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Original Paper

Black, Hispanic, and White Women's Perception of Heart Disease

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Understanding why women delay seeking treatment for symptoms suggestive of an acute myocardial infarction remains elusive. Thirty individual semistructured interviews were conducted to determine black (n=10), Hispanic (n=10), and white (n=10) women's perception of heart disease risk and whether differences existed based on participant's race or ethnicity. Narrative descriptions analyzed using the Morse and Field method revealed that women, regardless of race or ethnicity, associated heart disease and heart attacks with men who were obese, stressed, and smokers. Perceptions of heart disease risk were similar between groups, with women generally believing they were at risk for heart disease because of family history, diet, and obesity. Racial and ethnic differences were noted, however, in risk reduction and anticipated treatment-seeking behaviors. Continued efforts are needed to raise women's perception of their cardiac risks and the need for the engagement in health-promoting behaviors. (Prog Cardiovasc Nurs. 2007;22:13-19) ©2007 Le Jacq

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Understanding why women delay seeking treatment for symptoms suggestive of an acute myocardial infarction (MI) remains an enigma. Delays have been associated with several factors such as patient age,[1–3] patient race,[4,5] low perception of heart disease risk,[6] not recognizing initial symptoms of MI,[7] not wanting to bother others,[3,8] atypical presentation of symptoms,[9] and a mismatch between symptoms expected and symptoms experienced.[10] A recent quantitative study of ethnically diverse women indicated differences between perceived and calculated risk for coronary heart disease (CHD).[11] In general, women were unable to accurately assess their absolute 10-year CHD risk as measured by the Framingham global risk assessment. While disparities exist, the thought processes that influence treatment-seeking decisions remain unclear.

It is hypothesized that the manner in which women think about heart disease is likely to influence health-seeking behaviors and that women of diverse ethnic and racial backgrounds cognitively represent heart disease differently. As values and beliefs underlie all health decisions, identifying key influences that precipitate or hinder prompt treatment-seeking decisions is critical to the development of culturally relevant interventions aimed at decreasing women's cardiac death rates. The purpose of this study, guided by the Health Belief Model,[12] was to examine the perception of heart disease risk among black, Hispanic, and white women and to determine whether differences existed based on participant's race or ethnicity.

METHODS

This qualitative, descriptive investigation was part of a larger, methodologically triangulated study that examined the cognitive processes of black, Hispanic, and white women relative to manifestation and presentation of CHD. The quantitative results[13] revealed age and ethnic differences in women's perception of MI symptoms.

Approval to conduct this study was obtained from the University of Michigan Institutional Review Board and from key personnel at each data collection site. A total of 30 women were recruited for the study from churches and community centers located in the Detroit, MI, and San Antonio, TX, metropolitan areas. These areas were selected for their demographic characteristics and representative populations of black, Hispanic, and white women. Ten Hispanic women were recruited from the San Antonio area, and 10 black women were enrolled from the Detroit area. Equal numbers of white women were recruited from San Antonio (n=5) and Detroit (n=5). Participants had to be: (1) female; (2) 18 years or older; (3) self-identified as black, Hispanic, or white; (4) a resident of the Detroit or San Antonio metropolitan areas; and (5) able to read and speak English. Women with known cancers, CHD, brain disorders, or mental health disorders were excluded from the study.

Data Collection Procedure

To access community-dwelling women, clergy members and community center executive directors in the Detroit and San Antonio metropolitan areas were contacted and given an explanation of the study purpose, time commitment,

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Table I. Demographic Characteristics (N=30)

