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Attitudes and Beliefs Regarding Cardiovascular Risk Factors Among Bangladeshi Immigrants in the US

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Abstract

The US has increasingly growing Bangladeshi population, a South Asian sub-ethnic group with a high prevalence of cardiovascular disease (CVD). We conducted a qualitative study using individual in-depth interviews to explore attitudes towards and difficulties with modifying CVD related behaviors among a Bangladeshi cohort. We interviewed 55 patients before reaching data saturation. Bangladeshis discussed the meaning of health and heart disease in the context of how disease can potentially impact their ability to care for their family. Behavioral and psychological factors were discussed as the causes of CVD. Internal forces and external forces were brought up to explain difficulties addressing the causes of CVD. Bangladeshi individuals in our study were aware of CVD, but felt unable to address behavioral risk factors. They cite a combination of internal and external factors as barriers to lifestyle modification. Interventions to address these barriers must simultaneously addressing self-efficacy and work-life balance.

Keywords

Bangladeshi; South Asian; Cardiovascular disease; Immigrant population; Behavior change

Introduction

Immigrants from the South Asian subcontinent suffer from disproportionately higher cardiovascular morbidity and mortality compared to other ethnic groups [1–7]. Among South Asian immigrants, Bangladeshis have the youngest age of first MI (51.9 years) and the highest prevalence of metabolic derangements [8]. It appears that the majority of risk in

Bangladeshis, much like in other ethnic groups, is not due to undiscovered or novel risk factors, but rather modifiable risk factors (i.e.: increasing physical activity) [9–11].

The disparity in cardiovascular disease (CVD) prevalence and mortality is thought to be due to ineffective behavioral intervention messages [12–14]. A key reason for this is that these messages are not being framed in a way that accounts for how patients' personal experiences and cultural background affect their perception of illness [15]. There are fundamental differences regarding illness perceptions between South Asians and other populations. In a qualitative study in the U.K., Caucasians were more likely to accept personal responsibility for illness, whereas South Asians tended to externalize responsibility to migration and psychosocial stressors [16, 17]. Among migrant South Asians, key factors such as acculturation have been shown to impact individuals attitudes towards behavior modification. In a Canadian study, attitudes towards increasing physical activity varied based on years of residence in Canada [18]. In addition, younger South Asians are often more receptive to dietary medications. Several authors have demonstrated that younger South Asian women clash with their older counterparts regarding decreasing the oil and fat content of meals [19–21]. In other households, the male wields power over dietary practices and is an impediment to dietary modification [19]. However, one of the more successful dietary behavioral interventions involved educating couples together to overcome this impediment [22].

Bangladeshis remain an understudied segment of the US population. Although in many ways culturally similar to other South Asian ethnic groups, there are differences that may predispose them to even greater rates of CVD. Within Bangladesh, there is less exposure to western medicine; many Bangladeshi citizens receive care from less expensive traditional healers, affecting their attitudes towards disease processes. As a group, US Bangladeshis are less affluent and less English literate than other South Asian groups (i.e.: Indians or Pakistanis) in the US. They are also more likely to have unskilled, low paying jobs. In New York City itself, 31.7 percent of Bangladeshis live in poverty compared to 18.9 percent of the general population. Their median household income is more than \$20,000 lower compared to the general population [23]. However, given that each cultural interaction is unique, US Bangladeshis have likely developed their own beliefs regarding CVD prevention; influenced not only by their own customs, but also by their life struggles in the US.

Theoretical Framework

In this study, we use Kleinman's explanatory model of illness as a framework to explore Bangladeshi's perceptions and attitudes regarding behaviors related to CVD. Kleinman defines illness as how patients experience sickness, involving their personal, interpersonal, and cultural reactions to disease or discomfort. He further explains that the remedies physicians prescribe or advise, although biologically effective, fail to relieve illness- patients do not adhere to the regimen because they don't understand the physician's rationale for that regimen [15]. Applying Kleinman's theory to Bangladeshis, it is because practitioners have difficulty reconciling behavioral messages with Bangladeshis' cultural and life experiences that prevents those messages from being effective, leading to lack of lifestyle changes,

acquisition of risk factors, and high prevalence of CVD. Understanding these experiences can help practitioners frame their messages effectively and form the basis of behavioral interventions designed to prevent CVD in this population [24–28].

Methods

Objective and Study Design

In this study, we aim to examine how Bangladeshis' cultural norms and immigrant experiences shape their views of CVD-related behavior modification. To truly understand Bangladeshis' beliefs and experiences with lifestyle modification, we undertook a qualitative study using semi-structured interviews. Using Kleinman's theory as a basis, the interview protocol was designed to elicit responses regarding CVD without being biased with leading questions. Three practitioners who routinely care for Bangladeshi patients as well as four researchers experienced in qualitative research critiqued the interview questions. The questions were pilot tested on subset of five Bangladeshis and adjusted accordingly. Demographic data was collected by self-report. Health related data was collected from the electronic medical record.

