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"How do international collegiate athletes perceive the impact of dietary acculturation on current eating patterns?"

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“How do International Collegiate Athletes Perceive the Impact of Dietary Acculturation
on Current Eating Patterns?”

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A thesis submitted to the Graduate Faculty of

JAMES MADISON UNIVERSITY

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for the degree of

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Abstract

This qualitative research study examined perceptions of international collegiate athletes on the impact of dietary acculturation on current eating patterns. Twenty-two international collegiate student athletes participated in one of three focus group sessions. Focus groups explored participant dietary patterns in the context of acculturation. Thematic analysis of data, using a grounded theory approach, implicated that participants faced challenges as they adapt to the American culture. Emergent themes of challenges included cultural differences compared to home, demand of their sport and dining on campus. Topics related to dietary acculturation were discussed including food differences and quality, availability of fast food, family influences and lack of food options from home.

Keywords: acculturation, cultural identity, dietary acculturation, eating patterns, international college student athletes

Chapter 1: Literature Review

International students are a rising population at American Universities¹.

International students increase enrollments to strengthen revenues, help universities remain competitive and contribute to the diverse atmospheres on college campuses. Robust athletic programs are another reason international students are attracted to American universities. Cultural diversity is increasing in the National Collegiate Athletic Association (NCAA), with roughly 4% of all college athletes identifying as international student athletes.²

Acculturation, the process of settling and adjusting to a new culture^{3-5,7,8}, can have an impact on dietary and health outcomes for international students. Individuals can experience physical and psychological problems when transitioning to a new country.^{7,9-12} Acculturating to a new culture, language, education system, and social networks and place international students at a greater risk for homesickness, stress, anxiety, depression and social isolation.³⁻⁵ Rapid change in culture, customs and sport can potentially have negative effects on students' dietary and health behaviors.^{3,6,7}

In order to uphold their cultural identity, international students rely on food to cope with homesickness, as a socialization mechanism to meet individuals from their native countries and also to become accustomed to expectations of the host country.^{5,6,9,10,16} International students can experience culture shock, which is a state of disorientation as a result of moving from a native culture to a new culture.^{6,11,15} It has been found that international students who experience culture shock increase their food intake and decrease their physical activity levels as a reaction to stress.^{3,6,17} Currently

there are no data which characterize the impacts of the acculturation process and dietary patterns among international student athletes.

Dietary acculturation is the process of adopting dietary practices of a new culture. For migrants, adopting different eating patterns can affect health and lifestyle factors. Positive adaptations can occur when one assumes healthy lifestyle behaviors. Consuming a diet of high nutritional quality lowers the risk of adverse health conditions along with improving quality of life¹. Unhealthy eating behaviors can have consequences on health and quality of life.⁷ In the U.S., the food supply contains high amounts of fat, salt and sugar, all of which are culprits of poor health status.^{1,7,8,13} In the diet of migrants, traditional foods are often replaced by a “modern, Western diet” which includes a greater amount of calories from fats, oils, processed starches and sugars.¹⁷ These changes in dietary patterns can increase the risk for chronic disease.^{1,3,5,10} Among college age students, the lack of availability of traditional foods and an increase in alcohol intake, place them at a higher risk of increased body mass index (B.M.I).^{1,9,11,14}

It has been reported that when coming to America, migrants adopt poor eating patterns because of the convenience and availability of food which is typically of lower nutritional value.^{8,10,19} Other factors affecting eating patterns include the length of time spent in the country, the ability to speak the native language, and the social behavior of the environment⁸. The more far-removed their native culture is from American ways, the more difficult their transition will be.³

Convenience and availability are hallmark traits of college dining options. Many college campuses offer fast food options, which can be very appealing to students. Fast

foods, particularly those foods which are fried or highly processed, can contain high amount of trans-fatty acids.^{13,17} It has been found that individuals who eat fast food at least once a week have a 20% higher risk of mortality from coronary heart disease; furthermore, poor dietary patterns among college students may ensue as new found independence leads to unhealthy food choices, increased meals eaten away from home and the inclusion of more snacks in the diet.^{8,13,17} At this time, no studies exist to determine how dietary patterns are altered among college student athletes and what those changes mean for sport performance and overall health.

Given the increase in international student athletes, universities have explored programs to improve their experience to help students adapt to their new culture; universities have specifically focused on the challenges of dietary acculturation. The culture-adjustment exposes students to different socio-cultural environments compared to their homeland.^{1,3, 6-8,19} Colleges have made strides in creating healthier choices in campus dining halls and providing international students access to traditional foods; however, some limitations have been noted. It appears that traditional foods served on college campuses do not compare to the taste and quality of similar meals from international students' homelands. It has been found that international students have more severe reactions to the meal, the more distant the cultures are.^{1,10,15} A better understanding of international students' dietary patterns in relation to acculturation may have an impact on the transition to the American culture. Colleges and universities should devote more effort into creating a support system for international students with better health services, including dietary behaviors⁷. Further research on international

student athletes and dietary acculturation could ease their transition to the American culture and have potential effects on athletic performance by better accommodating their dietary needs.^{7,15}

The purpose of this study was establish theories among the dietary acculturation process in international collegiate athletes as they transition into the American culture. With none of the past research focusing on acculturation and international student athletes, this study utilized focus group methodology to characterize potential factors associated with dietary acculturation among international collegiate student athletes. The data and interpretations from this study may be influential in developing further hypothesis driven studies evaluating acculturation and dietary patterns. Furthermore; the advancement of knowledge in this area may help athletic personnel, college dining services and health care providers to better attend to the needs of collegiate international student athletes as they come to America.