Characteristics	Blacks (n=10)	Hispanics (n=10)	Whites (n=10)
Age, (mean [SD]), y	48 (13)	45 (8)	42 (7)
Age range, y	24–63	37–60	36–59
Body mass index >30	3 (30)	4 (40)	6 (60)
Marital status (married)	8 (80)	4 (40)	7 (70)
Living arrangements			
Spouse	8 (80)	4 (40)	6 (60)
Alone	1 (10)	4 (40)	2 (20)
Relative	1 (10)	1 (10)	2 (20)
Friend	0 (0)	1 (10)	0 (0)
Highest education			
Elementary school	0 (0)	1 (10)	0 (0)
High school	0 (0)	3 (30)	2 (20)
Some college	2 (20)	5 (50)	0 (0)
College	4 (40)	1 (10)	7 (70)
Postgraduate	4 (40)	0 (00)	1 (10)
Employment status			
Not employed	2 (20)	3 (30)	3 (30)
Part-time	0 (00)	2 (20)	2 (20)
Full-time	8 (80)	5 (50)	5 (50)
Annual household income, $*			
<20,000	0 (0)	5 (50)	0 (0)
20,000–39,999	2 (20)	4 (40)	0 (0)
40,000–59,999	2 (20)	0 (0)	3 (30)
60,000–79,999	2 (20)	1 (10)	4 (40)
80,000–100,000	1 (10)	0 (0)	1 (10)
>100,000	2 (20)	0 (0)	2 (20)
Medical history†			
Diabetes mellitus	3 (30)	1 (10)	1 (10)
Smoking	1 (10)	4 (40)	1 (10)
Hypertension	3 (30)	3 (30)	1 (10)
Gastroesophageal reflux disease	1 (10)	1 (10)	4 (40)
Stomach ulcers	1 (10)	1 (10)	2 (20)
Family heart disease	3 (30)	3 (30)	7 (70)
None	3 (30)	4 (40)	2 (20)

Values are frequency (percentage) unless otherwise indicated. *One subject refused to answer the question. †Subjects had more than 1 comorbidity.

and nature of participant involvement. After obtaining permission to collect data at each data collection site, recruitment flyers were posted. Interested participants contacted the principal investigator or research assistant designee at the listed telephone number or e-mail address and indicated their willingness to participate. At the time of initial contact, the study purpose, amount of participant involvement, and study-related questions were addressed. After verbally agreeing to participate, data collection sessions were scheduled for a mutually convenient time and place in a quiet, well-lit room.

At the beginning of each data collection session, written informed consent and demographic information were obtained before the initiation of each interview. Participants were encouraged to respond in a natural and open manner during the audio-tape-recorded interview session.

Initially, participants were asked to describe what they thought about when they heard the words *heart disease* and *heart attack*. As part of the examination into how women think about heart disease and heart attacks, women were also asked to describe the *basis for their thinking*, how they came to know what they know about heart disease and heart attacks, and to describe their *personal risk assessment for heart disease*. Next, participants were asked to describe any

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Table II. Summary of Derived Themes

Questions	Derived Themes		
	Blacks	Hispanics	Whites
Heart disease and heart attack	Death, worry	Death and dying, scary event	Male disease, related to risk factors
Basis for thinking	Family member, acquaintances	Family members experiences	Family member experiences, personal experiences
Personal risk assessment	At risk, not at risk	At risk for heart attack, not at risk	At risk for heart attack
Self-management strategies	Exercise, healthy diet	Try to eat low fat, try to exercise, walk regularly	Exercise, no formal strategy
Anticipated behaviors	Contact family, call 911	Call doctor	Contact family/friends, delay

self-manasgement strategies currently engaged in to reduce their risk for MI. Examples such as consuming a low-fat diet and engaging in regular exercise were provided. Lastly, participants were asked to discuss the behaviors they would engage in if they experienced symptoms they thought might be related to a heart attack. When participants felt they had adequately and completely answered the questions, the interview was considered complete. At the end of each interview session, the principal investigator or their designee summarized the descriptions and afforded each participant the opportunity to add, clarify, or question the summation. The interview sessions were audiotaped to ensure accurate transcription, to enhance ecologic validity, and to provide an accurate account of the dialogue for theme and meaning extrapolation. The median duration of the audiotaped interviews was 8 minutes.

Data Analyses

Content analysis was performed using the content analytic technique of Morse and Field.[14] The unit of analysis was each participant group (black, Hispanic, and white). The narrative descriptions were transcribed verbatim and read multiple times to identify major themes, phrases, and statements; redundancy and saturation in the descriptions were assessed. A coding scheme was developed to organize the data and to identify emerging themes. Once initial themes were identified, supporting statements were delineated and reviewed to ensure that the derived themes reflected the experience of each group of participants. A final review of the narrative descriptions, identified themes, and supporting statements was conducted to ensure accuracy, comprehensiveness, and completeness. This rigorous process was used to ensure that the derived themes reflect the essence of the women's descriptions, noting similarities and differences between groups.

