Factors Influencing the Food Choices and Eating Patterns of Marginally Housed and Homeless African American HIV-Positive female Substance Abusers

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ABSTRACT

The purpose of this study was to identify and describe the factors influencing the food choices and eating patterns of a group of marginally housed and homeless African American HIV-positive substance abusing women (n=28). Data was collected using 24-hour dietary recalls and a semi-structured interview guide. The homeless women were more likely to be food insecure, and experience greater nutritional deficits as a result of several barriers including lack of public assistance, social support, kitchen facilities, and difficulty accessing food service facilities. This study provides the foundation necessary to create a preliminary nutrition intervention plan serving HIV-positive substance abusing women.

INTRODUCTION

The synergistic effects of substance abuse and HIV on an individual's nutritional status are well known. Nutritional deficits resulting from metabolic complications in HIV and substance abuse can mitigate the effectiveness of antiretroviral medications, and conversely, medication side effects can further diminish food intake exacerbating an already compromised immune system (Isaki & Kresina, 2000). Nutrition insecurity, lower levels of food intake, wasting, and lower plasma levels of micronutrients are known to occur more often in HIV-positive women than in men (ADA, 2004). Poor African American female street drug and alcohol users with HIV may be especially vulnerable not only due to unique biological factors that affect a women's health but also because of health problems associated with health care disparities, and developmental histories marked by poor nutrition and disease within economically disadvantaged communities (Zule et al., 2002).

The immediate environment, community or neighborhood these individuals live in may play a key role in influencing their health and nutrition status. African Americans for instance, are more likely to live in neighborhoods that are characterized by disparities in basic food resources, with fewer supermarkets and fewer high-quality food options, as well as a disproportionate number of fast food restaurants (Glanz et al., 2007). Compared to their Caucasian counterparts, African American women reported more environmental obstacles to maintaining optimum health including: inadequacies in access to information sources emphasizing risk awareness and knowledge; limited transportation to health care; and lack of childcare (Hargreaves, Schlundt & Buchowski, 2002). Lack of culturally relevant community-based education programs may mediate the effects of these factors. For example, despite the growing number of African American women infected with HIV/AIDS each year, most harm reduction models are based on men, and do not target the physical, health, and nutritional needs of these displaced women (Public Advocate for the City of NY Reports, 2003).

African Americans, like other ethnic groups, are also often reluctant to change their dietary intakes as prevention against chronic diseases when they see such behaviors as giving up cultural food traditions they share with family and friends. Many foods typical of 'soul food' cuisine have high protein content, especially when combined with grains. But some traditional food preparation techniques may mitigate the benefits of high nutrient content of traditional foods (Hargreaves, et al., 2002). Sociocultural norms based on food myths, inaccurate

information, and misconceptions regarding food, nutrition, and health can jeopardize one's nutritional health as well. In one study involving HIV-positive African American women, investigators found that 33% believed a low-fat diet was not helpful to them (James, 2004). These data suggest that even though nutrition counseling may be available, knowledge, attitudes, and underlying beliefs with respect to food, nutrition, and health may pose barriers to contemplating and changing diet and food behaviors.

Supportive social networks comprised of strong social ties with family and friends are thought to help cushion some of the negative effects of exposure to social and economic adversity among HIV-positive women (Moore, Vosvick, & Amey, 2006). Innovative health promotion interventions based on socio-ecological models incorporating individual, interpersonal and community network influences have proven to be successful in reducing health disparities among African American populations with diabetes and cancer (Robinson, 2008; Campbell & Quintiliani, 2006). These models assume that while individuals can develop the requisite willingness to sustain strict treatment requirements in a challenging context, they are more likely to do so within supportive family and community networks. However, little is known about how the size and diversity of social networks influence the nutritional health of HIV positive African American women with drug and alcohol dependency.

Food insecurity, inadequate income, and severe nutritional deficits are priority areas for HIV-positive and substance abusing populations (ADA, 2004). These issues become even bigger concerns for homeless and displaced substance abusers persons infected with HIV (Drug Policy Alliance Network, 2006). Approximately 50% of the homeless population is estimated to be individuals who abuse drugs and alcohol (Rogers & Ruefli, 2004). Homelessness among substance abusers is associated with poor access to, and utilization of health care services (Smith & Christakis, 2008). Lack of a permanent address, valid identification, and kitchen facilities has been shown to hinder their ability to prepare foods obtained through food stamps (Whetten et al., 2006). Although many of these individuals depend on public assistance, they often lack the knowledge and skills necessary for negotiating the complicated social service structures in order to obtain entitlements and services for which they are eligible (Smart, 2005). These findings suggest important nutritional and clinical implications for low-income and African American housed and homeless women with HIV and substance abuse problems.

