COLLEGE STUDENTS’ PERCEPTIONS OF HEALTHY LIFESTYLES – FOCUS GROUPS TARGETING DIET AND EXERCISE IN COLLEGE

A Thesis

Presented in Partial Fulfillment of the Requirements for
the Degree Master of Science in the Graduate
School of The Ohio State University

By

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ABSTRACT

College students are known for consuming food that is high in fat, cholesterol and sodium, and low in fruits and vegetables. Additionally, once leaving high school, students’ physical activity levels decrease due to declined participation in organized sports. This study examined how these habits change upon entering college, the perceived barriers to eating healthily and maintaining physical fitness, and the beliefs of students on how a university can assist them in remaining healthy.

Authors conducted six focus groups and discovered that college students eat more, eat at unstructured times, and make food choices based upon what is quickest, what is close in proximity, what’s available, and what is affordable. Furthermore, students participate in fewer organize sports. Barriers to healthy behaviors included time and social pressures, as well as cost and availability of healthy food. Lastly, students agree that exercise and balance are important; however, they believe that the University plays a part in their health and as a result, students desire healthy options and more information regarding the food that is available to them. Additionally, they believe the University needs to provide more dining facilities with later hours.

The results indicate that college students, while they believe that being healthy is important, perceive a healthy lifestyle to be difficult to attain. Colleges and universities can use this information to establish programs to assist students in overcoming their barriers.
DEDICATION

Dedicated to my Mom and Dad.

Thanks for your continuous love and support.
ACKNOWLEDGEMENTS

I would like to thank my advisor, Dr. Kay Wolf, for all of her support, guidance, and patience. I would also like to thank two committee members, Jill Clutter and Connie Boehm, for all of their time and suggestions. I am truly grateful.
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>ii</td>
</tr>
<tr>
<td>Dedication</td>
<td>iv</td>
</tr>
<tr>
<td>Acknowledgments</td>
<td>v</td>
</tr>
<tr>
<td>Vita</td>
<td>vi</td>
</tr>
<tr>
<td>List of Tables</td>
<td>ix</td>
</tr>
<tr>
<td>Chapters</td>
<td></td>
</tr>
<tr>
<td>1. Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Background of the Problem</td>
<td>1</td>
</tr>
<tr>
<td>Purpose of the Study</td>
<td>2</td>
</tr>
<tr>
<td>Objectives of the Study</td>
<td>2</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>3</td>
</tr>
<tr>
<td>2. Review of Literature</td>
<td>4</td>
</tr>
<tr>
<td>Dietary Patterns of College Students</td>
<td>4</td>
</tr>
<tr>
<td>Alcohol Consumption</td>
<td>7</td>
</tr>
<tr>
<td>Physical Activity</td>
<td>8</td>
</tr>
<tr>
<td>Barriers to Seeking Health Services</td>
<td>10</td>
</tr>
<tr>
<td>Focus Groups</td>
<td>11</td>
</tr>
<tr>
<td>3. Methodology</td>
<td>14</td>
</tr>
<tr>
<td>Research Design</td>
<td>14</td>
</tr>
<tr>
<td>Focus Group Interviews and Subjects</td>
<td>14</td>
</tr>
<tr>
<td>Focus Group Questions</td>
<td>15</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>16</td>
</tr>
<tr>
<td>Table</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------</td>
<td>------</td>
</tr>
<tr>
<td>1. Focus Group Questions</td>
<td>20</td>
</tr>
<tr>
<td>2. Summary of Themes</td>
<td>22</td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION

Background of The Problem

Traditionally in the United States, high school graduates are faced with the decision of whether or not to continue their education at a college or university. This can be an exciting time for young adults, but also one filled with new environments, new responsibilities, and new experiences. Often, new habits are formed, and while it is hoped that these are for the better, in general, it is known that this is not always true. The diet of college students is reported to be high in fat, cholesterol, and sodium (1). Additionally, many students do not meet the recommendations for servings of fruit and vegetables, as well as eating a variety of foods (1, 2, 3 4). To compound the situation, binge drinking and other unhealthful habits, such as tobacco use, drug use, and a lack of physical activity, are simultaneously formed (5, 6). These practices established at a young age may persist later in life consequently leading to disease. In fact, according to the National College Health Risk Behavior Survey, nearly 35% of college students may be overweight or obese which is a precursor to many conditions such as type 2 diabetes and cardiovascular disease. (7). Because of this, it is critical that nutrition education and other programs for wellness promotion are engaged as early as possible.

Statement of The Problem
When young adults leave home to live on campus, they are free to make their own choices on what foods they consume. Because of this, bad habits are often formed. College students are documented to consume convenience foods, such as fast food, snacks from vending machines, and microwaveable dinners (4). These foods are typically high in calories, fat, and sodium, with little or no nutritive value. Additionally, students often stop participating in sports and other forms of physical activity once they graduate from high school. This creates the positive energy balance that will eventually lead to weight gain. The long-term consequences of not reaching and maintaining a healthy weight are many and include hypertension, dyslipidemia, type 2 diabetes, coronary heart disease, and stroke. Therefore, it is important to provide students with messages about good nutrition as early as possible in hopes that it will prevent chronic illness later in life (8). Many studies have answered the question “what do university students eat?”; however, few studies have investigated why students eat what they eat, and students’ perceived barriers to healthy eating.

Purpose of The Study

The purpose of this study will be to describe the change in students’ nutrition and physical activity behaviors upon entering college, as well as the perceived barriers to maintaining a healthy lifestyle.

Objectives of The Study

Specifically, this study addresses the following objectives:
1. To determine if, when, why, and how the behaviors of students’ change once they live on campus at a college or university.

