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Getting them off the Path toward Chronic Disease: Understanding One NJ Community College Students' Food Choices and Eating Habits

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Abstract

The dietary patterns of many college students predispose them to future health problems and contribute to epidemic of obesity. Using Dorfman et al. [1] three essential questions (what's wrong? What does it matter? What should be done?), the dietary preferences of 205 community college students at one urban New Jersey community college were assessed in this mixed methods study. 105 students were surveyed and 100 students were interviewed during 12-week nutrition course. The findings suggest that many students rated their diet poor as a result of tight budgets and low-income levels, lack of in-depth nutrition knowledge, lack of personal time to prepare healthy meals and exercise listed as barriers to healthy eating and lifestyle. Their views of self-have implications for community colleges in the United States, which could be used to develop specific diet and physical activity interventions among students and help them overcome these barriers to healthy eating.

Keywords

Community college students' dietary habits, Sedentary behavior, Healthy eating, Physical activity

Objective

Researchers has shown that dietary patterns of many college students predispose them to future health problems [2,3] and the epidemic of overweight and obesity [4] is prevalent among many students in the United States. Getting community college students off the path to diet related diseases such as type 2 diabetes, heart disease, stroke, some cancers [5,6] and changing their lifestyle choices so they become generally more healthy requires that we understand how they eat, their levels of physical activity, as well as their daily caloric intake, and their interaction with foods [7,8]. Continual monitoring of community college students' eating behaviors is essential to inform research and policy in order to improve their lives. In this study participants reported their daily consumption plant-based foods such as vegetables and fruits, their consumption unhealthy processed foods, such as fast food meals, and their daily engagement in moderate physical activity.

Although research has proven that food selection among adults is based on factors such as taste, cost, nutrition, convenience, pleasure, and weight control [9], food choices for community college students in New Jersey may be constrained by a different number of factors [10], especially when students are in college for the first time, stepping out independently, and beginning to make their own food decisions. For many first year community college students who participated in the study, the transition to community college was a crucial period for them because this was their first opportunity to make their own food decisions [11,12]; their knowledge of healthy food can affect their behavioral intention and their health concerns [13,14].

The aim of this study was to provide a current assessment of students' (in one community college in New Jersey) eating behaviors, self-reported dietary and factors that influenced the way they eat. The research questions for this study are twofold:

1. What types of eating and exercise habits do many students follow in their daily lives?
2. What are their perspectives on fast and processed foods, plant-based foods (fruits and vegetables), and physical activity?

Theoretical Framework

The American Heart Association (AHA) has found that being obese or overweight predisposed people to coronary heart disease [15]. Researchers have shown that regulating both dietary intake and physical activity can help control weight [16]. However, promoting lifelong healthy physical activity and eating depends on marshaling the most appropriate theory and practice strategies for a given situation. Dorfman et al,'s [1] three essential questions (what's wrong? What does it matter? What should be done?) are used to inform my understanding of community college students' food choices, eating, and physical habits. The way an issue is framed "signal[s] what to pay attention to (and what not to), they allow us to fill in or infer missing information, and they set up a pattern of reasoning that influences decision outcomes" [1]. Furthermore Dorfman added that how an issue is described, or framed, can determine the extent to which it has popular or political support in order to communicate stronger social justice values. Considering community college students' eating patterns and reframing them through a social justice lens can help stakeholders to consider alternative approaches to supporting healthier decisions.

To support those students who need to change their dietary and physical habits, the focus cannot just be placed solely on individual students' behaviors. Instead, we need to pay attention to policy that affects the environment in which students' behavior takes place. The

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circumstances in which these students grow, live, and age, and the policies supporting healthful choices [17] all influence their individual actions regarding (un)healthy eating and level of physical activity.