Unfortunately, information on the different ways in which these women procure food, and meet their nutritional needs is sparse. Experts warn that without a thorough understanding of the unique contextual influences on health behaviors and outcomes, treatment programs aimed at addressing health disparities are not likely to be effective (Prado et al., 2002). This study was therefore conducted to obtain preliminary data on the factors influencing the food choices and eating patterns of marginally housed and homeless African American HIV-positive female substance abusers. By focusing on the day-to-day food-related experiences of the two groups of women, and by giving voice to their perspectives, we hoped to generate empirically grounded data that acknowledges the social environment and community system in which they each live.

METHODS

Framework and Concepts

We used the PRECEDE [Predisposing, Reinforcing, and Enabling Constructs in Educational Diagnosis and Evaluation] component of the PRECEDE-PROCEED model as a theoretical framework to guide the qualitative interview process. According to PRECEDE, the factors influencing behaviors of a group must be identified before a culturally sensitive intervention is designed (Green & Kreuter, 1991). Predisposing factors such as attitudes, beliefs, and values provide the rationale or motivation for a behavior. Reinforcing factors include variables such as social support, which provide a continuing reward or incentive for the behavior, and thus contribute to its persistence or repetition. Enabling factors allow a motivation to be realized, and include the skills and resources that facilitate change. This research drew upon PRECEDE to provide empirically grounded data on the environmental and sociocultural determinants of health food selection and behaviors which must be considered if nutritional interventions are to be effective for underserved urban poor African American female substance abusers with HIV. Thus, with an emphasis on using the PRECEDE constructs to interpret food behaviors, this research helped shift the focus from merely measuring dietary "outcomes" to explaining "how" the participants arrived at the choices they made.

Sampling

All the participants of this study were recruited through agency referral from three NYC-based harm reduction centers (Housing Works, Inc., Lower East Side Harm Reduction Center [LESHRC], and Bronx AIDS Services), as well as through street outreach conducted by indigenous community outreach workers. Recruitment announcements were distributed by hand to passers by. Using a purposive sampling frame, women who fit the following criteria were recruited: English speaking; African American; active drug users; positive for HIV (self-reported); not in drug or HIV treatment at the time of the study; not pregnant or lactating; lived in the U.S. for at least 5 years, and between the ages of 19 and 55 years.

Participation required two 45-minute face-to-face interviews conducted on two separate but non-consecutive days. Therefore, at the time of recruitment, potential subjects were given contact cards with two appointment times spread over 2 weeks. As their appointment times approached, the women were contacted by the recruiter, and given reminder notices for their visits. Testing was conducted in the private offices of Fordham University. When possible, testing appointments with participants recruited through agency referral were scheduled during clinic hours to facilitate enrollment and attendance. Informed consent was obtained from all the women, and everyone was compensated $25 after each of the two visits.

Data Collection

Data was collected from each participant by means of a brief demographic questionnaire, two 24-hour dietary recalls, a food frequency questionnaire, and a semi-structured interview guide. The demographic questionnaire included questions on details of living arrangements, type and frequency of substance used in the past 30 days, and access to food stamps and other welfare entitlements. In order to obtain a picture of usual and typical food behavior, we collected the dietary recalls and food frequency data in two distinct 24-hour time periods.

During the dietary recalls, each participant was asked to list the foods and beverages she consumed for breakfast, lunch, dinner, and snacks in the past 24 hours. An assortment of measuring cups, spoons, glasses, and pictorial representations of plates and bowls of various sizes served as guides to help record the usual amount consumed for each food item.

A semi-structured interview guide based on the constructs of PRECEDE was developed for the qualitative interviews. The interview guide elicited participant perspectives on their dietary beliefs, preferences and behaviors as they were linked to identification with African

American traditions, diagnosis of HIV, drug use culture, and housing status, as well as how their neighborhood, community, family and friends enabled their healthy or unhealthy food behaviors. Each interview lasted an average of 45 minutes, and was tape-recorded with the participant's permission.