Chapter 2: Methods

Methodological Framework

Focus group methodology was used to facilitate a detailed discussion among international student athletes. Audio transcripts and field notes (from here on out known as *text*) assisted in generating a large amount of descriptive data that was systematically analyzed using Grounded Theory, a framework for developing theory about a phenomenon of interest.²² Grounded theory employs a constant comparative method through the integration of categories, themes and codes to demonstrate that a theory is adequately developed.²²

Participants & Recruitment

Male and female international student athletes, 18 years or older, were recruited to participate in the study. Participants were recruited three ways: 1) through a JMU-bulk email and 2) with assistance from JMU athletic trainers who referred willing participants to investigators and 3) advertisements posted around JMU athletic facilities. Interested participants contacted the researcher directly and chose one of three dates/times to participate in the focus group. Once recruited, the participants were emailed a pseudonym to be used during the study. This was to ensure confidentiality.

Three focus group sessions were conducted on three separate days. Days and times were selected to coordinate with athletics travel schedule and to avoid conflicts with practices and other sport events. Focus groups were completed in a conference room which was a familiar landmark to all participants. The number of participants in

each focus group ranged from as few as six to as many as 10. Participants were given the option of participating in a “same gender” focus group session. All participants agreed to participate in groups with both male and female participants. The study included eight females and thirteen males (n=21). Participants represented a variety of sport disciplines on campus and include: men’s and women’s golf, men’s and women’s soccer, men’s and women’s tennis, women’s volleyball, and women’s swim and dive. Participants were also from a variety of countries from four different continents including: Australia, Canada, England, France, Germany, Mexico, Norway, Serbia, Spain, Switzerland, Sweden, and Turkey. A number of participants indicated that they have lived in multiple countries. All study procedures were approved by the James Madison University Institutional Review Board.

Focus Group Interviews

On the day of the focus group participants reviewed the informed consent documentation and answered all questions to their satisfaction. Once participants gave their informed consent and agreed to be audio recorded they completed a demographic questionnaire (Appendix A). An interview guide was created to assist the focus group moderator in facilitating the sessions. The interview guide outlined the procedures and expectations during the focus group session as well as the questions to be asked of the participants. Appendix B includes a copy of the moderator guide with interview questions. The interview started with an ice breaker question to engage participants and create a comfortable environment. Through the utilization of an interview guide, the

interviewer used semi-structured focus groups with interview questions that included both generative and directive questions.

Interviews were recorded using a digital audio recorder reserved from Carrier Library. Participants were encouraged to not use their names to maintain anonymity. If actual participant names were used in audio recordings, those were omitted during the audio transcription process. Field notes were taken to ensure data collection if audio recordings happen to fail. Once all interviews were complete, the moderator and primary researcher debriefed and summarized potential ideas that emerged from focus group discussion, creating analytic memos. Digital data were downloaded to an encrypted flash drive in order to be securely stored. Interviews were transcribed verbatim into a Microsoft Word document. Transcribed documents (Microsoft Word and Excel) did not contain any identifiable information. Transcripts resulted in 24 pages of single-spaced data.

Data Analysis & Coding

Grounded Theory development was adopted as the framework to analyze data.²² Grounded Theory is a constant comparative method where categories, themes and codes are developed inductively from the data to generate a theoretical explanation of the phenomenon studied. Immersing in the data allowed for the gathering of pertinent details and to draw more cohesive conclusions.

Grounded Theory development is an iterative process that entails several phases. First, during the data immersion phase, the researcher reads the data several times to

familiarize herself with the data, making notes in the margin, called analytic asides, that highlight initial observations in the data. Second, the first coding process is called open coding. Open coding involved the data interpretation. Codes were constructed using words and phrases from participant quotations or a direct interpretation by the researcher. In most instances text was dually coded first with a broad concept code and then a more specific code. Emergence occurs as words or phrases are recurrently stated. By highlighting important words and phrases of the text, ideas will be shaped to begin the development of concepts. Concepts will be identified by codes. Codes emerge as the meaning of the data is interpreted. Codes can be constructed using words and phrases from participant quotations or a direct interpretation by the researcher. Third, as concepts begin to form, the use of comparing and contrasting methodology may reduce the concepts into larger groupings. This process is referred to as axial coding. Axial coding essentially reassembles the fragmented words, phrases and concepts into a more cohesive analysis, which result in the development of themes (Charmaz, pp 60). The identification and conceptualization of themes establishes the framework of the theory to be developed. Thematic codes can also be further reduced, as the theoretical model of the data begins to take shape. Such types of coding may help to specify relationships between themes (Charmaz, p 63) and strengthen theory development.

The Grounded Theory approach explored important words and phrases that emerged from participant quotations, called in vivo codes. Emergence occurred as words or phrases were recurrently stated. Words and phrases were separated and highlighted in the Microsoft word document to create “text”. Text was transferred into Microsoft Excel for

concept development. Concepts within each portion of text were identified by codes.

Below is an example how data was coded:

“Adapting to new culture. Different way to eat. Everything is just so big in the United States compared to Europe so had to make some adjustments”

This text was isolated from the focus group translation. The first pass evaluated the overall concept of the statement. This piece of text was coded as “*challenges in the US*”. It was interpreted that the participant was describing one of the challenges he or she faced when arriving to the US. A second pass, was created to tease out more specific concepts. It was interpreted that the challenges that were faced were due to the vast cultural differences from Europe to the US. Therefore, the code “cultural differences” was established. In this study a total of 548 pieces of “text” were coded. Eighty one unique codes were generated from the coding process. A code book (Appendix C) was created to define the meaning and context of each code.

Once all text was coded a word cloud software, *Wordle*, was used to conceptualize themes and visualize the frequency in which codes were used in relation to each other. Two word clouds were created, one which characterized the broad concept codes (Figure 1) and one which characterized the more specific concept codes (Figure 2). From this visualization and the comparing and contrasting of codes, concepts were combined to form larger groupings. This helped to create relationships between concepts and allow themes to emerge, strengthening theory development. Figure 3 is a representation of the theory that has been created as a result of this research. Participants then reviewed the model (Figure 3) to reinsure that what the researchers found was accurate and that those

were the challenges they faced in the US. A full explanation of this theory is discussed in *Chapter 3, Manuscript*.