Some of the community college students in this study are on the path toward chronic diseases as a result of their lifestyle choices. However, it is possible that students might make healthier choices about their physical activity and healthy eating habits if they are motivated and educated to make healthful food choices. Hence to advance fairer policy approaches regarding community college students' predisposition to chronic diseases, the issue has to be framed in a way that a new definition of the problem exposes the limits of the norm of individual responsibility, challenges the market justice ethic driving public policy, in order to make room for a shift toward collective solutions emphasizing social justice [1].

Design, setting and participants

Using a mixed method, the researcher collected information from students in one New Jersey community college to understand their eating patterns and exercise habits as well. This study used triangulation of multiple data sources (both qualitative and quantitative) to study and describe "a combination of the textural and structural description to convey an overall essence of the experience" [18] of New Jersey community college Students dealing with food. Therefore using a mixed methods approach strengthened the reliability of the study because multiple perspectives and multiple data collection points allowed me to verify that outcomes were consistent across sources. Guided by the work of Merriam [19], I observed the rules of consent, voluntary participation, confidentiality and anonymity during/after my data collection.

The author spent the spring semester of 2014 in one community college located in one county in New Jersey with study participants. The quantitative portion of the data was collected through a student survey instrument with 105 students aged 18-30+. Students completed the survey sheet and provided answers to these survey questions at their school in one session that lasted 25 minutes on average. Survey questions were measured on a likert scale, which enabled community college students in the study to indicate their responses on a scale of 1-5. For the qualitative portion of the data, 30-60 minute individual interviews with 100 students were audio-recorded and transcribed verbatim. Community college students were asked questions about their daily consumption of fast food meals, sugary soft drinks, plant-based foods including vegetables and fruits, and their level of physical activity. The interview transcripts were used to help interpret the quantitative data [20-22].

Results

105 students were surveyed and 100 students were interviewed. The student demographic had a wide age range, from 18 to 30+. Forty-one percent of these students had ages ranging between 18-20 and 26.7% are between 24-26 years old, 14.3% of them were between the ages of 27-30 years old, and 18.1% of them were above the ages of 30. The sample size used in the study reflected the demographics of a New Jersey's community college. All the students involved in this study were students in their first and second year program of study. Among those who completed the survey 44.8% were male and 55.2% were female. Moreover, in describing students' weights, 75 (72%) of them described themselves as being overweight or had a BMI greater than 25 kg/m^2, 14 (13%) students perceived themselves as obese, and only 16 (15%) students reported having a normal BMI. The majority of students in the age category 18-20 and 24-26 were living at home with their parents and very few students were living on campus dorms. Students aged 18-26 did not work and were full time students. The majority of students aged 27-30 were either married or living on their own. Finally some of students aged 30+ (both females and males) were married with children -all of which influence food selection and dietary habits. Many of these students age category 27-30+ held full time jobs as nurse assistants while taking classes part time to complete their nursing degree requirements.

Emergent themes: findings for both quantitative and qualitative data analysis

Usual daily consumption of vegetables and fruits: Well-balanced diets, including vegetables are appropriate for students attending a community college in New Jersey, but only a small number of participants reported consuming the recommended number of servings for vegetables and fruits. All surveyed students' respondents in the study rejected the notion that they eat a sufficient amount of raw vegetables and fruits each day. Such inadequate intakes of raw vegetables and fruits can result in significant health consequences for them, including vitamin or mineral deficiency. In addition, students who choose not to eat fruits and vegetables may be also deficient in key dietary fiber, which can improve their intestinal health, reduce inflammation and even slow or prevent tumor growth. Therefore students who reduce or exclude vegetables and fruits from their diet may increase their risk of high blood pressure or stroke. Although many students acknowledged that vegetables and fruits are rich in phytochemicals and have been shown to have great health benefits, a majority of students in the study claim they do not regularly consume fresh fruits and vegetables because of their texture, appearance, and cost. The interview transcripts revealed that students with tight budgets are often chose inexpensive greasy foods that are nutritionally deficient over fruits and vegetables that are healthy, but more expensive. Many students did not believe fruits and vegetables were worth spending extra money. For some community college students living home with their parents, important barriers to eating vegetables and fruits were blamed on their parents' income. For other students living by themselves, the quality of what they eat was also based on inadequate nutritional knowledge and awareness about fruits and vegetables.