Analysis

Since our primary objective was to describe the factors influencing the housed and homeless women's food behaviors, nutrient intakes and portion size data resulting from the dietary recall and food frequency questionnaire analyses have not been presented in this paper. However, in order to provide a context for the narrative data, the two dietary recalls for each participant were entered into the Nutrition Data System for Research software (NDS, Nutrition Coordinating Center, Minneapolis, MN), and averaged to produce a summary record of the proportion of individuals in each group reporting specific food choices and eating habits (Table 2). These included eating occasions, fruit and vegetable consumption, beverage consumption, snack and fast food consumption, and food source.

The qualitative interviews were transcribed, and re-read several times as soon as possible in order to preserve the full meaning of the participants' words. The transcripts were coded using the analysis software, Atlas-Ti, version 5.2. Coding allowed us to retrieve, organize, and ultimately classify segments of text for developing descriptive categories. Thematic analysis was used to search and identify common trends, themes, and pattern threads throughout the data. Themes generated from the participants' responses to the interview questions were reorganized and structured under the three PRECEDE constructs with the aim of identifying the factors influencing their food choices and eating patterns.

RESULTS

Participant Characteristics

30 African American women (19 – 55 years) initially agreed to participate in the study. However, since two participants failed to return for the 2nd day of testing, the final sample consisted of 28 women. Based on previously established criteria (Eisenhauer, 2001), women who reported having spent a majority of their nights in the past year in an apartment, group home,

supportive or temporary housing or treatment facility were considered marginally housed (n=13). In contrast, women who had spent one or more nights in the past year sleeping on the streets or in a shelter were considered homeless (n=15). The demographic profile of the sample is provided in Table 1.

While more than 50% of the housed women were married or living with a partner, and reported being employed full time, a majority of the homeless women were single (93.3%), and none of them were employed. A majority of the housed women group also reported receiving food stamps and benefits (84.6%), and almost half had some form of health insurance (46.1%). In contrast, none of the homeless we spoke to reported receiving food stamp benefits or having health insurance. A pattern of multiple drug use was found in the entire sample with alcohol, crack and cocaine being the drugs of choice, and used much more frequently than the other drugs. Intravenous drug use however, appeared to be more prevalent in the homeless group (86.6%) compared to the housed group (15.3%).

Food Choices and Eating Patterns

As Table 2 indicates, the food choices and eating patterns appeared to be limited and sporadic in both groups. However, compared to the housed women, the proportion of homeless women in nearly all the categories was also higher. For example, very few women ate breakfast (15.3% housed, 6.6% homeless), lunch (46.6% housed, 23% homeless) or dinner (39.9% housed, 23% homeless). It appeared that snack and fast food consumption patterns were high for both groups. Nearly all the housed (92.3%), and 100% of the homeless women ate high-fat sweet snacks. The proportions that ate high fat salty snack and fast foods were also high in both groups.

The proportion of women who consumed fruits (23% housed, 13% homeless) and vegetables (30.7 housed, 6.6% homeless) was low, but nearly everyone drank soft drinks (92.3% housed, 100% homeless), and fruit flavored drinks (92.3% housed, 93.3% homeless). None of the homeless women drank any milk or fruit juice.

The food procurement patterns demonstrated some important trends as well. For example, a majority of the housed women had procured food from convenience stores or delis (92.3%), and fast food restaurants (76.9%). Some of them had also eaten at a community center (46.6%). A few purchased food from a grocery store or supermarket (15.3%). Most homeless women on the other hand, had obtained their food from a dumpster (93.3%), soup kitchen

(93.3%), shelter (86.6%), or a community center (86.6%). None of them reported purchasing food from a grocery store or supermarket.

Factors Influencing Food Choices and Eating Patterns

The results from the semi-structured interview data analysis generated several themes which are grouped under the predisposing, reinforcing, and enabling constructs of the PRECEDE component.

A. PREDISPOSING FACTORS

This construct included themes that reflected participants' underlying motivations for their reported food choices and eating patterns. These included their knowledge, attitudes, and beliefs regarding food, nutrition, and health, and the cultural norms and affiliations they held with respect to their African American heritage, gender, substance abuse, HIV, and housing status.

Theme: Diet-Disease Misconceptions

The women expressed many diet- and disease-related misconceptions. For example, some women had a fatalistic attitude, and were resigned to dying early as a result of the complications brought on by their substance abuse and HIV. In calculating the benefits versus risks of making and sustaining the changes needed to achieve a healthy diet, they felt that it was not worth the stress, monetary requirements, or the inconvenience of having to make lifestyle adjustments. Instead, their priority was solely focused on treating their HIV-related symptoms:

"Why worry about food when you are going to die of drug addiction or HIV anyway? Treating the symptoms I have from this disease is more important for people like me, HIV positive people, than food."