2. To identify students’ perceptions of barriers to maintaining a healthy lifestyle.

3. To identify students’ perceptions of items that would assist them in leading a healthy lifestyle.

Definition of Terms

1. **Body Mass Index** – Body mass index (BMI) is a measure of body fat based on height and weight that applies to both adult men and women (9).

2. **Overweight** – An adult who has a BMI between 25 and 29.9 is considered overweight (10).

3. **Obese** – An adult who has a BMI of 30 or higher is considered obese (10).

4. **Dietary Guidelines for Americans** – A publication developed by the United States Department of Health and Human Services in conjunction with the United States Department of Agriculture. The Guidelines provide authoritative advice for people two years and older about how good dietary habits can promote health and reduce risk for major chronic diseases. They serve as the basis for Federal food and nutrition education programs (11).
CHAPTER 2

REVIEW OF LITERATURE

In the United States, overweight and obesity rates are climbing with 40% of the adult population now being categorized as obese (10). With these weight problems comes a plethora of long-term health conditions including hypertension, dyslipidemia, type 2 diabetes, coronary heart disease, and stroke. These diseases, usually not manifested until later in life, may be direct implications of what people eat in the present (12, 13). For college students, eating may well be determined by many factors including availability, price, and convenience (5). Additionally, psychological factors such as freedom from parental authority and developmental changes could play into what choices students make (14).

Dietary Patterns of College Students

Many studies have tried to determine what college students eat. Hendricks, Herbold and Fung analyzed data from Food Frequency Questionnaires and Health Behavior Surveys of 93 first-year undergraduate women at a college in Boston, Massachusetts, and found that students fall into two groups: “healthy” or “typical” (15). Healthy eaters included many of the recommended foods in their diets, such as fruits, vegetables, whole grains, legumes, fish, and diet sodas. Conversely, the typical group
consumed fast foods, refined grains, desserts, high fat dairy products, high fat snacks, and french fries.

Anding, Suminski, and Boss found similar results upon studying 60 female students enrolled during 2001 at a Texas university. Specifically, by surveying the diet, exercise, and health habits of students registered in three university aerobics courses using the Self Reported Physical Activity Scale and the Dietary Guidelines for Americans (11), they found noncompliance with the DGA at rates as high as 95% for consumption of grains, vegetables, and fruits (4). The same population reported, using three day food logs, exceedingly high intakes of fat, sugar, and sodium.

Huang et al conducted a study at the University of Kansas in which a convenience sample of 736 college students aged 18 to 27 years completed a cross-sectional survey to provide information on dietary habits. Researchers reported just over two-thirds of their sample consumed fewer than five servings of fruits and vegetables per day (6). Furthermore, roughly 67% of students consumed fewer than 20 grams of fiber per day with women consuming significantly less than men.

Additional studies are in agreement, most suggesting that college and university students’ diets are high in fat, cholesterol, and sodium, and are lacking in whole grains, fruits, and vegetables, as well as in variety (1, 2, 3, 4, 13). Irazusta et al examined the dietary habits of first-year female students. Nutrient analysis of three-day food logs for
both the experimental and control groups showed that fat contributed excessively to total energy intake. Deficiencies in dietary fiber intake were also observed.

The National College Health Assessment (NCHA), initiated in 1998, is a national research survey organized by the American College Health Association to assist college health educators, counselors, and administrators, as well as health service providers, in collecting data about their students' habits, behaviors, and perceptions on the most prevalent health topics (16). In the Spring of 2003 and 2006, the current university participated in the survey to illustrate information pertaining to body weight, nutrition, and physical exercise. According to self-reported data, students at the current university, in comparison to the national data, were significantly lower (26.6% versus 30.1%) in their intake of three or more servings of fruits and vegetables per day. Additionally, a significantly higher proportion of students responded at the current university that they do not eat fruit and vegetables.

In summary, studies are in agreement that, in general, college students’ diets are far from healthy and include high-fat, high-sodium choices such as fast foods, refined grains, desserts, high-fat dairy products, high-fat snacks, and french fries. Additionally, they are lacking in fruits and vegetables and whole grains, and therefore, they are lacking in various nutrients including fiber. In comparison to the national data, students at the current university report significantly lower intake of fruits and vegetables.

Alcohol consumption, common on college campuses can have implications on
other parts of college students’ lives. It consists of both the amount of alcohol consumed (quantity) and how often consumption occurs (frequency) (17). In general, students believe that alcohol use is an acceptable part of attending college and many fail to realize the importance to their health of not drinking too much (18, 19). Dantzer et al used a survey of 7,845 male and 9,892 female students aged 17 to 30 years to assess the prevalence of heavy drinking among university students. They established that 54.5% of men and 55.2% of women in a university setting were aware of the association between alcohol consumption and heart disease (19). Additionally, less than 60% of students were aware of the influence of alcohol on high blood pressure; however, awareness of the links between alcohol, heart disease, and high blood pressure were associated with increased odds of being a heavy drinker. In other words, heavy drinkers seem to be more aware of the risks of binge drinking.

Interestingly, awareness of the links between alcohol, heart disease, and hypertension has shown to be increased in those who are classified as heavy drinkers (defined as men drinking more than five drinks in one sitting and women drinking more than four drinks in one sitting) (19). Reasons for this have yet to be defined. However, a study using seven focus groups involving 49 male students at a university campus identified college men’s health concerns, barriers to seeking help, and recommendations to help college men adopt healthier lifestyles. Through content analysis, patterns were identified and Davies et al determined various reasons given for alcohol and substance
abuse including building social confidence, attracting a partner, coping with stress and anger, and general feelings of vulnerability (18).

