indicate that face-to-face training with self-efficacy or face-to-face training with self-efficacy plus perceived control did not strongly effect mental health, self-efficacy, or perceived control of the family member compared to comparison control groups that used video-based training during the months following patient hospitalization. Taken together, the findings suggest that a specially designed face-to-face AED training approach is not likely to enhance family member mental health status. Since this study was not powered to detect differences in actual AED use or patient outcomes we do not know if training program differences are important for skill retention and performance. More research needs to be conducted to find out if AED training modality affects AED performance during an actual cardiac emergency. Research on training modalities has focused on skills retention (rather than actual performance) of rescue skills.⁴³ This research shows that, in particular young people are able to learn AED skills from self-taught modalities (i.e. web-based)⁴⁴ although one study with older individuals did not find significant differences between video-trained versus instructor-trained in AED performance on a manikin⁴³. Regardless of modality “hands-on practice” is likely a critical feature of effective skill-building training programs.

The results of this study are consistent with the Moser and Dracup²³ study which tested different CPR training contents (social support-CPR versus risk factor education-CPR) on family member’s perceived control. They found that either of the CPR trainings increased perceived control in family members compared to a control group (no CPR), but there were no differences between the two CPR training groups. In present study we found that perceived control increased for family members over time even though this increase was not

greater in the training arm that emphasized perceived control. However, without a pure control group it's difficult to say if the increase in perceived control is related to AED training. The AED training programs in this study were designed based on prior research²³ as well as theoretical underpinnings but it is possible that they were not different enough in content to result in differential outcomes.

We enrolled a relatively high-risk patient population by design given that this clinical group is more likely to suffer a cardiac arrest. We directed training toward family members understanding that this group is most likely to witness an arrest and be in a position to provide lifesaving care. We also appreciate that this group can be especially affected by the stresses of their role but who in turn can be influential with regard to the patient's health status. With these characteristics in mind, we developed the training programs to include increasingly more face-to-face and potential hands-on experiences to affect both self-efficacy and perceived control among our trainees and yet these specific interventions did not appear to positively affect clinically-meaningful and sustained improvements in these characteristics. It is possible that other patient and caregiver characteristics such as patient psychological status may have outweighed the discrete face-to-face training effect even when this training provides for ongoing resources and training opportunities. Repeated counseling or training may sustain a psychological benefit for the caregiver. Alternatively, a modified content or supported intervention (phone follow-up) might enhance the training's effectiveness.

Limitations

The study has limitations and strengths. There was no comparison group that might be considered ordinary care i.e. those patients discharged without any study enrollment or AED training. We chose this approach because previous evidence had suggested that tailored training involving lifesaving skills could favorably affect psychological status. Hence the goal of the current study was to determine whether the content and mode of AED skills training could affect mental health status. Participants could not be blinded to the type of intervention. Importantly, they were not aware of specific hypotheses or planned comparisons. Although the study attempted to recruit a representative set of participants, African American and Veteran individuals who were otherwise eligible for the study were less likely to enroll. We are not certain whether the lower enrollment rate by African Americans and Veterans is specific to the technology inherent to the AED or is a more general apprehension about participating in research. These limitations need to be balanced by the strengths of the study: the randomized design involving a real-world clinical population, an intervention derived from health behavior theory that incorporates practical applications, systematic and validated measures of outcomes.

Conclusion

AED training for family members of high risk patients provides an opportunity to positively affect mental health of the family member (trainee) and perhaps the patient. However, in this study we found no convincing evidence that an approach that incorporated an emphasis on increasing self-efficacy and perceived control into AED training improved mental health in family members of high-risk cardiac patients in the months following hospitalization and participation on the training program. Taken together, the results suggest that at the current juncture the goals of AED training should be toward attaining and retaining AED operational proficiency and that additional investment to improve mental health for family members may have little yield.

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Figure 1.
Study flow chart

Table 1

Core components of AED Training according to arm.

Training arm	Manufacturer's Training Video	Training Video self efficacy messages	Manikin and AED practice supplies	Face-to-face Training Enhanced Self-efficacy	Perceived control
1	+				
2	+	+	+		
3	+	+	+	+	
4	+	+	+	+	+

Table 2
Baseline characteristics of family member participants according to randomized AED training arm

Training arm	Video-only (N=76)	Video + manikin (N=78)	Face to face training (N=76)	Face to face training, PC (N=75)	P- value ^{***}
Age	57	60	59	58	0.33
Gender: Male	16%	21%	18%	11%	0.31
Race: White	91%	86%	89%	87%	0.86
Education I(years)	14	13	14	14	0.91
SF-36					
Physical functioning	79.7	81.6	77.5	84.0	0.36
Role limitation - physical problems	78.3	86.5	78.0	85.3	0.22
Role limitation - emotional problems	83.5	90.1	80.8	92.4	0.03
Social functioning	76.8	75.3	74.9	77.3	0.85
Mental health	76.0	78.2	77.1	78.8	0.71
Energy/vitality	57.9	67.0	61.5	64.5	0.03
General Health	72.1	75.3	70.1	71.8	0.40
Pain	76.2	75.3	74.9	77.3	0.63
Mental Component Summary score	50.0	51.6	50.3	52.0	0.41
Physical Component Summary score	48.4	49.7	47.9	47.8	0.66
Perceived control *	13.5	11.8	14.0	13.2	0.02
Self-efficacy in AED skills (prior to training) *	11.7	10.7	12.4	9.9	0.12

* Higher scores indicate lower perceived control and self efficacy

** Note: The p-values are for the test for any differences among the four arms on the relevant variable, based on analysis of variance. For the three variables with significant over-all differences, an additional test was performed comparing all arms to one another, using a Bonferroni adjustment for multiple comparisons.

Table 3

Change scores from baseline to 3-months on mental health status perceived control and self-efficacy beliefs of family member participants with recoding so positive value indicates better outcome.

Training arm	Range for each scale (min-max)	Video only (N=76)	Video + manikin (N=78)	Face to face training (N=76)	Face to face training, PC (N=75)
Mental health	92 (8-100)	1.15	0.17	0.56	-0.81
Mental Component Summary score	45.5 (23.4-68.9)	2.35	0.45	1.03	-0.86
Physical Component Summary score	50.9 (12.8-63.7)	-3.11	-1.27	-0.54	-0.91
Perceived control	21 (4-25)	0.38	0.41	1.10	0.44
Self-efficacy in AED skills (prior to training)	24 (4-28)	2.21	1.65	3.51	2.40

Note: The change scores were used in the regression analyses.