



## **The Heart Healthy U Study: Formative Research to Design a Multimedia Campaign for Young Adults**

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### **Abstract**

Cardiovascular disease (CVD) is the leading cause of death in the US, and a high prevalence of CVD risks has been observed among Black young adults. Physical activity (PA) and healthy eating (HE) are essential components of lowering CVD risk. Therefore, this study explored the barriers, facilitators, behavior change activities, and health communication channels that can inform the development of a multimedia campaign to promote heart health (i.e., PA and HE) among Black young adults. Between September and November 2019, three focus group discussions (FGDs) with a total of 30 students were conducted at a Historically Black College and University (HBCU) campus within the southern region of the US. Lack of time, body shaming in the gym, and limited HE options on campus were identified as some of the barriers to PA and HE. Knowledge of family health history, Instagram influencers, access to a peer trainer and a dietitian were mentioned as facilitators to PA and HE. Participants suggested various activities to promote heart healthy behaviors, including providing factual health information, teaching healthy food preparation skills, and promoting/creating healthy food options events through social media and print as the communication channels. The focus group findings identified barriers, facilitators, health behavior activity ideas, and the communication channels to encourage PA and HE among Black young adults. The results of this study can be used to inform the development of a multimedia campaign to reduce CVD risk among Black young adults.



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### Abbreviations

cardiovascular disease: CVD; physical activity: PA; healthy eating: HE; historically black college and university: HBCU; and focus group discussions (FGD)

### Introduction

Cardiovascular disease (CVD) is the leading cause of death in the United States, affecting Black Americans disproportionately. Black Americans have a far higher mortality rate of CVD (205.3 per 100,000) than white Americans (168.7 per 100,000).<sup>1</sup> Furthermore, according to the Centers for Disease Control and Prevention, Black Americans develop cardiometabolic risk such as obesity, hypertension, and diabetes at a younger age than their counterparts.<sup>2</sup> Thus, there is a need to intervene early, especially when individuals reach the ages of 18 to 25 years,<sup>3, 4</sup> a critical transition period to be accountable for making health-related decisions. Labeled as “emerging adults,” it is a time in the life course when young adults leave their parents homes, attend college, and have the autonomy to make dietary decisions without parental influences.<sup>5</sup> Due to this period’s transitional nature, young adults are more vulnerable to unhealthy lifestyles leading to weight gain, especially among college students. Research studies indicate that while Americans gain 4 pounds within a 2-year period, college students are likely to gain double the amount within the same timeframe.<sup>6-9</sup>

Increased weight gain can lead to overweight or obesity, which in turn increases the likelihood of developing CVD.<sup>6-9</sup> Unfortunately, Black Americans have a high prevalence of cardiometabolic risk factors (e.g., obesity, diabetes, and hypertension) at college entrance.<sup>10,11</sup> Research suggests that if unhealthy behaviors persist into adulthood, there is a greater likelihood of developing CVD.<sup>10</sup> Fortunately, heart healthy habits such as physical activity, and a diet low in saturated fat and high in fruits and vegetables can help prevent CVD.<sup>12</sup> According to Wakefield and colleagues, multimedia campaigns delivered through the use of existing media such as television, radio, and social media and that expose large portions of the population to the benefits of eating well, are an effective evidence-based approach to promote healthy behaviors.<sup>13</sup> For example, multimedia campaigns

have successfully addressed health behaviors to prevent heart-diseases, lessen tobacco, alcohol, and illicit drug use, encourage cancer screening and prevention, and promote behaviors related to safe-sex.<sup>13,14</sup> However, multimedia approaches have not been used to promote heart health on HBCU campuses, which have a student body of more than 70% Black Americans.<sup>15</sup> Given that the young adults consumption of information on different media platforms, a multimedia campaign would likely be an effective way to reach this population.

Therefore, the aim of this study was to explore the barriers, facilitators, behavior change activities, and health communication channels that can inform the development of a multimedia campaign to promote heart health (i.e. PA and HE) among Black young adults. In this study, we report on the formative research conducted to gain insight into the barriers, facilitators, activities to promote behavior change, and channels to disseminate a multimedia campaign on an HBCU campus.