Edward and Meiselman studied the changes in habits during the first year at a university. By surveying three cohorts of first-year students over three consecutive years using food frequency questionnaires, they were able to establish that drinking tends to increase in quantity over the course of a school year (5). Consequently, the percentage of energy intake contributed by alcohol also rose.

Finally, in a study using the 1999 – 2000 National Health and Nutrition Examination Survey, Breslow et al examined the association between alcohol and diet quality (Healthy Eating Index (HEI) scores) using cross-sectional, nationally representative data. As quantity of alcohol consumed increased, HEI scores decreased. In other words, an increase in alcohol consumption was found to be related to a worsening in diet quality. Interestingly, diet quality was poorest among the highest-quantity, lowest-frequency drinkers and best among the lowest-quantity, higher-frequency drinkers. Authors also found that increased alcohol consumption may be related to other risky behaviors such as cigarette use (17). Similarly, there are new trends in which college students restrict calories from food in order to allow for the calories found in alcohol. Overall, this can directly affect nutritional status in addition to habitual decisions students make regarding food and physical activity.

Physical Activity
The Dietary Guidelines for Americans suggest 30 to 60 minutes of moderate intensity exercise for disease prevention and weight management (11). Several studies have examined the incidence of exercise in college students and whether they measure up to the recommendations. Irazusta et al asked 46 female nursing students how much of their weekly leisure time during the past year they had spent doing something physical that involved sweating and breathlessness. They found that the highest percentage of sedentary individuals, defined as those who exercise less than once per week, were found among the first-year nursing student group (20). Similarly, students in their final year were overwhelmingly classified as sedentary with 47.5% admitting to less than one session of exercise weekly. These results are very closely comparable to a 2005 study at a midwestern university that analyzed the typical eating and exercise habits of a group of lower- and upper-level students using a validated two-paged written questionnaire. Roughly more than half of the 258 students participating in the study reported exercising one time per week (21).

Driskell et al studied upper-level and lower-level university students to determine differences between the groups (21). Using a validated questionnaire that assessed demographics, typical eating, and exercise habits, investigators examined 114 lower-level and 147 upper-level students. While few differences were found between the groups, some physical activity commonalities were uncovered. Two-thirds of both groups reported typically walking at least five times per week with an average of 37.1% of
students usually walking more than 31 minutes daily. Additionally, half or more of the 
students in both groups reported typically walking, doing other aerobic activities and 
doing resistance/weight training at least once weekly. The main reasons given for college 
student participation in physical activities reported were enjoyment, health, social 
interaction, weight management, competition, and to lose weight. Others included 
fitness/health management, stress/mood management, and socializing.

The NCHA data indicated that the majority of students at the current university 
(about 77.7%) responded that they engaged in vigorous or moderate exercise on at least 
one of the past seven days while 22.3% of the students didn’t participate in physical 
exercise during the past seven days. This was consistent with the patterns revealed by the 
NCHA national data (16).

**Barriers to Healthy Eating and Physical Activity**

Student resources are abundant on college campuses. It is common for 
universities to provide students with recreation centers, health services, and counseling; 
however, many students do not take advantage of these opportunities. Researchers at 
Clemson University surveyed 94 undergraduate college students electronically to elicit 
attitudes and beliefs regarding their health and nutritional practices and perceived 
nutrition information needs (1). In order to enrich the relationships derived from the 
quantitative data, they also conducted six one-hour focus group interviews involving 36 
students who had completed the questionnaire. Students indicated that barriers to
attaining a healthy lifestyle included having friends who were not interested in a healthy lifestyle, social activities with friends that mainly involved going out to eat and/or drink, peer pressure to drink, and difficulty finding friends who were interested in being exercise partners. Time pressure and the demands of schoolwork were also common themes. Interestingly, students were aware that there was room for improvement in their own physical activity, although they had no plans for adapting their lifestyle.

**Developmental Changes**

College students, in terms of their decision making processes, are still developing (22). This impacts problem solving and the consequential actions that come from decisions made. Further, it is necessary to discuss when talking about the lifestyle changes that college students are faced with when coming to a university. The Reflective Judgment Model (RJM) describes changes in assumptions about sources and certainty of knowledge and how decisions are justified in light of those assumptions. According to this model, there are seven stages in the developmental progression. They are broken into three levels: prereflective thinking (Stages 1-3), quasi-reflective thinking (Stages 4-5), and reflective thinking (Stages 6-7). The stages are listed below:

1. **Stage One** – Knowledge is assumed to exist absolutely and concretely; it is no understood as abstraction. It can be obtained with certainty by direct observation. Beliefs need no justification because there is
assumed to be an absolute correspondence between what is believed to be true and what is true. Alternate beliefs are not perceived.

2. *Stage Two* – Knowledge is assumed to be absolutely certain or certain but not immediately available. Knowledge can be obtained directly through the senses or via authority figures. Beliefs are unexamined and unjustified or justified by their correspondence with the beliefs of an authority figure. Most issues are assumed to have a right answer so there is little or no conflict in making decisions about disputed issues.

3. *Stage Three* – Knowledge is assumed to be absolutely certain or temporarily uncertain. In areas of temporary uncertainty, only personal beliefs can be known until absolute knowledge is obtained. In areas of absolute certainty, knowledge is obtained from authorities. In areas in which certain answers exist, beliefs are justified by reference to authorities’ views. In areas in which answers do not exist, beliefs are defended as personal opinion because the link between evidence and beliefs is unclear.

4. *Stage Four* – Knowledge is uncertain and knowledge claims are idiosyncratic to the individual because situational variables dictate that knowing always involves an element of ambiguity. Beliefs are justified
by giving reasons and using evidence, but the arguments and choice of evidence are idiosyncratic.

