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Predictors of Acute Coronary Syndrome Symptom Knowledge, Attitudes, and Beliefs in Adults without Self-Reported Heart Disease

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Background: The time of symptom onset to the time an individual decides to seek care is the most significant contributor to total treatment delay.

Objectives: To explore predictors of ACS symptom knowledge, attitudes, and beliefs in adults without diagnosed heart disease.

Methods: We used a cross-sectional, descriptive, and correlational design, employing an online survey including the ACS Response Index and the avoidance subscale of the Coping Strategy Indicator. We leveraged social media platforms and a university email list-serv to enroll participants. Stepwise hierarchical linear regressions were used.

Results: We analyzed responses from 981 participants, with a mean age of 35.2 years (SD 16.5) and 75% female. The regression analyses yielded models that explained 14%, 23%, and 25% of the variance for knowledge, beliefs, and attitudes, respectively. Ethnicity, race, exposure to ACS symptom information (in the media or by teaching), and perceived health were the predictors of ACS symptom knowledge, attitudes, and beliefs with the largest effect, though others were statistically significant.

Conclusions: The findings underscore the importance of community education to raise awareness of ACS symptoms while considering social determinants of health. Future research and clinician interventions for ACS symptom knowledge, attitudes and beliefs should be expanded with a focus on ethnicity and gender.

Keywords:

cardiovascular; signs and symptoms; acute coronary syndrome; myocardial infarction; social determinants of health

Abbreviations List

ACS = acute coronary syndrome

CAD = coronary artery disease

QC = quality control

STEMI = ST-elevation myocardial infarction

U.S. = United States

Predictors of Acute Coronary Syndrome Symptom Knowledge, Attitudes, and Beliefs in Adults Without Self-Reported Heart Disease

Introduction

Over 1 million people in the U.S. experience Acute Coronary Syndrome (ACS) each year, and over 18 million adults in the U.S. live with a diagnosis of coronary artery disease, or CAD.[1] Prompt treatment for ACS – inclusive of unstable angina, non-ST-elevation myocardial infarction, and ST-elevation myocardial infarction (STEMI) – is essential to improve blood supply to the myocardium rapidly (critical in the case of STEMI) and to provide other evidence-based treatments that will afford patients better clinical outcomes.[2,3] However, delays in seeking treatment for acute ACS symptoms remain common, often exceeding 2 hours and sometimes lasting days, with variations based on geographic region globally.[1,4,5]

Delay from symptom onset to the time an individual decides to seek care is the most significant contributor to total treatment delay.[6] Riegel and colleagues[7] suggested that focusing on patient-specific ACS symptom knowledge, attitudes, and beliefs can serve to reduce these care-seeking delays, given that these factors play a role in helping individuals recognize and respond to an ACS event.[8-10] Thus, by understanding predictors of ACS symptom knowledge, attitudes, and beliefs, it may be possible to develop interventions tailored to modifying or addressing these predictors.

Gaps in knowledge of ACS symptoms still exist, even given multi-national campaigns to raise awareness of heart disease, such as the Go Red for Women Campaign.[11] For example, only about half of U.S. adults know all five of the most common ACS symptoms,[12] and around 1 in 12 adults are unaware that chest pain or discomfort is a potential ACS symptom.[13] Recent data from Cushman and colleagues[14] reveals that just over half of women in the U.S. know that chest pain is a potential ACS symptom. Moreover, only 44% of women recognized that cardiovascular disease is the leading cause of death for women.[14] These disparities are particularly evident for racial and ethnic minorities[12,14] and those with lower incomes and education.[13]