### Materials and Methods

#### Study Design

This explorative, descriptive qualitative study used focus group discussions (FGDs) to inform the development of the Heart Healthy U campaign.

#### Participants

Three FGDs were conducted with students currently enrolled at a HBCU in the southern region of the US, with an intended 8-12 participants. Participants were recruited through flyers posted at various campus locations and through classroom announcements. To participate in the FGDs, students had to be a matriculating student. No other inclusion/exclusion criteria were stipulated. Each individual received a \$20 incentive to participate.

#### Institutional Review Board

Institutional review board approval was obtained before any study activities were executed. All participants signed consent forms before participating in the FGDs.

#### Focus Group Discussion Guides

Two semi-structured FGDs guides were developed. Focus group discussion 1 and FGD2 used guide A and FGD3 used guide B. Guide A explored the

following topics; identifying barriers, facilitators, behavior change activities, and health communication channels that can inform the development of a multimedia campaign to promote heart health (i.e. PA and HE) among Black young adults. Guide B focused on the evaluation of the campaign materials. Specifically, FGD 3 participants provided feedback on content, graphics and placement, and multimedia channel.

#### Focus Group Discussion Timeline

Focus group discussion 1 and FGD2 occurred in September 2019 and FGD3 occurred in November 2019, with 11 participants for the first group, 10 for the second group and 9 for the third group.

#### Focus Group Discussion Procedures

Each FGD was 90 minutes and moderated by the two principal investigators, Helene Vilme (HV) and LaShawn Wordlaw (LW), along with the graduate

research assistant serving as the note taker. Overall, the procedure included three steps; (1) introductions, review of informed consent and focus groups procedures, (2) focus group discussion, and (3) demographic and incentive forms completion. FGD 1, 2, and 3 began with introductions, the purpose, request for permission to audio record the discussion, and review of the rules of engagement. Next, the participants read and signed the consent forms. Subsequently, HV and LW proceeded with the focus group discussion, asking questions to establish rapport and encourage friendly dialogue and then moved to a series of key questions pertaining to perceptions, barriers, facilitators, activities, and health communication channels for heart healthy promotions. At the conclusion of each FGD, participants completed a demographic form (sex, age, classification, and campus residency status), and received \$20 for their participation.

**Table 1: The three focus group discussions sample characteristics**

Variables		No of participants (n)	Percent (%)
Age	< 25	27	90
	> 25	3	10
Gender	Male	10	33
	Female	20	67
Classification	Freshman	10	33
	Sophomore	3	10
	Junior	10	33
	Senior	6	20
Residence	Graduate	1	3
	Off-campus	14	47
	On-campus	16	53

Percent is expressed as “%”. The sample size of the focus groups is represented with the letter “n”.

#### Data Analysis

The audio-recorded files were professionally transcribed verbatim and entered into the ATLAS.ti qualitative analytic software. Data were analyzed using thematic analysis as described by Braun and Clarke,<sup>16,17</sup> following five steps; (1) data familiarization, (2) generating initial codes, (3) searching for themes across the data, (4) reviewing themes, and (5) defining and naming the final themes. First, Helene Vilme (HV) and LaShawn Wordlaw (LW) read and re-read the transcripts to

become familiar with the data. Second, HV and LW independently coded the transcripts based on categories that related to barriers and facilitators to engage in PA and healthy eating, as well as strategies and channels to promote heart healthy activities. Third, the initial codes were then assessed to identify themes and subthemes. Fourth, HV and LW compared differences in the themes and subthemes that were identified. Disagreements were discussed until a consensus was reached. Next, the initial themes were validated by checking

to see if they worked in relation to the entire data set by asking several questions recommended by Maguire & Delahunt.<sup>17</sup> These questions included; (1) Do the themes make sense?(2) Does the data support the themes? (3) Am I trying to fit too much into a theme?(4) If themes overlap, are they really separate themes? (5) Are there themes within themes (subthemes)?and(6)Are there other themes within the data? Once the themes and subthemes had been validated, the final process involved refining the final themes by identifying the 'essence' of each theme.<sup>18</sup>

## Results

### Descriptive Characteristics of Focus Group Discussions Participants

The demographic summary statistics for the three focus group discussions are presented in Table 1. Majority of the participants (90%) were below the age of 25, females (67%), and lived on campus (53%).