Some women put a low priority on the ability of a nutritious diet to substantially affect their health – at least when compared to the potency they assigned to medications. They also believed eating a diet rich in raw and uncooked foods such as fresh fruits and vegetables would result in a

compromised immune system, and encourage new HIV-related complications. They were subsequently less motivated to make improvements in their dietary habits:

"They (health professions or agency staff) tell me that I should not eat this or that but I don't think it really matters what I eat because I don't think eating a diet with fruits, veggies, and all that is going to reduce my viral load. Medications do that, not food. So it doesn't matter what type of food it is just as long as it is food."

Most women acknowledged to having drug-induced food cravings for sweet and carbohydrate-laden foods. Satisfying these drug-induced cravings was more important than choosing foods for their nutrient content alone. Interestingly enough, they also strongly believed that these cravings were a result of specific nutrient deficiencies, and reported 'fixing' them by consuming a large amount of carbohydrate-rich foods, and avoiding other food groups:

"Sometimes I have to have something, like yesterday, I had to have some cookies and orange soda. So that's what I ate all day. Then you can't worry about whether it is right or wrong kind of food because your body is telling you that it is missing sugar, it is missing carbs. Then I just eat only carbs, nothing but carbs. You gotta fix it."

There were specific rules regarding eating and avoiding specific foods, and during particular times of the day. For example:

"Meats aggravate HIV, so I don't eat meats anymore."

"I don't eat fruits after sunset because it causes indigestion for people with HIV."

"I don't drink skim milk because I feel that it doesn't have any nutrients to offer for someone like me who has HIV."

"I don't eat raw foods like salads anymore because I don't think it's good for someone with HIV to eat raw foods. It can raise your viral loads."

Some women were distrustful of food technology and believed that genetic engineering was responsible for many of their health problems including AIDS:

"They put a lot of hormones in the meat and use a lot of pesticides and that's what's giving us all this disease and cancer all that crap."

Similar such misconceptions were revealed during the interviews with the homeless sample. As indicated in Table 2, nearly all the homeless women reported eating out of dumpsters routinely. They reported various reasons for using dumpsters as their primary food source:

"I get food from dumpsters because otherwise I'll go hungry. I mean I don't really have an address so I can't really get food stamps or anything. So for me this is the main source."

"The soup kitchens are not open all night long. By the time I get there sometimes it is closed. So then I just try to eat what I find."

Most of these individuals appeared to be somewhat aware of food safety concerns, and mentioned several strategies they used to ensure that the food they procured was safe to eat. For instance, they reported only choosing that were either still wrapped or boxed or separated from the rest of the trash as they believed that this helped avoid cross-contamination from pathogens or physical hazards such as cleaning chemicals. Some believed that freezing cold winters had a preserving effect on food, and believed that food retrieved during colder months was safer than food retrieved in the summers:

"It is a risk I know. But I won't stuff like chicken, meat and all that. Just like vegetables, or restaurant food boxes, or bread, just stuff like that."

"I won't touch anything that is not wrapped or is not in a box. Because then I know that I can see the expiration date and it won't be spoiled."

"In the winter, it is better because then the food has been like in an icebox. I try not to eat too much out of dumpsters when it is hot though because food gets spoiled faster with heat."

For some, severe hunger outweighed food safety concerns. Others displayed a lack of knowledge of food safety, disease transmission through germs, and omitted basic food hygiene rules. They did not believe that eating spoiled or rotten food was harmful to their health, and had a high tolerance for imperfections that would signal to many that a food item might be tainted and its consumption dangerous to one's health. Washing the food, and a careful observation for any outward signs of spoilage were their benchmarks for ensuring quality:

"Yeah I eat out of dumpsters quite a bit but as long as it doesn't smell, I feel it is safe. I eat it. When you are hungry, you can't worry about food being safe. You gotta eat!"

"I just wash it, or wipe it and then eat it. I don't think I'll get sick from eating old food because if it doesn't smell bad or have maggots on it, it should be okay I feel."

In general, recently thrown out food was perceived to be safe, especially if they had seen it being thrown out:

"If it has just been thrown out, then yeah! Why would you let it go to waste? That's fine."

When asked if they had ever gotten sick from eating dumpster food, many of them answered yes. Comments included:

"I have gotten sick many times, but I can't worry about it because otherwise I'll go hungry."

Most participants described that they initially considered eating out of trash as unacceptable behavior but that life-altering circumstances led to accepting them over time:

"I mean I didn't used to do this you know? If you had asked me 10 years ago, I would have been shocked that you would even ask me such a thing. But now, I am an addict, don't have a place, how am I going to survive? I gotta do this."