Recruitment and Sample

Subjects were recruited from a federally qualified health center in New York City. We used a purposeful homogenous sampling strategy to uncover a broad range of concepts and maximize generalizability. Eligible subjects were 18 years of age and older, a patient of the health center, and able to speak and understand English. They were subsequently enrolled in a one on one interview where they were asked a series of open-ended questions (Table 1). The responses were audio-recorded and transcribed verbatim. The study methods and protocol were approved by the institutional review board of Weill Cornell Medical College.

Data Analysis

Data from the semi-structured interviews were analyzed using grounded theory methods. As is typical with qualitative studies, data analysis and data collection occurred simultaneously [29]. Transcripts were coded line by line into meaningful concepts in a process called open coding [30]. Common concepts were sorted and grouped into discernible categories. Some categories were broken down into subcategories to properly label their properties and dimensions in a process called axial coding [30]. The relationships among categories were examined and unified into over-arching themes.

Each author independently reviewed the transcripts, coded the data, and generated categories. Disagreement regarding the coded data and categories were resolved by discussion to generate a final coding scheme. One investigator (MP) re-examined the transcripts based on the final coding scheme. After the transcripts were re-examined, the authors discussed the coded data to arrive at the final set of categories and themes presented here.

Results

Fifty five patients were interviewed before data saturation was reached. Forty percent of the interviewees were female. The average age was 41.5 years. There was little variation in education level as the majority finished at least high school or college. Sixty percent were employed, the majority being male. The average length of time in the US was 15.7 years. Fifteen percent had hypertension, 49 % had hyperlipidemia, 30 % had diabetes, and 9 % had CAD. Patients' responses to the interview questions were grouped into the following categories: meaning of health, meaning of heart disease, causes of CVD, and difficulties addressing CVD causes (Table 2).

Meaning of Health

Participants were initially asked "What does being healthy mean to you?" Responses fell into 3 subcategories: 1) what people do to be healthy 2) things one is able to do or feel when healthy and 3) biological aspects of health. Responses involving what people do to be healthy included eating a healthy diet, engaging in physical activity, actively controlling the stress in one's life, controlling one's medical conditions such as hypertension and cholesterol levels, and avoiding harmful habits. Subjects that mentioned things one is able to do or feel when healthy discussed being active and not having psychological stress. Being active was important in providing and taking care of one's family. A 34 year old female without CVD risk factors explained, *"I can take care of my family, my baby, and... myself."* Statements addressing biological aspects of health involved not having disease as important to health. A 41 year old male with hypertension and diabetes mellitus type 2 explained, *"You don't have any disease, that's the main thing, you're healthy."* Health was viewed as remaining free of debilitating diseases that can affect one's ability to care for his or her family.

Meaning of Heart Disease

The personal meanings of CVD to subjects were grouped into 2 main subcategories: fear of consequences and description of symptoms. The consequences that were feared involved not being able to be active and care for oneself or family. A 53 year old diabetic female explained, *"...I get problem may paralyze or something, I get very sick, nobody there, it'll be problem for me."* The majority of subjects describing fear had hyperlipidemia, which highlights the relative awareness Bangladeshis have of lipid derangements.

Physical symptoms were also discussed in terms of not having the ability to be fully functional and active. A 47 year old male without CVD risk factors explains, *"I know a lot of people... You know heart disease, have breathing problem. You know when he walk, like 5 min, he feeling not comfortable to walk."*

Causes of CVD

Subjects were next asked how best to prevent heart disease. They were further probed by asking to reflect on why someone they knew developed heart disease and how it could have been prevented. They responded by discussing what they felt were the causes of heart disease in individuals they knew and how those causes could have been addressed.

Responses were grouped into one of three subcategories: biological, behavioral or psychological causes. Biological responses included ones that mentioned risk factors such as high cholesterol and high blood pressure: A 30 year old female without CVD risk factors explains, *"I think high cholesterol, and high blood pressure. Sometimes high sugar,"* with high sugar referring to diabetes. The majority of responses fell into the behavioral causes category. Patients usually discussed diet and exercise behavior, although some patients would discuss smoking. Over 60 % of all subjects mentioned dietary habits, while just over 50 % of subjects discussed exercise behavior. Discussions involving healthy diets focused mainly on avoiding fatty, oily, or high cholesterol food. Eating fruits and vegetables was also mentioned. Subjects felt that diet was one of the largest contributors to heart disease in Bangladeshi individuals. A 57 year old male with hyperlipidemia and type 2 Diabetes added, *"You know the fat is the number one thing that cause this heart problem."* Many patients did mention lack of exercise as important in CVD, but often did not go into depth regarding exercise habits, or how much exercise one needs to perform to improve cardiovascular health. The most common form of exercise mentioned involved walking and was related to being active. A 45 year old female with hypertension explained how it's important for people to *"... walk more, exercise more. And more active."*