### Barriers to Engaging in Physical Activity

From focus group 1 and 2, four themes were identified as barriers to physical activity (PA); lack of time, attitude, lack of motivation, and body shaming in the gym.

#### Lack of Time

Participants from focus groups 1 and 2 indicated that their busy schedule preventing them from engaging in PA. Lack of time due to work, class, homework, and family concerns were some of the examples mentioned by the participants.

*I don't really engage in physical activity because I just feel like I don't have time for that. (Female student)*

*I would say for me, personally, just having like a busy schedule all over the place. Sometimes I'll leave here at five and go straight to work so I don't always have time to be physically active. (Female student)*

*Busy, class, homework, we need to study, but like, family issues just like, whatever happens like, throughout the day can affect like, how you feel to go to the gym, well not to the gym. (Male student)*

#### Attitudes

The majority of participants expressed that their attitudes could stifle their willingness to engage in PA. For example, two participants stated:

*It also starts in my head, so my attitude to want to be physically active cause there's days when I don't go to work and I may not have anything to do, instead of going to the gym, I just don't do anything, so I think it starts with your perception and your attitude of what you want to see the change in. (Female student)*

*Nothing really keeps me from going to the gym except for like, my own mindset. Like, I could go to the gym whether it's on campus or in my apartment complex, but I just don't really want to. So, that's my problem, yeah. (Female student)*

#### Lack of Motivation

Lack of motivation, whether general, due to fatigue from work/employment or distance to a gym, played a role in the lack of physical activity engagement.

*I stay in a new res, so like really, I'm right there in the middle of everything besides my classes. I've got the \_\_\_ area, the football field if I want to just go run up and down and then the gym is like, in walking distance, so it's really nothing keeping me unless I just really don't want to go. (Male student)*

*I work, I work a lot cause I don't stay on campus, so like, I have bills to pay, so if I go to work or if say I had class all day and I had to work later that night, I'm not going to the gym because serving takes a lot out of me like, I'm on my feet the entire time and I'm so tired afterwards I don't feel like working out or doing any type of physical activity afterwards. (Female Student)*

*Distance and I have the lack of motivation to walk there because of the distance. (Female student)*

#### Body Shaming

Body shaming was also a concern for the female participants; some associated going to the gym with others judging their physical appearance.

*I would say body shaming. I mean I hate going to the gym and people looking at you. I feel like they're talking about you. (Female student)*

### **Barriers to Healthy Eating**

In terms of HE, the barriers that emerged from focus group 1 and 2 were lack of time, lack of confidence with cooking skills, fresh fruits and vegetables' shelf life, limited HE options on campus, cost, vending machine options, and transportation to grocery stores.

### **Lack of Time**

Participants in the focus groups stated that time constraints, notably their busy schedules, were barrier to HE.

*I know for me, if I'm running late to work and there's only like a McDonalds and Wendy's by my job, so I'm just gonna drive through. (Female student)*

*Cause my schedule is so big, the only free time I have like, I sleep or going to the café and grab something. (Male student)*

### **Lack of Confidence with Cooking Skills**

Another barrier mentioned by the participants was lack of confidence in their culinary abilities, particularly when it came to cooking vegetables.

*I can't cook, so I'd rather [not] spend money on food that I can't cook. (Male student)*

*Okay so you buy like your pepper, but then like how do you eat it? (Female student)*

*I feel like fruits is something that I could easily get up and grab or I can put in my bag and take out and eat. I can't just take out like, a stalk of lettuce or like, some broccoli if I wanted. I mean you just cut it up like, like I'm just thinking for like, yeah, like now I could probably be at home and like, cut up a stalk of broccoli and then like, put it in a zip lock bag with some Ranch or something like that and then take it to class, but I'm thinking about like, other stuff, I wouldn't really know how to without like, actually keeping it cold because when you think about fruits, it's like most fruit already has a covering and it doesn't matter like, what you*

*do to it, you could just beat it up and it'll still be straight. (Female student)*

### **Fresh Fruits and Vegetables' Shelf Life**

Although the focus group 1 and 2 participants noted that fruits are easy to consume and transport, the limited shelf life of fresh fruits and vegetables was cited as a reason for not purchasing them.