Factors related to ACS symptom knowledge, attitudes, and beliefs affect care-seeking delay. Arrebola-Moreno and colleagues[8] conducted a systematic review of 57 studies, focusing on nine common variables that may affect prehospital delay times in patients experiencing ACS. They found that there was some evidence that a lack of symptom knowledge, a general fear of symptoms, embarrassment about seeking care, or worry about bothering others led to shorter delay times, and there was moderate or strong evidence that symptom anxiety, perceived seriousness of symptoms, and attribution of symptoms to some cardiac problem led to shorter delay times.[8] It has also been suggested that particular coping behaviors, such as denial of symptoms, emotional coping, and avoidance behaviors, may increase delays in seeking care for ACS symptoms.[15-17] Individuals who are less numerate, or less capable of solving problems related to probability, are also more likely to delay seeking care for ACS symptoms,[18] as are individuals who do not perceive themselves to be at risk of ACS.[19-21] It is essential to consider attitudes and behavioral intentions, in addition to knowledge, as simply knowing ACS symptoms does not guarantee that individuals will seek care promptly after symptom onset.[22]

Much of the recent evidence related to symptom knowledge, attitudes, and beliefs is derived from samples of individuals who have known or newly-diagnosed heart disease or ACS. However, it is important to understand not only symptom knowledge, attitudes, and beliefs of those with known heart disease but also of those without heart disease and without previous ACS. Those with no previous history of heart disease are often surprised when they experience ACS, given their lack of perceived risk for heart disease.[23] Each year in the U.S., over 68% of

ACS events (about 720,000) are experienced by individuals who have never experienced ACS before.[1] Even though some of these individuals may know that they have heart disease, they have had no first-person experience related to ACS symptoms. Moreover, less attention has been placed on younger individuals' ACS knowledge, attitudes, and beliefs, even though CAD and ACS are growing more common among individuals younger than 40, with the proportion of younger people experiencing an MI growing by about 2% annually.[24]

Given the lack of evidence related to ACS symptom knowledge, attitudes, and beliefs in adults without heart disease and in younger adults, the purpose of our study was to explore predictors of ACS symptom knowledge, attitudes, and beliefs, including these populations in our analysis. We also wanted to incorporate novel potential predictors, including numeracy and a tendency to rely upon avoidance-based coping strategies. We addressed three research questions: (1) What cognitive, social, emotional, demographic, and clinical characteristics predict *knowledge* of ACS symptoms? (2) What cognitive, social, emotional, demographic, and clinical characteristics predict *attitudes* related to ACS symptoms? (3) What cognitive, social, emotional, demographic, and clinical characteristics predict care-seeking *beliefs* related to ACS symptoms?

Methods

We carried out a cross-sectional, descriptive/correlational, survey-based study. To ensure the inclusion of all relevant study information, we used the STROBE Statement[25] checklist for cross-sectional studies when preparing this manuscript. The **Blinded for Review** Institutional Review Board (IRB-2020-381) determined this study to be exempt from IRB review.

Setting and Participants

We distributed an anonymous electronic survey in October and November 2020 using Facebook, Instagram, LinkedIn, Twitter, and email. We considered suggestions by Dillman and colleagues,[26] Reagan and colleagues,[27] and Stokes and colleagues[28] in designing the survey and applying this multi-method recruitment strategy. We choose to recruit participants from four different social media platforms, given different user demographics across the platforms.[28,29] By recruiting participants via social media and email, we were able to reach our target population (individuals without heart disease) readily. Moreover, we recognized that about 3 in 4 U.S. adults use social media, and there are only minor differences in social media use overall across racial, gender, educational, and geographical categories.[29]

We posted a link to the study survey on our personal social media pages, inviting those who saw the link to consider taking the survey and sharing it within their personal network. To reduce sampling bias, given that the survey was shared on our personal pages, we also shared the survey on three public, general-interest group pages on Facebook, with a membership of over 70,000 people. Moreover, the survey link was sent to the **Blinded for Peer Review** research listserv, which included students, faculty, staff, and administrators. The first page of the survey contained the informed consent language; submission of the survey indicated implied consent. To be included in this study, participants had to (a) be 18 years of age or older, (b) have the ability to complete the electronic survey, (c) be fluent in English, and (d) have no self-reported history of ACS. Upon completion of the study survey, participants had the option to enter a drawing for 1 of 50, $10 electronic gift cards.