After the analytic process was completed, content validity and verifiability of the extracted themes were established by an experienced qualitative researcher to review the data analyses. Interrater reliability for theme extraction was 100%. This was established using the formulation of the number of agreements divided by total number of agreements plus disagreements.[15]

RESULTS

The 30 women who participated in the study ranged in age from 24 to 63 years (Table I). While demographic characteristics among the 3 groups were generally similar, black participants were more likely to live with their spouse, work full-time, and have completed postgraduate education than Hispanic or white participants. Whites were more likely than blacks or Hispanics to be obese and to have a family history of heart disease and gastroesophageal reflux disease. Smoking was reported more frequently among Hispanics than either the black or white participants.

As data were analyzed, several mutually exclusive themes emerged from the participants' descriptions, with similarities and differences noted among groups. A summary of the interview questions and derived themes are presented in Table II.

Heart Disease and Heart Attack

Content analysis revealed that black and white women associated heart disease and heart attacks with men who were obese, stressed, and smoked cigarettes. White women consistently described thinking of a "man, [having] pain on [his] left side, [who is] overweight, [and] possibly in his 50s or 60s" and experiencing a great deal of "stress." Similar beliefs were echoed by black women, who said, "it happens to people as they get older" and to "men, basically, and postmenopausal women." Hispanics were not as likely to associate the words heart attack and heart disease with a particular sex or age group, but instead associated the words with "death and dying," "instant death," and "someone collapsing, holding their chest, [and having] difficulty breathing."

Women, regardless of race or ethnicity, consistently described heart disease and heart attacks as "scary" and something that "scares them." In addition, women associated heart disease and heart attacks with risk factors

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such as a "family history of coronary heart disease" and with people who do not "take care of themselves" and are "inactive," do not engage in "exercise," and who eat "poorly."

Basis for Thinking. When women were asked to describe the basis for their thinking, participants described family members who had experienced an MI. One black woman said, "because I have known people who've had heart attacks and then they suffered with heart disease. My husband's little brother has a pacemaker and he's in his late 40s." Similar sentiments were expressed by other black women who said her "stepfather had a heart attack" and "brother had heart trouble" and "parents had heart disease." One Hispanic woman said her "grandfather had a heart attack," while another said both her "grandfather and father" had heart attacks. One Hispanic woman said that her "boyfriend's mother-in-law was restless on the sofa and died" from heart disease. White women described having a "father" and "grandmother" who had heart disease.

Two women, 1 Hispanic and 1 white, described "television" as the "basis for everything we learn in the United States" to explain their understanding of heart disease and heart attacks. One Hispanic woman said she thinks of "chest pain and death" because you "see it on TV and [in] commercials."

Personal Risk Assessment. Next, when participants were asked whether they thought they were at risk for heart disease, Whites overwhelmingly thought they were at risk. One white woman said, "of course, I know I am at risk … because I have very high cholesterol, family history." White women indicated that being "overweight" and needing a "better diet" and to "eat more fruits and vegetables" and having "no exercise" in their daily routine put them at risk. Another woman reported that she "love[s] cream and butter" and that she intentionally "buy[s] heavy cream." Moreover, she indicated the demands of her personal life ("raising 4 children") were very stressful. Stress was not limited to personal demands, but extended to employment situations. Specifically, another white woman indicated "she could be" at risk because of her "high stress job" where she works "50–60 hours per week."

Black and Hispanic women were divided in their personal assessment of their heart disease risk. Six of the 10 Hispanic women believed they were at risk for heart disease. Reasons given included being "overweight," having a "family history" of heart disease, being a current or former "smoker," and "aging." One Hispanic woman said, "I don't eat healthy; I still eat a lot of fast foods," while another said, "my cholesterol is high." Of the 4 Hispanic women who did not perceive themselves to be at risk, they indicated that they did not "think so" because they are in "really good health" and because they did not feel "tired" or have "numbness" in their "hands or fingers." One Hispanic woman indicated that because she was "trying to lose weight" she did not believe that she was at risk for heart disease.