Even those who felt that the behavior was unacceptable supported it as an acceptable behavior to avoid going hungry, and for survival:

"Typically I would say no but then when you're hungry and trying to survive, you gotta do what you gotta do even if that means eating out of trash."

Comments made by some homeless women also revealed that it was not uncommon for them to go for entire days without eating. However, they did not think that skipping meals was harmful to their health and nutritional status:

"I don't eat everyday. The last time I ate was about 3 days ago. But I don't worry because since I am not hungry, my body must be telling me that it is okay."

<u>Theme: Cultural Norms and Affiliation</u>

Cooking and eating traditional soul foods was an important way for some to stay connected with their African American heritage:

"I feel that as a black woman, it is important for me to not give up my black roots. By eating them, I am letting the next generation know that this is our food. So whenever I can, I try to cook or eat our traditional African American dishes like collard greens, chitlins, etc."

Eating traditional foods was expressly associated with feelings of comfort and familiarity with their childhood and family backgrounds:

"I grew up with my grandmother. She raised us. So I always remember her making mac and cheese for us. It is what I still like to eat when I think of her."

Food also played an important role in social gatherings with their friends and family members:

"When me and my family we get together for holidays we make a lot of food…African American food….it is a way for us to express our cultural background."

Most expressed resentment at giving up their current food habits because to them, 'eating healthfully' meant giving up part of their cultural heritage or trying to conform to the dominant culture:

"I eat everything even though they say the way we black folks eat, fried chicken and all is not healthy, too much fat, cholesterol, and we should be eating grilled chicken but that is not soul food! You can't make me give up my own culture…I'm not going to eat the way while folks do…you know?"

Many women expressed concerns about losing too much weight. Adhering to the cultural ideals of body image might have also influenced some of their food choices and eating patterns. For example:

"Because of the disease, I have lost a lot of weight. Black women who look too thin don't look nice. In our culture, it is okay for black women to be chunky. So I eat junk food all the time now because I want to gain back the weight I lost."

Certain food behaviors were also closely related to an individual's perceived affiliation to her status as an HIV-positive person, a substance user, or a homeless person "living a rough life on the streets." For example:

"With people like us….this is a certain lifestyle…. so we're all just trying to find where we can find the dope. I mean nobody is asking did ya eat. Instead you ask if you have some. This is how it is with us. This is the way I think you know?"

"Some of us when we find out we have HIV, then we try to encourage each other to stay positive, eat something…because it's all you can do. It's about finding a common ground and sharing what you know is right to eat, and can help."

B. REINFORCING FACTORS

The themes under this category reflected the level of social support, and personal resources that were available to the women at the time of the interviews. The factors here reinforced their existing poor food choices or encouraged their continuance, thereby serving as barriers to healthy food habits.

Theme: Family and Peer Support

The housed women described their partners and children as being unsupportive of making improvements to their dietary behaviors:

"I live with my boyfriend and my three kids, so whatever they want to eat, I eat. Even if I want to make some healthy changes around my house, my partner and kids are very picky and if they don't like something it won't fly."

Friends, and extended family members on the other hand, especially mothers and sisters, were described as being supportive of dietary changes:

"My mother and sisters keep telling me to eat more fruits and vegetables ever since I have HIV. So I try to eat more of that now."

However, this was not always the case. Some women described their extended family members as being unsupportive as well:

"Every two or three days, my sister comes to see me. She'll help me with the meds…but if I make something healthy she won't touch it. But I need her help with stuff so when she's over, I just have to go with what everyone will eat even though I am the one who is sick."

Statements made by the homeless women revealed a confluence of especially negative factors which were absence of social support from a male partner, family, friends, or peers. Nearly all of the homeless women reported that they were no longer in touch with their extended family members, and did not have a steady boyfriend, partner or friend at the time of the interview. The lack of social support may have therefore, reinforced the negative food behaviors in this group:

"I'm homeless, don't really have nowhere to go… no one I can rely on. I gotta be on my own, and pretty much it is up to me whether or not I find something to eat. So a lot of times, since no one really cares whether I live or die, I just don't eat. I go days without eating."

A strong sense of community with friends and family was desired, and described as being critical to better health by most:

"It's not like I am trying to avoid people, I just don't have people wanting to be in touch with me anymore because I am homeless. It is just the way it is, but I think if people like us had the support we needed from friends, family, and even health care workers, we would eat much better, take better care of ourselves."