Figure 1.
Coding- First Pass



Figure 2.
Coding- Second Pass



Chapter 3: Manuscript

International student athletes are important to the fabric of the American university culture by increasing competition, contributing to the diversity on campus and increasing enrollments to strengthen revenues. Robust athletic programs are attracting international students to American universities. Cultural diversity is increasing in the National Collegiate Athletic Association (NCAA), with roughly 4% of all college athletes from international origin.

Although it is attractive to come to the United States and learn and play at an American university, Acculturating to a new culture, a process termed, acculturation,^{3-5,7,8} can have impacts on both dietary and health outcomes for international students. Physical and psychological problems have also been documented.^{7,9-12} Adapting to a new culture includes learning a new language, navigating the education system, and creating social networks. The necessity for cultural adaptation within the new environments of U.S. universities places international students at a greater risk for homesickness, stress, anxiety, depression and social isolation.³⁻⁵ Rapid change in culture and customs can also have negative effect on students' dietary and health behaviors.^{3,6,7} In order to uphold their cultural identity, international students rely on food to cope with homesickness, as a socialization mechanism to meet individuals from their native countries and to become accustomed to expectations of the host country.^{5,6,9,10,16}

Dietary acculturation is the process of adopting dietary practices of a new culture. In the U.S., the food supply contains high amounts of fat, salt and sugar, all which contribute to poor health.^{1,7,8,13} For migrants, traditional foods are often replaced by a

“modern, Western diet” which includes a greater amount of calories from fats, oils, processed starches and sugars.¹⁷ These changes in dietary patterns can increase the risk for chronic disease.^{1,3,5,10} Among college age students, the lack of availability of traditional foods and an increase in alcohol intake, place them at a higher risk of increased body mass index (B.M.I).^{1,9,11,14}

Convenience and availability are hallmark traits of college dining options. Many college campuses offer fast food options, which can be very appealing to students. Fast foods, particularly those foods which are fried or highly processed, contain high amount of trans-fatty acids.^{13,17} It has been found that individuals who eat fast food at least once a week have a 20% higher risk of mortality from coronary heart disease.^{13,17} A new found independence as a college student may lead to unhealthy food choices, increased meals eaten away from home and the inclusion of more snacks in the diet.^{8,17}

At this time, limited studies exist to determine how dietary patterns are altered among college student athletes and what those changes mean for sport performance and overall health. Studies have shown when college students move to a new country they assimilate to the culture and customs of the host country.^{8,17} Dietary acculturation is the process of adopting dietary practices of a new culture. For migrants, adopting different eating patterns can affect health and lifestyle factors. This research sought to answer the following question: *How do international collegiate athletes perceive the impact of dietary acculturation on current eating patterns?*

Methods

Focus group methodology was used to facilitate a detailed discussion among international student athletes. Audio transcripts and field notes assisted in generating a large amount of descriptive data that was systematically analyzed using Grounded Theory, a framework for developing theory about a phenomenon of interest. Grounded Theory employs a constant comparative method through the integration of categories, themes and codes to demonstrate that a theory is adequately developed.²²

Participants

Male and female international student athletes, 18 years or older, were recruited. Research participants were recruited three ways: 1) through a JMU-bulk email and 2) with assistance from athletic trainers that referred students to investigators who were willing to participate and 3) flyers posted around athletic facilities advertising the study. Interested participants contacted the researcher directly and selected one of three dates and times to participate in the focus group. The days and times selected for focus groups were set in consideration with athletics travel/practice schedule, school schedule and to avoid any conflict within their sport.

The study included eight females and thirteen males (n=21). Participants represented a variety of sport disciplines on campus and include: men's and women's golf, men's and women's soccer, men's and women's tennis, women's volleyball, and women's swimming and dive. Participants were also from a variety of countries from four different continents including: Australia, Canada, England, France, Germany,

Mexico, Norway, Serbia, Spain, Switzerland, Sweden, and Turkey. A number of participants indicated that they have lived in multiple countries.

Procedure & Analysis

All study procedures were approved by the James Madison University Institutional Review Board. Focus group interviews were led by a trained focus group moderator using an interview guide. Focus groups were completed in a conference room which was a familiar landmark to all participants. On the day of the focus group, participants provided informed consent and completed demographic questionnaires. The number of participants in each focus group ranged from as few as six to as many as ten. Structured and semi-structured questions were used to facilitate discussion. All interviews were audio recorded and field notes collected. All data was transcribed verbatim into a Microsoft word document. Data was fragmented into text as new ideas and concepts were identified. Fragments were exported into an excel document for coding.