The other subcategory of responses to questions about the etiology of CVD involved psychological causes, namely psychological stress. Many felt that having less psychological tension was important in preventing CVD. Women tended to discuss stress slightly more than men, possibly from witnessing the employment and financial burdens of their fathers and husbands as well as their suffering from CAD. A 54 year old female whose father developed CVD, explained, *"My country, it's tension, stress... My father, same thing, Too much tension."*

Barriers to Addressing Causes of CVD

The barriers that patients discussed in addressing causes of CVD were organized into 2 subcategories: internal forces (forces under one's control) and external forces (forces not under one's control), which were mentioned with the same frequency. Internal forces such as self-motivation were felt to be important in addressing dietary modification. One reason individuals lacked self-motivation was because many were unwilling to change what they eat or how food was prepared, due to taste or a particular food being a staple. A 51 year old male with hyperlipidemia explained that Bangladeshis *"... think it's good if they make tasty food. They're not thinking about health."* Others discussed how many lacked the resolve to make behavioral changes. A 50 year old diabetic female, who discussed this lack of resolve in her siblings who had uncontrolled diabetes and developed CVD, stated, *"I think, the most important thing, people have to have determination. This is my health, so I have to take care of by myself."*

Many subjects who mentioned internal forces also discussed external forces as well, sometimes in more depth. External factors were further broken down into lack of time and psychological stress. Men and women would discuss not having enough time to address the behavioral causes of CVD. It was felt that this lack of time was due to long hard working hours. Many Bangladeshis feel that they take lower paying, hard working, labor intensive,

time-consuming jobs as a result of their immigrant and socioeconomic status. A 47 year old diabetic man stated, *“They’re not highly qualified, they’re living style is very hard, working very hard. They work 60, 70, 80 hours a week.”* A 48 year old male without CVD risk factors further explained how this leaves little time to address behavioral causes, *“Whoever working, especially our Bengali people, they’re working hard job. Working, driving, has to be like 6 days, 7 days. They can’t find space for gym, good food to eat.”* A 31 year old female without CVD risk factors explained how her family’s economic position rendered little leisure time to address behavior modification. *“My husband taxi driver he work sometimes 12 hours. Sometime, if he doesn’t have money, the business is no good, he spend 17 hours, 15 hours”*.

Psychological stress was also felt to be related to socioeconomic status and working long hours. It was felt that the combination of hard work, long hours, compounded with the lack of leisure time imparted much stress on US Bangladeshis. A 40 year old female without CVD risk factors explained, *“... they have lots of stress in job and have lots of hard work to do.”* Additionally, it is the constant worry about making ends meet that Bangladeshis expend most of their mental energy on, causing a stressful life and leaving little ability to focus on behavioral aspects of health. A 48 year old female without CVD risk factors expressed, *“I think it’s a lot of things. We don’t feel, because no time. We don’t think about health. We think about other things, we’re busy, no time.”*

Discussion

For Bangladeshis, attitudes towards health, CVD, and difficulties addressing CVD risk factors revolve around caring for one’s family. Being active to be able to provide for one’s family was an important aspect of health, and the fear of losing this ability was what many associated with CVD. Although previous studies have found a lack of awareness of heart disease among South Asians, this may be changing [31]. Fear of negative health effects has stimulated Bangladeshis to become more aware of CVD and its risk factors. Previous qualitative studies have frequently found stress and external responsibility as a dominant part of South Asians’ explanation for causes of CVD [17, 32]. Our findings differ from these accounts and show that Bangladeshis to some degree believe in self motivation and assuming internal responsibility for acquiring CVD. Many subjects who mentioned internal forces also discussed external forces as well, often in more depth. Subjects often initially discussed motivation, but on further prompting, would delve into external barriers to modifying behavior. To our knowledge, this is the first study looking at how Bangladeshi immigrants in the US deal with disease and CVD risk [17, 33, 34].

