Barriers and Facilitators Related to Heart-healthy Lifestyle Among Persons with Acute Coronary Syndrome

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Abstract: Leading a healthy lifestyle is one of the important ways of dealing with acute coronary syndrome. However, lifestyle information has been insufficiently documented in the literature in a context of Bangladesh. Thus, this study aimed to explore barriers and facilitators of heart-healthy lifestyle among persons with acute coronary syndrome in Bangladesh. This study used a qualitative descriptive method. Qualitative data were gathered via four focus group discussions that included 22 male participants with acute coronary syndrome, 18 of whom undertook in-depth interviews as did 11 family members. Content analysis process was used to analyze the data.

Findings indicated that smoking cessation barriers were incapable of dealing with nicotine withdrawal symptoms; confronting stress and tension; and beliefs that smoking helps work productively. Physical activity barriers were constraints imposed by physical conditions; exercise not being a habit, lack of time, and lack of knowledge. Dietary barriers included facing hunger from lesser food amounts; conflict over food preferences; insufficient knowledge; insufficient support; and low income. Facilitators to modify heart-healthy lifestyle were commitment to follow advice; perceived benefits; perceived awareness; support; income adequacy; and basic education. The results provide understanding of the factors related to modify heart-healthy lifestyles among persons with acute coronary syndrome in Bangladesh. This evidence contributes to the development of useful interventional strategies in order to lifestyle modification which contribute to prevent complications of the disease and prolonging life.

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Introduction

Acute Coronary Syndrome (ACS) is a leading cause of suffering and death worldwide today. In Bangladesh, ACS has become a major health concern, since the World Health Organization (WHO) reported the death rate was 411 per 100,000 of population, considered to be high, in comparison to that of western and others south-Asian countries.[1] A case-control study highlighted that ACS tends to occur ten years earlier among Bangladeshi people than in western

countries and emphasized that 40% of people with ACS were below 50 years.[2] Studies recommend that people with ACS need to go beyond medication treatment in order to control and manage their disease, and to focus on their lifestyle.[3,4]

Lifestyle refers to those discretionary activities which are a regular part of one's daily pattern of living and significantly influence one's health status.[5] The fundamental aspects of a heart-healthy lifestyle include smoking cessation, physical activity (PA), and diet. Several studies have demonstrated the benefits of heart-healthy lifestyle including management risk factors such as avoiding being overweight and obese, preventing and controlling diabetes, maintaining normal blood pressure and blood lipid levels, and decreasing the progression of disease to prevent early complications and premature death.[3,6]

However, to follow and/maintain a heart-healthy lifestyle seems difficult for people with ACS because lifestyle is influenced by many factors. Several previous studies reported that modifying or maintaining a heart-healthy lifestyle is affected by illness perception,[7,8] beliefs,[9,10] attitudes,[11] knowledge,[12] social support,[13,14] policy,[15,16] and changing world influences.[17,18] The presence or absence of these factors either impedes or facilitates one following and maintaining a heart-healthy lifestyle. Although, ACS is one of the top killer diseases in Bangladesh, very little is known about various barriers and facilitators regarding how these factors influence persons with ACS in the process of modifying a more heart-healthy lifestyle. Even though there have been many studies done in the western countries about the barriers and facilitators of heart-healthy lifestyle,[14,15,19] results of these studies may not be generalized to fit in Bangladesh because of different country contexts, customs, cultures, and social norms. Thus, this study aimed to explore the experience of barriers and facilitators to modify heart-healthy lifestyle among persons with ACS and their family members in Bangladesh in order to illuminate the extent of which barriers and facilitators influence to modify and/or maintain a heart-healthy lifestyle. Findings would help in the designing of suitable interventions to prevent complications of the disease and prolong life by decreasing unhealthy lifestyles.

Review of Literature

A heart-healthy lifestyle includes smoking cessation, and regular physical activity, and healthy dietary consumption is important because it confer benefits.[3,6] Studies have identified that those with ACS often do not modify and/or maintain enough of their lifestyle and often face challenges due to the influence of many individual level factors including perceptions, belief, attitudes, knowledge and social support affecting heart-healthy lifestyle. A review of literature found that a person's illness perception influences a heart-healthy lifestyle because it is subjective in nature. People with ACS who hold a positive illness perception try to find some health benefit from their disease and have a more optimistic outlook that tends to motivate them to change their lifestyle.[7,8] People who may struggle to deal with negative experiences can also cause positive changes in their lifestyle, which, in turn, can simplify the process of adjustment to illness through creating awareness about control over lifestyle.[6] In contrast, negative perceptions about illness like bodily discomfort lower physical activity (PA).[20]

Beliefs influence either positively or negatively the management of lifestyle in people's day-to-day life. Beliefs regarding food tests and appearance may help people to consume low fat and salt foods.[9] Physiological restrictions such as pain, fatigue, tiredness, increase heart rate and shortness of breath lead to a PA barrier.[10] However, a positive belief about PA reduces body weight, and encourages regular PA.[15] Positive attitudes likely increase coping abilities as people assume benefits whereas negative attitudes influence and create barriers to change lifestyle.