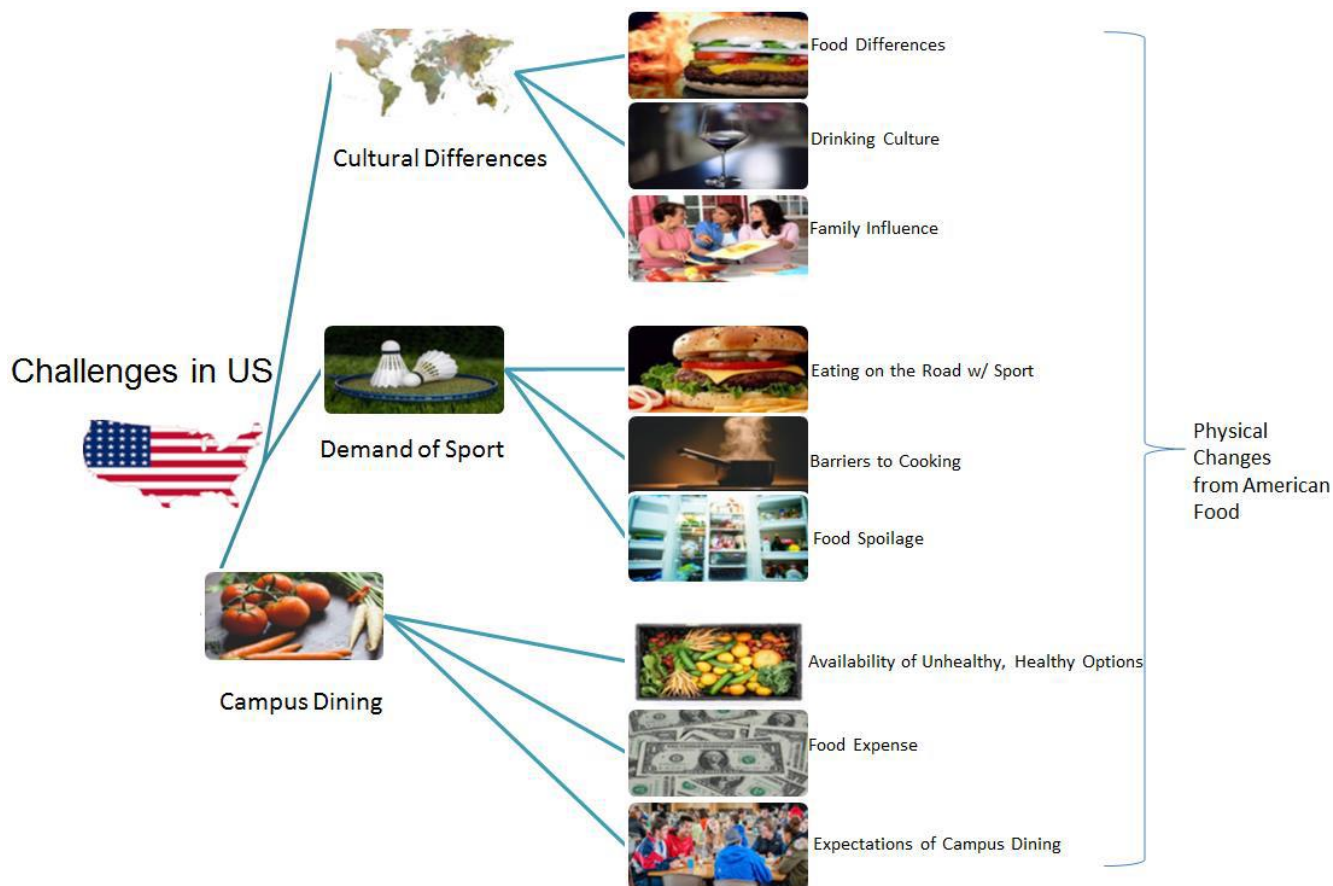
For coding and analysis, the grounded theory approach was applied to text to explore important words and phrases that emerged from participant quotations.²² Emergence occurred as words or phrases were recurrently stated. By highlighting important words and phrases of text ideas were shaped to begin the development of concepts. Concepts were identified by codes. Codes were constructed using words and phrases from participant quotations or a direct interpretation by the researcher. A code book was created for consistency in coding. As concepts began to form, the use of comparing and

contrasting methodology reduced the concepts into larger groupings, which resulted in the development of themes (Charmaz, pp 60). The identification and conceptualization of themes established the framework for theory development.

Results

Analysis of the data indicated that international collegiate student athletes face dietary challenges when adapting to the culture and customs of the United States. This theory is supported by three major themes that emerged 1) Cultural Differences, 2) Demand of Sport and 3) Dining Options on Campus. Figure 1. is a model that conveys the overall challenges participants face in the U.S.

Figure 3.- Challenges in US



Analysis of the data indicated that international collegiate student athletes face distinctive *challenges* when adapting to the culture and customs of the United States (US). Many of the ideas generated from this qualitative inquiry underscored the challenges of dietary acculturation. Throughout the focus group sessions, participants conveyed a constant comparison from their home countries to America. For example one participant stated their main challenge was:

“Adapting to a new culture. Different way to eat. Everything is just so big in the United States compared to Europe so [I] had to make some adjustments.”

Through data analysis the overarching theme that collegiate student athletes face challenges when acculturating to the United States is supported by three major themes 1) Cultural Differences, 2) Demand of Sport and 3) Dining Options on Campus. These challenges and experiences appear to culminate around a major identified consequence, 4) Physical Changes from American Food. All are described in greater detail below.

I. Cultural Differences: Among challenges that participants faced in the US, cultural differences between the native culture and the mainstream American culture. Participants perceived Americans as “always on the go”, eating meals quickly, and failing to take time to enjoy meals. Participants acknowledged that in their home culture there is a greater appreciation of food. They described this as eating and enjoy their meals without rushing. Overall cultural differences are represented in Figure 4.

Figure 4.- Cultural Differences



One participant commented:

“When I am in Western Europe its normal to have a table of 8-10 people like twice a week at least. We spend like 2 hours at the table sometimes. By the time the food comes, we eat fruit or dessert and then coffee and its super enjoyable.”

Similarly, another participant stated:

“I think that’s a big thing with everyone eating together. Back home you wait for your parents to come home from work to eat as a family. That’s just the norm.”

These comments exemplify the contrast in their home culture to American culture, particularly the differences in meal time structure and the appreciation of food. In their home culture, it appears that meal time with family is valued as they wait for all members of the family to be present before eating. They take the time to prepare home cooked meals and utilize the meal time to create memories with friends and family.

Ia. Food differences: One of the largest contrasts in culture identified by participants was differences in food. Differences in food ranged from portion sizes to availability of food options from home.

One participant stated:

“For example the portion sizes are huge and I wasn’t really used to that. Also when we go to like E-Hall or D-Hall for example we have all different kind of food that we can possibly eat, like junk food, so I was not used to that.”

A participant also commented on portion sizes:

“You don’t have an option to eat healthier cause they just serve the portion of the meal”

These quotations exemplify that major differences from foods from home and American foods were the portion sizes. Many of the participants indicated they were overwhelmed by the amount of food and found it difficult to eat all the food. Another food difference mentioned by participants was breakfast foods.

