Helping Responses as a Function of Training in First Aid

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Article:

Introduction

As a helping profession, health education is concerned with the motivation, circumstances, and variables that encourage people to help themselves and others. In line with these duties and responsibilities of helping professionals, health educators are often responsible for teaching first aid and cardiopulmonary resuscitation. A basic premise upon which many emergency care courses are founded is that students who complete formal training first aid are more likely to initiate a helping response than those people without training.

There is a large body of literature that addresses the issue of "helping behavior." Controlled research situations have sought to determine the conditions under which an individual will render aid to a person who has locked the keys in the car or to a person in need of money to use public transportation.[1] A few studies[2-4] created emergency situations that examined helper response to people in need of first aid. However, these studies never actually required subjects to perform first aid—only to initiate help or show a willingness to help. Others[5-8] examined “competence" as the independent variable and generally found that knowledge/ability produced a greater willingness to help. None of these study designs required the completion of a first aid response. This study analyzed not only willingness to help, but also the effectiveness of first aid procedures performed.

Statement of the Problem

Emergency medical systems depend upon bystanders to initiate first aid procedures. Such action can sometimes mean the difference between life and death. Thousands of courses have been offered by colleges and universities using standardized American Red Cross (ARC) procedures. Hundreds of thousands of people have been trained and received certification cards, but it is unknown whether training has a positive impact on willingness to help, speed of response, or effectiveness of procedures performed.

The purpose of this study was to establish the impact of training in first aid, via an ARC standardized course in advanced first aid and emergency care, on the initiation, speed, and effectiveness of helping responses. There were three hypotheses:

1. Training would increase the incidence of positive helping responses in an emergency situation that involves trauma.

2. Training would increase the speed with which the helping response was initiated.

3. Training would increase the effectiveness of care rendered.

Procedures

All subjects in this study were enrolled in an advanced first aid and emergency care course at The Pennsylvania State University, Subjects were limited to those students who had no previous formal training in first aid, Students were randomly assigned to either a trained *(N*= 80) or untrained *(N*= 83) group. Untrained students went through the experimental scenario in the first two weeks of a ten-week term, and had received some classroom instruction and laboratory practice, but *not* in the control of bleeding techniques. The trained students

went through the scenario during the last two weeks of the term, and had received classroom instruction and laboratory practice sessions in the control of bleeding techniques.

All eligible students were assigned to report to an "interview" on the third floor of a university building. Participation in out-of-class research projects had been established as part of course requirements for a year before the term of data collection and was thus a routine course assignment, This project involved an ostensible interview concerning student health services conducted jointly by The College of Health Planning and Administration and The Health and Human Services Department of the Federal government.

Subjects necessarily passed a worker at the top of the stairs as they proceeded to the hallway to the interview room. A sign on the door of the interview room indicated that the interviewer was called out unexpectedly, would return shortly, and that subjects could begin completing an interview form while they were waiting. During this time, the worker was making "working" noises with a drill, hammer, and screwdriver. While subjects were completing the forms a fake accident occurred in the foyer approximately 30 feet from the interview site. From the hallway location, subjects could not see the worker as he prepared for the "accident," although the worker could unobtrusively observe the subjects.

The resultant injury, held constant for all subjects, was a leg laceration that produced severe and obvious arterial bleeding. Professional make-up and artificial blood created a realistic scene as confirmed by the following judgements: Only six of the subjects showed any sign of suspicion, and then only *after* making a helping response; the postexperimental interview elicited cues as to whether the scenario was seen as "real" or "unreal." This interview also served to reduce anxiety (a highly nervous reaction indicated the "realness" of the scenario), to convince the subject of the importance of the experiment as an important part of their overall training, and to insure their cooperation in not revealing the true nature of the interview to classmates. These procedures were cleared through the University Behavioral Science Ethics Committee.

In all cases, the victim feigned unconsciousness in order to avoid verbal communication with the prospective helper. This type of wound clearly enabled the researcher to ascertain the appropriateness of care provided. These factors were constant: intensity of the crash, the accident scene, the amount of bleeding, and the location of the scenario. Believability checks, safety procedures, and the postexperimental interview insured realness of the setting and subject cooperation. Two hidden cameras provided confirmatory information with regard to the initiation of help, the speed of initiation, and the appropriateness of first aid.

Three variables were manipulated in a 2 x 2 x 2 design: (1) ambiguity, (2) number of perceived bystanders, and (3) level of training. In the unambiguous setting the victim screamed "help!" and in the ambiguous setting only the sounds of the crash were heard. The perceived number of bystanders was manipulated such that subjects were either alone or in a group (one male and one female confederate in all cases). Instruction in control of bleeding techniques was not presented until the fourth week of the term, so that training level was manipulated in a typical pretest/posttest manner. The resultant contingency table was analyzed with multi-way frequency procedures using log-linear model.[9] The contingency table of observed cell frequencies by ambiguity, group, and training levels is presented in Table 1. The Chi-square statistic is presented for collapsed tables which yielded a 4-cell table and multiple regression analysis was done for the continuous time data.'"

Results

1. Training in first aid did not significantly increase the likelihood of responding in this experimental scenario.

2. Training increased the speed with which aid was initiated in ambiguous settings, but decreased it in unambiguous settings.

