Western Carolina University

Undergraduate Research Grant

Willingness of High School Students to Perform Cardiopulmonary Resuscitation (CPR) and Automatic External Defibrillation (AED)

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Purpose and Objectives

The objectives of this project are to answer the following research questions:

1. Under what circumstances are high school students likely to perform cardiopulmonary resuscitation (CPR) on victims of cardiac arrest?

2. Under what circumstances are high school students likely to perform automatic external defibrillation (AED) on victims of cardiac arrest?

3. What are the barriers that may prevent high school students from performing CPR or AED on victims of cardiac arrest?

4. What influence do age, race, gender, or intent to enter the medical profession have on willingness to perform CPR or AED?

5. What influence does the makeup of the home have on willingness to perform CPR or AED?

6. Does witnessing a cardiac arrest in the past influence the willingness to perform CPR or AED?

Significance

Cardiovascular disease accounts for nearly 1 million deaths in the United States each year, and approximately half of these are sudden deaths as a result of coronary heart disease.[1] More than half of the deaths from heart attacks occur during the first few hours after the onset of symptoms and before patients reach the hospital.[2] Immediate action following symptom onset is critical in reducing morbidity and mortality.[3] There is strong evidence that cardiopulmonary resuscitation (CPR) provided by a bystander at the scene of a cardiac arrest more than doubles the chances of survival of the victim.[1] In addition, the vast majority of victims of sudden cardiac death experience ventricular fibrillation, an abnormal and chaotic rhythm of the heart.[4] Fortunately, this chaotic rhythm is often responsive to defibrillation, a procedure whereby an electrical current is passed through the heart, restoring its normal rhythm. Consequently, victims of sudden cardiac death who experience ventricular fibrillation have a higher liklihood of

survival compared to patients who experience other abnormal heart rhythms.[5] To be effective however, defibrillation must be provided within the first few minutes of cardiac arrest. The probability of surviving cardiac arrest is estimated at 80% when defibrillation and CPR are administered immediately following the onset of ventricular fibrillation, and declines by 4% for each minute of delay until these measures are initiated.[6]

Despite the overwhelming evidence that bystander CPR and defibrillation by emergency medical professionals improves patient outcome, survival to hospital discharge following cardiac arrest remains poor, only in the 5% to 20% range, even in locations with highly organized emergency medical response systems.[7] The primary reasons for such dismal survival rates are: 1) the poor rate of bystander-initiated CPR (reported between 10% and 20% of cases), and 2) the delay in emergency medical care personnel reaching the scene to provide defibrillation (the national average EMS response time is more than 10 minutes).[8, 9, 10]

In an effort to address the poor rates of bystander-initiated CPR and the delay in delivering defibrillation, the American Heart Association (AHA) has taken the lead in providing wide-spread CPR training to the general public. More recently the AHA has spearheaded efforts to place defibrillators in public places for use by the public. Termed Public Access Defibrillation (PAD), this program places automated defibrillators in public areas where cardiac arrests are likely to occur, such as sports arenas and shopping malls. The automatic external defibrillators, or AEDs, are computer driven devices capable of delivering defibrillation with minimal input from the operator. The concept is that untrained bystanders would be able to apply the AED and deliver the defibrillation well in advance of arrival of EMS. It has been projected that bystander CPR, coupled with defibrillation provided by the lay public using AEDs, could result in substantial increases in cardiac arrest survival rates.[11]

While the aforementioned efforts by the American Heart Association are laudable, and theoretically could save thousands of lives each year, the enthusiasm for these programs must be tempered by the realities of the emotional response of the public when faced with a medical emergency. Several studies have examined the willingness of the public to perform CPR. These investigations have identified a reluctance of some members of the public to perform CPR. Using survey methods, Ross and colleagues found that 35% of their respondents were unwilling to perform CPR on strangers and members of differing race.[12] Other studies using survey designs have also identified an alarming proportion of respondents who are unwilling to perform CPR under certain situations, such as a when faced with a "young drug addict," "an unkempt man," "a stranger," a "gay man," or when facial blood was present.[13, 14] Reasons cited for witholding care include fear of disease transmission, legal liability, further harming the patient, as well as a lack of confidence with their mastery of CPR techniques and the unpleasantness of mouth-to-mouth ventilation.[13, 14, 15] Even though these studies suggest a dissappointingly low willingness to perform CPR, the results may in fact overstate the willingness of the public to provide emergency care. All of these studies used written survey methods which surveyed attitudes and perceived behaviors rather than actual behaviors, and are devoid of the sense of urgency and the true unpleasantries of performing CPR. It is plausible that the actual willingness to render aid would be even less when faced with a true emergency.