Six of the black women believed they were at risk for heart disease given their "family history" and the fact that they "smoke" and have "hypertension" and "diabetes." Not all black women with known risk factors believed they were at risk, however. One middle-aged black woman who saw her doctors "every 4 months" for "borderline high blood pressure" and "diabetes in the family" did not think she was at risk for heart disease. Similarly, another black woman who was "overweight" and had "poor exercise habits" did not think she was at risk because she tried to "eat healthier." A third black woman, aged 28 with no known risk factors, did not believe she was at risk for heart disease because she tries to "eat healthy and exercise."

Self-Management Strategies

In general, women indicated that they "tried to eat healthy" and "exercise" to reduce their risk for heart disease and heart attacks. More specifically, black women indicated they had "quit smoking," and 7 of the 10 black women said they "exercise" anywhere from "20 minutes a day" to "1 hour twice a week." One black woman said she tries to "watch what I eat, eat a well-balanced diet, and try to not have too much meat on my plate, [eating] more vegetables and fruit each day," while another indicated that she "takes the stairs instead of the elevator." Another black woman with diabetes indicated that she "dances at least once a week" and "walks" to "help control [her] diabetes." Other forms of exercise black women engaged in included "swimming and tennis," walking on the "treadmill," "kick boxing 3 nights a week," and doing all of their own housework and gardening. One black woman said she incorporates "spirituality to be healthy [because] I want a sound body and sound mind."

White women also described engaging in "exercise on a regular basis" and "eating lots of vegetables" to reduce their risk for heart disease. One white woman said she exercises on the "treadmill 40 minutes daily for 3 miles" per hour and eats a low-fat diet, with very little red meat [and] no hot dogs." Another white woman said she "kickboxes 3 to 4 times per week with people at work," while another who admitted she is "not under any kind of exercise program," perceived she was exercising when she "vacuums her large house."

Of the 5 white women who indicated they had no formal strategy to reduce their risk for heart disease, one stated she "tries to eat a low-fat diet" and another stated she sees her "doctor every 3 months and [is on] on medicines for cholesterol." A third said she "tries to eat a balanced diet, eats lot of butter" but "does not eat [a] low-fat diet." Another woman who is "pressured by her family to lose weight" "loves carbohydrates" and "fast food" says she "reads [and] watches movies" to relax and reduce her heart disease risk. She also credits her "friendships"

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with reducing her heart disease risk. One white woman stated she doesn't do "much of nothing [sic], no exercise, no low-fat diet" to reduce her risk.

Similarly, Hispanic women described "exercising" and "trying to be more active" as current behaviors to decrease their risk for heart disease. Four of the Hispanic women stated they "exercise regularly," while 6 Hispanic women stated they do not engage in any "regular exercise." Of the 4 Hispanic women who exercised regularly, they described using the "treadmill and the bike" and trying to "go to the gym at least twice a week." One woman said she tries to "keep more active during the day instead of staying home a lot and watching TV." Three Hispanic women who said they did not own a car stated that they "walk regularly" to the "bus stop" and to the "store." One Hispanic woman who stated she does "no regular exercise" because she is "just God lazy" and is "really out of shape."

In addition to exercise, Hispanic women indicated they "sometimes eat a low-fat diet" and cook without "lard" or "grease." One woman stated she consumes a "diet of chicken, turkey, and egg whites." Similarly, a second Hispanic woman stated she uses "olive oil" when she cooks, while a third indicated she is "trying to eat corn and not flour tortillas." Consuming a "lot of bananas" and drinking "a lot of milk" was viewed by another Hispanic woman as a behavior that would decrease her risk for heart disease. Hispanic women commented that they are "not into fast food" but admitted they often "make unhealthy choices when [they] eat out" because "there aren't very many healthy choices out there." One Hispanic woman described an incident where her "boyfriend took me to a restaurant, ordered a tortilla, and it looked like it had a lot of grease and I said, OOOHHH … but I still ate it."