Many people with ACS in Bangladesh avoid red meat and often go for walks which tends to lead to a new adjusted lifestyle,[11] while some were not willing to stop smoking and explained that it assisted them to reduce stress.[21]

Knowledge increases comprehension that helps to apply information quicker, and then people might look forward to act in favor of decision-making and setting goals easily. However, insufficient knowledge impedes a heart-healthy lifestyle as the people do not understand information clearly.[12] In Bangladesh, people with ACS usually tend to seek more information about PA and diet at the time of discharge from hospital.[22] Moreover, they also find difficulties about the authenticated source of knowledge to modify their lifestyle.[15]

Organizational level factors have been examined, including service ability, policies, availability of resources, attitudes, beliefs, and knowledge of health care personnel, that can all support people to adopt a heart-healthy lifestyle. When healthcare providers' information was unclear regarding how to have a heart-healthy lifestyle this made it difficult for patients to follow.[15]

A heart-healthy lifestyle is more likely to occur at the national level when there are good policies which support lifestyle such as pictorial labeling on packets and increased taxes on cigarettes that tend to encourage persons to reduce smoking.[16] Compulsory food labeling makes it easier for those with ACS to purchase healthy foods.

Furthermore, lifestyles have been impacted by the changing world, both at the corporate and individual levels. Production, distribution, and retailing control by large corporation in several countries make heart-healthy food become more costly. A lot of people often eat fast foods[18] rather fresh food. Due to urbanization and economic development there are increasing levels of change, day-by-day, tending to put a tremendous amount of pressure on lives. To relieve stress and pressure many people often start to smoke and continue for uncertain periods.[21] On a global basis, development of new types of technology have had tremendous negative effects on the amount of PA, and some people do not want to walk even a short distance. They use vehicles, spend most of the time watching television for amusement and therefore decrease physical activity. Media advertisement increases consumption of unhealthy diets.

Methods

Design:

A qualitative descriptive research design was used to carry out this study and was considered to be appropriate to explore peoples' experiences regarding the barriers and facilitators to follow and/or maintain a heart-healthy lifestyle. The design helps researchers to gain better understanding of individual perspectives and experiences within their own context.[23]

Participants and Setting:

The study participants were people with ACS and family members. They were recruited from the outpatient department (OPD) of the National Institute of Cardio-vascular Diseases Hospital in Dhaka, Bangladesh from June 2015 and May 2016. To gain access the researcher contacted with health staff at OPD, identified potential participants based on inclusion and exclusion criteria, and provided brief description about the study and invited participants to the study. Purposive selection involving criterion-based sampling was used to recruit participants. A total of 22 participants with ACS were selected for focus group discussions and 18 of them recruited for in-depth interviews, as well as 11 family members. The inclusion criteria was either male or female diagnosed with having ACS by physicians; attended the outpatient department for their care purpose; had experiences of difficulties related to quit smoking; engaged in regular physical activity and/or avoided fatty and high energy dense food; or to explore information about facilitators,

inclusion criteria involve persons who were able to quit smoking, participate regular physical activity and/or avoid fatty and high energy dense food, and be willing to participate.

The exclusion criteria were: participants with severe heart failure or impaired left ventricular ejection fraction less than 40%; complicated heart failure with a stage of III and IV according to New York Heart Association; any vascular disease; any congenital heart disease; unwilling to participate; unable to give sufficient time; and inability to speak and understand Bangla language.

In total, 11 family members agreed to participate in the study. Their inclusion criteria were: family member living in the same residence; involved in looking after the relative for at least three months; and ability to speak Bangla language. Exclusion criteria were: family members unable to give sufficient time; and inability to speak and understand Bangla language.

Ethical considerations:

The study was approved by the Ethical Review Committee, Number-016/2015, Faculty of Nursing, Chiang Mai University, and the National Institute of Cardiovascular Disease, Bangladesh. Each participant received an explanation, and an information sheet with a detailed description of the study purpose, methods, potential benefits of participation and privacy statement. A signed consent form was sought before voluntary study involvement. Participants could withdraw at any time. To protect confidentiality a pseudonym was used in the FGDs and interviews. All audio-recorded and transcribed data were stored securely.

Data Collection:

Focus Group Discussions (FGDs): Four of these were conducted to gain a wide range of information and variety of perceptions about the topic of interest. An open-ended question guide was prepared to facilitate participants' expression of thoughts and opinions. The guide included three types of questions: *preliminary questions* to establish rapport and a relationship; *core questions* focused on specific barriers and facilitators for a heart-healthy lifestyle such as "How you have lead your lifestyle since being diagnosed with ACS?" and "What problems have you encountered when trying to change your lifestyle?" followed by probing questions to address the participants such as "What...?"; "Why....?"; "How....?" and "For what reason....?" regarding their lifestyle in order to get elaboration and confirmation. *Closing questions* expressed gratitude for sharing the participants' knowledge. Each FGD consisted of 5-6 participants held at outpatient department of NICVD hospital and lasted for 60-120 minutes when target data were achieved and an MP3 recorder was used for recording.

In-Depth Interviews: were conducted participants with ACS and their family members using an interview guide in their preferred place such as a private hospital room or in their home for around 60-90 minutes. The questions used were mostly open-ended in nature. For example, "How did you help your relative to change his lifestyle?", "Could you please explain me a little more about how you assisted him to do this?" and "What problems have you faced in the process of helping your relative to change his lifestyle?" A second interview carried out when information was ambiguous, or to get new information. The participants' non-verbal behaviors were written on field notes, and reflection notes were made after each interview in order to capture contextual information and behavior of the participant.

Data Analysis:

All FGDs and in-depth interview data were immediately transcribed, and transcription accuracy was confirmed by repetitive listening of audio-recorder and reflections notes regarding interaction of participants. Content analysis began by reading the transcript of each type of qualitative data line-by-line and coding phrases and concepts whilst looking for potential concern for barriers and facilitators, then

codes were linked in order to create sub-categories. Further, the sub-categories reduced into categories as suggested by Miles and Huberman[24] in a three-stage process: data reduction; data display; and drawing conclusions/verification.