While some previous works have attempted to gauge the willingness of the lay public to perform CPR, no such studies exist with respect to performing defibrillation. Without such investigation, current efforts toward public access defibrillation seem premature for several reasons. First, if the lay public is unwilling to perform defibrillation, placing defibrillators in public areas would be an ineffective strategy for reducing prehospital cardiac deaths. Second, to

be effective, defibrillation must be delivered quickly. Even if defibrillators were readily available, if the public hesitates in performing the procedure or lacks the skill to operate the defibrillator, any potential benefits of public access defibrillation will be negated. Finally, the cost of an automatic external defibrillator is approximately $8,000. Obviously, the cost of such a program is enormous and should be evaluated prior to implementation. Such evaluation should be focused on 3 areas: 1) willingness of the public to use the AED, 2) ability of the lay public to use the device correctly, and 3) the impact of public access defibrillation on survival rates. This study is designed to evaluate the first of these 3 areas: the willingness of the public to perform CPR and AED.

While previous studies have assessed the willingness of the lay public to perform CPR, the methods were limited to survey research which lacked the realism of a true emergency. To overcome this limitation, the proposed study will increase realism by using videotaped scenarios in addition to survey methods. As such, this investigation will be the first of its kind to assess the willingness of high school students to perform CPR using the added realism offered by videotaped scenarios. In addition, the proposed study is the only evaluation of the willingness to perform automatic external defibrillation. No other published reports of public acceptance of AED were identified during an extensive Medline literature search.

Project Plan

An 11 item demographic questionnaire and a 4 item survey (Appendix 1) will be administered to a convenience sample of approximately 2500 students from 13 high schools (Table 1) during the months of March and April, 2001. With approval of the Principal of each of the participating schools, the survey will be administered during regular class hours. Written consent to participate will be obtained from the students, or their parents if the student is

underaged (Appendix 2). The consent form will be provided to the students by their teacher prior to the day of the survey. Signed consent forms will be collected prior to the day of the survey.

Study participants will be presented with 8 brief video clips depicting scenarios in which an individual suddenly collapses in a public place. The scenarios are staged such that the viewer becomes a part of the scenario, and it is clear that no one else is available to help. The eight scenarios are as follows:

1.	Stranger	While standing in the check out line at the grocery store, a middle-aged man unknown to you collapses.
2.	Trauma	You witness a motor vehicle crash in which a small car has struck a telephone pole. Upon approaching the car, you notice the driver is unconscious and bleeding from a head wound.
3.	Child	While at the public swimming pool, you notice a nearby commotion. Upon investigating, you notice that an 8-year-old child has been pulled from the water. She does not appear to be breathing.
4.	Elderly	While shopping at grocery store, you witness an elderly male collapse in front of you. He appears unconscious.
5.	Drug addict	After leaving the theater, a man approaches you from a side alley. He states that his friend has been using intravenous drugs and may have overdosed. He asks you to help his friend whom you find in cardiac arrest.
6.	Relative	While eating at a restaurant with your family, you notice one of your dad choking on food. Upon reaching him, he is unconscious.
7.	Differing Race	A middle eastern exchange student in your class collapses.
8.	Vomitus	While at the library, you notice the librarian grab his chest and collapse. Upon closer examination, you notice that he is unconscious and there is a pool of vomitus by his head.

Following each scenario, study participants are asked a series of questions designed to assess their willingness to render medical care (Appendix 1). The full script of the scenarios is found in appendix 3.

Table 1. Survey sample.