Anticipated Behaviors

Next, women were asked to identify their anticipated behaviors if they were to experience symptoms they thought might be related to a heart attack. Six of the black and 5 of the white participants indicated they would most likely seek advice from "family members" such as their "mother" or "husband." One black women commented that she "would tell my husband what's going on. I know the first thing he says, 'Let's go. We're going to the hospital' and that would be the end of that, there wouldn't be any discussion." Another black woman said she would contact her "mother" to ask for advice, saying "you know what? This is kinda [sic] how this feels. What do you think, kind of thing." Similarly, a white woman indicated she "would contact [her] daughter, a physician … mainly I [would] ask her, not because of her expertise in heart attacks because that's not her field, but whether she thought I was overdramatizing it or something. But if she said no, [I would] go." In addition to contacting family members, black participants indicated that they would "immediately go to the emergency [department] or call 911," waiting "5 minutes, maybe." One black woman indicated she would "get help immediately; I wouldn't wait around."

White participants were not as likely to believe they would seek immediate medical evaluation. Instead, they stated they "hoped they would go right away." One white woman explained her decreased likelihood to seek prompt evaluation as, "I, knowing myself, I would probably hesitate before I went to the emergency room, only because I would think, oh, its not a big deal. It's just, you know …Yea, I always have a lot of little aches and pains." Similar sentiments were echoed by 3 other white women, one of whom said, "I worry that I might just blow off symptoms. I worry that I might be one of those people that just says 'oh, its indigestion' … hopefully I won't do something like that but … that crosses my mind because you hear cases like that all the time. So I just pray and hope that I will know the difference and have the sense to seek care if that ever happens." Another white woman explained her hesitation related to prompt evaluation saying,

> You know, I probably would kind of ignore them, you know. Especially if it was, you know, like indigestion or something like that. I might just think, you know, something else is going on. But if I had really bad chest pain or trouble breathing, something like that, I would probably… especially because of my age. I forgot to mention that's another factor. I am, you know, almost 50 so ah… yes, I probably would I think go and get checked because I am just so afraid.

Similarly, another white woman said, "If I thought they [the symptoms] were very threatening, I would go to the hospital, if it was real pain [in my] arm, throat, neck. If [it were] angina pain, [I] would make [a] doctor appointment" and then concluded by saying, "I'm not sure if I would know if I was having one [MI] right away."

In contrast, 8 of the 10 Hispanic women indicated that they would call their "doctor first" and "see if [they] can make an appointment." In addition, they indicated they would "go to see the doctor right away" to "get it checked out." One Hispanic woman said, "I think I know my body well enough to say, it's not just that I'm tired, or I think it would scare me enough to go see someone." Another Hispanic woman stated, "depending on how bad it [the symptoms] was, I'd call the doctor and then 911, but if not, 911, and then the doctor." A third Hispanic woman said, "I would call for an appointment. I don't think I would call the ambulance. I think I would try to make that doctor's appointment [for] the next day."

Of the 2 remaining Hispanic women who did not indicate that they would call their physician, one said,

> I never really thought about it. 911. If I had it in my mind it could possibly be a heart attack, I'll call 911 [if not] then I

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> probably wouldn't call anybody. I would just sit down and try to let it pass; maybe thinking it was indigestion or something like that. [What] I would do is kind of sit back and pay attention to the symptoms. [If it got worse], then I would probably call my daughter, if she was [available], before [I would call] the ambulance, [or go to] the hospital.

The other Hispanic woman said "if the symptoms weren't something that I thought was very, very serious, I would probably think it's time for me to see what this [is]. I would contact 'family members that are medical' and I would call my Mom. It depends on what's happening, if you just feel your arms aching, you're not going to call the ambulance. You're going to go ahead to the doctor."

DISCUSSION

The findings from this study indicate that regardless of ethnicity, women participants associated heart disease and heart attacks with men who were obese, stressed, and smokers; however, when asked to evaluate their own risk for heart disease, most women, regardless of age, believed they were at risk for heart disease because of family history, diet, and obesity. Black women were most likely to identify hypertension as a risk factor for heart disease. These findings represent an incongruence between personal risk assessment and the mental picture women have of a heart attack patient. Hispanics and blacks were more likely than white participants to associate fatalistic assumptions with heart disease and heart attacks such as death and dying.