3. Training significantly increased the likelihood that an appropriate intervention response (direct pressure) would be rendered.

TABLE 1

Contingency Table of Observed Cell Frequencies for All Helping Responses by Ambiguity, Group, and Training Levels

			Training Level	
Response	Ambiguity	Group	Untrained	Trained
Responders	Ambiguous	Alone	8	13
		Group	5	8
	Unambiguous	Alone	19	16
		Group	15	14
Non-Responders	Ambiguous	Alone	13	7
		Group	15	12
	Unambiguous	Alone	3	4
		Group	5	6

Note: $N = 163$.

Table 2 compares responders and non-responders by training level (collapsed across ambiguity and group levels). Ninety-eight students (60 %) responded to the emergency. The trained group (64 %) did not respond significantly more often than the untrained group (57 %). This result supports the notion that knowledge does not necessarily mean that a person will develop an attitude reflected by appropriate health behavior. In this experimental setting the tendency to respond was no better for trained than for untrained individuals.

TABLE 2

Helping Responses by Training Level

	Responded?	
Training Level	Yes	No
Untrained	47 (55%)	36 (45%)
Trained	51 (63%)	29 (37%)

Note: $N = 163$

X^2 (ldf) = .862, $P < .353$, *ns*.

If a subject did not respond within 60 seconds, he/she was considered to be a non-responder. As can be seen in Table 3, overall, in the unambiguous setting (a call for help) produced a faster response time than the ambiguous setting (no call for help). Response times also were faster if the subject was alone rather than in a group. In group situations, much of the delay can be attributed to a brief glance by the subject toward the other group members in search of their reaction. It was as if the subject was seeking confirmation of the situation and a determination of whether anyone else was going to help. In all group situations there was only one real subject. The other members were confederates of the researcher who were instructed not to respond to the emergency except as directed by the subject. An interaction between Training, Ambiguity, and Group produced the results seen in Table Trained people responded more quickly than untrained ones when the setting was ambiguous, however when the setting was unambiguous (there was a cry for help) the untrained subjects responded more quickly. Generally, the difference in times across groups is not a large difference and would probably have no effect on the outcome of the emergency. It is interesting to observe, however, that untrained individuals in a group/ambiguous setting delayed a response for nearly half a minute. This is probably because these individuals were hoping that someone else in the group would have better knowledge of first aid and would respond first (see Shotland Heinold" for a more detailed discussion of the decision-making process in emergencies).

TABLE 3
Mean Times (in seconds) for Initiating Any Positive Helping Responses in the Accident Scenario by Training, Ambiguity, and Group levels[1]

	Training level	
	Untrained	Trained
	Ambiguous settings	
Alone	13.25	10.08
Group	29.00	15.38
	Unambiguous settings	
Alone	3.32	10.00
Group	7.40	14.86

Note: $N = 98$.
[1] R^2 (Training X Ambiguity X Group) = .107 ($F = 5.7$), $P < .01$.

Of the 83 subjects in the untrained group, 47 (47 %) initiated a helping response, but only 29 (35%) included some form of direct intervention (first aid procedure). Only 4 (5 % of the subjects in the untrained group who rendered aid applied direct pressure to the bleeding wound. Among the trained group of subjects, 51 (64 %) initiated a helping response. Of these, 32 (63%) included direct pressure to the bleeding wound. This means that 63 percent of the trained group who rendered aid performed the correct procedure compared to only 8 percent of the untrained group (who attempted some form of aid).

Table 4 presents the direct pressure response collapsed across ambiguity and group variables.

TABLE 4
Direct Pressure Response by Training Level

	Performed Direct Pressure?	
Training Level	Yes	No
Untrained	4 (8 %)	43 (92 %)
Trained	32 (63 %)	19 (37 %)

Note: $N = 98$.
X^2 (ldf) = 30.956, P .0001.

Implications

Perhaps the most important implication of the study is that first aid instructors cannot assume that students, having learned the material, will offer help to a victim in need of first aid. Knowledge and skill do not necessarily compel a person to render care, but if care is offered, a course is likely to increase the probability that correct treatment will be given. Perhaps first aid courses need to spend some time having students contemplate "what if" situations, where students must consider behavior options as well as care options. Analogous practice situational exercises might prove beneficial. Such exercises would encourage students to plan a personal course of action to help another person in need of first aid.

The literature indicates that there is no definite personality type that can be counted on to initiate helping behavior.[12-14] The only alternative is to train as many people as possible in first aid courses, hoping that a

willing responder will be present at any given accident. This is the current goal of the American Red Cross. Ways of increasing the likelihood that a response will occur need to be identified and incorporated into the first aid curriculum. Pantin and Carver were able to increase the speed at which subjects initiated a response by utilizing first aid training films, detailing first aid procedures. This result supports the use of training films and practice scenarios which are a normal part of most first aid courses. Beaman, Barnes, Klentz, and McQuirk16 simply provided subjects with an overview of information concerning psychological and sociological factors which normally inhibit helping in emergencies. Armed with this information, subjects helped significantly more than uninformed subjects. The scenario involved a bicycle accident, the initiation of a helping response, but no completion of a response before experimental termination. A three-part study using a similar scenario as in the present study is now being planned to test whether disseminating "helping" information along with specific skills training will maximize the help a hapless victim is likely to receive.

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