The belief that external forces contribute to CVD was prevalent in the Bangladeshi population. Previous studies have framed these external factors as the view that stress directly causes CVD. Although some did iterate this belief, most discussed stress as an inhibitor to changing behaviors they knew were important to CVD risk reduction, rather than as a direct cause. Lower socioeconomic status contributed to the psychological stress that left people unable to worry about much more than their day to day life, leaving little time for healthy preventative behaviors. This idea of stress as an inhibitor to behavior change rather than an independent CVD risk factor has not been previously observed in

South Asian groups and reflects how their socioeconomic status contributes to different views compared to other South Asian subgroups [35–37]. This finding has several implications. It illustrates that more Bangladeshis than expected believe in dietary discretion and physical activity as important to CVD. Practitioners should understand that the barrier to behavior change is not a belief system that views CVD as un-preventable, but is more related to socioeconomic issues. It appears that there is room for practitioners to engage Bangladeshis in productive conversations regarding lifestyle behaviors. What differentiates Bangladeshis in the US from other immigrant groups is that because they are a relatively new and small immigrant group, they are relatively isolated, less acculturated, and have less confidence in overcoming the socioeconomic and psychological barriers described above. Strategies should focus on empowering this population to address health issues despite one's socioeconomic and immigrant status—for instance on how to eat healthy and exercise despite one's work and time constraints. Additionally, since loss of function is a big fear among Bangladeshis, messages should emphasize how healthy behaviors maintain one's ability to function and thus provide for their family, rather than just prevent CVD.

There are limitations to our study. First it only involved English speaking patients which can overly represent patients who are able to acquire and process health information. Additionally, it was conducted in a cohort that had access to care which can overly represent patients educated by their providers or patients interested in their health. These subjects are likely less impoverished and less likely undocumented immigrants than US Bangladeshis overall. The cohort was still however a suitable representation of the Bangladeshi community. Many subjects had non-English speaking family members, neighbors, and friends who did not have access to care and often discussed challenges and solutions from the perspective of other members of the population who were not as adept at addressing CVD risk factors.

An understanding of Bangladeshis' perceptions regarding CVD can have implications for the prevention and management of risk factors in this population. Poor lifestyle choices contribute to the disparity between Bangladeshis and other ethnic groups. An understanding that Bangladeshis struggle with self motivation, a lack of leisure time, and stress provides discussion points for providers to address behavior modification. We also found there was recognition of the role of lifestyle behaviors, possibly due to the fact that our subjects all had regular access to medical care. Future interventions will not only have to enhance self-efficacy to address stress and work-life balance, but also improve access to care.

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Table 1

Open ended questions asked during one-on-one interviews

1	What does being healthy mean to you?
2	When you hear the word heart disease, what does it mean to you?
3	What do you think people can do to decrease their chances of getting heart disease?
4	Are you able to do these things?
5	What are some of the difficulties you have in doing these things?

Table 2

Taxonomy of patients' perceptions of CVD

Category	Subcategory	Concept	Quote	Count
Meaning of health	Things one does to be healthy	People should engage in healthy behaviors	<i>Healthy is, I feel is exercising, healthy food eating, and avoid fatty foods, and unhealthy food</i> –female, age 36	31
	Things one is able to do or feel when healthy	People are able to be active when healthy	<i>I can take care of my family, my baby, and... myself</i> –female, age 34	20
	Biological aspects	Healthy means not having disease	<i>You don't have any disease, that's the main thing, you're healthy</i> –male, age 41	33
Meaning of heart disease	Fear of consequences	Fear of being inactive or care for oneself	<i>It's really big thing. Get problem I get problem may paralyze or something, I get very sick, nobody there, it'll be problem for me. It's bad, dangerous I mean</i> –female, age 53	29
	Description of symptoms	Physical symptoms hampers one's ability to do what others easily do	<i>I know a lot of people... You know heart disease, have breathing problem. You know when he walk, like 5 min, he feeling not comfortable to walk</i> –male, age 47	7
Causes of CVD	Biological	People get heart disease because of certain risk factors	<i>My both brother had diabetes....I think that's one biggest reason they get heart attack. They never controlled their diabetes</i> –male, age 50	17
	Psychological	People get heart disease because they have a lot to worry about and have a lot of psychological stress	<i>And tension free life, stressless life. Stress also heart attack cause, this is my assumption</i> –female, age 44	15
	Behavioral	People get heart disease because of dietary indiscretion and not exercising	<i>...exercise and watch very careful the diet. And the diet I think is the fat. You know the fat is the number one thing that cause this heart problem</i> –male, age 56	44
Difficulties addressing causes of CVD	Internal forces	The ability to address risk factors for heart disease is dependent on one's own drive and motivation	<i>Everything depends on their own mind. If you want to stop something, you have to put it yourself in your mind</i> –male, age 50	29
	External forces	The lack of time and stress made it difficult for many Bangladeshis to address heart disease risk factors	<i>We don't feel, because no time. We don't think about health. We think about other things, we're busy, no time</i> –female, age 48	30