One quote regarding the difference in breakfast foods:

“Actual bacon but not American, because that’s not real. European pork that’s what I like. Here the bacon is very thin, no meat to it, doesn’t taste like anything. At home it is very thick.”

Another participant said:

“The idea of breakfast is different. That’s different to me like pancake, sausage eggs, like yeah we have eggs to but sausage that’s not for breakfast. Or smashed potatoes or that stuff is not for breakfast.”

Several participants indicated that breakfast foods served in America were starkly different from their home culture and typically these foods would not be served for breakfast in their home cultures. As stated in the above example, breakfast foods in Europe were perceived to be of higher quality.

Ia1. Fast food chains and their popularity in the US were also discussed as an aspect of food differences. Several participants stated that there are many more fast food chains in the US compared to their home culture. Participants also pointed out that these dining options at home were more expensive compared to the US.

A participant indicated:

“There are a lot more fast food restaurants to choose from. In Europe, there’s not like that many choices. We only have a few like McDonalds or KFC but here we have like here there are so many different ones like right next to each other, so like here there’s a lot more distractions.”

A participant conveyed:

“Food, it’s harder to eat healthy here than in Western Europe. So much fast food. Everything is very fatty.”

According to participants, the US offers a wider variety of fast food restaurants. Participants also described the challenges of eating healthy in America given the overwhelming presence of fast food chains. This was emphasized in the example above. It was also noted that with a vast number of fast food restaurants, participants perceive there to be less family owned restaurants in the US, which are more popular overseas.

Ia2. Quality of food was another reoccurring theme associated with the cultural differences in food. Participants shared their perceptions of American food as being processed, full of preservatives and devoid of quality, this was starkly different from their perceptions of their home foods. Taste quality, particularly with produce and meats, was a concept that emerged consistently across all focus groups. Participants commented that foods just do not taste the same and found it difficult to describe the true taste of food to Americans who may not be exposed to such quality.

According to one participant:

“The food in Europe, the quality is much better. Like when you bite into a tomato, it doesn’t taste like a tomato [from

the US].”

Another participant commented:

“When I eat a strawberry [in the US] I eat something juicy I feel like, but it's not the taste of a strawberry[in Europe]. I don't know how to explain it to people who have never had the taste of a strawberry.”

In regards to meat, on participant commented:

“I think it's the quality. Like you're gonna find pork, sausages, but they're not the same as [my home culture]. You'll find bacon but it'll be different. It's not the same quality, so it's not the same taste. So it's like apples and oranges.”

These examples show the constant comparison of food quality from their home cultures to the US. The difference in the flavor profiles of food and food quality in the US was noticeable to the participants. They often mentioned how they would eat the same eat foods in the US as they would have at home, yet it would seem as if they are eating two different foods since the quality was not there.

Ia3. Lack of availability of home foods was recognized by participants as a sub-theme of food differences. Participants characterized foods that they consider “home foods” and described their nostalgia for these foods. Home foods were culturally specific. Although several participants synonymized home foods with home cooked meals, prepared by family members.

One participant defined home foods as:

“Something I am not able to make for myself.”

One participant commented:

“But my mom or me we would actually spend time in the kitchen preparing the food and the taste is just homemade. Everything is fresh.”

Participants indicated they do not always have access to home foods. Across all focus groups, fish was a food option from home that was not in abundance or was not perceived as fresh or of good quality.

An athlete from Western Europe stated:

“Home, I was always told like you have to eat fish twice a week or something like that because it’s healthy and then you go to the dining halls here, there’s fish every other week if you’re lucky so that was different for me at least.”

Paella, a rice dish typically prepared with seafood, appeared to be greatly missed by several participants from Western Europe, who described this dish as the best food in their culture.

A participant said:

“We have like the Mediterranean [diet], a lot of salad, potatoes, rice, stuff like that. You know paella, the best thing ever.”

Another participant said:

“In Europe it’s like roast dinner, and one thing I miss is baked beans, here they’re awful.”

It was clear that participants missed their staple foods from their cultures and found limited success with finding those foods here in America. Throughout their discussions participants continued to draw comparisons between the differences in foods available in the US compared to their home culture.

Ib. Drinking Culture was addressed from several perspectives and emerged as a sub theme under cultural differences, given the fundamental differences between drinking in America compared to their home culture. This discussion began with participants expressing the introduction of alcohol by their parents at an early age.

A participant said:

“In Europe its 18, your parents would let you have a drink at the table at like 15, 16, 17 so you get used to how it’s more casual.”

Another participant commented:

“We start younger it’s in a more controlled environment. You get used to drinks you like, what drinks go well with your body””

A participant pointed out the differences in drinking age and how nightlife is a part of their culture:

“Night life is a big thing, which is big in Europe but it is not big over here. So like drinking and stuff I am legal in Europe but I’m not legal here.”

A participant stated:

“The beer here is less percentage than the beer in [Northern America Country] at least and that’s attributes to the way you have to drink, whereas [in my country] you can have a good beer it can be like 8% or 9%.”

From the above examples, participants seemingly implicated the early exposure to alcohol to a greater respect for drinking and relating the social and cultural connections to alcohol consumption. The examples above also suggest that the differences in legal drinking age between their culture and the US was an adjustment for international collegiate student athletes. The drinking age varies depending on the country. The greatest contrast that international student athletes identified was the perception of the “alcohol binge culture” in America. They perceived American students to have less control over their alcohol consumption and less of a true appreciation of alcohol as a social companion.

Ic. Family Influence appeared to play a big role in the culture and lifestyle habits of international collegiate student athletes and this was perceived as a contrast to the American lifestyle. This was

particularly emphasized when participants discussed dietary preferences and choices. It appears that participants' family members played an important role in shaping those preferences. Participants also contrasted the differences in preparing and sharing foods compared to the American lifestyle.