*When you buy fruit, it only last long in the fridge. So, when you're in your dorm you can't put it like, you can't leave it there forever cause it's gonna rot. (Male student)*

*We can refrigerate fruits, but it's gonna go bad like, that all the time you know. (Male student)*

### **Limited Healthy Eating Options on Campus**

The participants' view of a shortage of healthy food options on campus was a barrier to HE.

*There needs to be some improvement in the food that's in the cafeteria and having like, more choices that are like, healthy. (Female students)*

*There's not a lot of like, options around here. Like, there's only just a Burger King, so [crosstalk] and nobody wants to eat there, and you know, talk. Plus, the café food, you get tired of it. So, it's just like there needs to be more stuff around here like, walking distance. (Male student)*

*I just feel like, eating like, baked foods, grilled, things like that, but it's hard to do that here cause like, our coaches, they want us to eat healthy, but just eating in the café is like close to impossible. (Male student)*

### **Cost**

The participants noted that cost was a barrier to healthy eating, indicating that it was more expensive to purchase healthy food items.

*If you, and you don't have somewhere where you can go and make food, it's like, well you have to eat with your friends but like, you go where something's already made and then like, Cookout's super affordable so, why would you not go get a five dollar tray instead of like, ten dollar something. So, like how much food cost, how much time you have to get it. (Female student)*

*A barrier to healthy eating is it's expensive buying that stuff at the store is just costly and I mean, being a student and then working part time, I mean you don't have those funds to buy the healthy things, so we go for the cheaper choices and then we're here. (Female student)*

### **Vending Machines Options**

The lack of healthy options in vending machines on campus was cited by participants of the focus groups as a barrier to HE. One female student, for example, stated:

*I think even down to the drink vending machines like, they don't have juice, they may have Gatorade, but that's if they work, but most to the time, the only thing that you can get out of the machines are sodas and they're like, the worst sodas like, the Cheerwine and stuff that has a whole lot of sugar in it. (Female student)*

### **Transportation to Grocery Stores**

When it came to going to the grocery store or the farmer's market, participants shared that, despite receiving a free bus pass from their university, the public transit system in their city was inadequate.

*You can ride the buses whenever for free.  
(Male student)*

*Yeah, school gives us a bus pass.  
(Female student).*

*But the buses in [redacted] suck. I just want to put that out there. (Female student)*

*[Company name redacted]: it's expensive like, they upcharge you so much just for going down the street. It'll be like ten dollars just to go like, a stop sign. (Female student)*

### **Facilitators to Engaging in Physical Activity**

Five themes were identified as facilitators to PA: knowledge of family health history, Instagram influencers, peer trainer, personal trainer, and PA classes.

#### **Knowledge of Family Health History**

Several participants of focus groups 1 and 2 expressed that knowing their family's health history facilitated their engagement in PA.

*I know high blood pressure runs in my family, so I want to avoid that by any cause. I just don't want to be in a hospital for any reason, having to go to the doctor numerous times throughout the month. So, yeah, that's why I'm working on being a healthy me in my early twenties before I get to like, late twenties and my thirties.  
(Female student)*

*I have a family history of diabetes, cancer, heart disease, and high cholesterol and so my dad actually has diabetes, started to eat healthy because of it, but once I got on my own, I kind of drifted off of it, but now I've had, recently I've had three family members get diagnosed with different cancers. I had two other ones get diagnosed with diabetes, all within like a few months. So, that has caused me to start back changing my eating habits and also to lose weight, cause I don't want those same health issues like them.  
(Female student)*

*What's motivating me to be physical active is because of my family history, is because in my family adult history, most of them have high blood pressure and some have contracted diabetes and so, and then, I'm next in line. (Male student)*

#### **Instagram Influencers**

The participants' indicated that their engagement in PA was influenced by social media, notably Instagram influencers, who are well-known with a large following. For example, one female student stated:

*I started to follow a whole bunch of fitness people on Instagram and I'll see their little fitness videos and stuff and I have a little collection of their workouts and even when I see, I'm like, I should be working out. (Female student)*

#### **Peer and Professional Personal Trainers**

Some of the participants expressed that personal trainers whether peers in the field of kinesiology or a professional, could help motivate students to engage in PA.