Group differences were noted in the behaviors women engaged in to reduce their perceived risks. Black and white women described participating in regular exercise sessions, while Hispanic women described trying to exercise and trying to eat healthy to reduce their risks. In addition, more Hispanic than black or white women reported not owning an automobile and, consequently, walked every day to work, to shopping centers, and to access public transportation. The higher socioeconomic status of the black and white women may have accounted for the group differences in risk-reducing behaviors, such as belonging to a gym and engaging in kickboxing classes. Both of these activities may have been cost prohibitive to the Hispanic women who tended to have lower annual household incomes.

When asked to describe anticipated treatment-seeking decisions for symptoms they thought were related to a heart attack, black and white women generally indicated they would most likely first seek advice from family members, while Hispanic women indicated they would most likely initially contact a physician. Two middle-aged white women stated that they feared they would not seek immediate medical evaluation. Black, Hispanic, and white women indicated that socially mandated caregiving responsibilities contributed to women's tendency to de-emphasize their own health care needs and the tendency to delay seeking prompt evaluation and care.

A striking similarity among the 3 groups was the reliance on family members' MI experiences, predominately male family members, and on the popular media to understand heart disease and heart attacks. The importance of family members was also emphasized in the responses of the black and white participants who said they would initially seek the advice of family members should they experience symptoms they thought were indicative of an MI.

Results of this study were similar to those in the published literature. The perception of heart disease and heart attack by black, Hispanic, and white women as primarily a man's disease was similar to the results of a recent survey in which college students perceived men to be at higher risk for heart disease than women[16] and the results of a national telephone survey of black, Hispanic, and white women[17] that revealed that less than half of women surveyed correctly cited heart disease as the No. 1 killer of women.

Likewise, identifying the heart attack experiences of family members and the media portrayal of an MI as the basis for understanding heart attacks and heart disease was similar to focus group findings of community-dwelling black, white, and Latino men and women with heart disease.[6] In addition, the reported intention of black women in this study, 80% of whom were married, to contact family members and call 911 should they experience symptoms suggestive of an MI was reflective of a recent study[5] that reported decreased prehospital delay times among married African Americans.

Despite these similarities with the published literature, several differences were noted. For example, the ability of community-dwelling women, regardless of ethnicity or racial identity, to identify personal risk factors for heart disease differed from the published results,[18] which reported that White women hospitalized with newly diagnosed heart disease were generally unable to identify personal risk factors for CHD despite a medical history of cigarette smoking and menopause. Also, the reported intention of black women in this study to contact 911 should they experience symptoms suggestive of an MI differed from Finnegan and colleagues'[6] report that blacks generally were skeptical about using the 911 emergency transport system, preferring instead to be transported by private car to the hospital. Likewise, the reported intention of Hispanic women in this study to contact their physician should they experience symptoms suggestive of a heart attack differed from Finnegan and associates' finding that Hispanic women were more likely to defer treatment-seeking decisions to family members or friends.

Two limitations of this study were the reliance on a convenience sample of community-dwelling women from the Detroit and San Antonio metropolitan areas and the description of

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anticipated treatment-seeking behaviors. As such, the findings of this study may not necessarily reflect the experiences of women who chose not to participate or who live in other areas of the country and may not necessarily reflect women's actual treatment-seeking behaviors.

Findings from this study suggest that, despite national efforts by the American Heart Association, women still continue to conceptualize heart disease as a male disease and primarily rely on the personal experiences of male family members and the popular media to shape their understanding of the disease. Continued efforts are needed to alter this antiquated conceptualization of heart disease and to raise women's cardiac risk awareness. The reliance on family members to decide anticipated treatment-seeking decisions stresses the need to extend cardiac health teaching to spouses, siblings, sons, and daughters. An increased community-based understanding of heart disease in women may improve treatment-seeking decisions and decrease women's cardiac morbidity and mortality.

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