Usual daily consumption of unhealthy processed/fast foods: Most of the students involved in the study may not achieve the healthy eating guidelines designed to reduce their risk of chronic diseases because they are consuming diets rich in fat, sugar, and low in fruits and vegetables. The majority of students recognize that by reducing or excluding vegetables and fruits intake in favor of foods with a high energy density, they ultimately hindering their efforts to maintain a healthy body weight. Some students in the study chose to eat fast foods because this food was flavorful, trendy, visible in the media, and cheaply available to them. However, interview data revealed that some students ate unhealthy fast foods meals because of their lack of cooking skills coupled with the time constraints in their daily schedule.

The interview data from students revealed that although there are a wide variety of dining choices available to students on college campus, many claimed that the not so healthy food choices are the most affordable to them. Others admitted that they select the unhealthy fast food options mainly because of its taste and the oversized portions of the meals they get. Both the survey and interview data revealed that students in the study did not research nutrition information about the food they were eating. They certainly did not seem worried about the long-term risk of chronic diseases associated with eating too much fast food. Although many female students admitted eating a diet high in saturated fat and were not interested in planning a heart healthy diet for themselves on a daily basis, ironically some of them were very self-conscious or defensive about their body weight status. They reported that anytime questions about weight were part of conversations, they felt that they were being judged.

The interview data revealed that some of the students in the study were not involved in any sort of nutritional evaluation. They only tried to balance their diet and start healthy eating habits after they or one of their family members experienced a personal health crisis in their life. Those students who were already taking medications for diseases such as high cholesterol and blood pressure tried to incorporate vegetables in their diet. Since vegetables are healthy in vitamins and fiber, they believed eating more vegetables would reduce their blood cholesterol and sugar level. Some students who were monitoring their caloric intake adopted a plant-based diet because of the fear of developing

plaques in their arteries. These students tend to eat more fish, beans, and even trained themselves to eat dark-green veggies and other leafy greens daily.

The qualitative data explained the reasons why students in the study failed to follow the American Heart Association guidelines, which recommend eating fish (particularly fatty fish) at least twice a week. Many students avoided eating fish because of it price, taste, and odd texture. Some of them were not aware of the health benefits that eating fish can bring to the body. For example many of them did not know that fish is a good source of protein and that it is not high in saturated fat. They all did not know that fish is also a good source of omega-3 fatty acids that can benefit their heart whether they have cardiovascular disease or not.

Daily engagement in physical activity behavior: Many of the students in the study revealed that they do not exercise regularly, mostly because it did not fit into their daily schedule. Most of them agreed that when they find themselves short on time, exercise is the first thing they sacrifice. Talking about physical activity, the qualitative data collected through individual interviews with the students revealed that the majority of students in this study did not usually get around off and on campus by walking or riding a bicycle. The majority of the respondents blamed the absence of bike lanes on New Jersey's public roads. Hence they all agreed that they either drive or use public transportation to get to school. When on campus, participants preferred to use elevators instead of stairs.

The interview data revealed that many students blamed their sedentary behaviors on the lack of discretionary time, since they spent most of their time studying. The majority of the students claimed because of a combined academic schedule and full time work schedules, exercise simply did not fit into their daily schedules. However, all students admitted that their sedentary behaviors coupled with an over-consumption of calories could make them prone to becoming overweight.

The majority the students in the study also believed that the instructional approach used in community college indirectly promoted and encouraged sedentary behaviors through their coursework load. A majority of them complained that none of their course work called for actively moving around the classroom.