*I know when I went to [name of university redacted], they had like, student trainers cause I know a lot of*

people were like, kinesiology, I think that's what it is, yeah, and they were kinesiology majors and so a part of their like, senior class or whatever, they had to basically change students and they became sort of our trainers through their program. So, I feel as if they implemented that here, at [name redacted], it would also help students, one, get some background knowledge, well not background knowledge, but like, hands on knowledge on like, training, I feel like. And it would also help students be motivated because they have someone like, not even out of college yet, right, who's right there with the knowledge to help them like, workout and I know one of my RA's, she was like, charging people thirty dollars for them, for her to like, train them. (Female student)

But I know for a fact if I go to the gym myself, I'll probably skip out on revs, probably go home where I can be on my phone, but with my trainer along with me, pushing me, you know we got the same mindset of trying to get me to be great you know. (Male student)

I feel like it would be better if I had like a personal training like [name redacted] said cause as soon as I get to the gym I go straight to the treadmill. Yeah, I don't know like, what else to do. (Female student)

### PA Classes

Offering physical activity classes was mentioned as a factor that would likely facilitate physical activity engagement. For example, one female student indicated:

*I don't know if they still do it, but I know in the gym, they used to hold classes like, Zuma, yoga and stuff like that cause I actually used to go to the Zumba class but I feel like doing stuff that's fun makes it easier for me to be physically active rather than going to the gym and trying to lift weights or trying to run on the treadmill, but if they offer more classes, I feel like more people would be more likely to engage in those physical activities. (Female student)*

### Facilitators to Healthy Eating

For healthy eating, three themes were identified as facilitators: access to a dietitian, bringing a farmer's market to campus, and cooking classes.

### Access to a Dietitian

The participants indicated access to a dietitian could facilitate HE because of the opportunity of one-on-one nutrition counseling from a professional.

*Having more access to like, someone suggesting things that you should eat and be more informed about that. (Female student)*

### Farmer's Market to Campus

Having a campus-based farmer's market was perceived as an opportunity to increase access to healthy foods on campus. Students indicated if there was one, they would use it.

*Yes, depending on the price (Female student)  
Cause I feel like that would be better as it's more accessible. (Female student)*

*We can just use our Flex [meal card] to buy the fruit (Male student).*

### Cooking Classes

Similar to PA classes, cooking classes were discussed as facilitators to HE. For example, one female participant stated:

*I feel like if there are more, I feel like if you guys implemented like, maybe like some cooking sessions, you know, that would probably teach people how to like cook now that like, we're on our own versus like being at home. Like we're preparing food for ourselves and stuff, so maybe if there were like some cooking sessions or like, teaching people about the different types of vegetables then they would know like, what to do with them or that they're okay to eat when they see 'em in the café. (Female Student)*

### Information of Campus Resources

Providing information on campus resources emerged as a facilitator for both PA and HE. Some of the participants felt that increasing awareness about healthy eating options and group PA classes that are available on campus would be advantageous since some students are not aware of all the available resources that are on campus.

*Spreading more knowledge to the fact that's something that we have, cause it's there, but I feel like not everyone takes advantage of it. (Female student)*

### **Promotional Activities Recommended to Encourage Physical Activity**

Participants in focus group 1 and 2 were asked to suggest activities to promote in a multimedia campaign aimed at encouraging HBCU students to engage in PA and HE. For PA engagement, the focus groups participants recommended providing factual health information, having continent rewards challenges, providing information about behavior-benefit links of PA, and including prompts/Cues.

#### **Provide Factual Health Information**

The participants recommended that the campaign provide factual health information regarding CVD risk among minority college students.

