Heart Attack Awareness:
Educating Rural South Carolina Populations to Improve Survival Rates

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INTRODUCTION

Cardiovascular disease is a major public health concern for South Carolina. According to the 2009 South Carolina Rural Health Report, the prevalence of heart attacks in SC was 4.6 percent, which was higher than the national average of 4 percent.[1]

A major factor affecting the outcome is the amount of time that lapses between a patient recognizing a heart attack and receiving medical attention. While 86.8% of SC adults reported they would call 911 if someone were having a heart attack, only 32.5% of SC adults could recognize all the symptoms.[1]

Forty-six percent of South Carolina is classified as rural. Residents of rural areas are 44% more likely to die from a heart attack than urban residents.[2] Overall, there is a public health need to educate SC rural residents on the signs and symptoms of a heart attack in order to decrease mortality and disability rates in SC.

The ultimate goal of our project was to reduce the time from onset of heart attack to hospital arrival by educating rural Charleston on the signs and symptoms of heart attack and what to do when one occurs.

Our community partner was Mission Lifeline, an organization dedicated to improving the outcomes of patients with heart attacks. Mission Lifeline works with The American Heart Association and many other local organizations. (www.scha.org/sc-missionlifeline)

METHODS

We used an educational pamphlet titled "Warning Signs of Heart Attack" put forth by the American Heart Association to educate residents of rural Charleston communities on common signs of heart attack and what to do if one occurs. Based on the information in the educational pamphlet, a short, two-minute poster presentation was developed for delivery at community gatherings.

We partnered with the leaders of two community events whose population could benefit from our presentation. The first was a community-based event at St. John's High School in John's Island, SC and the second was a faith-based gathering in Hollywood, SC.

Prior to the presentations, a survey was created based on the Behavioral Risk Factor Surveillance System (BRFSS). The survey was designed to investigate the awareness of heart disease and its symptoms among the participants. The following questions were included in the survey.

1. Do you think pain or discomfort in the jaw, neck, or back are symptoms of a heart attack?
2. Do you think feeling weak, lightheaded, or faint are symptoms of a heart attack?
3. Do you think chest pain or discomfort are symptoms of a heart attack?
4. Do you think sudden trouble seeing in one or both eyes is a symptom of a heart attack?
5. Do you think pain or discomfort in the arms or shoulders are symptoms of a heart attack?
6. Do you think shortness of breath is a symptom of a heart attack?
7. If you thought someone was having a heart attack or a stroke, what is the first thing you would do?

The survey was administered to the participants both before and after our presentation. No demographic data was collected from the respondents. The surveys were analyzed to gauge both awareness and efficacy of our presentation.

RESULTS

A total of 56 surveys were administered. The results indicate that our presentation would be most useful in a setting where people do not know to call 911 immediately after a suspected heart attack. As shown in Figure 1, individuals at the church had a lower percentage of people who previously knew to call 911. Although there is no statistical difference between any of the questions used to identify symptoms of a heart attack (survey questions 1-6), the presentation is still useful because the main goal of the presentation is to inform people to call 911 if they suspect a heart attack.

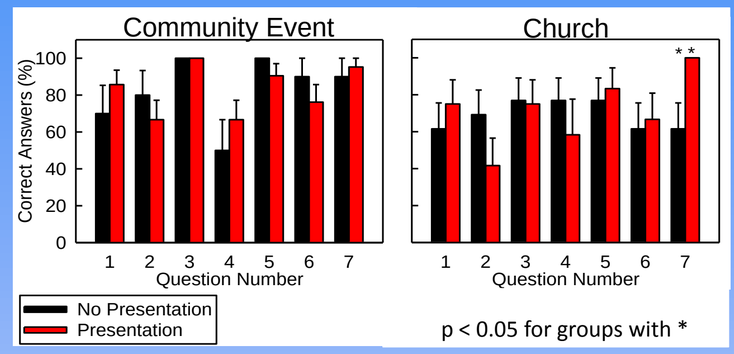

Fig 1. Number of correct survey answers for the Community Event and Church.

One limitation of this study is that only two locations were surveyed. In addition, it is unknown how long the participants will retain the information, and if the knowledge to call 911 in the event of a heart attack leads to the action of calling 911. To mitigate these limitations future studies could be done at more locations, follow-up studies could be done with our study's participants, and a county-wide initiative of the presentation could be done followed by a survey of 911 calls to see if the presentations resulted in increased 911 calls for heart attacks compared to a similar county without the health care presentations.

DISCUSSION

Under our topic, Education and Policy, our group's goal was to educate people in the community about the warning signs of a heart attack and the importance of seeking immediate medical care by calling 911.

For future Presidential Scholars groups we would suggest seeking community partners and solidifying dates early in the process. In addition, we found that after community members listened to our presentation, they may have still answered some of the questions incorrectly; so it would have been beneficial to go over the answers, to ensure that the accurate information is being retained.

Working in an interprofessional group for this project added diversity to our thought processes and problem solving capabilities. However, many of these benefits were not obvious until later, so group building exercises may prove beneficial before projects are initiated.

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