Instruments

Predictor Variables

The survey instrument included multiple potential predictor variables based on the body of previously published literature.[7-9] We included age, gender, education, numeracy ability, race, ethnicity, living situation, ability to afford healthcare, whether they previously received teaching from healthcare professional about ACS symptoms, whether they previously saw media coverage about ACS symptoms, their perceived 10-year risk of a cardiovascular event, their perceived lifetime risk of a cardiovascular event, self-perceived current health, history of hyperlipidemia, history of hypertension, history of diabetes, and nicotine use status. The total score on the avoidance coping scale was only considered in the models for the outcome variables of beliefs and attitudes, since avoidance would more likely affect beliefs and attitudes about seeking care, rather than symptom knowledge. That is, individuals who employ more avoidance might be more likely to avoid seeking care for ACS symptoms.

We included two novel variables: numeracy and the use of avoidance-based coping strategies. Numeracy is related to "a person's practical ability to solve problems involving probability" and lower levels of numeracy have been shown to lead to increased ACS care-seeking delay time.[18, p. 293] To measure numeracy in the present study, we asked participants, "Imagine that the chance of winning the lottery is 1 in 1,000. What percent of lottery tickets win the lottery? ____%."

We also measured whether participants tended to use avoidance-based coping strategies in their daily life, using the avoidance subscale of the Coping Strategy Indicator (CSI).[30,31] This subscale includes 11 statements related to avoidance-based coping, and participants are asked to consider a stressful event that they recently experienced and indicate how they coped, such as "tried to distract yourself from the problem" and "did all you could to keep others from seeing how bad things really were." These statements are answered on a three-point Likert-type scale, including “a lot,” “a little,” and “not at all.” Various reliability and validity characteristics have been previously described, and the avoidance subscale specifically has shown satisfactory internal consistency, with a Cronbach’s alpha of .84.[30,31] For the present study, Cronbach’s alpha was .80 for the avoidance subscale.

Outcome Variables

Our three outcome variables were ACS symptom knowledge, ACS symptom attitudes, and ACS symptom beliefs. We measured these three continuous outcome variables using the ACS Response Index (ACS-RI) developed by Riegel and colleagues.[7] The ACS-RI includes three subsections related to ACS knowledge, attitudes, and beliefs. The ACS knowledge section consists of 21 symptoms, 15 of which are actually symptoms of ACS and 6 of which are distractors. These 6 distractor items include 3 incorrect symptoms (lower abdominal pain, headache, cough) and three stroke symptoms (arm paralysis, numbness/tingling in the hand, slurred speech. Participants are asked whether they think the listed symptom is an ACS symptom (yes/no). For ease of interpretation, we have re-scaled the knowledge subscale to a 0 to 100% scale (with higher percentages indicating more correct answers), as other researchers have done.[32] The attitude subscale includes five questions related to attitudes about ACS symptoms, such as, “How sure are you that you could get help for yourself if you thought you were having a heart attack?” These five attitude questions are measured on a 4-point Likert-type scale, from “not at all” sure (1) to “very sure” (4). The belief subscale includes seven questions related to ACS symptom care seeking, such as “Because of the cost of medical care, I would want to be absolutely sure I was having a heart attack before going to the hospital.” These belief questions are measured on a 4-point Likert-type scale, from “strongly agree” (1) to “strongly disagree” (4). Higher scores on the attitudes and belief scales indicate more favorable responses towards care-seeking; that is, the higher the score, the more that the participants' attitudes and beliefs support prompt care seeking for ACS. Lower scores indicated that participants more often provided responses that would not facilitate prompt care seeking when experiencing possible ACS symptoms.

The ACS Response Index was initially tested with 3,522 patients, demonstrating satisfactory psychometric properties, including Cronbach's alpha values of .71, .74, and .82 for the knowledge, attitudes, and beliefs scales, respectively.[7] Riegel and colleagues[7] also described preliminary discriminant and construct validity. In the present study, Cronbach's alpha scores were .73, .81, and .75 for knowledge, attitudes, and beliefs, respectively.