5. *Stage Five* – Knowledge is contextual and subjective because it is filtered through a person’s perceptions and criteria for judgment. Only interpretation of evidence, events, or issues may be known. Beliefs are justified within a particular context by means of the rules of inquiry for that context and by context-specific interpretation of evidence. Specific beliefs are assumed to be context specific or are balanced against other interpretations, which complicates conclusions.

6. *Stage Six* – Knowledge is constructed into individual conclusions about ill-structured problems on the basis of information from a variety of courses. Interpretations that are based on evaluations of evidence across contexts and on the evaluated opinions of reputable others can be known. Beliefs are justified by comparing evidence and opinion from different perspectives on an issue or across different contexts and by constructing solutions that are evaluated by criteria such as the weight of the evidence, the utility of the solution, or the pragmatic need for action.

7. *Stage Seven* – Knowledge is the outcome of a process of reasonable inquiry in which solutions to ill-structured problems are constructed.
The adequacy of those solutions is evaluated in terms of what is most reasonable or probable according to the current evidence, and it is reevaluated when relevant new evidence, perspectives, or tools of inquiry become available. Beliefs are justified probabilistically on the basis of a variety of interpretive considerations, such as the weight of the evidence, the explanatory value of the interpretations, the risk of erroneous conclusions, consequences of alternative judgments, and the interrelations of these factors. Conclusions are defended as representing the most complete, plausible, or compelling understanding of an issue on the basis of the available evidence.

Previous research has indicated that most college students score just about 3.5 on the Reflective Judgment Interview, a measure of functional rather than optimal level of development (23). In other words, freshman students may believe that absolute truth is only temporarily inaccessible, that knowing is limited to one’s personal impressions about the topic, and that most if not all problems are well structured. When students in this stage encounter more complex or ill-structured problems, they therefore have considerable difficulty in knowing what to believe or how to decide in the face of this uncertainty (23). This may be necessary information in understanding why students make the choices they make and how they make these decisions.

**Focus Groups**
An important component of this study will be to collect data in a way that will capture the perceptions, feelings, and attitudes from students participating. For this reason, focus groups will be used. As defined by Krueger and Casey, a focus group is a special type of group in terms of purpose, size, composition, and procedures (24). It is used to listen and gather information, especially as a way to better understand how people feel or think about an issue, product or service. Focus groups are carefully planned and involve a series of discussions designed to obtain perceptions on a defined area of interest. Ultimately, the intent of the focus group is to promote self-disclosure among participants.

Morgan states that there are three basic uses of focus groups in current social science research (25). First, they may be used as the principal source of data, which is called the self-contained method. Second, they are used as a supplementary source of data in a study that uses another primary method. Third, they are used in a multimethod study in which two or more methods of gathering data are combined. For the purpose of this study, the focus groups will serve as the primary source of data, thus the self-contained method will be used.

When planning the focus group study, the first step is to determine the purpose (24). The goal is to clearly understand what kind of information is being sought. Once a purpose is established, a method can be decided upon. There are several instances in which focus groups should be used, as stated by Krueger and Casey:
1. The information desired consists of a range of ideas or feelings that people have about something.

2. Investigators are trying to understand differences in perspectives between groups or categories of people.

3. The purpose is to uncover factors that influence opinions, behavior, or motivation.

4. The investigator is looking for ideas from a group.

5. To pilot test ideas, materials, plans or policies.

6. The researcher needs information to design a large-scale quantitative study.

7. The researcher needs information to help shed light on quantitative data already collected.

There are several advantages and disadvantages to using the focus group interview as a research method. According to Morgan, the fact that focus groups are driven by the researcher’s interests can be a source of weakness. In particular, there is concern that the moderator, as a means of maintaining the investigator’s focus, may influence the group’s interactions. However, he also states that focus groups are “quick and easy” in that they provide researchers with concentrated amounts of information on the topic of interest. Focus groups allow investigators to gain information from several sources in much less time than it would take them to gain information from individual
interviews. Additionally, Powell and Single claim that the focus group is synergistic in nature, allowing participants to clarify and build on top of others’ contributions (26).
CHAPTER 3

METHODOLOGY

Research Design

This study was descriptive in nature and was designed to collect information from students on a college campus regarding eating and lifestyle behaviors. College students were recruited using table-tent advertisements (Appendix A) in dining halls and through an email newsletter (Appendix B) sent to all first-year students in the School of Allied Medical Professions.

Focus Group Interviews and Subjects

The focus groups took place in the evenings during winter quarter. The study population included 40 undergraduate college students in a total of six focus groups. The groups were comprised of mostly students living in student housing. Those students that participated and lived off campus ate in University dining halls. Students had to be over the age of 18 to volunteer. Students were informed that the focus groups were being conducted to learn their perceptions of a healthy lifestyle and the factors that assist or stop them from exercising and eating well while in college. Lastly, students were asked to provide written consent in order to participate (Appendix C).

Focus groups were conducted on campus, with each group being held in the evening and lasting approximately one hour. An experienced moderator facilitated each
focus group. Additionally, the groups were audiotaped in order to ensure accuracy when analyzing the discussions. The recordings of the focus groups began after students said their names; transcriptions were recorded without names and the summaries were completely confidential without any summary by student name.

Prior literature was searched regarding determinants and barriers related to college students’ food patterns and exercise activities, as well as barriers to healthy lifestyle in relationship to eating and exercising. An expert panel of health educators and behavioral researchers reviewed the information and developed the focus group guide. Focus group questions regarding healthy lifestyles were divided into: (i) questions regarding current eating patterns, how they decide what to eat, and their perceived barriers to healthy eating, (ii) questions regarding current exercise activity and the perceived barriers to remaining active, and (iii) questions for final input on thoughts regarding what would aid students in attaining a healthy lifestyle.