Name of School	Location	Total Number of Students	Percentage of Student Body Surveyed	Number of Students Surveyed
Ashbrook High School	Gastonia, NC	1255	0.2	251
Forestview High School	Gastonia, NC	1140	20%	228
South Point High School	Belmont, NC	975	20%	195
North Gaston High School	Dallas, NC	1000	20%	200
East Gaston High School	Mt. Holly, NC	1275	20%	255
Cherryville High School	Cherryville, NC	600	20%	120
Bessemer City High School	Bessemer City, NC	600	20%	120
Hunter Huss High School	Gastonia, NC	1100	20%	220
Highland High School	Gastonia, NC	1100	20%	220
Union Pines High School	Cameron, NC	853	20%	171
North Moore High School	Robbins, NC	443	20%	89
Pinecrest High School	Aberdeen, NC	1820	20%	364
Davie High School	Mocksville, NC	1460	20%	292
TOTAL				2725

10106 6,870

Frequency tables will be developed to provide a descriptive profile of the study sample, including racial mix, age, grade, gender, time since their last CPR course, and the age distribution of the family living within the household. Where appropriate, descriptive statistics will be used to further describe the demographic variables. Associations between willingness to perform CPR/AED and the different scenarios will be examined using the chi square test for independence (objectives 1 and 2). Barriers to performing these procedures will be evaluated through frequency tables and descriptive statistics (objective 3). Relationships between barriers to performance and demographic variables will be examined using descriptive and inferential statistics as appropriate (objectives 4, 5, and 6).

Upon completion of the survey, students will be debriefed. During this debriefing, students will be reassured that the video clips they viewed were not actual emergencies, and that the people in the videos were actors and were not victims of an actual emergency.

Project Timeline

March - April	Data collection
April - May	Data entry
June	Data analysis
July	Manuscript preparation
August	Submission of manuscript to the Journal of Prehospital Emergency Care.

Budget and Justification

Funding is requested for printing of data collection instruments and consent forms. These instruments will be distributed to each of the survey participants. The actual videography work will be performed by the investigators with assistance of WCU's Theatre and Communications Department at no cost.

Table 2. Budget

Printing (16,000 copies @ $0.03)	$480.00
TOTAL	$480.00

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APPENDIX 1

Survey Instrument

Please answer the following questions:

1. How old are you? _____ years

2. What grade are you in?
   - ❑ 8th
   - ❑ 9th
   - ❑ 10th
   - ❑ 11th
   - ❑ 12th

3. Please indicate your gender.
   - ❑ male
   - ❑ female

4. Please indicate your race.
   - ❑ Caucasian
   - ❑ African-American
   - ❑ Hispanic
   - ❑ American Indian
   - ❑ Latino
   - ❑ Asian
   - ❑ Middle Eastern
   - ❑ Other _____

5. Please indicate the school you attend.
   - ❑ Ashbrook High School
   - ❑ Forestview High School
   - ❑ South Point High School
   - ❑ North Gaston High School
   - ❑ East Gaston High School
   - ❑ Cherryville High School
   - ❑ Bessemer City High School
   - ❑ Hunter Huss High School
   - ❑ Pinecrest High School
   - ❑ Union Pines High School
   - ❑ North Moore High School
   - ❑
   - ❑
   - ❑

6. Do you intend to enter into a health care profession as a career?

   ❑ yes ❑ no

7. Who lives with you in your home? **(Check all that apply)**
   - ❑ parent(s)
   - ❑ older sibling
   - ❑ younger sibling (≥ 10 years old)
   - ❑ younger sibling (5 - 9 years old)
   - ❑ younger sibling (< 5 years old)
   - ❑ grandparent or other elderly person (over age 60)
   - ❑ a sick or disabled relative or friend
   - ❑ someone of a differing race

8. How long has it been since you have been instructed in CPR?
   - ❑ within 6 months
   - ❑ 7 months to 1 year ago
   - ❑ 1 - 2 years ago
   - ❑ 2 - 3 years ago
   - ❑ 3 - 4 years ago
   - ❑ more than 4 years ago
   - ❑ never been taught CPR

9. How long has it been since you have been instructed in automatic external defibrillation?
   - ❑ within 6 months
   - ❑ 7 months to 1 year ago
   - ❑ 1 - 2 years ago
   - ❑ 2 - 3 years ago
   - ❑ 3 - 4 years ago
   - ❑ more than 4 years ago
   - ❑ never been taught AED

10. Have you ever witnessed someone experience cardiac arrest?

    ❑ yes ❑ no

11. If you answered yes to question #9, what did you do? (Check **all** that apply)
    - ❑ watch only
    - ❑ call 911
    - ❑ perform mouth-to-mouth breathing
    - ❑ perform chest compressions
    - ❑ perform automatic external defibrillation

Based upon the scene you have just witnessed, please answer the following questions. Please answer **based upon your first reaction** to the situation and how you think you would have responded had this been an actual medical emergency.