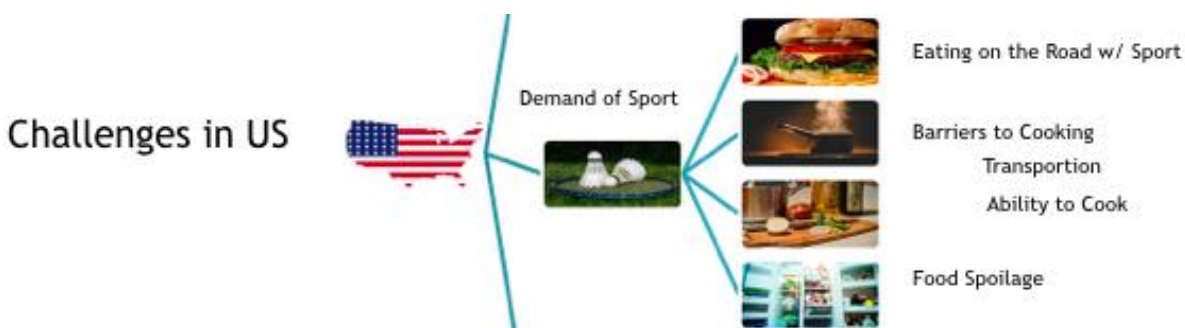
One participant states:

“There has definitely been a linkage lost between the American families, between this food and family and just making food and the whole process of food has been lost between those families. I don't know if its just here at JMU since most of the families are affluent, they just don't like to cook and they just go out.”

Participants constantly mentioned across focus groups the connection between family and food and how these attitudes differed in American families. The example above highlights this construct. Furthermore, participants perceived American families to lack appreciation for foods and prefer dining out to cooking at home instead, this appeared to overall contribute to the food differences between participant home cultures and the US.

II. Demand of Sport: Between practices, strength and conditioning workouts, athletic training room rehabilitation, traveling, study hours and other required activities, collegiate student athlete's schedules are very demanding. Figure 5 is a display of the factors associated with demand of sport.

Figure 5- Demand of Sport



One participant emphasized this:

“Being an athlete especially takes up so much time that even though I am off campus now I feel like I get home at 9 or 10 every night”.

This statement highlights the demands athletes face with sport, particularly their required time commitment to sport. As participants described the demands of their sport, several ideas emerged especially those that emphasized dietary and lifestyle behaviors.

Subthemes identified were eating on the road with sport, barriers to cooking, ability to cook and food spoilage. All are described below.

Ila. Eating on the road with sport is associated with demand of sport as teams travel to compete, often for days at a time. This forces teams to eat out while on the road. Participants in our focus group discussed that coaches often make the decision on where to eat when traveling. Fast food or fast casual restaurants appear to be a popular choice as those types of restaurants can make a large number of meals at an affordable price. However, participants perceive these types of restaurants as serving poor quality, unhealthy foods.

One participant noted:

“When we travel with our team we always stop off on the way. It’s literally at the middle of four fast food restaurants, it’s always bad food.”

Most participants agreed that they would rather eat at higher quality restaurants that provide more nutritious options. Participants also indicated that poorer quality food often makes them feel not physical well.

“I don’t want to be eating Chick Filet then I feel like crap that night then eat Applebee’s at night and feel like crap in the morning, and be expected to play its tough.”

This example offers insight into the connection between eating poorer quality food on the road and their perceived performance in sport. It appears students

expressed frustration when coaches would choose less than nutritional dining choices and still expect top performance from their athletes.

Iib. Barriers to cooking were identified in association with the participants' demand of sport. Athletes appear to have limited time, which could lead to barriers with meal preparation. Several participants agreed that if they had time to cook that they would.

One said:

"I would want to say I want to cook for myself a lot more if I wasn't training and doing our thing all day".

Another participant stated:

"The last two, three weeks, I have been coming back at 10 pm and then like I'm starving but then I don't have time, I am super tired and I know tomorrow is going to be a busy day as well, so I either like cook some pasta real quick or cereal and that's it."

Time and level of exhaustion due to sporting demands clearly act as barriers to food preparation and limits the ability for some collegiate student athletes to prepare their own meals. However, it was encouraging to hear that if time permitted, some participants would be interested in preparing foods. Lack of time

could also be compounded by the challenges with transportation.

IIIb1. Transportation

Transportation options will differ depending of the location in the United States. In general, urban areas have greater transportation options where rural locations can be more limited; this also includes safe and accessible pedestrian and biking options. Participants in our focus group shared their struggles with limited bus schedules and the dependency on other classmates/teammates for rides. Some participants expressed the difficulty with getting to a food store, which appeared to hamper their ability to prepare foods. Most of the participants indicated that they did not have their own vehicles and relied on either public transportation or on rides from friends.

“To go to the grocery store back home it’s a simple task, jump in the car go to the store. Now it takes a mission. It takes 3-4 people asking what they’re doing today.”

Participants discussed the simple task of going to the grocery store and without reliable transportation, it becomes a challenge. Depending on friends or teammates for a ride appears to be unpredictable. Being an international athlete, there are very limited ways to get off campus,

making it challenging to purchase the foods they would like, or getting home at a reasonable time to prepare their own food. The participants conveyed they wish they could make healthier dietary choices, but with the limited transportation being international, it is hard to always buy the food they prefer.

IIb2. Ability to cook

While some discussed time and transportation as barriers to cooking, for several participants, the ability to cook was identified.

Mentioned by one participant:

“I can only really make pasta, the basics.”

This participant indicated that their culinary skills were limited and they were only able to prepare simple foods. The lack of ability to cook, resulted in the reliance of campus dining options. Eating on campus is a broader theme that is discussed in section three(III) of the results section.

IIc. Food Spoilage and food waste in the home was identified by participants as a direct result of their travel demands of their sport. Participants shared their difficulties with keeping foods fresh as they traveled.

One participant mentioned:

“It’s tough trying to prepare when you’re gonna be there, when you’re not gonna be there, when to eat certain foods in order for it to stay fresh.”