Guba and Lincoln's criteria were used to ensure and maintain trustworthiness and rigor of the study.[25] Credibility was addressed by using FGDs and in-depth interview methods and data from persons with ACS and their family member. Member checking was undertaken with the participants about data interpretation made by the researcher to confirm validity. Transferability was ensured by describing details of participants and the study context so that the readers could understand the context. Dependability was gained through describing the data collection process, showing an audit trail of complete record of raw data transcript and analysis record. Findings were confirmed and verify with qualitative experts for accuracy of interpretation. Confirmability was affirmed by completing interviews, interpretation and discussion made with research committee members.

Findings

Demographic characteristics of the study participants

Of the 22 participants with ACS, nine had ST-segment elevation myocardial infarction (STEMI), seven had non-ST-segment elevation myocardial infarction (NSTEMI), and six had unstable angina (UA). They were males aged 33 to 65 years old. Most were married, Muslim, and had completed primary and secondary education. Their average monthly household income was 15,600 BDT (Bangladesh Taka at exchange rate of 83.63BDT/US$1) within a range of 8,000-35,000. Most family members were female spouses of the participants with ACS, aged 27 to 52 years. Three were males who were eldest sons of their relative participant. The majority were Muslim and their income ranged from 10,000-19,990 BDT (Bangladesh Taka) per month.

Findings Barriers for Modifying/Maintaining Heart-Healthy Lifestyle

These emerged in three categories: *Inability to quit smoking; Exercise being a difficult task;* and *Facing difficulties in changing eating habits* (**Table 1**).

Table 1 Categories and subcategories of barriers and facilitator for modifying/maintaining heart-healthy lifestyle

Barriers	Facilitators
Inability to quit smoking	Motivation
-Incapability of dealing with nicotine withdrawal symptoms	-Commitment to following advice
-Confronting stress and tension	-Perceived benefits
-Belief that smoking helps productive work	-Perceived awareness
Exercise being a difficult task	Sufficient Support
-Constraints imposed by physical conditions	-Family support
-Exercise not being a habit	-Professional support
-Lack of time	-Support from friends
-Lack of knowledge about exercise	Sufficient socio economic conditions
Facing difficulties with eating habits change	-Income adequacy
-Facing hunger from insufficient meal amounts	-Basic educational attainment
-Conflict over food preferences	
-Insufficient support	
-Insufficient knowledge	
-Low income	

Category 1: Inability to Quit Smoking. Most informants mentioned that they were unable to quit smoking because they were incapable of dealing with nicotine withdrawal symptoms and they felt that smoking assisted them in dealing with the stress and tension going on in their day-to-day lives. They believed that smoking helped them to work productively.

Sub-category: Incapability of dealing with nicotine withdrawal symptoms. Some of the participants expressed that they started smoking in the form of cigarettes or *bidi* at a young age and it had since become an everyday activity. Many mentioned that, often, when they have tried to stop smoking, they failed several times. Some expressed that after taking breakfast and drinking tea they experienced symptoms of craving. Others mentioned about their inability to concentrate on work; irritation; insomnia; tremors in their hands; and constipation resulting from the habit of smoking cigarettes in the toilet. To avoid these problems they continued smoking. For example:

> *I want to stop smoking, but when I finish eating food, particularly in the morning, or after taking tea, I feel the craving to have a smoke.* (Smoker, male, age 39)

Sub-category: Confronting stress and tension. Some participants had noticeably reduced the number of cigarettes that they regularly smoked, but most found it difficult to cease smoking. To release stress and tension, they would smoke cigarettes:

> *I have no longer been able to work as I could before. I can no longer get my full salary, but my family expenditures have increased. Therefore, I feel a lot of tension about things like my kids' education and daily food expenditures. So, to get some relief from stress and tension, I smoke cigarettes.* (Smoker, male, age 34,)

Sub-category: Belief that smoking helps productive work. Those with ACS always received suggestions from their health-care workers to stop smoking. However, this suggestion seemed useless to them, because they believed that smoking helped them to maintain their productivity, enabling them to work for longer periods of time, with better concentration:

> *Smoking increases the thinking capacity of my brain, because, many times, when I have had difficulties in figuring out how to repair a machine, then I sit and smoke a cigarette for a few minutes to help me refocus my thoughts in a step-by-step process. Having gained a new perspective on the situation, I can then search among the various possible alternatives, to enable me to fix the problem.* (Smoker, male, age 45)

Category 2: Exercise Being a Difficult Task. A substantial number of participants expressed that physical discomfort was main underlying reasons for not engaging in regular PA. Some raised concerns about being unfamiliar about structured exercise. Further, many were busy working resulting in insufficient time or had inadequate knowledge on the recommended intensity of exercise.

Sub-category: Constraints imposed by physical condition. Among the study participants, the most common problem of PA was the constraints imposed by their physical conditions. These limitations have often discouraged them from doing PA regularly, despite the fact that they have received instructions and information from their physicians regarding the importance of regular PA. Thus the information was not relevant to many participants, because they experienced many bodily symptoms of their disease, which often diminished their capability to do PA or exercise. For example:

> *When I start to walk somewhere at a medium speed continuously for five minutes, I begin to sweat, and I experience palpitations. I feel very weak and tired, and I also feel dizzy and have difficulty breathing. My chest becomes heavy,*

just as it happened during my first heart attack. So I don't like to walk and risk getting another one. (FGD-4, male, age 54, mild PA)

Sub-category: Exercise not being a habit. When participants were asked about their ideas of the meaning of regular PA, most thought that this meant they should do some physical work which is related to their usual work. Most liked to do household work, gardening, and walking, the most common PAs. Apart from the above activities, they did not participate in sports or recreation-related activities, because, since their childhood, they have not done any regular exercise or participated in any sports or recreational activities. Some of them indicated that structured exercise was not familiar to them and therefore, felt hesitation, for example:

I have not grown up with the notion that I have to do exercise every day. At this age, if I started to walk, my neighbor would look at me and start to laugh. I think that it's a matter of social prestige at this age. (Male, age 65, NSTEMI, mild PA)

Sub-category: Lack of time. Some participants were engaged in some kind of job, or with a small business, so they were too busy to perform any additional PA. Thus, exercise was not easy for them, for example:

...open my shop at 9:00 every morning. The whole day, I need to stay in the shop. I have to talk and showing them different goods. I close it around 12:00 midnight. So, I think that I am busy enough with all of this...I do not have any extra time to do outside exercise. (Male, age 62, NSTEMI, mild PA)

Sub-category: Lack of knowledge about exercise. When the participants were asked about the frequency, intensity, and duration of PA needed to receive health benefits from exercise, some were unable to answer these questions. They were also often unable to specify the PA recommendations they had been given:

My physician told me to walk for half an hour every day, but I don't know about the recommended speed. I do not have any idea about that. (Male, age 43, STEMI, mild PA)

Category 3: Facing Difficulties with Eating Habit Change. Several participants reported changing some of their eating pattern irrespective of the type of ACS and acknowledged obstacles when taking attempt to modify diets. They faced hunger due to eating less food at mealtimes, having food choice conflicts within family members, insufficient knowledge about heart-healthy diets, and insufficient supports.

Sub-category: Facing hunger with insufficient amount of meal. Some participants faced hunger when trying to eat a lesser amount of rice at each meal. The reason was that they had been newly diagnosed with diabetes mellitus, as well as ACS, and some of them were also overweight. Therefore, their physicians advised them to restrict the large amount of rice that they normally consumed through habit. Thus, when they tried to eat less rice or switch to bread, they became hungry:

I had a problem with high triglyceride levels and abdominal obesity, as well as diabetes. My physician suggested that I need to reduce my rice consumption as much as possible. However, when I try to eat less than the usual amount that does not fulfill my hunger, because I am used to eating a full plate of rice three times a day. (Male, age 55, NSTEMI)

Sub-category: Conflict over food preferences. The participants were asked what their greatest difficulties were as far as changing to a more heart-healthy diet. Most mentioned conflicts regarding food preferences among family members. When food is cooked using less salt and oil, and with boiled vegetable curries rather than fried vegetables, other

members of the family, especially the children, are not able to eat adequate amounts of rice, the basic food. This often resulted in family conflict:

> *When the foods in our house were cooked to be less spicy, salty, and oily, my son and daughter were no longer eating enough food. Every time I would look at them, I would feel so bad. Thus, now I eat whatever they like to eat. I don't like to see my kids hassled over their food preferences, as this would cause arguments in our family.* (Male, age 47, STEMI)

Some participants acknowledge that food preference conflict also occurred when they were unable to compromise with food taste or beliefs that putting little oil and spices in curries lowered the taste of their meals. Despite of sickness, they prefer fried vegetables:

> *Most of the time, when I sit down to eat my meal, I found that most of the vegetable curries look like they are boiled, and they are not cooked with adequate oils, salt and spices. So there is no delicious flavor to the curries. Thus, I have asked my wife to prepare the curries in the usual way with oil, salt, and spices.* (Male, age 43, STEMI)

Sub-category: Insufficient support. Some participants explained that many times their family member did not concentrate more on their food when living in a joint family environment, because their spouse had been busy with other household activities, for example:

> *Cooking for only one person is very difficult when living in a joint family.* (Female spouse, age 57)

Most participants spoke about being unable to have adequate conversations with health care workers to discuss information on diet.

> *The physicians and nurses in the hospital are too busy. They could give us more time to discuss about diet, rather than just telling us not to eat fatty foods. They concentrate more on prescribing medicine, rather than on discussing with us about details of diet. During the stay in the hospital, even I could not find dietician at all to discuss about diet.* (FGD-3, Male, age 46, STEMI)

Similarly, some participants mentioned they could not get any informational resources such as booklets or dietary manuals from the hospital, which could be used at a later time:

> *I have not had any manual to read that contains details of information on how I could reduce my dietary fat intake. The health-care personnel have not supplied me with any information regarding this.* (FGD-1, male, age 45, STEMI)

Some family members acknowledged obstacles to food preparation in order to assist eating heart-healthy diets, because they learned cooking from their mothers. They explained that they did not have education on how to cook food keeping food values intact, and followed the recommendations. For example:

> *I learned cooking from my mother and relatives. When I cook food, it takes me more than one hour, often without a lid. I drain water from the rice after cooking. ...we like the vegetables to be fried, rather than boiled to make a soup or a curry. I don't actually know how to cook heart-healthy foods in ways that remove the excess fat from the meat curry. Also, I don't know how to cook without oil, because I have not attended any cooking classes. I don't know! Perhaps my cooking has destroyed the vitamins in the food. (Female, spouse, age 40)*

Sub-category: Insufficient knowledge. Some participants mentioned that they do not know details about how to control portion size, such as the sizes of different measurements recommended. They tended to think that eating a heart-healthy diet mainly meant cutting out animal foods that are high in fat, but they did not consider that they need to reduce excess amount of carbohydrate foods such as rice, sweet, sugar.