Discussion

The knowledge of what the dietary and physical activity habits of community college students is; of what can be done about it using social justice frames; and of what works effectively to alter students' individual eating behaviors is at heart of this study. To disseminate evidence on the status of their health, information on their BMI was collected and I generate evidence on the social determinants of their poor health. In this study BMI was used to classify normal weight, overweight and obesity in our student populations [23]. Researchers have shown that a BMI below 18.5 kg/m^2 is categorized as underweight, BMI of 18.5-24.99 kg/m^2 represents normal weight, BMI of 25-29.99 kg/m^2 is considered as overweight and a BMI ≥ 30 kg/m^2 is considered obese [5,24-26]. Survey data revealed that the majority of students were either overweight or obese and only 16 (15%) students reported having a normal BMI.

The results of this study are consistent with North Americans' eating patterns [24]. Many North Americans adults, like community college students, have a great affinity for consuming a significant amount of processed and fast foods. Therefore, "the primary dietary culprit [in North America] is an overconsumption of one or more of the following: calories, saturated fat, cholesterol, trans fat, alcohol, and sodium" [24]. Another key finding of this study is that some students involved the study attributed their poor dietary habits to their lack of knowledge related to food preparation and time availability in their daily schedules to prepare healthy meals for themselves. The results from both interview and survey data make a significant contribution to our understanding of community college students' dietary behavior. It is widely believed that higher consumption of fruits and vegetables is protective against cardiovascular disease [26]; nevertheless many students in the study did not consume a healthy diet and fell short on vegetables and fruits, opting instead to indulge on unhealthy fast food meals including high-energy drinks. This study's results propose that community college students' in New Jersey do not adhere to a strict control of their weight and engage in disordered and poor eating behaviors. Since many students do not yet experience any type of clinical symptoms for their nutritional deficiency, therefore, they fail to establish a close relationship between nutrition-related problems (increased blood cholesterol, heart attack, or inability to walk normally) and their health. Encouraging students in college to modify their eating behavior in ways that are healthful and getting them to implement dietary guidelines that encourage adequate vegetable and fruit intake to improve their overall health should be an educational outcome that community colleges across the United States seek. To influence students' eating behaviors through knowledge, skills and attitude, community colleges teaching their students about healthy eating have to use a comprehensive model of behavior change that includes helping them to adopt ongoing, new healthier behavior, preparing students for change, and teaching them how to adopt new daily eating habits [27]. However, college campuses need greater efforts across the U.S. because their campus grounds or surrounding campus grounds are the site of cheap food items rich in saturated fat, trans fat, and cholesterol. Since there is an increased availability of junk around and off campus, many students consume large portions of these food items. For colleges across the United States to help their students find the best path to good nutrition and good health, they need to promote quality diet and teach their students how to make healthier food choices. Colleges in the United States have to negotiate with the food industry in order decrease the cost of raw unprocessed foods ingredients because study participants find these food items expensive, which deters even students with cooking skills from assembling a meal from scratch [28]. To find the best path to good nutrition and set a path to good health for students, Pollan recommends that they "eat food. Not too much. Mostly plants [based foods]" [29].

Since researchers have already established that school-based nutrition education programs can improve knowledge [30] of their students, the findings of this study highlight the necessity for colleges across the United States to impart more nutritional knowledge to their students, and help them to make connection between fast food consumption and chronic diseases. Furthermore, helping community college students to maintain nutritional health and prescribe them various guidelines for planning healthy diets would allow them to enjoy a long and vigorous life [24].

Behavioral outcomes resulting from nutrition programs in community colleges can target specific students' dietary behaviors and are likely to change them. Increasing students' awareness of the importance of a healthy diet and taking action to get them to buy into the idea of healthy eating [31,32] can be rewarding for them. Many of the community college students do not associate their behaviors with the risk of several chronic diseases and health conditions [33]. Hence, a call for nutrition interventions that educate community college students on inexpensive, healthful eating in a structured environment, and diet-disease relationships is necessary.

