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Knowledge Gaps and Misconceptions About Coronary Heart Disease Among U.S. South Asians

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Abstract

Background: Although South Asians are at higher risk for coronary heart disease (CHD) than most other U.S. racial/ethnic groups, very little research has addressed this disparity.

Purpose: As a first step in developing culturally targeted CHD prevention messages for this rapidly growing community, this study examined South Asians' knowledge and beliefs about CHD.

Methods: Analyses, conducted in 2009, were based on data collected from January–July 2008 in a cross-sectional study population of 270 South Asian adults in Illinois. Interviews were conducted in English, Hindi, or Urdu using a standardized questionnaire. Multivariate regression models were used to examine the associations between sociodemographics and CHD knowledge and attitudes about preventability.

Results: Eighty-one percent of respondents had one or more CHD risk factors. Most participants (89%) said they knew little or nothing about CHD. Stress was the most frequently mentioned risk factor (44%). Few mentioned controlling blood pressure (11%), cholesterol (10%), and diabetes (5%) for prevention. Fifty-three percent said that heart attacks are not preventable. Low education level, being interviewed in Urdu or Hindi, and low level of acculturation were associated with less knowledge and believing that CHD is not preventable.

Conclusions: A majority of South Asians in this study believed that CHD is not preventable and had low awareness of modifiable risk factors. As a first step, CHD education should target the knowledge gaps that may affect risk factor control and behavior change. Education messages may need to be somewhat different for subgroups (e.g., by education and language) to be maximally effective.

Introduction

Although growing evidence suggests that Asian Indians and Pakistanis (South Asians) in the U.S. are at greater risk for coronary heart disease (CHD) than most other racial/ethnic groups,

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^{1–3} little research has addressed this disparity. There have been increasing calls for CHD prevention efforts to be targeted to minorities.⁴ As a first step to developing CHD prevention messages for the high-risk South Asian community, the present study aims to: assess levels of CHD-related knowledge among South Asians; assess attitudes about the preventability of CHD; and identify if there are demographic factors associated with knowledge and attitudes.

Methods

Study Sample and Setting

Following IRB approval, the study team recruited 270 participants, from January–July 2008, from one federally qualified health center (FQHC) ($n=75$; 27.8%) and five community centers ($n=195$, 72.2%) serving South Asians in Chicago, Illinois and surrounding suburbs. The majority of participants were approached and recruited on-site by the study coordinator or by site staff. Some participants notified family or friends about the study, and these individuals were also eligible to participate in the study. Participants were eligible if they were aged 20–75 years, self-identified as Asian Indian or Pakistani, and if they spoke English, Hindi, or Urdu. All surveys were in-person and verbally administered, in the participant's language of choice, by the project coordinator who is fluent in all three languages.

Instruments

A survey was developed to assess knowledge and attitudes about CHD using validated questions from other surveys^{5,6} and, when needed, by creating new questions. Survey items were developed in English, translated into Hindi and Urdu, and back-translated into English. The survey was pilot-tested in all three languages.

Awareness of CHD as a health problem was assessed using two items, “What do you think is the greatest health problem facing Indians and Pakistanis in the U.S.,” and “What disease are most Indians and Pakistanis in the U.S. dying from?” Knowledge of CHD was assessed using two unprompted, open-ended questions: “in your opinion, what are the major causes of a heart attack?” and “what things are important for preventing a heart attack?” Open-ended questions are less likely to overestimate the participant's knowledge, as opposed to using true/false questions.⁷ Respondents were encouraged to list as many factors as they could, and their answers were coded into 1 of 20 pre-defined categories. Answers coded as “other” were recorded verbatim and later re-coded as appropriate. Respondents were also asked if heart attacks are preventable, with response options on a 4-point Likert scale, which was collapsed into a dichotomous variable for analysis.

Demographic information and self-reported health conditions were collected. Height and weight was measured. Participants with a BMI >25 kg/m² were categorized as obese, based on BMI cut-points for South Asians.⁸ Acculturation was measured using validated questions⁹ on language, food, and ethnicity of friends. Response options were on a 5-point scale. The values of the responses for each respondent were summed to create a summary acculturation score. The summary score takes into account the fact that these characteristics are often clustered within an individual.¹⁰ Based on the distribution of the summary score (range 5–21), participants were categorized as having a low level of acculturation (score 5–9) or a high level of acculturation (score 10+).

Data Analysis

The analysis focuses on participants' ability to identify the major modifiable CHD risk factors: smoking, high-fat diet, physical inactivity, overweight/obesity, high cholesterol, blood pressure, and diabetes. Chi-square tests were used to examine unadjusted associations between sociodemographics and knowledge and attitudes. Multivariate logistic regression models were

then used to determine the adjusted association between sociodemographics and knowledge and attitudes. Significance was evaluated at $p < 0.05$. Analyses were conducted in 2009 using Stata Statistical Software: Release 9. College Station, TX: StataCorp LP.