1. Based upon this situation, would you (check all that apply):
   - ❑ do nothing
   - ❑ watch
   - ❑ call 911
   - ❑ perform mouth-to-mouth ventilation
   - ❑ perform chest compressions
   - ❑ perform automatic external defibrillation (AED)

2. If you were unwilling to perform mouth-to-mouth ventilation, please indicate why (check all that apply).
   - ❑ Fear that I might acquire an infection such as AIDS, HIV, hepatitis, tuberculosis, or some other infectious disease.
   - ❑ Fear that I may be injured performing this procedure.
   - ❑ Fear that I may further injure the patient while performing this procedure.
   - ❑ Fear that I may harm other bystanders while performing this procedure.
   - ❑ Fear of legal liability and that I may be named in a lawsuit if I do something wrong.
   - ❑ I am not comfortable with the technique of this procedure and I fear that I might do something wrong.
   - ❑ I believe that it is wrong for me to intervene because I might be interfering with a natural death.
   - ❑ I would be too embarrased to do this procedure in front of my friends.
   - ❑ None of the above. I would be willing to do this procedure.

3. If you were unwilling to perform chest compressions, please indicate why (check all that apply).
   - ❑ Fear that I might acquire an infection such as AIDS, HIV, hepatitis, tuberculosis, or some other infectious disease.
   - ❑ Fear that I may be injured performing this procedure.
   - ❑ Fear that I may further injure the patient while performing this procedure.
   - ❑ Fear that I may harm other bystanders while performing this procedure.
   - ❑ Fear of legal liability and that I may be named in a lawsuit if I do something wrong.
   - ❑ I am not comfortable with the technique of this procedure and I fear that I might do something wrong.
   - ❑ I believe that it is wrong for me to intervene because I might be interfering with a natural death.
   - ❑ I would be too embarrased to do this procedure in front of my friends.
   - ❑ None of the above. I would be willing to do this procedure.

4. If you were unwilling to perform automatic external defibrillation (AED), please indicate why (check all that apply).
   - ❑ Fear that I might acquire an infection such as AIDS, HIV, hepatitis, tuberculosis, or some other infectious disease.
   - ❑ Fear that I may be injured performing this procedure.
   - ❑ Fear that I may further injure the patient while performing this procedure.
   - ❑ Fear that I may harm other bystanders while performing this procedure.
   - ❑ Fear of legal liability and that I may be named in a lawsuit if I do something wrong.
   - ❑ I am not comfortable with the technique of this procedure and I fear that I might do something wrong.
   - ❑ I believe that it is wrong for me to intervene because I might be interfering with a natural death.
   - ❑ I would be too embarrased to do this procedure in front of my friends.
   - ❑ None of the above. I would be willing to do this procedure.

APPENDIX 2

Consent Form

Performance of Cardiopulmonary Resuscitation and Automatic External Defibrillation

This survey is being conducted as part of a class research project at Western Carolina University. The purpose of the project is to assess the actions of high school students when confronted with a medical emergency. This brief, written survey is being conducted to determine **your** willingness to perform certain first aid measures when confronted with a medical emergency. The survey includes a limited number of demographic questions (age, race, sex, etc.). Following collection of this information, you will be shown 8 video clips depicting the scene of a medical emergency. You will then be asked a series of questions relating to the video clip that are designed to assess how you would respond if faced with a similar, real-life situation.

The privacy of all respondents will be protected. Individual responses will remain confidential and information gathered will be analyzed and reported in aggregate form only. There will be no possibility of identifying a survey respondent by his or her responses. No names or other personal identifiers will be included on the survey.

The time required to complete the survey is about 25 minutes. Participation in the study is entirely voluntary. You do not have to disclose any information against your will and you may withdraw your participation at any time.

The survey is being conducted in several North Carolina High Schools and is designed to assess the response of high school students when confronted with a medical emergency. The information gathered from this survey will be used to identify the the barriers to rendering emergency medical care and to devise new educational programs to improve the actions of the public when confronted with a medical emergency. Your voluntary participation in this project is important to the overall success of the project.

If you wish to discuss this research with someone else, you may contact Dr. Michael W. Hubble, Emergency Medical Care Program Director, Western Carolina University at (828) 227-7113.

Are you willing to contribute your time to complete the survey?

I, _____ freely and voluntarily agree to participate in the research
(print your name here)
study as described above. I further attest that I am at least 18 years of age. (If you are not at least 18 years of age, please have your parents sign below.)