*You'll have to show me like, facts you know, or numbers of college students with high blood pressure already or a heart disease, just showing me that it's you know, realistic for me to have these problems at my age. (Female student)*

*If you want to lose this amount of weight, this is how much you have to do. (Female student)*

#### **Continent Rewards Challenges**

Continent rewards such as incentives, competition challenges or contest on social media were recommended as entities to incorporate in the promotion of PA and HE.

*Competition like, I don't want someone to outdo me or it's the fact that there is a competition that I can win and like, show you that I'm, not necessarily better, but I could put forth more effort and show you that I really want to go do something. I feel like that's what we're driving to do. (Male student)*

*Fun incentive like, if you do this, you'll get this. (Female student)*

#### **Provide information about behavior- benefit link of PA**

Another suggestion expressed by the focus group participants was to create promotional materials

that emphasized the advantages of PA. One female participant stated that one of the benefits of PA is that it decreases stress:

*I believe it [PA] relieves stress, well for me, anyway, it relieves stress. (Female student)*

#### **Prompts/cues**

Participants suggested that PA prompts and cues that encourage students to engage in PA be included in the multimedia campaign targeting HBCU students. One participant made the following suggestion:

*If you have more cues to like, take the stairs like, have like, signs up in different buildings that kind of reroutes your mind to like this personal little elevator, but oh, actually I could just take the stairs. It's just right up here. Or if you just had like more cues around campus. I'm not really sure off the top of my head, but like, I feel like more cues to you know, would kind of like, persuade me to like, be thinking about being active versus taking the easy way. (Female student)*

#### **Promotional Activities to Encourage Healthy Eating**

For HE, teach healthy food preparation skills, add more healthy places that serve healthy food options on campus, add nutrition vending machines, and promote/create health food options events emerged as promotional activities to encourage HE.

#### **Teach Healthy Food Preparation Skills**

Teaching students how to prepare healthy foods was mentioned as an activity that could encourage HE among students, particularly classes that teaches students how to cook vegetables.

*I think a cooking class, or some type of instructional thing would be good. (Female student)*

*Teaching people how to cook the vegetables. I mean I know how to cook, but a lot of people don't know how to cook or prepare the vegetables, so maybe if you give them that type of education then they can know what to do with it rather than just looking at it and just leave it cause they don't know what to do with it. (Female student)*



### **Add More Places that Serve Healthy Food Options**

Another suggestion for encouraging HE among students was to have additional places on campus that serve healthy food.

*I feel like, more options. I just want more options than just the café and Subway. (Male student)*

*We have like a little store on campus, the C store, but everything's really expensive and there aren't many like, healthy options, so I think if they kept the C store and maybe lowered the prices some and it had some better options that would be a better resource for students. (Female student)*

*[Dining hall]. I think if there was like a, like I don't know if they could, if there was like, a hibachi station like, more, you've seen the like, the cook, the food being cooked to the audience, so it's not like you have all this food that's precooked, people don't eat it and it's waste. (Female student)*

### **Add Nutrition Vending Machines**

The participants suggested that a vending machine with healthy food options should be installed on campus. Specifically, a participant stated:

*I went to a college, [college name redacted], I'm from Massachusetts so, they have a nutrition vending machine, they've got like, four of 'em around campus. They have like, a V8 Juices and all them nutrition dishes and they have like, protein snacks and vitamin E snacks, protein shakes, all that, so I think we should just bring that down here. (Male student)*

### **Promote/Create Healthy Food Options Events**

Healthy food events were suggested as a promotional activity that should be developed and the participants recommended obtaining support from the University to promote the events. One male participant suggested:

*Put the word of mouth out to use that, and hey, we're having this event you know, not just want the public health education is backing it, but you know, I guess the whole entire campus put their arms around this and made it a real event, it might be something that sticks. (Male student)*

### **Health Communication Channels Recommendations to Encourage Physical Activity and Healthy Eating among HBCU Students**

Participants from focus group 1 and 2 were asked to recommend the communication channels that could be used to disseminate health information about PA and HE to HBCU students. The participants suggested social media, print, and online advertisement as ideal places to disseminate PA and HE related information to HBCU students.