Statistical Analysis

All data were analyzed in IBM SPSS 26.0 (IBM Corp., Armonk, NY). To reduce errors introduced by response bias from people randomly selecting answers or not carefully reading/answering questions, we included two attention check questions in the survey, asking participants to select a specific response. For example, in the section of the survey including a list of Likert-type questions from the ACS Response Index, we specifically instructed participants, "For quality control purposes, please select "disagree." Further, we reviewed the time it took each participant to complete the survey. Participants who completed the survey in less than three minutes or answered one or both of the QC questions incorrectly were not considered in the analysis. A total of 13 people were excluded based on these criteria. An additional 20 participants were excluded because of missing data on the aforementioned predictor variables. Deletion of the 33 participants was conducted after ensuring that they did not differ on key demographic data from those with no missing data. We computed descriptive statistics of counts with the corresponding percentage for categorical variables and mean with standard deviation for continuous variables to characterize the sample and variables of interest in our research questions. Stepwise hierarchical linear regressions were utilized to explore the association of the selected predictor variables with knowledge, beliefs, and attitudes. Model selection was made through a multi-tiered approach by evaluating each regression coefficient's magnitude and assessing each covariate's contribution to the explained variability (r^2) of the outcome. Due to potential multicollinearity among the measured predictor variables, univariate regressions were performed for each predictor variable, and only variables that reached statistical significance were entered into multivariate modeling.

Theory

We used Leventhal's Common-Sense Model of Self-Regulation[33] to inform our design. This model helps to explain how people come to develop and implement action plans for illnesses they are experiencing, with a strong focus on the symptoms that a person experiences, given that these symptoms not only serve as an indicator that something is wrong in the body but also directly affect cognitive illness representation and recognition.[33] Knowledge, attitudes, and beliefs related to ACS symptoms play a role in this cognitive process[7] and a lack of ACS symptom knowledge or suboptimal attitudes and beliefs related to ACS symptoms may lead to delayed care-seeking for symptoms.[34]

Results

A total of 981 participants were included for further analysis. A majority were recruited by email (63.3%; n = 621) and Facebook friend's post (29.1%; n = 286), followed by Instagram (3.5%; n = 23) and Twitter (2.5%; n = 25); 26 participants did not select a recruitment method. A typical sample participant was an average of 35.2 years of age (SD = 16.5), female (75.0%; n = 736), white (89.8%; n = 881), living with someone else all the time (75.7%; n = 743), never a smoker (75.5%; n = 741), not working full-time (54.0%; n = 530), and making $50,000 - $199,999 (52.2%; n = 512). See Table 1 for a complete summary of the sample.

Predictors of Knowledge

The average percent correct for the knowledge items was 75.9% (SD = 17.6%). Variables that were entered into the multivariate stepwise regression analysis with substantial association with knowledge from univariate analyses included age, gender, numeracy ability, race, ethnicity, living situation, whether they received teaching from a healthcare professional about ACS symptoms, whether they saw media coverage about ACS symptoms, their perceived lifetime risk of a cardiovascular event, self-reported health status, history of hyperlipidemia, and nicotine use status. The knowledge model explained 14% of the variance ($R^2 = .14$). A substantial negative relationship was detected between ethnicity and knowledge, indicating those who identified as Hispanic or Latina/o/x possessed less knowledge than those who were non-Hispanic or Latina/o/x ($p < .001$). A substantial negative relationship was also seen between gender and knowledge, with men in this sample possessing less knowledge than women ($p < .001$). Receiving teaching from a healthcare professional about ACS symptoms, seeing media coverage about ACS symptoms, and taking medications to treat high cholesterol all had a positive relationship with knowledge. Those who had received teaching from a healthcare professional about symptoms ($p = .002$), saw media coverage about symptoms ($p < .001$) and took medication to treat high cholesterol ($p = .034$) had a higher knowledge than those who did not. See Table 2 for details.