_____ Date _____
(signature)

I, _____ the parent of _____ grant
(print your name here) (print your child's name here)
permission for my child to participate in the study described above.

_____ Date _____
(signature)

APPENDIX 3

Scripts for Scenarios

Script #1. Stranger

Open in the aisles of a grocery store.

Camera 1 (our only camera) acts as the "eyes" of our heroic AHA CPR/AED Certified high school student. Everything seen is from the POV of our hero. The camera scans the lined shelves of the grocery store. Pan down to view a grocery list held above a half full basket. Pan back up to see another high school student approach the "camera" with an armful of groceries.

Friend: What's the deal? For the past 4 days after school your mom meets us at the door with a list of errands to run. Does she think that just because you have your license now she has a new slave?

The friend sighs exasperated. Camera pans back to the shelves, moving down the aisle.

Friend (off camera): (coughs) Can I put these in there or do you want me to carry them all over the store?

Camera turns back to friend and follows the motion of dumping the armful of groceries unceremoniously into the basket. Camera stays on friend.

Friend: (brushing shirt off) Ok, what else?

Camera pans down to list. Impatient, the friends snatches the list from our hero's fingers. Camera pans back to friend's face.

Friend: (fingering down list) Got that, got that, got that, got that, got that...the only thing we need is green peas. (hands the list back...exasperated face) They're right here in front of you.

The friend grabs the can and drops it into the basket right into the soft bread on top.

Friend: There, done. Let's get out of here so we can go to the mall. (or wherever high school kids go)

Clearly tired of the great shopping adventure, the friend drags our hero by the basket to the front of the store.

The camera holds the point of view of the CPR student as the two walk towards the express aisle. Two people stand ahead of them in line: an elderly lady checking out and a heavy-set middle-aged man behind her leaning heavily on a cart. The friend makes a dramatic show of counting the number of items in the man's cart when the man suddenly puts a hand to his chest and grimaces before sliding to the floor. He doesn't move, lying there with his eyes closed. He doesn't appear to be breathing. The friend stands looking down at the man stunned. Ahead in line, the elderly lady gasps. The cashier looks around frantically.

Cashier (yelling): Does anyone know CPR?!

Camera pans to various bystanders with carts, buggies, and children, all staring, but unmoving. A few even begin to edge away.

Cashier: Please, can't anyone help?!

Camera refocuses on the man on the ground and fades...

Script #2. Trauma

Open in the front yard of a house.

Camera 1 (yet again, our only camera...we gotta work on that low budget) holds the P.O.V. once again of our AHA CPR/AED certified high school student.

Camera focuses on a boy with a baseball glove standing approximately 20 feet away. The boy throws a ball towards the camera, which is caught by a glove that comes into view from the side of the camera and thrown back.

Off camera, the squeal of tires is heard, followed by a crash.

Camera 1 pans towards the sound. The baseball passes through the field of vision as the catcher's attention is drawn towards a car imbedded in a light pole down the street.

The sound of someone running can be heard as the CPR student's throwing partner comes into side angle view.

Friend (concerned): Do you think they're ok?

Camera and friend move towards the car at a moderate pace. People from other houses have already begun to crowd around the car.

Camera and friend near the car. As the car comes into view, we can see that the front end of the car has sustained moderate damage. As the camera gets closer, a man can be seen inside leaned towards the door unconscious. Blood is seeping from a cut above his eye. Even more drools from the corner of his mouth.

A bystander leans into the car.

Bystander 1 (nervously): I don't think he's breathing.

Bystander 2: So do something!

Bystander 1: I don't know what to do! You do something!

Bystander 2: I don't know what to do either! (looking around) Does anyone know what to do?

Camera pans left, then right. No one moves. Some people shake their heads no. Camera focuses back on the driver, then fades...

Script #3. Child

Open at the scene of an indoor pool (this can be one of the pools at WCU).

Camera 1 as always holds the P.O.V. of our wrong place/wrong time hero, the AHA CPR/AED certified high school student.

Through the camera we see a pair of feet swishing slowly in the water (belonging to our hero him/herself). Sounds of play in the water can be heard all around.

Camera 1 pans up to view several kids playing in the water, jumping off the diving board, splashing, and dunking. The kids vary in age, but it is clear that no adults are around.

The camera follows a Nerf football being tossed the length of the pool by two of the children.