*I think social media since our age group these days use social media, so any of the social media apps, more so Twitter and Instagram, since we use those a lot more than Facebook. (Female student)*

*I think the lawn sign would be good because it's big and regardless, even if you're not paying attention, you'll see it. (Female student)*

*Online flyers like, on our EOL. When you first get onto blackboard and it [EOL] has those little things that pop up and the go away, then this next advertisement. (Female student)*

### **Heart Healthy U Campaign Development Process**

The information gathered from the first two focus groups was used to develop the Heart Healthy U marketing content. The content was developed with the assistance of a marketing specialist. Specifically, the marketing specialist reviewed the content for verbiage and graphic suitability. After all of the marketing content was developed, a third focus group discussion was conducted to review the Heart Healthy U marketing content. The participants in this focus group provided valuable feedback about the verbiage (word choice), graphic images, and the suggestions for the most appropriate channels to disseminate the materials. For example, students recommended specific locations for the materials such as putting posters about PA near elevators to encourage stair use, lawn signs near sidewalks and campus pathways to educate about the fruit and vegetable guidelines and promoting PA and healthy eating in the dormitories. Students also indicated that information about selecting healthy food options should be placed in the dining hall and on social media. Overall, they suggested that materials that

highlighted healthy eating tips on-the-go, shopping for healthy food on a budget and quick exercise tips should be placed on social media and in the dormitories. After the focus group was completed, the participants' feedback was used to refine and finalize the Heart Healthy U marketing materials. The two investigators worked closely with the Office of Students Affairs to gain approval for the placement of the campaign materials on each campus.

### **Discussion**

This study engaged students at an HBCU in a guided discussion to identify barriers, facilitators, appropriate activities, and communication channels to promote heart healthy behaviors. Because literature on how to promote heart healthy behaviors among Black young adults are scarce,<sup>18</sup> the study findings can be used to inform the development of a multimedia campaign to improve their heart health.

### **Barriers to Engaging in Physical Activity**

Barriers to engaging in PA reported by the HBCU students included lack of time, attitudes, lack of motivation due to fatigue or distance, and body shaming at the gym. These findings were consistent with other studies reporting barriers to engaging in PA. For example, Anjali Sabharwal found that time constraint was a barrier for engaging in PA by college students.<sup>19</sup> In this study, students indicated that their busy and erratic schedules prevented engagement in PA. Findings from the current study also aligns with Poobalan and colleagues research regarding attitudes towards PA among 18-25 years old individuals.<sup>20</sup> They found that positive attitudes toward PA were strong predictors of being physically active. Similarly, students in this study reported that their own mindset played a role in engaging in PA. Thus, promotions that focus on motivating students to engage in PA represent an appropriate marketing strategy. As well, barriers to engagement in PA due to lack of motivation as a result of fatigue or distance from an exercise facility parallels findings from Ebben and Brudzynski; Samara *et al.*,<sup>21,22</sup> In this study, students indicated that due to fatigue from work and attending classes/completing course work, low energy remained for PA. Moreover, distance was deemed a barrier to PA, specifically, the thought of walking to a gym contributed to the lack of motivation to engage in PA. In addition, female students indicated concern of how their physical appearance may be viewed by others as a deterrent to using the

gym for PA. Perception of body image may have a negative or positive impact on the motivation to exercise, especially among women.<sup>23,24</sup> Therefore, messages that promote body positivity should be included in PA promotional campaign materials that target female HBCU students.