> *I just take two plates of rice, but I do not measure it how much it is. When I feel that my stomach is full, I stop eating. So I don't know how much I'm eating.* (Male, Age 57, NSTEMI)

Some participants have misunderstood the consequences of medical treatment. They overestimated the positive effects of the treatments and mentioned that, after implantation of a coronary stent, they felt completely cured, as they were no longer experiencing any more symptoms of the disease. They believed that they no longer had to follow the recommendations for a heart-healthy diet. Therefore, they started to eat food as habituated:

> *I was quite all right. I did not have any problems after the implantation of stent, so I started to eat as I had before. So I did not change my diet in the ways that were advised.* (Male, age 43, STEMI)

> *...I could not experience any symptoms, so I started to eat (in an) irregular manner.* (FGD-2, male, age 53, NSTEM)

Sub-category: Low income: A substantial number of participants mentioned that low income was inhibiting to buy recommended food due to its cost.

> *Nowadays, fresh vegetables and fruits are much too expensive. The price of local fruits is also high. This price goes to double if any natural problems. Because of this, I have not been able to buy fresh vegetables or fruits regularly.* (Male, age 53, NSTEMI)

Facilitators for Modifying/Maintaining Heart-Healthy Lifestyle

Facilitating factors comprised three categories, Motivation; Sufficient Support; and Sufficient Socioeconomic Conditions **(Table 1)**.

Category 1: Motivation. Some self-motivated participants were able to change smoking patterns; increase physical activity; and eat more heart-healthy diets when committed to follow advice; perceived benefits; and aware about the severity of health problems described as follow:

Sub-category: Commitment to follow advice. Some participants committed to follow advice to stop smoking, integrated PA into their daily life and modified their diet to be more heart-healthy. These commitments occurred to the physician; within themselves; among their family members; and within their groups of friends. The physician was found as the main motivator because participants considered advice from physician to be a part of their treatment, for example:

> *My physician is insistent to me about the problems caused by my smoking. Since then, I have made a commitment to my physician that I will stop smoking.* (FGD-3, male, age 57, NSTEMI)

Sub-category: Perceived benefits. Some participants mentioned that after quitting smoking, starting to perform PA regularly, and/or modifying their diets they perceived observable physical benefits:

> *After starting to eat more vegetables, my constipation problems were gone. I found that I could pass my stool in a comfortable manner. Moreover, I lost weight. My big abdomen started to get smaller. I am fitter than before and ...slimmer since I continued regular walking. I have also felt lighter.* (Male, age 52, STEMI)

Sub-category: Perceived awareness. Some participants point out that they were motivated to modify their lifestyles, because they became aware of the severity of their health problems:

> *I stopped smoking after seeing the diagram of my angiogram report which was made by my physician. I read in this report that one of the heart artery was 90% and another one 70% narrower. So, I was worried to have another episode of this disease anytime. Because of this, I stopped smoking.* (Male, age 56, UA)

Category 2: Sufficient support

Participants acknowledged various forms of support, received mainly from their families, and particularly from spouses, health-care professionals, and friends.

Sub-category: Family support. Most participants stated that their spouse and children helped them to change lifestyle by creating some psychological stimulation. Their spouse provided them with support by cooking; serving them meals; and doing other necessary tasks:

> *My wife is very concerned about my walking. When I feel too weak, my wife goes with me as far as I can, so both of us walk. When we walk together and talk to each other, I forget my weakness and boredom. This encourages me to walk more.* (Male, age 63, NSTEMI, moderate PA)

> *My wife is very concerned about my diet.... She cooks separately both for me and for other family members as well. I know that it's very difficult. Still, she has not stopped her regular cooking work. She has done everything; I have just only eaten. Moreover, when my grandson goes to the market, she prepares food list needed for me, and she always tells him not to bring those foods which I cannot eat.* (Male, age 52, STEMI)

Sub-category: Professional support. Some participants explained their physician showed some pictures regarding the effects of smoking on hearts and at the same time, they gave explanations that lead them to be motivated:

> *My physician has explained me about the bad effects of smoking. That has helped me to stop smoking.* (FGD-2, male, age 45, STEMI)

Sub-category: Support from Friends. One participant mentioned that, when a close friend showed an interest to help and to get involved in overcome difficulties, this made it easy for a person with ACS to change their lifestyle:

> *...my close friend took me to a meeting of our religious group [Tabligi Jamaat]. There, I listened to a lecture on Cigarette Addiction and Islam. ... as smoking is addictive and can alter an individual's mind, it is thereby prohibited. I was under the supervision of my Friend Follower [Sathi] for three months,). This monitoring has helped me to stop smoking.* (Male, age 46, NSTEMI)

Category 3: Sufficient Socioeconomic Conditions

Participants with good socioeconomic conditions faced less financial constraint, due to adequate income and attainment of basic education which enabled access different sources of information, such as newspapers, Internet, and books, in order to acquire knowledge and detailed understanding of the disease to solve their problems.

Sub-category: Income adequacy. Some in the FGDs and in-depth interviews expressed they did not have financial constraints to restore health as they do not have any monetary obligation:

> *I have enough money to buy necessary food for myself. Me and my wife have jobs which are sufficient to maintain our living status and my treatment. I get all my routine check-ups done regularly, in order to follow up on my health condition. (Male, age 44, UA)*

Sub-category: Basic educational attainment. Some who completed at least some education beyond the primary school level were able to maximize their awareness regarding the need for a heart-healthy lifestyle by acquiring more knowledge from various sources, for example:

> *I don't depend only on the advice of my physician. Also, when I get time, I watch panel discussions on TV about health matters. I read the health section of the newspaper regularly. Also, I browse the Internet on my mobile phone in order to get more information about my diet and about my disease.* (Male, age 47, STEMI)

Discussion

Key findings in this study of barriers and facilitators of a heart-healthy lifestyle among persons with acute coronary syndrome in Bangladesh emerged into six categories: *Inability to quit smoking*, *Exercise being a difficult task*, *Facing difficulties with eating habit change*, *Motivation*, *Sufficient support and Sufficient socioeconomic condition.*