Theme: Personal Resources

We asked participants to identify any personal resources that may have influenced their food choices and eating patterns. All the housed women we spoke to reported receiving food stamps or financial assistance from welfare or disability assistance. While these sources covered their basic food needs, they were not nearly enough to cover the high cost of fresh food, especially fruits, vegetables, and lean meats which may have prevented them from eating healthfully:

"A box of cereal costs almost $4. But if I have to buy some vegetables to make a salad or some stir-fry, it would cost me twice as much, and won't last long. So I buy foods that I can afford which is mostly packaged foods."

Time and convenience also played an important role in influencing their food choices and eating patterns. Efforts to procure drugs took time away from buying and preparing fresh meals. Therefore, fast foods and frozen foods were less time consuming and more convenient alternatives:

"I just eat what I can quickly lay my hands on. If I have to make something healthy, I have to take the bus and go to the store and all that. I am usually running around trying to get my next hit so don't have time to cook and all that. Once in a while I do, but mostly I just get what I can get quickly at the bodega across the street, and I can just stick it in the microwave and eat, then that is going to be lunch."

In contrast to the housed group, none of the homeless women received food stamps or disability assistance. Therefore, a majority of them relied on eating free meals offered in soup kitchens and shelters. They reported eating from dumpsters only when they were hungry or there were no free food sources available at that time of the day or in the area:

"I don't have a place to live so it's hard for me to get food stamps or disability…I also don't have no ID. So I will usually just eat one meal a day at the soup kitchen. Sometimes I go to the shelter. It's free and I can eat there for free. So I just eat at these places."

Interestingly, on the issue of whether and how personal time and money affected the food choices of homeless individuals, a woman remarked that among homeless street drug users, these factors would not necessarily translate into healthier food choices because they must often decide between satisfying the need for food or the urge for drugs:

"When you have only so much money, your body really needs the drugs to be normal, so you see them as more important than food."

C. ENABLING FACTORS

The theme grouped under this construct reflected the neighborhood resources that were available to participants. These resources may have played an important role in facilitating changes in their food choices and behaviors.

Theme: Neighborhood Amenities and Educational Programs

Both groups of women expressed frustration at the lack of resources in their immediate neighborhoods. They reported that healthier foods such as lean meats, fish, fresh fruits and vegetables were not always available at their local bodegas and stores. Not having larger grocery stores and supermarkets in their immediate neighborhoods left them at the mercy of small convenience stores with limited inventories:

"I may know what I should eat but I only gonna eat what I find where I live, you know?"

Lack of easier access and transportation means to grocery stores were also reported as barriers to healthy food choices by the housed women:

"It takes too long to get to one of those big supermarkets. I have to get on the train, the bus, it's too much. I feel that even if I want to, I can't. This is why a lot of us settle for what is available right here in our neighborhoods and that aint the good and healthy stuff."

Since many homeless women depended on soup kitchens and shelters as one of their primary food sources, they mentioned the inconvenience of the limited hours of operation at these facilities. Several participants reported times when they were sick and could not go, or get to the meal site on time for a meal due to the distance:

"And then like the other day, I was out all day, just looking for drugs, and then by the time I got here, their meal hours are over. So I gotta be here at a certain time if I gotta eat."

"Sometimes when I've been sick I couldn't go, so then I had to get something from the trash. I wish they had a system where they can maybe have it somewhere closer in our neighborhood."

Some women said they try to overeat when they get to the facilities because they were unsure of where their next meal would be coming from:

"I know that a lot of us, we can't get to a shelter every day, so when we go, we tend to eat a lot. It makes my stomach hurt sometimes but this way at least you don't go hungry for too long."

They made several comments on the quantity and quality of meals served, and most said that they would like to see healthier options:

"It's okay it's food you know….I mean it could be better like they give us a hot meal, some soup, bread, meat, but not much fruits and vegetables. This stuff is also hard to get from dumpsters because they get rotten easily and also damaged."

Both the housed and homeless women remarked that they would eat healthfully if they had the knowledge and information to choose nutritious foods. They believed that they lacked the information to consistently make healthful food choices, and expressed an interest in learning about various topics related to food, nutrition, and health in HIV and substance abuse:

"I am telling you, if I knew that a drug addict with HIV should eat this much, what to eat, when to eat, how to prepare food, how to buy the most food with limited cash, etc. I would. The problem is that they don't teach us that stuff."