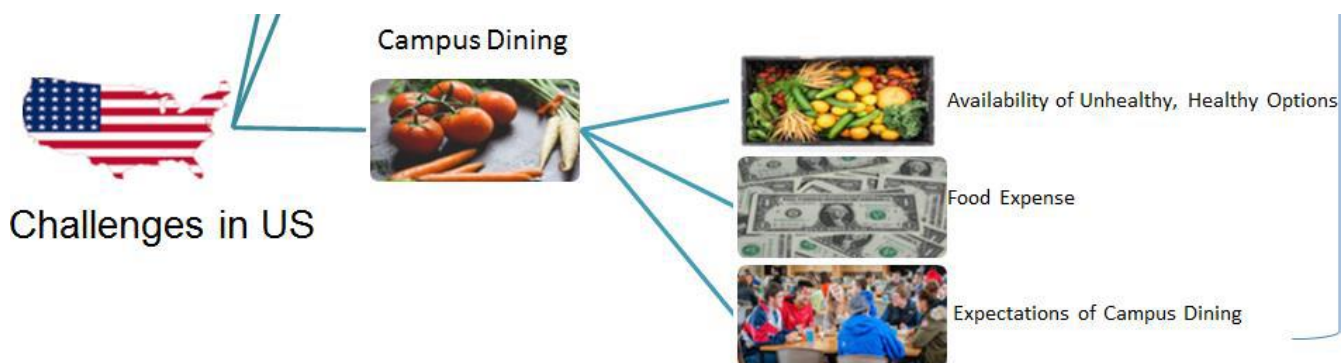
Also stated:

“I think also the fruits and vegetables go bad after a week. So buying the frozen food is so much easier”

Irrespective of cooking ability and difficulty with transportation, the participants quoted above discussed the challenges of keeping foods fresh while traveling. This factor may also limit the ability to purchase certain types of nutritionally superior foods, as nutritionally dense food options typically spoil quicker.

III. Eating on Campus evidently plays an important role in providing food options for international collegiate student athletes living both on and off campus. All participants indicated they either had a full meal plan or meal punches, which enables them to purchase selective meals. The apparent popularity of campus dining for international collegiate athletes is due, in part, to their lack of transportation (as described previously) and emergent under this theme was the convenience of campus dining options. Eating on campus is portrayed in Figure 6.

Figure 6. – Campus Dining



Mentioned by a participant:

“As an athlete I would only pretty much eat on campus most of the time because your whole day is spent there so it is a lot easier.”

Also stated:

“I like to go to the dining halls because you can get more food. Like if I use my punches at Dukes you get two slices of pizza, I will still get hungry one hour later.”

Another participant stated:

“I go somewhere with my punch that I can eat as much as I want.”

Campus dining facilities are typically open long hours and have different food service operation types that offer meals for breakfast, lunch, dinner and times in between. The various dining options allow great flexibility to customize meals and dietary preferences. Some places allow a certain amount of food per punch, whereas some locations serve buffet style and students can choose how much they want to eat. It appeared from the

participant statements above, the larger portion offerings at buffet style locations were more adequate at supporting their dietary needs, since competitive athletes typically have increased caloric and nutritional needs.

Yet despite the flexibilities and conveniences of campus dining, participants did describe challenges faced when accessing campus dining options. These challenges are further explored under the three sub-themes described below: availability of healthy and unhealthy dining, expense of healthy foods and expectations of campus dining. Both availability of unhealthy options and expectations of campus dining are further divided.

IIIa. Availability of healthy and unhealthy dining options were discussed at length among participants. Overall participants noted that there were certain places on campus to find nutritional options, although these were much more limiting compared to the availability of unhealthy dining choices.

One participant commented on the healthy options available on campus:

“I really like D-Hub because I think they have everything there. You can eat healthy, there is salad, there is meat, there is rice. The only thing is you can eat a lot. I think you can make the right choice, you can eat good.”

Another participant indicated:

“A lot of the food back home is definitely healthier than this[food served on campus].”

One participant added:

“Everything is cooked in oil. You get green beans and it’s soaked in oil.”

Another participant stated:

“I find that all the sides are a side of fries or chips”

From such statements, it also appears that students perceive campus dining options as being different from foods they would receive at home, particularly related to the nutritional quality of the foods. These statements also emphasize what participants consider as unhealthy food preparation practices and unhealthy food options that are available in the dining facilities.

Participants also discussed the repetition of food choices available at numerous campus dining facilities. Repetition was noted for both healthy food choices and unhealthy food options.

A participant said:

“There’s also a lot of repetitive dishes too so no matter where you go

there's always going to be burgers and there's always going to be pizza and always going to be sandwiches."

A quote regarding repetition with healthy food choices:

"Its tough to eat it every single day and the amount of healthy options you just go back to the same thing very often"

The perceived limitations of healthy food options on campus, compounded by the repetition of these options as well as increased nutritional needs could create challenges for international collegiate student athletes. Students may choose unhealthy food options to diversity their meal planning and food options and to avoid boredom with foods consumed. Furthermore, as discussed below, the expense of healthy food choices on campus may also act as a barrier to selecting healthy foods.

IIIb. Expense of healthy foods appeared to be a major barrier for international collegiate student athletes when trying to make healthy choices.

A participant said:

"Healthy is still expensive back home, but eating unhealthy isn't as cheap like it is here."

One participant talked about the cost of fruits and vegetables in the United States. *"The fruit is much more expensive and vegetables are much more expensive, compared to what we can find in Europe. It's more costly to eat healthy here."*

One participant described:

“And if I’m not on a punch plan it’ll be hard to go to greens and D-Hub and E-Hall because it will be expensive.”

These comments exemplify how consuming unhealthy food options in the US and on campus was easier and more affordable compared to their home countries where eating unhealthy is much more expensive. Participants were more concerned about the costs of healthy foods on campus particularly if they were to run out of meal plan punches.