Withdrawal symptoms of smoking play a crucial role to continue smoking indicated by our participants. Similar finding occurs in Brazil, Jordan and Chile where people with ACS experience stress and tension related to their daily life. When they try to quit smoking they often felt nicotine withdrawal symptoms.[21,26,19] In the NICVD hospital, generally a patient is not offered counseling and treatments regarding how to control withdrawal symptoms, or how to cease smoking, such as the use of nicotine replacement therapy. This lack does not help them to quit smoking. In the context of Bangladesh smoking is a common form of unhealthy lifestyle among males. Although, our participants had experienced ACS at least six months earlier most did not completely stop, but continued smoking for an indefinite period of time. This finding could be explained in terms of nicotine dependence because when nicotine levels fall in the blood that stimulates to smoking.[36] Thus, people feel comfortable and relaxed which leads to more smoking later.

Doing exercise was the hardest part because of constraints imposed by the participants' physical conditions: they expressed chest pains, breathlessness, dizziness, drowsiness, body pain, fatigue and weakness. These parallel results have been reported elsewhere.[27] In addition, after diagnosis many participants were likely to become sedentary and decrease PA because their physicians also advised them to restrict PA to within a moderate level, as vigorous exercise likely tended to have high risk for repeated attack or sudden death.

Findings indicated that participants were busy in daily work. This is likely to be that these age group persons bore most responsibility to earn money for family expenditure. Thus, they had less or no opportunities to go outside for exercise. Further, exercise was not their habit, because in the Bangaladesh context working beyond the family need is considered as unproductive work. Therefore, participants engaged in some forms of informal activities which were partially congruent with the study among South Asians and Europeans living in the United Kingdom.[28]

Eating habit change was difficult for the participants in terms of changes in food taste and personal preferences on food choice creating conflicts in the family. A similar finding was reported in the UK when participants consumed family meals to avoid conflict with household members.[29] In addition, many participants acknowledged that shifting rice to bread and consume smaller amounts of rice did not satisfy hunger because of their habit from childhood to eat a large amount of rice. Insufficient support to cook separate food and insufficient knowledge to cook healthy food were another difficulty for family members. Similar findings about spouses have reported insufficient knowledge, communication style and attitude to prepare food impeding dietary

modification.[30] Additionally, low income constrained consuming a heart-healthy diet because of cost. Similar findings concurred with this in Pakistan, and Canada in that due to a low income participants could not follow dietary advice.[31] Motivation makes lifestyle modification easier; this motivation of some participants was due to commitment to improving their present health conditions. Research confirms that people committed to change overcome difficulties.[32] Sufficient support from families, especially spouses, helped changes to maintain heart-healthy lifestyles by cooking food, serving and not buying unhealthy foods, providing emotional support and helping to do PA.[15,30,33] Professionals were a good source for health information to change. Needed information is necessary to motivate change. A previous study identified that support by a group of professionals effectively increased smoking cessation, increased PA, and a heart-healthy diet.[34, 35]

Adequate income assisted to modify lifestyle because of affordability; people can obtain exercise facilities, and buy fresh foods, and consume less calorie foods.[31] Likewise, basic or higher education levels facilitated more understanding of health-related messages and an ability to access information from different sources.

Limitations

This study was conducted in a single setting in a tertiary level hospital in the capital city of Bangladesh. Therefore, it may not reflect the actual heart-healthy lifestyle among the persons with ACS attending in district hospitals in the various parts of the country. Moreover, the purpose of this study was to explore barriers and facilitators to modify heart-healthy lifestyle among persons with ACS their family member, and did not include health care workers or any policy makers, whose perception might be different. Finally, qualitative findings were mainly based upon male persons with ACS and their family member's. Thus the study did not reflect female perspectives because of cultural obligation to talk with an unfamiliar male who was the principal researcher.

Conclusions and Implication for Nursing Practice

A qualitative descriptive research approach was used to gain perceptions and experiences of people with ACS and their family members related to the barriers and facilitators of heart-healthy lifestyle. Their inability to quit smoking and exercise was a difficult task and they faced difficulties in changing life habits, and these appeared to be the most common constraints to follow and maintain a heart-healthy lifestyle. However, adequate motivation, sufficient support, and sufficient socioeconomic condition appeared as a motivator to engage in heart-healthy lifestyle in context of Bangladesh. Therefore, an interventional research is recommended by providing education program in order to gain more information prevent complication of the disease. Nurses can ensure the presence of family members while carry out health education so that they can understand their needs better and take care of their relatives in their own family environment for the long run. It is also recommended that future research should be conducted in district level hospitals of different parts of the country. In addition, future study should explore female perspective regarding barriers and facilitators factors related to heart-healthy lifestyle in Bangladesh's context.