In this study, a significant proportion of participants fell short of daily physical activity recommendations. Such a finding suggests that more needs to be done at the community college education programming level to help raise these students' awareness about the importance of physical activity for health and well-being [34] through curricula programs that deal with physical inactivity. To increase the effectiveness of physical activity interventions for students, community colleges in the US should program in their coursework more physical education classes and allow their students to have access to structured physical activities. Intermural sports or aerobics classes could motivate enough students to be physically active. While being physically fit and healthy may help students become better learners, these students attributed their physical inactivity to time

spent studying and time doing schoolwork. Therefore, more has to be done at the community colleges level to integrate and support physical education into their coursework and classroom learning.

Conclusions and Implications

More research is needed to determine whether resistance to adopt healthy eating habits and exercise is attributable to how they use and manage their time as students or to other barriers such as lack of nutritional knowledge and skills. This study provided evidence that including nutrition programs year round within community college curricula could promote and help students to meet their nutritional recommendations. Community college students can have a better diet if they know what food choices to make.

This study adds to the growing literature that poor dietary and physical activity interventions in community college students' could increase their risk for weight gain and obesity-related conditions, therefore putting them toward the path of chronic diseases. Although successful attempts have been made to promote healthy eating and prevent weight gain in students within many community colleges by offering them a range of nutrition courses [24,35], the relationship between knowledge gain from these courses and students' behavior change is weak. To get community college students off the path of chronic diseases, these students need their community college-based nutrition education curricula be programmed more frequently for longer duration in order to have a real impact on their eating patterns. In the future, community college-based nutrition programs or interventions have to make nutrition course content available to a great number of community college students and provide training about eating patterns, diet management and planning to their teaching staffs. Instructional approaches such as lecture, discussion, role-playing, videos, problem solving, self-monitoring and goal setting have be integrated in the community college-based nutrition program for both instructors and students.

Using social justice stance such as shared responsibility and strong obligation to the collective good including health as frames, community colleges can identify policy and programmatic strategies that are effective in promoting physical activity [36] and healthy eating [37] among their students. Concerted actions across sectors by the United States national government and community colleges can generate policy action toward healthy subsidized community cafeterias for all community college students. Subsidizing community cafeterias in community colleges might lead to food price reductions for students, which may be a strong method of intervening to promote healthier foods choices [38], particularly the consumption of fruit and vegetables among students in their school settings.

Trying to understand factors that impact dietary and physical activity behaviors in community college students would help these colleges design and identify suitable interventions that will encourage healthy lifestyles and improve dietary and physical activities habits [39]. As institutions that can deliver systemic solutions, community colleges have to establish and consider curricular change, change related to physical activity, modifications to existing food options in university cafeteria and instruction that help students develop knowledge, attitudes, and behavioral skills needed to adopt and maintain healthy eating behaviors and physically active lifestyles (What's wrong?). This college institution should mandate that all students taking 12 or above 12 credits course be allow to take free yoga and gym credit course in a form of pass or fail credit. All students agreed because of the time insufficiency while attending college, it would be beneficial to them if their university provided them with an opportunity for exercise in the school place.

Moreover poor dietary habits including eating too much fast food on/off campus and low fruit and vegetable intake puts students on the path toward chronic diseases (Why does it matter?). Hence, community colleges must promote appealing; affordable healthy food options for their students through healthy subsidized cafeterias and the central government must provide adequate funds for their food services (What should be done?). To improve the quality of life and health status of community college students, we need to encourage healthy eating, lift up their spirit through self-care behaviors.

This study further emphasizes the need for more interventions to improve healthy eating habits in community colleges students, especially their intake of raw fruit and vegetables. Future studies could explore the idea of fruits and vegetables juice fasting for weight loss. Because juice fasting is the tastiest way for community college to get all the healthy vitamins, minerals, antioxidants and enzymes, I suggest community colleges' cafeterias have to add juicing on their food menus on campus. Juice containing adequate intake of fruits and vegetables should be encouraged on campus instead of sugar-sweetened beverages because dietary fiber in these fruits and vegetables are deemed to be a key component in healthy eating [40].

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