During one throw to the deep end, we see one child cannon ball off the diving board. The camera follows the throw back. The football goes unnoticed by the catcher as he turns towards a commotion behind him. Two older kids are pulling a younger child out of the shallow end of the pool.

The "camera" gets up and walks hurriedly (no running around a pool) towards the group. The two kids who pulled him out are leaning over him. Several other kids are gathered around. The child is blue around the lips and pale.

Kid 1 (nervously): I don't think he's breathing.

Kid 2: Pump his legs. It forces the water out of his lungs.

Everyone looks at him strangely.

Kid 2: I saw it on TV.

Kid 3: No, you're supposed to pound on his chest.

Kid 4: No, pound on his back.

Kid 1: Look everyone, shut up! Does anyone know what to do for real?

Camera pans up to look at the shaking heads of the ground, then pans back down and focuses on the child before fading...

Script #4. Elderly

Open in the park along a walking trail (this could be shot on the WCU walking trail on the back side).

Camera 1 continues to hold the P.O.V. of our AHA CPR/AED certified high school student (bored of that yet?). The camera moves along the trail at a walking pace. In view, we see typical park action, people playing frisbee, having picnics, jogging, walking dogs, etc. (whatever we can get at our disposal).

Camera 1 pans to the right to see a girl in workout clothes assuming the power-walk position.

Girl (obviously continuing a conversation): So, Mom's going on and on and on about how she expects my grades to stay where they are, and if they don't she's going to restrict my driving to going back and forth from school. I mean, how unreasonable can you get? I can finally get out of the house whenever I want to and she starts throwing all these new rules on me.

Camera pans back to the walking trail in front of them during this conversation. As she talks, we see an elderly man sitting on a bench in the shade. His head is slumped forward unnaturally. He doesn't look like he's resting.

Camera and girl stop.

Girl: He doesn't look right. You think he's ok?

Camera and girl move quickly to the man's side. The man's color is ashen and he doesn't appear to be breathing. The girl leans down to the man in camera view.

Girl: I don't think he's ok. What should we do?

Camera focuses momentarily on the girl looking around, then the camera pans around to the surroundings. No one has noticed the two teens or the man. Pan back so that both girl and man are in view.

Girl (raised voice): Hey, does anyone know this guy?

A few heads turn. Some joggers stop. One jogger leans down to the man, looking and listening.

Jogger 1 (slightly panicked): I don't think this guy's breathing. Do either of you know CPR? (a beat) (raised voice) Does anyone know CPR?!

Camera pans around to show no one moving closer. A few people shaking their heads and general signs of awkwardness. Focus back on the man before fading...

Script #5. IV Drug User

Open in the lobby of a movie theater.

Camera 1 holds the P.O.V. of AHA CPR/AED certified high school student. Camera moves forward towards the lobby doors with a crowd of people heading to the exterior of the building.

It is night outside and the crowd disperses around the camera and two friends of our CPR student. Chatter passes between our three characters (consists of "oh, remember the part where..." and "it was really cool when the guy...") Camera alternates view of friends based on who is speaking.

The trio begin to walk towards their car. As they pass a side alley, they notice a man pacing at the entrance, seemingly mumbling to himself, his hands waving from his head to his sides. The three falter, then quicken their pace to pass the man.

The man looks up and sees the teens.

Man: Oh thank God! You've got to help me!

The man grabs the hand of our CPR student. The camera moves behind this man, drug to just inside the entranceway of the alley.

Camera focuses on another man slumped against the wall of the alley. He is pale with blue lips. The two friends gasp.

Camera turns towards the friends.

Friend 1: What happened?

Camera pans back to the man.

Man (desperately): Man, we were shooting up and I think he's overdosed. He's never done this before. Please, do any of you know what to do? Please, help him!

Camera turns to see the two friends standing very close to each other (holding each other if female) looking uncomfortable and a bit scared.

Camera does a panoramic scan of the parking lot. The previously thick crowd has disappeared, the lot empty and quiet.

Camera pans back to the man lying slumped against the alley wall before fading...

Scenario #6. Relative

Open at a restaurant.

Camera 1 holds the P.O.V. of our cursed hero, the AHA CPR/AED certified high school student who just can't seem to get a break here lately.

Three people sit at the table with the student. These people are his/her family consisting of one sibling, a mother, and a father.

The sibling is shoveling food from his plate to his mouth as if it will be taken away from him.