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References

1. El-Saharty S, Ahsan KZ, Koehlmoos TL, Engelgau MM. Tackling noncommunicable diseases in Bangladesh: Now is the time. World Bank Publications, 2013.
2. Chowdhury R., Alam DS, Di Angelantonio E et al. Bangladesh Risk of Acute Vascular Events (BRAVE). 2014 http://www.icddrb.org/media-centre/media releases/doc_download/7982-brave-study-press-brief
3. Chow CK, Jolly S, Rao-Melacini P, Fox KA, Anand SS, Yusuf S. Association of diet, exercise, and smoking modification with risk of early cardiovascular events after acute coronary syndromes. Circulation. 2010; 121(6): 750-8.
4. Steg, P. H., James, S. K., Atar, D., Badano, L. P., Lundqvist, C. B., Borger, M. A., ... & Gershlick, A. H. (2012). ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation. The Task Force on the management of ST-segment elevation acute myocardial infarction of the European Society of Cardiology (ESC). European Heart Journal, 33(20), 2569-2619.
5. Pender NJ, Murdaugh CL, Parsons MA. Health Promotion in Nursing Practice Stamford, Connecticut: Appleton & Lange.2015.
6. Spring B. Ockene JK. Gidding SS., Mozaffarian D. Moore S. Rosal MC. Lloyd-Jones D. Better population health through behavior change in adults. A call to action. Circulation, 2013; 01.
7. Smith A, Fortune Z, Phillips R, Walters P, Lee GA, Mann A, Tylee A, Barley EA. UPBEAT study patients' perceptions of the effect of coronary heart disease on their lives: A cross-sectional sub-study. Int J Nurs Stud. 2014; 51(11):1500-6.
8. Huffman, J. C., DuBois, C. M., Mastromauro, C. A., Moore, S. V., Suarez, L., & Park, E. R. (2016). Positive psychological states and health behaviors in acute coronary syndrome patients: A qualitative study. Journal of Health Psychology, 21(6), 1026-1036.
9. Yehle KS, Chen AM, Plake KS, Yi JS, Mobley AR. A qualitative analysis of coronary heart disease patient views of dietary adherence and web-based and mobile-based nutrition tools. J CardiopulmRehabil Prev. 2012; 32(4):203.
10. Ngiap-Chuan T, Wei S, Seng-Lian C. Lifestyle modifications of patients with coronary heart disease on follow up in public primary care center in Singapore: assessment of perception and behavior. The Singapore Family Physician. 2011; 173(1):67-72.
11. Bhattacharyya M. Stevenson F. Walters K. Exploration of the psychological impact and adaptation to cardiac events in South Asians in the UK: a qualitative study. BMJ Open, 2016;6(7).
12. Matthias, A. T., Lokunarangoda, N. C., & Ekanayaka, R. (2014). Knowledge assessment regarding secondary prevention of coronary heart disease--a multi centre survey. BMC Medical Education, 14, 113.
13. Asgar, M. A., Chinnawong, T., Kritpracha, C., (2010). Stress and Coping of Patients with Myocardial Infarction in Bangladesh (Unpublished master's thesis). Prince of Songkla University.
14. Aggarwal B, Liao M, Allegrante JP, Mosca L. Low social support level is associated with non-adherence to diet at 1 year in the Family Intervention Trial for Heart Health (FIT Heart). J. Nutr. Educ. Behav. 2010; 42(6):380-8.
15. Cole JA, Smith SM, Hart N, Cupples ME. Do practitioners and friends support patients with coronary heart disease in lifestyle change? A qualitative study. BMC Family Practice. 2013; 14(1):126.
16. Barkat A, Chowdhury AU., Nargis N, Rahman M, Khan MS, Kumar A. The Economics of Tobacco and Tobacco Taxation in Bangladesh. Paris: International Union Against Tuberculosis and Lung Disease. 2012
17. Donnelly, T. T., Al Suwaidi, J., Al Bulushi, A., Al Enazi, N., Yassin, K., Rehman, A. M., ... Idris, Z. (2011). The influence of cultural and social factors on healthy lifestyle of Arabic women. *Avicenna*, (2011), 3.
18. Salisbury AC., Chan PS. Gosch KL. Buchanan DM. Spertus JA. Patterns and predictors of fast food consumption after acute myocardial infarction. The American Journal of Cardiology, 2011; 107(8), 1105-1110.
19. Bambs C, Sgombich M, Leiva L, Baraona F, Margozzini P, Pizarro C, Rojas A. Facilitators and barriers to the adoption of healthy lifestyles after first myocardial infarction in Chile: A qualitative study. Rev. chil. cardiol. 2015; 34(3):163-74.

20. Zhu L. Ho SC. Sit JWH. The experiences of Chinese patients with coronary heart disease. Journal of Clinical Nursing, 2012; 21(3-4), 476-484.
21. Abu-Baker NN, Haddad L, Mayyas O. Smoking behavior among coronary heart disease patients in Jordan: a model from a developing country.Int. J. Environ. Res. Public Health. 2010; 7(3):751-64.
22. Sultana R. Petpichetchian W. Kritpracha C. Patients' discharge information needs regarding myocardial infarction in Bangladesh. Songklanagarind Journal of Nursing, 2015; 35(3), 1-14.
23. Lambert VA, Lambert CE, Editorial: Qualitative descriptive research: An acceptable design. Pacific Rim International Journal of Nursing Research. 2012 16(4): 255-256
24. Miles MB, Huberman AM. An Expanded Sourcebook of Qualitative Data Analysis. Sage. 1994.
25. Guba EG, LincoIn YS. Fourth Generation Evaluation. Newbury Park, CA: Sage Publishing; 1989.
26. Ferreira ÂS, Campos AC, Santos IP, Beserra MR, Silva EN, Fonseca VA. Smoking among inpatients at a university hospital. J BrasPneumol. 2011; 37(4):488-94.
27. Galdas PM, Oliffe JL, Kang HB, Kelly MT. Punjabi Sikh patients' perceived barriers to engaging in physical exercise following myocardial infarction. Public Health Nurs. 2012; 29(6):534-41.
28. Darr A, Astin F, Atkin K. Causal attributions, lifestyle change, and coronary heart disease: illness beliefs of patients of South Asian and European origin living in the United Kingdom. Heart Lung. 2008; 37(2):91-104.
29. Netto G, McCloughan L, Bhatnagar A. Effective heart disease prevention: lessons from a qualitative study of user perspectives in Bangladeshi, Indian and Pakistani communities. Public Health. 2007; 121(3):177-86.
30. Salminen-Tuomaala MH, Åstedt-Kurki P, Rekiaro M, Paavilainen E. Coping with the effects of myocardial infarction from the viewpoint of patients' spouses. J Fam Nurs. 2013; 19(2):198-229.
31. Barolia RI, Clark AM, Higginbottom GM. Protocol for a qualitative study on promoting dietary change and positive food choices for poor people with low income who experience cardiovascular disease in Pakistan. BMJ Open. 2013; 3(12).
32. Astin, F., Horrocks, J. and Closs, S.J., Managing lifestyle change to reduce coronary risk: a synthesis of qualitative research on peoples' experiences. BMC Cardiovascular Disorders, 2014;14(1)96.
33. Rogerson MC, Murphy BM, Bird S, Morris T. "I don't have the heart": a qualitative study of barriers to and facilitators of physical activity for people with coronary heart disease and depressive symptoms. International Journal of Behavioral Nutrition and Physical Activity. 2012; 9(1):140.
34. Boyde M, Grenfell K, Brown R *et al.* What have our patients learnt after being hospitalised for an acute myocardial infarction? AustCrit Care. 2015; 28(3):134-9.
35. Tawalbeh LI, Tubaishat A, Batiha AM, Al-Azzam M, AlBashtawy M. The relationship between social support and adherence to healthy lifestyle among patients with coronary artery disease in the North of Jordan. ClinNurs Res. 2015; 24(2):121-38.