**Focus Group Questions**

1. Please tell us your name and the first thing that comes to your mind when you think about college food.

2. Have your eating habits changed since coming to college? How?

3. Since coming to college, how do you decide what to eat?

4. What do you feel is the biggest barrier to eating healthily in college?

5. Have your exercise habits changed since coming to college? How?
6. Is exercise important to you? Why or why not?

7. What do you feel is the biggest barrier to regular exercise in college?

8. How would you define a healthy lifestyle?

9. If Ohio State University could do one thing to aid you in becoming healthy, what would it be?

10. Does anyone have anything to add?

Data Analysis

All focus groups were transcribed from audio recordings. Text data were carefully read by investigators and systematically analyzed to identify recurrent themes both within and across groups. Researchers read all transcriptions individually, then met to discuss themes and patterns. Two researchers concurrently coded all text data to ensure consensus and consistency. A third researcher reviewed the themes for agreement. Responses were organized into categories, including what college students eat, exercise activity, barriers to eating and exercise, and helpful ideas for the future.
CHAPTER 4

COLLEGE STUDENTS’ PERCEPTIONS OF HEALTHY LIFESTYLES – FOCUS GROUPS TARGETING DIET AND EXERCISE IN COLLEGE

Melissa Mullett, Kay Wolf, Jill Clutter, Connie Bohem

ABSTRACT

College students are known for consuming food that is high in fat, cholesterol and sodium, and low in fruits and vegetables. Additionally, students’ exercise decreases after high school due to declined participation in organized sports. This study examined how diet and exercise change upon entering college, the perceived barriers to being healthy, and the students’ beliefs of how a university can assist them in remaining healthy. Authors conducted six focus groups and discovered that college students eat more, eat at unstructured times, and make food choices based upon what is quickest, what is close in proximity, what’s available, and what is affordable. Furthermore, students participate in fewer organized sports. Barriers included time and social pressures, cost, availability of healthy food, and unfavorable perceptions of the recreational sports facility. This information can help universities to institute programs to aid students in becoming healthy individuals.
INTRODUCTION

The National College Health Risk Behavior Survey results indicate that nearly 35% of college students may be overweight or obese which is a precursor to many conditions such as type 2 diabetes and cardiovascular disease. (1, 2). Additionally, the diet of college students is reported to be high in fat, cholesterol, and sodium (3). Many students do not meet the recommendations for servings of fruit and vegetables, as well as eating a variety of foods (3, 4, 5, 6, 7, 8). To compound the situation, binge drinking and other unhealthful habits, such as tobacco use, drug use, and a lack of physical activity, are simultaneously formed (9, 10, 11). Students in their first year of college are often classified as sedentary, exercising less than one time per week (12, 13). Lastly, the decisions that students make is largely dependent upon the developmental stage they are in (14, 15). These practices established at a young age may persist later in life consequently leading to disease.

Many studies report what students eat in college and some report what their exercise habits are. Yet research has not sufficiently focused on the college students’ reported changing lifestyle behaviors upon entering college and perceived barriers to a healthy lifestyle. Furthermore, reports on interventions or how colleges are changing to improve student outcomes are few. The present qualitative study attempts to illuminate the barriers and facilitators to healthy eating and exercise among college students and provide suggestions for developing future programs.
METHODS

Study Design and Participants

Six focus groups, ranging from six to eight participants, 60 minutes each, were conducted the second quarter of a university calendar. To attract students using the residence dining halls, table-tent advertisements were used. A flyer was also distributed through an email newsletter to pre-Allied Health Professions students.

Students were informed that the focus groups were being conducted to learn their perceptions of a healthy lifestyle and the factors that assist or prevent them from exercising and eating well while in college. All participants were over the age of 18 and provided written consent.

Development of Focus Group Guide

Prior literature was searched regarding determinants and barriers related to college students' food patterns and exercise activities, as well as barriers to healthy lifestyle in relationship to eating and exercising. An expert panel of health educators and behavioral researchers reviewed the information and developed the focus group guide. Focus group questions regarding healthy lifestyles were divided into: (i) questions regarding current eating patterns, how they decide what to eat, and their perceived barriers to healthy eating, (ii) questions regarding current exercise activity and the perceived barriers to remaining active, and (iii) questions for final input on thoughts
regarding what would aid students in attaining a healthy lifestyle. Table 1 illustrates the questions used during the focus group sessions.

1. Please tell us your name and the first thing that comes to your mind when you think about college food.
2. Have your eating habits changed since coming to college? How?
3. Since coming to college, how do you decide what to eat?
4. What do you feel is the biggest barrier to eating healthily in college?
5. Have your exercise habits changed since coming to college? How?
6. Is exercise important to you? Why or why not?
7. What do you feel is the biggest barrier to regular exercise in college?
8. How would you define a healthy lifestyle?
9. If [the current university] could do one thing to aid you in becoming healthy, what would it be?
10. Does anyone have anything to add?

Table 1: Focus Group Questions
Data Collection

Five trained research staff moderated the focus groups. The groups were audiotaped in order to ensure accuracy when analyzing the discussions. The recordings of the focus groups began after students said their names; transcriptions were recorded without names and the summaries were completely confidential without any summary by student name. to encourage participants, a $25.00 gift card was provided after the sessions. This project received approval from the University Institutional Review Board.