Predictors of Attitude

The mean attitude score for the sample was 13.4 (SD = 3.0). Multivariate stepwise regression analysis was conducted using age, gender, education, race, ethnicity, living situation, ability to afford healthcare, exposure to teaching from a healthcare professional about ACS symptoms, exposure to media coverage about ACS symptoms, perceived 10-year risk of a cardiovascular event, perceived lifetime risk of a cardiovascular event, history of hypertension, and history of hyperlipidemia. The attitude model explained 25% of the variance ($R^2 = .25$). Those who identified as Hispanic or Latina/o/x and those with plenty of money to pay for healthcare possessed lower ACS symptom attitudes than those who were non-Hispanic or Latina/o/x ($p = .006$) and those who reported not having enough money to pay for healthcare ($p = .032$). Conversely, those who had received teaching from a healthcare professional about ACS symptoms, saw media coverage about ACS symptoms, were older, were white, and reported living with someone else all of the time had higher attitude scores than those who had not received teaching from a healthcare professional about ACS symptoms ($p < .001$), did not report seeing media coverage about ACS symptoms ($p < .001$), were younger ($p < .001$), were non-white ($p < .001$) and lived alone ($p = .039$). See Table 2 for details.

Predictors of Beliefs

The mean belief score for the sample was 18.4 (SD = 3.6). For beliefs, the univariate analysis suggested inclusion of the potential predictor variables age, education, numeracy ability, living situation, ability to afford healthcare, whether they received teaching from a healthcare professional about ACS symptoms, whether they saw media coverage about ACS symptoms, perceived lifetime risk of a cardiovascular event, perceived vulnerability towards cardiovascular disease compared to others their age, self-reported health status, history of diabetes, history of hyperlipidemia, and total score on the avoidance coping scale. The beliefs model explained 23% of the variance ($R^2 = .23$). Age, perceived lifetime risk of a cardiac event, receiving teaching from a healthcare professional about ACS symptoms, self-reported current health (poor vs.

excellent), and total score on the avoidance coping scale defined the prediction model for beliefs. Those who felt that they were at higher risk of having a heart attack in their lifetime and those with higher avoidance coping scores had symptom belief scores that were lower than those who felt lower risk (*p* < .001) and had lower avoidance coping scores (*p* = .003). Conversely, those who had received teaching from a healthcare professional about ACS symptoms were older and perceived their health as excellent had higher ACS symptom belief scores than those who had not received teaching from a healthcare professional about symptoms (*p* < .001), were younger (*p* < .001) and perceived their health as poor (*p* < .001). See Table 2 for the details.

Discussion

To our knowledge, this study is the first to explore ACS symptom knowledge, attitudes, and beliefs using the ACS Response Index in a sample of participants with no self-reported history of heart disease. Thus, these findings are novel but also preliminary, and additional research is warranted. While some predictor variables were significant predictors of all three outcome variables, others were predictors for just one outcome. In particular, ethnicity, race, and previous exposure to education or information about ACS symptoms affected the prediction models the most.

Five variables predicted ACS symptom knowledge, and ethnicity had the largest impact. Hispanic or Latino participants had knowledge scores nearly 3.5 percentage points lower than those who were not Hispanic or Latino, indicating that they answered between three and four knowledge items incorrectly. This finding was not surprising, as Cushman and colleagues[14] showed that Hispanic women have had a decline in ACS symptom knowledge from 2009 to 2019 and also that Hispanic women had the largest overall decline in recognizing that cardiovascular disease is the leading cause of death for women in the U.S. Fang and colleagues[12] similarly showed that Hispanic individuals had less knowledge of five common ACS symptoms (pain or discomfort in the jaw/neck/back, feeling weak/lightheaded/faint, chest pain or discomfort, pain or discomfort in the arms or shoulder, and shortness of breath) than non-Hispanic counterparts. Additionally, patients that had either seen ACS symptom information in the media or had been taught about ACS symptoms by a health care professional had higher scores than those who had not. It stands to reason that more awareness and exposure to ACS symptom information would assist individuals in knowing these symptoms. Clinicians can use this information when working with community groups and patients, ensuring that they are providing consistent education regarding ACS symptoms, especially to individuals who may be at higher risk of ACS. In addition, clinicians should reinforce the information with supporting material that resonates with and is reflective of the individual and/or group.[35]