Results

Participant characteristics and overall CHD awareness

Participants' mean age was 49 years (SD $\pm$ 14.8) and 57% were women. Fifty-five percent immigrated to the U.S. within the past 10 years; 70% were immigrants from India and 27% from Pakistan. Two thirds of the interviews were in Hindi or Urdu, and the rest in English. Sixty percent had more than a high school education, and 53% were uninsured. Eighty-one percent of respondents had 1 or more risk factors for CHD. Respondents perceived diabetes as the greatest health problem facing U.S. South Asians (35%), followed by CHD (10%), and cancer (9%). Forty-seven percent correctly identified CHD as the leading cause of death in South Asians. Only 30% of participants said they had ever spoken with a physician about CHD prevention.

Knowledge of risk factors

Respondents were asked to identify as many CHD risk factors as they could (Table 1). The mean number of risk factors identified was 2.8 (SD $\pm$ 1.4). Interestingly, stress (44%) was the most commonly identified risk factor, followed by a high-fat diet (29%) (Table 1). High cholesterol and high blood pressure were identified by 26% and 22% of respondents, respectively, as CHD risk factors. Only 12% of respondents said diabetes. Few (11%) identified smoking. CHD knowledge varied significantly by education and language of interview (Table 1). Multivariate logistic regression, adjusted for sociodemographics, health conditions, and healthcare access, also showed that respondents with less than a high school education and those who were interviewed in Urdu had significantly lower odds of being able to name at least one correct CHD risk factor (p -value < 0.05).

Attitudes and knowledge about CHD prevention

Overall, 53% said that most heart attacks cannot be prevented. Women, Hindi or Urdu speakers, and those with low levels of acculturation were more likely to believe that heart attacks cannot be prevented (p -value < 0.05). When asked what things are important for CHD prevention, 49% said exercising, 40% said reducing stress, and 37% said low-fat diet. Few mentioned controlling blood pressure (11%), cholesterol (10%), and diabetes (5%).

Discussion

This study found that South Asians have important knowledge gaps regarding the modifiable risk factors for CHD and that 53% believe that heart attacks are not preventable. Lack of knowledge was particularly acute around risk factors where clinical intervention is most successful: cholesterol, blood pressure, and diabetes. The proportion of South Asians that knew any one of these risk factors (38%) was lower than it is in other U.S. populations.⁶

Less education and being interviewed in Urdu or Hindi were associated with worse knowledge. The majority of U.S. South Asian are immigrants, and one third are limited English proficient.¹¹ CHD prevention messages may not be reaching this group.

It is unclear if South Asians' attitudes about CHD differ substantially from other populations. A 2006 survey of U.S. women found that overall 14% believed that there is nothing they could do to prevent heart disease, and that 22% of Hispanic women held this belief.¹² A 1977 survey of Chicago adults reported that 24% said that heart attacks cannot be prevented.¹³ Among

South Asians in this sample, women, those with low levels of acculturation, and non-English speakers were more likely to hold this belief. Beliefs about fate may contribute,¹⁴ but there may also be issues related to immigration and gender roles, which have previously been shown to be related to perceptions about control over health.^{15–17}

The main limitation of this study is use of a small, convenience sample which limits generalizability to the larger U.S. South Asian population. Study strengths include data collection in Hindi, Urdu, and English and inclusion of South Asians with lower SES. Prior health studies in the U.S. are limited by the fact that they included only South Asians who are English-proficient^{18,19} and have a high SES.¹ Lower SES South Asians may be at even higher risk for CHD since low SES is associated with higher CHD risk and mortality.^{20,21}

These findings suggest the need for further research in prevention-related knowledge and behaviors in South Asians.

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Table 1

Perceived causes of heart attack by demographic characteristics in response to the question, “What do you think are the major causes of heart attack?”

	Overall	Gender		Education		Has a CHD risk factor		Acculturation level		Language of interview		
		Men	Women	≤ High school	> High school	No	Yes	Low	High	English	Urdu	Hindi
Diet high in fat	29.4	29.9	26.1	25.7	29.2	23.0	30.6	25.4	30.0	27.3	28.2	27.7
Lack of exercise	25.1	29.9*	19.0*	21.1	25.5	16.0*	28.2*	17.7*	29.3*	35.2*	15.4*	23.1*
Being overweight	9.8	6.8	11.1	9.2	9.3	10.0	8.8	11.5	7.1	5.7	11.1	10.8
High cholesterol	25.9	23.9	24.8	12.8*	32.3*	23.0	25.3	18.5*	30.0*	35.2*	18.8*	20.0*
High blood pressure	22.0	16.2	24.2	15.6*	24.2*	18.0	22.4	16.9	24.3	27.3*	13.7*	24.6*
Diabetes	12.2	10.3	12.4	5.5*	15.5*	12.0	11.2	10.0	12.9	14.8	8.6	12.3
Smoking	11.0	13.7	7.8	11.0	9.9	7.0	12.4	10.0	10.7	10.2*	6.0*	18.5*
Having a family member who has had heart attack	9.0	9.40	7.84	3.67*	11.80*	7.00	9.41	1.5*	15.0*	15.9*	1.7*	10.8*
Stress	43.5	47.9	57.5	55.1	52.2	51.0	54.7	56.2	50.7	45.5	56.4	58.5