Data Analysis

All focus groups were transcribed from audio recordings. Text data were carefully read by investigators and systematically analyzed to identify recurrent themes both within and across groups. Researchers read all transcriptions individually and then met to discuss themes and patterns. Two researchers concurrently coded all text data to ensure consensus and consistency. A third researcher reviewed the themes for agreement. Responses were organized into categories, including what college students eat, exercise activity, barriers to eating and exercise, and helpful ideas for the future.

RESULTS

The following results present lifestyle changes of students as they enter college, college students’ definition of a healthy lifestyle, barriers to eating well and exercising, and suggestions for assistance to improving the students’ lifestyles.
A total of forty college students participated in six focus groups. Twenty-one (52.5%) participants were female and 19 (47.5%) were male. Most of the students lived on campus and all ate in university dining halls. There were several themes found in and across the focus group discussions. Table 2 summarizes these themes.
### Summary of Themes – Changes in Eating Habits
- College students’ diets consist of larger portions sizes.
- College students eat meals at unstructured times.
- College students make food choices based upon what is quickest, what is closest, what is available, and what is affordable.

### Summary of Themes – Changes in Exercise Habits
- College students participate in less organized sports.
- College students perceive their exercise habits to be increased from high school.

### Summary of Themes – Barriers to Healthy Eating
- College students perceive the barriers to healthy eating to be time pressures, money, availability and choices, and social pressures.

### Summary of Themes – Barriers to Exercise
- College students perceive the barriers to physical activity to be social and time pressures.

### Summary of Themes – Items That Would Aid Students in Becoming Healthy
- College students desire healthy choices in all dining halls.
- College students desire information about the food that is available in University dining facilities.
- College students desire more eating options available on the weekends.

Table 2: Summary of Themes
Eating

Changes in Eating Habits and Food Choices

The students reported changes in their eating patterns since coming to college. The primary factors affecting their eating pattern included time, larger portions, finances, and missing home. Students reported similar factors in determining their food choices. They reported time, proximity, money, and the meal plans as the most influential factors in making meal choices.

The lack of time and their changing schedule influenced their eating: “...I’ll go to [the] Commons at, like, midnight or something like that. I’ll have breakfast at noon, and then lunch at, like, nine, and then dinner even later.” Students also reported that they found themselves eating larger portions than in the past due to the meal plan. Large portions were available, and many felt uncomfortable wasting the food provided (or their money) that was available due to the meal plan: “I agree with that. At [the grab-and-go dining], you get three sides and an entrée, so every time I go, I get a ton of food and max it out. Sometimes I’ll save some of it for later, but usually I just eat all of it at the same time.” Interestingly, some participants reported eating healthier than home, while others reported eating more junk food: “Mine actually got a little bit better...I live with my dad and he’s really bad about buying vegetables. He eats meat and potatoes every day. When I came here, I was like “wow, vegetables” and “I think I eat so much less healthful here. Because at home, my mom cooks and I know what it is. But here, you don’t know
what you’re going to get.” However, many reported missing the customary foods and schedules from their home such as fruits and vegetables and meals at consistent times: “I eat a lot more junk food now and I eat at like two in the morning, because I don’t go to bed until three in the morning. So, I feel like my whole eating schedule and the contents of what I eat have totally changed.”

Proximity of food eateries was a factor in what and when students ate. They reported running into dining areas because they were close to their classes or housing. Also, the sites that were open when they had the time to eat influenced what they ate. This included social eating with friends at nights from places that delivered: “Or the [campus pizza delivery] if I don’t feel like moving...I get that delivered.”

**Barriers to Eating Healthy**

The factors that negatively influenced eating better included money, time, availability of healthy foods, and the student card. Students felt the money and time limited the options that they had to purchase and consume better foods: “Money is a pretty big barrier, because if you want something healthy, but you can’t afford it, you aren’t going to buy it. If it’s something healthy or quick and cheap, Ramen wins.” Additionally, they felt that healthy choices were not always made available to them, especially on the weekend and due to the student card: “The traditional meal plan is a joke...you can’t [access] after 10:00 pm until 7:00 am the next morning and they expire at the end of the week. You can eat at only four places on campus...I can’t go to [the
marketplace dining]” and “On the weekends, I’m forced into selective options, because [the grab-and-go dining] is closed, [the commons] has restricted hours, [the burrito line] is open until 7:00 pm. So, you’re forced to either get something off campus or the [campus pizza delivery]…”

Exercise

*Importance of Exercise and Changes in Exercise Habits*

The students reported that exercise is important, mainly for stress relief and feeling good about themselves: “It has a lot to do with self-esteem and how you view yourself.” They also reported changes in their exercise habits since coming to college. The primary factors affecting their exercise pattern included no longer being able to participate in team sports, increased walking to classes, and the living environment.

The lack of organized, team athletics influenced their physical activity: “I used to do sports and now I’m not in sports, so I probably workout a lot less.” However, students also reported an increase in overall physical activity. This was primarily due to walking daily to and from classes, as well as the recreational sports facility being available for their use in weight lifting: “Yeah, having those facilities is great. I’ve started working out since college; I didn’t do that ever before.” Students reported the living environments as beneficial, because there are people around to act as motivators to attend the gym or do something active: “And you have friends; there’s always someone to workout
with...whether you’re in the dorm or a Greek house or whatever, there’s always someone who wants to. Even if you aren’t in the mood, someone’s going to be like” no, let’s go.”

**Barriers to Exercise**

The factors that negatively influenced exercise behavior were time, weather, and perceptions of the recreational sports facility. The primary individual impediment was a perceived lack of time due to class hours, course workload, and social activities: “During the day, you have classes, you have activities, speakers, hanging out, eating. Don’t forget the homework. There’s just so much stuff that happens during the day, like when you would want to workout, and they’re more important, I guess.” Students also conveyed that the recreational sport facility is not open 24 hours, as so... is not conducive to the college lifestyle.