Related to ACS symptom knowledge, it is also important to point out that every person is different, and some patients may experience ACS symptoms that do not match those symptoms listed in the knowledge section of the ACS Response Index. For example, headache and arm numbness/tingling are included as distractors or “incorrect” responses on the ACS Response Index, even though patients sometimes report these symptoms during ACS.[36,37] Thus, some participants may have heard of symptoms like headache from other individuals who had previously experienced ACS, influencing their belief that headache is a symptom of ACS.

Like knowledge, respondents who had previously been taught by healthcare professionals about ACS symptoms were more likely to have higher belief and attitude scores. Higher belief and attitude scores reflect responses that would support prompt care seeking for possible ACS symptoms. Additionally, respondents who were non-Hispanic/Latino and who had seen ACS symptom information in the media had higher belief and attitude scores. White participants also had higher attitude scores than the Black/African American or Asian. These findings underscore the importance of patient education and increasing awareness of ACS symptoms and appropriate action for these symptoms. Additionally, social determinants of health remain essential considerations for clinicians, including nurses. In this study, variables related to the social determinants of health, including race, ethnicity, perceived health status, living situation, gender, and ability to afford healthcare predicted ACS knowledge, beliefs, and/or attitudes. As Powell-Wiley and colleagues[38] outline, the social and community context (e.g., social environment and cohesion and financial strain), lived personal experience (health literacy, perceived health status), and the sociopolitical and economic issues (e.g., healthcare access and quality, education access and quality) are all important aspects of the social determinants of health that could affect ACS symptom knowledge, attitudes, and beliefs. Social determinants of health will remain important for researchers and clinicians to consider when designing interventions to address ACS symptom knowledge, attitudes, and beliefs.

Limitations

There were limitations of this study. The self-report nature of the survey presents the possibility of response biases, including social desirability bias or response set bias. However, attention check questions were included to protect against response set bias. Overall, the sample was homogenous, and there was limited educational, racial, and ethnic diversity in this study. To create a survey that was manageable in length, we only included one numeracy question to assess participants' numeracy skills. Using more than one numeracy question might have helped us to further stratify participants by numeracy ability. Finally, the R^2 values for our three prediction models were relatively low, indicating that there are additional predictor variables to consider. Because the target population recruited for this study is novel, we had to rely upon published literature from patients with known CAD and/or a history of ACS to identify potential predictor variables. That is, even though several variables were identified as significant predictors in this study, a low R^2 value across the predictor model meant that a significant percentage of the variability across responses is not explained by the models.

This study is preliminary, and additional study is necessary. Larger numbers of diverse participants are needed to further explore issues related to race, ethnicity, education level, and other demographic factors so that the sample better reflects that of the overall U.S. population. Moreover, the R^2 values for each prediction model were modest. Thus, other predictor variables need to be identified to further explain ACS symptom knowledge, attitudes, and beliefs. Once more is known about potential predictors of ACS symptom knowledge, attitudes, and beliefs in this population, interventions can be developed and tested to improve these scores.

Conclusions

This study provided preliminary insight into the factors that predict ACS knowledge, beliefs, and attitudes. Education by a healthcare provider was significant. However, ethnicity and female gender was negatively correlated with knowledge and attitudes. Nurses are in a key position to ensure social determinates of health are considered when providing and facilitating education in the community and clinical settings. Further research is warranted to examine ACS knowledge, beliefs, and attitudes and how they influence behavior, especially in those without a self-reported history of heart disease.