Most reported relying on television news programs, talk shows, and ethnically specific magazines like Essence and Ebony for nutrition information. Physicians were also considered reliable sources of information. However, most women remarked that they rarely received any nutrition-related information from their physicians and primary care providers. This was especially true of the homeless group:

"I don't see a doctor, and even the few times that I have, they have never told me about what I should eat or not eat. Mostly just stuff about testing this or that, viral load, medication….never what to eat or what not to eat. So then how am I supposed to know what to eat?"

The educational materials and messages presented at the clinics and hospitals were considered too general and not culturally relevant:

"My doctor told me that I should eat this, that but you know it is all such general information. I mean I don't eat the same things that Mary over there, (a white woman at the receptionist's desk) eats. I like soul food, not sushi you know?"

Nutritional pamphlets handed out by the health care providers in soup kitchens and other facilities were dismissed because of their perceived racial bias. They pointedly described the materials as "ignoring black culture", and perceived not one but two negative messages in these materials. The first is that they were considered irrelevant, and the second is that the creators of this material were described as being dramatically out of touch with the realities of their lives:

"I feel that the education programs are not very good…because they don't teach us how to prepare nutritious food that we black folks eat. The stuff they give us to look at don't even have people that look like us. They have smiling happy faces on them, and we are not that."

Several participants commented that they would be more inclined to attend education programs at neighborhood churches and community centers than at health departments or hospitals because of their familiarity, and proximity:

"It would be helpful to have somebody talk to us about nutrition and all that when we go to the soup kitchens and shelters to eat…..encourage drug addicts and HIV positive women like me to eat."

DISCUSSION

The dietary recall data showed all participants to have irregular and infrequent meal patterns with extremely limited food choices. Prior research has shown the diets of low-income drug users to be characterized by a high intake of refined carbohydrates, particularly soft drinks (Smit & Tang, 2000). Compared to male drug users, female drug users consumed significantly fewer meals, and more likely to report statistically significant lower frequency of consumption of vegetables, and a higher consumption of sweets/desserts (Smart, 2005).

Compared to the housed women, the proportion of homeless women was higher in nearly every category including eating occasions, fruit and vegetable consumption, snack consumption, and soda and fruit-flavored beverage consumption indicating that they may be consuming less than recommended amounts of crucial vitamins and minerals. Many emergency food system clients had inadequate intakes of several nutrients, and most had inadequate servings of fruits and vegetables, with lower average intakes of these foods than the general population (Cichoki, 2007).

Of note, a majority of the homeless women in the present study reported obtaining their food not from convenient food store shelves but from outdoor waste receptacles placing them at an even greater risk for parasitic infections, undernourishment, and micronutrient deficiencies. These trends are consistent with previous research. Studies examining the relationship between housing status, substance abuse, and public entitlements have found homeless substance abusers to rely on begging, theft, ready-cooked meals, fast-food restaurants, and garbage cans as primary food sources as a result of little or no access to financial and public assistance (Beattie & Longabaugh, 1999).

The semi-structured qualitative interviews generated several themes. Many diet-related misconceptions were expressed leading to avoidance of certain foods (fruits and vegetables), and consumption of others with a greater frequency (carbohydrate-rich foods). The dietary recall data appeared to corroborate these reports. In addition, a desire to assimilate into a particular cultural or social group translated into food preparation and consumption practices that may have been harmful to their health. Most homeless women believed that it was acceptable and safe to eat from dumpsters. Their daily survival needs took a priority over making healthy food choices and maintaining adequate nutrition. These misconceptions indicated that the women's belief systems were supported by a lack of adequate nutrition-related knowledge, which ultimately led to poor

food choices and eating patterns. The findings of this study are in agreement with previous research that have shown cultural attitudes and beliefs, and lack of adequate knowledge to make informed decisions about health acting as barriers to dietary compliance and healthy eating practices (James, 2004).

Statements made by the homeless women revealed a greater sense of social isolation, stigma, and marginalization. The lack of social support experienced by these women may have acted as barriers to improving their dietary habits resulting in poor food choices, erratic eating patterns, and inappropriate food sources. These results lend support to the suggestion that the decreased size and diversity of social networks may act as limiting factors to improved health (Robinson, 2008)). Social networks comprising of individuals whose behavioral norms do not support HIV/AIDS substance abuse reducing behaviors, have been found to exacerbate alcohol and drug dependency, and mitigate efforts to reduce overall HIV/AIDS transmission rates among some groups (Moore, Vosvick & Arney, 2006).