Students, additionally, reported that the recreational sport facility was intimidating to use: “The gym can be a self-conscious place” and “Some people are intimidated by the gym...maybe people come in and are shy to ask what a machine does....” They also stated that getting there in inclement weather was a barrier: “The weather...when it gets bad, you can’t make it to the gym.”

**Healthy Lifestyle and University Assistance**

Students principally defined a healthy lifestyle as something that requires a conscious effort: “Making a conscious effort to eat healthy foods and set aside time to workout.” Additionally, they reported a balance between the different aspects of their
lives, including exercise, a healthy diet, and mental health, as being healthy: “Balancing everything. Getting good grades. Maintaining academics while doing everything on the side; hanging out with friends, getting to the gym, eating healthy.”

Students provided ideas on what would aid them in becoming healthy. For food, these included more healthy options, nutrition information in the dining halls, and better drink choices (more real juice and milk, rather than pop and coffee) on the student meal card. In terms of exercise, students reported that having the recreational sports facility open 24 hours would be more conducive to the college lifestyle: “If the [recreational sport facility] was open 24 hours, I would definitely go. It would fit the lifestyle of college kids.” They also reported that they would like to have the opportunity to utilize free personal training and have organized activities in the dorms: “Maybe we could do something in the dorm, like form a group to go do a sport or go workout together.”

COMMENT

Although the diet and exercise habits of college students are well known, most research does not describe how students’ habits change during the transition from high school to college. Most studies thus far have focused on what students eat, how much they exercise, and what barriers they feel to exercise. The present study focused on: (i) if, when, why, and how the behaviors of students’ change once on campus, (ii) what the perceived barriers are to maintaining a healthy lifestyle, and (iii) what items would assist
students in leading a healthy lifestyle. The results of the study might provide insight for program planners when attempting to improve the health of university students.

Findings from the focus groups indicate that students are faced with increased portions, unstructured eating patterns, and due to the time pressures and financial position many are in, they make their food choices based upon whatever is available the quickest, is on the menu, and is affordable. These changes in dietary habits could be due to many things. First, perhaps college students have not been educated on how to make healthy food choices. The findings of this group revealed that students want point-of-sale information on nutrition. If this is the case, then universities could provide students information in the dining halls on nutrition and making healthy choices in order to better the eating habits of their students. Secondly, it is conceivable that the developmental stage that students are in influences their decisions. Because most students in college are in a stage where they have difficulty in knowing what to believe or knowing how to decide what to do, they may make choices based on what authority figures do or based on what they observe (14, 15). This could explain why peer-pressure is such a large issue on college campuses. It could also be part of the reason why the habits of students often come from what they see at home. If universities could use this information to set examples for students, it could be an effective way to increase healthy behaviors.

The results of the groups indicated that students feel organized sports opportunities are fewer and that this may contribute to a decline in physical activity. It
was apparent that students were either unaware of the chance to participate in intramural sports or felt that they were inaccessible for some reason. If this is true, it could present an opportunity for the dorm Resident Assistants to work with the recreational sports department in order to promote and raise awareness about the sports opportunities on campus. Also, students appeared to acknowledge that physical activity declined in terms of cardiovascular training (ie. running); however, interestingly, they reported that weight lifting exercise may actually be increased above what it was in high school, simply due to the university facilities made available to them. Nevertheless, students reported barriers to exercise: time, weather, and perceptions of the recreational sports facility.

The perception of the students was that the recreational sports facility is large and intimidating for some students to use. This could be for several reasons. First, students may not have a good understanding for how to use gym equipment and are hesitant to ask for direction. Secondly, students may actually be intimidated when walking into the recreational sports facility due to its size, the number of people inside, and the perception that “everyone is staring.” Or, third, it could be due to the fact that students either don’t know how to get to the gym, or don’t want to go alone. Whatever the case, all of these possibilities serve as potential areas for intervention. Universities could create courses or mini-series to teach students how to use equipment or how to navigate the gym. The creation of dorm-against-dorm activities could open opportunities for students to participate in activities without having to attend the gym. This could also be an area in
which the Resident Assistant could promote use of the recreational sports facility by taking students in groups.

It is important for universities to know what they can do on an institutional level to assist their students in overcoming barriers and becoming healthy. Students ultimately believe that the option of healthy choices both during the week and on the weekends and information about the food they are offered will assist them in becoming healthy or maintaining a healthy lifestyle. They also provided recommendations to keep the recreational sport facility open 24 hours and provide free trainers to students. Program planners might use this information to effectively target the specific barriers, especially those that are under university control, such as making healthy food readily available to students, reworking the meal plan system, and considering the recreational sports facility hours.
LIST OF REFERENCES


CHAPTER 5

SUMMARY AND CONCLUSIONS

Summary

This study sought to uncover more information regarding college students and health. A review of the college health literature as well as the research focusing on students' diet and exercise habits, perceptions of barriers to maintaining a healthy lifestyle, and thoughts on items that would assist them in leading a healthy lifestyle revealed several discoveries. These include several ways in which the college students' diet and exercise habits change after coming to college and what the main perceived barriers to eating healthy and maintaining physical activity are.

Few studies in the past have investigated why students eat what they eat, and students' perceived barriers to healthy eating. This is a problem because there was evidence suggesting that bad habits are often formed when high school students leave home for college (5, 6). Consumption of fast foods, vending machine snacks, and microwaveable dinners during college, in combination with decreased physical activity can lead to weight gain and chronic diseases such as hypertension, dyslipidemia, type 2 diabetes, coronary heart disease, and stroke (4).