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Tables

Table 1. Sample characteristics (N = 981)

Variables	N (%)	M (SD; Range)
Age		35.2 (16.5; 18-87)
Gender		
Female	736 (75.0)	
Male	228 (23.2)	
Race		
White	881 (89.8)	
Black or African American	34 (3.5)	
Asian	29 (3.0)	
Multiracial	17 (1.7)	
Native Hawaiian/Pacific Islander	1 (0.1)	
American Indian or Alaska Native	1 (0.1)	
Prefer not to respond	18 (1.8)	
Ethnicity		
Not Hispanic or Latino	911 (94.6)	
Hispanic or Latino	52 (5.4)	
Prefer not to respond	18 (1.8)	
Living situation		
Alone	130 (13.3)	
With someone else sometimes	108 (11.0)	
With someone else all the time	743 (75.7)	
Nicotine Use		
Never used	741 (75.5)	
Former user	143 (14.6)	
Current user	97 (9.9)	
Work status		
Full-time	451 (46.0)	
Part-time	285 (29.1)	
Retired	59 (6.0)	
Disabled	4 (0.4)	
Unemployed	182 (18.6)	
Income		
Less than $25,0000	167 (17.0)	
$25,001 to $49,999	149 (15.2)	
$50,000 to $99,999	279 (28.4)	
$100,000 to $199,999	233 (23.8)	
$200,000 or more	61 (6.2)	
Education		
Less than high school	2 (0.2)	
High school/GED	82 (8.4)	
Some college	337 (34.6)	
Trade School	9 (0.9)	

Associate degree	98 (10.0)
Bachelor’s degree	223 (22.7)
Graduate degree	228 (23.2)

Note. No attempts were made to replace missing data so the total frequency for some variables may not add up to 981.

Table 2. Stepwise multivariate regression model for Knowledge, Attitude and Beliefs (N = 981)

	Knowledge				*Belief*				*Attitudes*			
	B (SE)	β	*p*	95% CI	B (SE)	β	*p*	95% CI	B (SE)	β	*p*	95% CI
Constant	10.80 (.22)		.000		21.24 (.78)		.000		9.23 (.47)		.000	
Ethnicity												
Not Hispanic/	Ref								Ref			
Latino vs. Hispanic/	-3.49 (.45)	-.26	.000	(-4.38, - 2.60)					-1.26 (.46)	-.09	.006	(-2.17, -0.36)
Latino												
Race												
Non-White									Ref			
White									1.31 (.37)	.11	.000	(0.59, 2.23)
Exposed to ACS												
Symptoms in Media	Ref								Ref			
No	0.89 (.23)	.13	.000	(0.44, 1.34)					1.00 (.23)	.14	.000	(0.54, 1.46)
Yes												
Gender												
Woman	Ref											
Man	-1.02 (.22)	-.16	.000	(-1.46, -0.59)								
Taught by Health												
Professional About	Ref				Ref				Ref			
ACS Symptoms	0.57 (.19)	.10	.002	(0.20, 0.93)	1.10 (.23)	.15	.000	(0.65, 1.54)	2.09 (.19)	.36	.000	(1.72, 2.45)
No												
Yes												
Taking Cholesterol												
Medication	Ref											
No	0.67 (.32)	.07	.034	(0.51, 1.29)								
Yes												
Ability to Afford												
Healthcare									Ref			
Not enough money									-.43 (.20)	-.07	.032	(-0.87, -0.04)
Plenty of money												
Avoidance Coping					-.20 (.03)	-.26	.000	(-0.25, -0.15)				
Score												
Age					.05 (.01)	.21	.000	(0.03, 0.06)	.03 (.01)	.15	.000	(0.02, 0.04)
Perceived Current												
Health					Ref							
Poor					1.25 (.33)	.13	.000	(0.61, 1.89)				
Excellent												

Perceived Lifetime Risk of Heart Disease					-.02 (.01)	-.10	.003	(-0.03, -0.01)				
Living Situation												
Alone									Ref			
With someone else all the time									.45 (.22)	.07	.039	(0.02, 0.88)
R^2	.14				.23				.25			

Abbreviation: ACS, acute coronary syndrome