The high cost of healthy food, low cost and easy availability of fast and convenient foods, and lack of financial opportunity were also important considerations. The affordability of food has been documented as a barrier to improving people's diets. When total income is considered, economically disadvantaged people such as low-income drug users are known to spend less money on food, but a larger percentage of their total income is also spent on food (DHHS, 2008). Both the housed and homeless women felt that they would not be able to sustain healthier food habits in the absence of quality education programs, and larger grocery stores offering a wide variety of healthy foods in their immediate neighborhoods. The women also did not consider the existing educational materials and messages targeted at them to be culturally relevant. These neighborhood differences have accounted for the diet-related health disparities among African Americans in previous studies as well (Miguez et al., 2003).

The data collected through this study provides the foundation necessary to create a preliminary nutrition intervention plan that could be incorporated into drug treatment and other health and social programs serving HIV-positive substance abusing women. Participants' statements underscore the importance of actively engaging community participants in the needs-assessment process and incorporating their input into the development of and dissemination of a culturally tailored nutrition and health promotion curriculum.

Implications

The results of this study show that dietary recommendations for housed and homeless women therefore, may not be as straightforward. The nutrition priorities for the two groups may vary. Homeless African American HIV-positive substance abusers are more likely to be food insecure, and experience greater nutritional deficits as a result of several barriers including lack of public assistance, kitchen facilities, and difficulty accessing food service facilities. This group has multifaceted needs that must be taken into consideration when developing case management protocols. Studies have shown that protocols that promote sobriety, encourage economic independence, provide a stable residence during an extended recovery period, and provide social support in the form of peer role models can improve health outcomes (Glanz et al., 2007).

Because of the value attributed to traditional African American foods by the entire sample, program planners must understand that it is important to stress the positive aspects of traditional African and African American diets, even while stressing the need for modifying or reducing certain elements of the diet. Nutrition educators also need to consider the information these clients need to make informed food choices as well as how the information will be delivered and received.

Public entitlements such as soup kitchens, shelters, and community centers frequently report nutrition assessment and treatment. Participants' statements however, did not relate to these outcomes. Nutrition staff that is more vigilant to low intake, and service facilities that attend to resident participants' needs, and attempt to enhance the nutrition education experience may improve the participants' nutritional status. Ways to make programs and materials more culturally relevant may include hiring more African American health professionals, providing training in diversity and cultural competence to existing staff, using more graphics and images with African American characters, and creating national Food Guide Pyramids that use traditional foods from different cultural groups.

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Table 1 Demographic Profile

	Housed (N=13)	Homeless (N=15)
Age, mean (SD)	33.5 (7.3)	33.7 (6.8)
High school graduate (%)	15.3	13.3
Married or with partner (%)	53.8	6.6
Single (%)	46.2	93.3
Have children under age 18 years (%)	7.7	6.6
Have any type of health insurance (%)	46.1	0
Presently employed full time (%)	53.8	0
Presently receiving food stamps and welfare assistance (%)	84.6	0
Substance use in the past 30 days (%)	100	100
Intravenous drug use (%)	15.3	86.6
Type of substance used		
Alcohol (%)	100	100
Cocaine (%)	84.6	86.6
Crack (%)	84.6	93.3
Speedball (%)	76.9	73.3
Heroin (%)	61.5	73.3
Marijuana (%)	7.7	6.6
LSD (%)	7.7	6.6
Ecstasy (%)	7.7	6.6
Methamphetamine (%)	7.7	6.6
Prescription drugs (%)	7.7	5.5

Table 2 Food Choices and Eating Patterns

	Housed (N=13) %	Homeless (N=15) %
Eating occasion		
Ate breakfast	15.3	6.6
Ate lunch	46.6	23.0
Ate dinner	39.9	23.0
Fruit and vegetable consumption		
Ate fruit	23.0	13.3
Ate vegetable	30.7	6.6
Beverage consumption		
Drank milk	30.7	0
Drank fruit juice	30.7	0
Drank soft drink	92.3	100
Drank fruit flavored drinks	92.3	93.3
Snacks and fast food consumption		
Ate a high-fat salty snack	84.6	86.6
Ate a high-fat sweet snack	92.3	100
Ate a fast food	84.6	86.6
Food source		
Fast food restaurant	76.9	23.0
Community center	46.6	86.6
Church	7.6	0
Soup kitchen	7.6	93.3
Shelter	0	86.6
Convenience store or deli	92.3	13.3
Grocery store or supermarket	15.3	0
Dumpsters	0	93.3
Begging	0	6.6
Theft	0	6.6