Mom: Slow down. This is not a race. No one's going to take your food away.

Sibling: You never know, Mom (dishes another bite in).

Mother and father exchange looks. The father shrugs and returns to his meal. Mother turns back to the sibling.

Mom: Can't you act like I raised you right for once? (she complains, seeing him making designs in his food)

Gentle coughing suddenly comes from Father. Mother glances up concerned, but he holds a hand up, stilling her worries as he takes a sip of water. It doesn't seem to help. He coughs a bit harder.

The waiter approaches the table.

Waiter: And how is our family evening going over here? Sir, are you all right?

Father continues coughing harder and harder. His hand sneaks up to hold his throat.

Sibling: Are you ok, Dad?

Mother reaches up to pound him on the back. He is shaking his head "no" In answer to the question. He coughs harder, seems to be drawing a breath before jerking. No more coughs come and he paws at his throat even harder. Mom continues to pound on his back. The sibling just looks on stunned.

Father continues to attempt to breathe, but with no success. He falls to the ground. Mother tries to catch him as he falls.

Mom: Please someone help! He's choking!

Camera focuses on Mom and Dad on the floor before fading...

Script #7. Differing Race

Open in a classroom.

Camera 1 holds the P.O.V. of our AHA CPR/AED certified high school student.
Through the camera, we see a pencil poised over a MC test on one of the last pages. The eraser taps the page a few times in impatience.

Camera 1 pans up to view other students around him, each hunched over their respective desks and tests. Camera pans around to the teacher who gives the camera a stern look from over a paperback book. The camera quickly shifts back to the test.

"A" is slowly circled on the next question. A body brushes past the desk as a student of middle-eastern descent heads toward the teacher to turn in their test. The camera follows his movement.

Teacher (smiling): Done already.
Foreign student (accented): I have no problems with it, no.

Just before reaching the front desk, the student stutter steps, then collapses hard onto the floor. Everyone's head in view snaps up. The teacher jumps to his feet and moves to the student's side.

The teacher turns to one of the students in the front row.

Teacher (pointing towards the door): Go get the nurse!

The student promptly gets up and hurries from the room.
The camera slowly gets up and joins the class crowding around the student.

Teacher (waving them off): Back off, back off, give him some air.

Random student: Hey, I don't think he's breathing.

The teacher leans down to the student and listens intently.

Teacher (nervously): Please tell me someone in here has taken the CPR class.

The student who ran off to find the nurse returns alone and is seen peering over Everyone's shoulder.

Student (huffing and puffing): The nurse has already left for the day.
Close up on teacher.
Teacher (insistently): Does anyone in here know CPR?!
Camera pans from teacher to unconscious student before fading...

Script #8. Vomitus

Open inside a library.

Camera 1 holds the P.O.V. of an AHA CPR/AED certified high school student.

The camera focuses on the pages of a book sitting on a table in the library. Only soft sounds are heard (we're in a library after all).

A hand comes into view (the hand of our student) and flips the page. A fingertip scans down the page, follows a line of text. The fingers then drum on the pages before flipping the book closed a bit too loudly. A hand slides the book to the edge of the table before the camera rises with the student.

The camera heads towards the exit before a commotion is heard at the front desk.

Camera 1 pans over to see a group of people surrounding something on the floor. Camera moves over to the group of people to observe one of the librarians lying on the floor. Beside his head lies a pool of vomit. Vomitus still oozes from the side of the man's mouth, but no bubbles or breaths punctuate the stream. The man is pale and sweat glistens from his forehead and upper lip.

Another librarian leans over him.

Bystander: What happened?

Librarian (worried): I don't know. He's had indigestion all day and he said his arm hurt, but that's all. He wasn't dizzy or anything. (holds a finger under his nose) (panicked now) He's not breathing! Does anyone know what to do.

Camera pans back and forth to fearful heads shaking before returning focus to man. A bit more vomit slivers out of his mouth before fading...