อุปสรรคและปัจจัยสนับสนุนในการปรับเปลี่ยนวิถีทางการดำเนินชีวิตที่ดีต่อสุขภาพหัวใจของผู้ที่มีภาวะหัวใจขาดเลือดเฉียบพลัน

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บทคัดย่อ: วิถีทางการดำเนินชีวิตเป็นแนวทางหนึ่งที่สำคัญในการจัดการกับภาวะหัวใจขาดเลือดเฉียบพลัน อย่างไรก็ตาม ข้อมูลวิถีทางการดำเนินชีวิตในบริบทของบังคลาเทศยังไม่มีเพียงพอ ดังนั้น การวิจัยนี้จะศึกษาอุปสรรคและปัจจัยสนับสนุนในการปรับเปลี่ยนวิถีทางการดำเนินชีวิตที่ดีต่อสุขภาพหัวใจของผู้ที่มีภาวะหัวใจขาดเลือดเฉียบพลันในบังคลาเทศ

การวิจัยนี้ใช้วิธีวิจัยเชิงคุณภาพในผู้ให้ข้อมูลจำนวน 33 ราย ข้อมูลเชิงคุณภาพเก็บรวบรวมโดยใช้วิธีการสนทนากลุ่มจำนวนสี่ครั้งในผู้ให้ข้อมูล 22 ราย และสัมภาษณ์เชิงลึกในผู้ที่มีภาวะหัวใจขาดเลือดเฉียบพลัน 18 ราย และสมาชิกครอบครัว 11 ราย โดยใช้วิธีการวิเคราะห์ข้อมูลเชิงเนื้อหา

ผลการศึกษาแสดงให้เห็นว่าอุปสรรคในการเลิกสูบบุหรี่ ได้แก่ ไม่สามารถจัดการกับอาการถอนพิษนิโคติน การเผชิญกับความเครียดและความตึงเครียด และความเชื่อว่าการสูบบุหรี่ช่วยให้เกิดประสิทธิภาพในการทำงานอุปสรรคด้านกิจกรรมทางกาย ได้แก่ ข้อจำกัดด้านสภาพร่างกาย การออกกำลังกายไม่ใช่เป็นอุปนิสัย ไม่มีเวลา และขาดความรู้อุปสรรคด้านการบริโภคอาหาร ได้แก่ การเผชิญกับความหิวจากการกินอาหารในปริมาณที่น้อยลง ความคับข้องใจในการหลีกเลี่ยงอาหารที่ชอบ ขาดความรู้เกี่ยวกับการบริโภค ขาดการสนับสนุน และมีรายได้น้อย ปัจจัยสนับสนุนในการปรับเปลี่ยนวิถีทางการดำเนินชีวิตที่ดีต่อสุขภาพหัวใจ ได้แก่ ความมุ่งมั่นในการปฏิบัติตามคำแนะนำ การรับรู้เกี่ยวกับประโยชน์ ความตระหนัก การสนับสนุน รายได้ที่เพียงพอ และการได้รับการศึกษาขั้นพื้นฐาน

ผลการศึกษานี้ทำให้เกิดความเข้าใจเกี่ยวกับปัจจัยที่เกี่ยวข้องกับการปรับเปลี่ยนวิถีทางการดำเนินชีวิตที่ดีต่อสุขภาพหัวใจของผู้ที่มีภาวะหัวใจขาดเลือดเฉียบพลันในบังคลาเทศ ข้อค้นพบนี้จะนำไปสู่การพัฒนากลยุทธ์ที่เป็นประโยชน์เพื่อปรับเปลี่ยนวิถีทางการดำเนินชีวิตซึ่งจะช่วยป้องกันการเกิดภาวะแทรกซ้อนจากโรคและให้มีอายุยืนยาว

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คำสำคัญ: ภาวะหัวใจขาดเลือดเฉียบพลัน บังคลาเทศ อุปสรรคและปัจจัยสนับสนุนในการปรับเปลี่ยนวิถีทางการดำเนินชีวิตที่ดีต่อสุขภาพหัวใจ การสูบบุหรี่ กิจกรรมทางกาย วิถีการรับประทานอาหาร วิจัยเชิงคุณภาพ

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