Key findings of this study include the following:
1. Students' diet habits change once coming to college; in general, the primary factors affecting their eating pattern included time, larger portions, finances, and missing home. Similarly, students reported time, proximity, money, and the meal plans as the most influential factors in making meal choices.

2. The factors that negatively influenced eating better included money, time, availability of healthy foods, and the student card.

3. Students' exercise habits change once coming to college; the primary factors affecting their exercise pattern included no longer being able to participate in team sports, increased walking to classes, and the living environment.

4. The factors that negatively influenced exercise behavior were time, weather, and perceptions of the recreational sports facility.

5. Students feel that exercise is important for stress relief and self-confidence.

6. Students define a healthy lifestyle as requiring a conscious effort and one that balances the different aspects of their lives, including exercise, a healthy diet, and mental health.

7. More healthy food options, nutrition information regarding dining hall food, and better drink choices on the meal plans would help students to
eat healthier. Additionally, opening the recreational sports facility 24 hours and providing trainers would aid in being physically active.

Conclusions

Students’ habits change in many ways during the transition from high school to college in terms of eating and physical activity. They are faced with increased portions, unstructured eating patterns, and due to the time pressures and financial position many are in, they make their food choices based upon whatever is available the quickest, is on the menu, and is affordable. Additionally, organized sports opportunities are fewer which may contribute to a decline in physical activity. The social life of students’, in addition to the demands of schoolwork become barriers to staying active and making healthy food choices. It is important for universities to know what they can do on an institutional level to assist their students in becoming healthy. Overall, the perceptions of this population may be much like other large institutions.

There are some limitations that affected the results of the study. In general, the small number of participants, and the nature of focus group research were limiting factors. First, focus group research, because it is driven by the researcher’s interests, may be produce weak results and moderators may influence the group’s interactions by trying to maintain the focus of the study. Second, all forty of the participants in the study were self-selected. This sample may not be representative of all college students at the current university.
LIST OF REFERENCES


APPENDIX A

TABLE TENT ADVERTISEMENT FOR RECRUITMENT
What keeps you from leading a healthy lifestyle?

We want to hear what you have to say! (and, better yet, we’ll pay you for it!).

JOIN A Healthy Lifestyles Focus Group today!
Contact __________ to register.

Schedule:
Monday 2/25
Wednesday 2/27

All sessions start at 6:30 pm and are located in 306 Atwell Hall. Sessions last 45-60 minutes. All participants receive $25 Visa gift cards.
APPENDIX B

EMAIL NEWSLETTER ADVERTISEMENT FOR RECRUITMENT
We want to hear what you have to say! (and, better yet, we’ll pay you for it!).
JOIN A Healthy Lifestyles Focus Group today!
Contact ______________ to register.

Schedule:
Monday 2/25
Wednesday 2/27

All sessions start at 6:30 pm and are located in 306 Atwell Hall. Sessions last 45-60 minutes. All participants receive $25 Visa gift cards.
The Ohio State University Consent to Participate in Research

Study Title: COLLEGE STUDENTS' PERCEPTIONS OF HEALTHY LIFESTYLES- FOCUS GROUPS TARGETING EATING AND EXERCISING IN COLLEGE

Researcher:

Sponsor: The Student Wellness Center

This is a consent form for research participation.

It contains important information about this study and what to expect if you decide to participate.

Your participation is voluntary.

Please consider the information carefully. Feel free to ask questions before making your decision whether or not to participate. If you decide to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose:

This study is being conducted by __________ and as a portion of a masters student’s thesis to understand the barriers to students participating in a healthy lifestyle.

Procedures/Tasks:

This consists of a 30-60 minute interview. This interview will be tape recorded and transcribed. It will be used only by the Student Wellness Director and Thesis Committee members for analysis of interview data.

Duration:

You may leave the study at any time. If you decide to stop participating in the study, there will be no penalty to you, and you will not lose any benefits to which you are
otherwise entitled. Your decision will not affect your future relationship with The Ohio State University.

Risks and Benefits:

All information discussed in the focus group will be heard by other participants. While all participants will be asked to keep the discussions confidents, there is no guarantee of confidentiality.

Confidentiality:

Efforts will be made to keep your study-related information confidential. However, there may be circumstances where this information must be released. For example, personal information regarding your participation in this study may be disclosed if required by state law. Also, your records may be reviewed by the following groups (as applicable to the research):

- Office for Human Research Protections or other federal, state, or international regulatory agencies;
- The Ohio State University Institutional Review Board or Office of Responsible Research Practices;
- The sponsor, if any, or agency (including the Food and Drug Administration for FDA-regulated research) supporting the study.

Incentives:

All participants in the focus group will receive $25 Visa gift cards.

Participant Rights:

You may refuse to participate in this study without penalty or loss of benefits to which you are otherwise entitled. If you are a student or employee at Ohio State, your decision will not affect your grades or employment status.

If you choose to participate in the study, you may discontinue participation at any time without penalty or loss of benefits. By signing this form, you do not give up any personal legal rights you may have as a participant in this study.

An Institutional Review Board responsible for human subjects research at The Ohio State University reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research.
Contacts and Questions:

For questions, concerns, or complaints about the study you may contact __________.

For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact __________.

If you are injured as a result of participating in this study or for questions about a study-related injury, you may contact __________.
Signing the consent form

I have read (or someone has read to me) this form and I am aware that I am being asked to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to participate in this study.

I am not giving up any legal rights by signing this form. I will be given a copy of this form.

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Investigator/Research Staff

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

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