IRB. 01-080
3/27/01

COVERSHEET
REQUEST FOR REVIEW OF HUMAN SUBJECTS RESEARCH

1. Principal Investigator Dr. Michael W. Hubble

Faculty Advisor (if PI is student)

2. Department and School Department of Health Sciences, College of Applied Sciences

3. Telephone No. ext. 7113

4. Project Title

Willingness of High School Students to Perform Cardiopulmonary Resuscitation (CPR) and Automatic External Defibrillation (AED)

5. Check all that apply: (X) a specific project (X) a grant proposal ( ) a protocol change ( ) faculty ( ) staff ( ) graduate student (X) undergraduate

6. Funding source Undergraduate Research Grant, Honors College

7. This is: (X) a new project ( ) an annual renewal

8. Type of Review Requested - PI's recommendation: (See Part Two, Section III for criteria)

(X) Exempt or Expedited ( ) Full

Signature of Principal Investigator 3-8-01 Date

If PI is student, signature of Faculty Advisor Date

10. IRB Chair recommendation:

( ) Exempt from IRB Review (X) Expedited Review ( ) Full Review

11. Final Recommendation:

( ) Exempt ( ) Approved with conditions
(X) Approved ( ) Not approved

Signature of Chairperson (or Designee), ~~Psychology~~ ~~Department~~ Institutional Review Board Date 3/26/01

CHECKLIST FOR RESEARCH INVOLVING HUMAN SUBJECTS

Please type and submit two copies to the Chairperson, Psychology Department
IRB, Psychology Department, 301 Killian Building

Respond to each of the questions. Attach additional sheets as needed.
Staple all pages together when finished.

Attach copies of questionnaires, non-standard tests, consent forms, and other supporting documents.

1. Purpose of proposed research.

The objectives of this research are as follows:

1. Under what circumstances are high school students likely to perform cardiopulmonary resuscitation (CPR) on victims of cardiac arrest?

2. Under what circumstances are high school students likely to perform automatic external defibrillation (AED) on victims of cardiac arrest?

3. What are the barriers that may prevent high school students from performing CPR or AED on victims of cardiac arrest?

4. What influence do age, race, gender, or intent to enter the medical profession have on willingness to perform CPR or AED?

5. What influence does the makeup of the home have on willingness to perform CPR or AED?

6. Does witnessing a cardiac arrest in the past influence the willingness to perform CPR or AED?

2. Give a brief description or outline of your research procedures as they relate to the use of human subjects. This description will include the subjects themselves (methods of recruiting, inducements to participate), instructions given to them, activities in which they will engage, and tests and questionnaires, plus a discussion on the procedures for obtaining informed consent. There must be assurance that no pressure will be employed in soliciting student involvement. Note if the subjects are minors or "vulnerable" (children, prisoners, mentally or physically infirm, pregnant women) and how their special conditions will be handled.

If any subjects are minors, consent will be obtained from their parents. Participation is voluntary. See attached proposal.

3. Does this research entail possible risk of mental, legal, physical, or social harm to the subjects? Please explain. What steps have been taken to minimize these? What provisions have been made to insure that

appropriate facilities and professional attention necessary for the health and safety of the subjects are available and will be utilized?

No risks are anticipated.

4. The potential benefits of this activity in general outweigh any probable risks. This opinion is justified by the following reasons:

There are no perceived risks. This is a written survey of how high school students believe they would respond to a medical emergency. The benefits of this research include devising educational campaigns that will encourage high school students to provide CPR after witnessing a cardiac arrest. Their actions could be life-saving. Consequently, the benefits far outweigh any perceived risks.

5. How will prior informed consent be obtained? A copy of your consent form must be attached.

Written, voluntary concent will be obtained using the form contained in the proposal. If participants are minors, consent from their parents will be obtained in advance. See attached proposal.

6. Will the confidentiality of all subjects be maintained? If yes, how is this accomplished? If not, has a formal release been obtained?

Names will not appear on any survey instruments, thus anonymity is assured.

7. Do the data to be collected relate to illegal activities? _X__No ___Yes

If yes, explain.

8. Is deception involved? _X__ No ___ Yes

If yes, explain.

9. Are all subjects protected from the future potentially harmful use of the data collected in this experiment? How is this accomplished?

No names will appear on any survey instruments. Data from this study will be entered into the computer of the PI and the original documents destroyed.

I have read the Western Carolina University Psychology Department Policy and Procedures on Human Research and agree to abide by them. I also agree to report any significant and relevant changes in procedures and instruments as they relate to subjects to the Chairperson of the IRB.

---------- 3/8/01

Signature of Principal Investigator Date

If PI is student, signature of Faculty Advisor Date

Other Investigators

Mike Bachman, Nancy Martin, Dennis Huie, Randy Price

Other Investigators

Revised February, 1997