### **Barriers to Healthy Eating**

In regard to barriers to HE, this study found that for HBCUs students, lack of time, lack of confidence with cooking skills, fresh fruits and vegetable shelf life, limited of HE options on campus, cost, vending machine options and transportation to grocery stores were barriers. Many previous studies had reported that among college students, HE was inhibited by the aforementioned barriers.<sup>25-29</sup> Further, the majority of college campuses have been labeled as having obesogenic environments,<sup>29</sup> thus a lack of HE options on campus is not surprising. Relatedly, another finding is the lack of healthy options in vending machines. Some government agencies have pushed for educational institutions to increase availability of healthy foods found in vending machines<sup>30</sup> Moreover, transportation was a key component of food access.<sup>31</sup> In this study, students reported that a lack of transportation was a deterrent to healthy eating, this finding was in alignment with the concept of food access serving as a barrier to healthy eating.<sup>27</sup> All in all, the current findings and those of previous studies highlight the barriers that can deter the consumption of healthy foods. In promoting healthy eating behaviors among HBCU students, the barriers aforementioned should be taken into consideration as they may play an important role in motivating students to eat healthy.

### **Facilitators to Engaging in Physical Activity**

In relation to what can facilitate engagement in PA among HBCU students, participants indicated that knowledge of family health history, Instagram influencers, peer and personal trainers, as well as the provision of activity classes were facilitators to PA. According to CDC, knowledge of family health history is important in protecting health.<sup>32</sup> Peer and personal trainers and PA classes were highlighted as facilitators by students for PA engagement. Although personal or peer trainers have been utilized in exercise facilities to help individuals build competence and self-efficacy with exercise techniques,<sup>33</sup> it has not yet been explored in research as a technique to encourage PA among HBCU college students.

Further, using social media influencers as part of health promotion is gaining popularity due to the fact it can enhance audience engagement and campaign reach<sup>34</sup> especially among young adults, who spend an extensive amount of their time on social media. Therefore, it is worthwhile to consider influencers as a promotional strategy in multimedia campaigns targeting college students.

### **Facilitators to Healthy Eating**

For healthy eating, focus group participants indicated that having access to a dietitian, a farmers market on campus, and cooking classes would facilitate healthy eating. Previous research indicate that a dietitian can help individuals make better decisions about food.<sup>35</sup> Bernardo *et al.*,<sup>36</sup> and Barr, *et al.*,<sup>37</sup> have found that cooking classes do facilitate healthy eating among college students. A farmers market is a commonly reported technique to improve food environments by making it easier to access healthy local foods.<sup>38,39</sup> Furthermore, previous studies indicate that farmers markets increase consumption of fruits and vegetable consumptions.<sup>38,39</sup> Hence, incorporating food environmental changes, such as a farmers' market, may facilitate HE behaviors.

### **Activities and Channels to Promote Engaging in Physical Activity and Healthy Eating Behaviors**

The focus group participants indicated that activities that would motivate engagement in PA include providing factual information about PA, contingent rewards—challenges posted on social media, incentives, information about the benefits of PA and cues to encourage PA engagement. Teaching students how to prepare healthy meals, adding more places that serve healthy options, replacing unhealthy vending machines with ones that offer healthier options, and creating campus events that promote healthy behaviors were recommended as activities and actions that would enhance the likelihood of healthy eating. Additionally, the channels recommended for promoting and disseminating heart healthy messages included social media, print (e.g., posters, lawn signs, and banners) online advertising within school networks such as a university email system. Social media is a commonly used channel to interact with college

students.<sup>34</sup> Previous studies have demonstrated that college students can be engaged via multiple social media platforms.<sup>40, 41</sup> Furthermore, print has been used by to promote healthy behaviors.<sup>42,43</sup> However, the use of electronic advertisement on university network systems is a new finding.

### **Limitation of the Study**

Recruitment of participants for the focus groups was limited to one institution in the southern region of the US. Thus, the findings cannot be representative of other HBCU student populations or geographic areas. Further, there are also limits inherent in conducting focus groups, which can entail complicated social dynamics, leading to social desirability bias. However, efforts were made to limit the possibility of social desirability by creating an environment where the participants could express themselves fully without judgment or censure.

### **Conclusions**

This study identified PA and HE barriers and facilitators, relevant activities, and communication channels for promoting heart-healthy behaviors among Black young adults. The findings also indicated content to include in a multimedia campaign aimed at encouraging heart healthy behaviors among a student college population that is more likely to enter college with diabetes, hypertension, and obesity, all of which are risk factors for cardiovascular disease.

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### **Conflict of Interest**

The author(s) declares no conflict of interest.

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