IIIc. Expectation of campus dining was a common theme as students discussed their the importance of high quality food offerings and availability of home foods. As mentioned previously, some participants synonymized home foods with home cooked meals. Despite wanting to see more home food options, participants recognized the challenge on the university level of doing so. A statement regarding a participant’s expectation of campus dining exemplified this:

“Healthy meals are considered home cooked meals and that would be a lot to ask [of campus dining]

Another participant indicated:

“You can’t individually make home cooked meals for hundreds of people.”

These statements merely represent experiences on campus rather than barriers to eating on campus.

IIIId1. JMU cafeteria ranking is one of the top in the country. Participants acknowledged the high ranking and agreed, that in comparison to other universities, the food quality is better. Many of these comments came from participants who previous to JMU attended other American Universities.

One participant said:

“JMU is ranked high in the country, so we are actually quite lucky. All of us blindly just picked this, none of us saw the campus I literally just saw a picture of the campus and said oh I am going there. We are lucky that the food actually isn’t that bad, it could be a lot worse.”

A transfer student commented:

“Yeah I was at [Redacted] before and the food was just terrible. Like literally did not taste like anything. Here you taste something it’s not as good as what we can find in Europe but it’s still better than many other places around the United States.”

A participant said:

“So this school was ranked 2 in the nation in food, I think. I don’t want to know the rank of 50 or 250.”

Despite reporting some barriers to the consumption of nutritious foods, it is clear, from the perspectives provided above, that international collegiate student athletes appreciate the high ranking their university cafeteria holds. This reconciliation, that the choices at JMU are superior to other American campuses, appeared to temper their high expectations for food quality.

IIIId2. Lack of cultural variety was another topic mentioned by participants that fit well with their expectations of campus dining.

A participant said:

“So at back home at least to me there’s a lot of Chinese, Indian different Asian dishes, so that I don’t really notice as much too it’s just like here’s pizza, here’s burgers, here’s sandwiches.”

Another participant stated:

“There’s a lot more Mexican food and a lot less of other cultures”

It appeared from statements provided by participants that the lack of cultural variety among campus dining options was surprising. A lack of availability of foods familiar to participants could be implicated in changes to dietary intake. It appears that participants were looking for dining services to better accommodate their cultural preferences and this may be even more important for collegiate international student athletes since they predominantly depend on campus foods for their diet.

IIIId3. Recommendations to campus dining was the final sub-theme identified in the focus group session. Participants offered up several suggestions on how the university could better accommodate the unique dietary needs and preferences of international collegiate student athletes.

One participant recommended using local food resources:

“In terms of eating local I do know that the food trucks, there are local soy farms, so I know they use local tofu, so I don’t think it’s an issue that they can’t get local, they just don’t necessarily.”

Another participant emphasized to set a standard in the dining hall:

“I would recommend a place where you would double punch to go in but the quality of the food is better. Make it more expensive, but know that when you walk in there’s a standard there.”

A statement about accommodating student athletes in the dining halls:

“Think about how many athletes are on full scholarship compared to how many athletes are paying. I know a lot of athletes are paying for it so you could pay to hire a chef.”

A participant also suggested:

“Or maybe just find a medium where the unhealthy isn’t so much easier to go to”

As another participant indicated:

“I think there’s only like 500 student athletes to 19,000 students who are sitting on their bum who don’t really want to go and find the freshest food, they’re fine with going and picking up two slices of pizza. For them it’s actually catering their side, so they actually cater to the school and not the minority.”

Many of the comments and suggestions focused on food quality. It is logical that the focus group participants would make this recommendation given the predominance of the food quality theme throughout focus group sessions. The availability of higher quality food products may be more important for the athletic population given the connection of food quality to athletic performance and overall health. This is likely enhanced for the collegiate international student athlete given their connection to high

quality foods from home. These plausibility's play into the final theme and a potential consequence of the challenges international student athletes experience during their acculturation process, *physical changes from American Food*.

IV. Physical Changes from American Food was described as the consequence of significant dietary changes after exposure to American food.

As one participant indicated:

"I have gained like a lot more weight since I have been here just because of the unhealthy food."

Food quality a robust theme that emerged frequently through analysis was referenced as a potential factor associated with weight gain.

One participant stated,

"I'm eating less here and putting on more weight because it's fatty foods. I am eating more at home, but it's better, rich quality."

Weight loss was experienced by one of the participants as they avoided consuming an abundance of American foods since those foods made them feel poor.

Other health consequences attributed to poor dietary quality were acne breakouts and cavities.

“I can speak from personal experience, like when I came home freshman year, before that I had no cavities, no nothing like that. And then when I came back after a year in America I had like eight and my hygiene habits hadn’t changed. The food just didn’t fit or like go with my system. Something about the food here just didn’t fit with me right.”

Throughout the focus group sessions, participants conveyed a constant comparison from their home countries to America. Most of the participant comparisons were in the context of how different American food options were from their home culture. These differences have appeared to make a substantial contribution to health changes experienced by international collegiate student athletes in this study.

Discussion

Findings from this qualitative research study suggest that dietary acculturation impacts international collegiate student athletes as they transition to the American culture. Participants described numerous dietary challenges including vast cultural differences in food types, quality and preferences; time barriers associated with their demand in sport; and the limited availability of food options from home, particularly when dining on campus. Past research associated with dietary acculturation among international collegiate student athletes is limited and to the best of our knowledge this is the first study to qualitatively evaluate dietary acculturation among this population.

Previous studies that focused on migrants who immigrated to the United States found that they protect their cultural identity through food.^{1,5} Participants in this study discussed immensely about home food options that they preferred to consume, with home cooked meals most widely implicated. Amos and colleagues (2014) acknowledged that international students had a strong connection to traditional foods and that their cultural identity was tied to these foods. Participants in the current study described their preference of food as “homemade” or a meal they prepare and consume at home with family. They mentioned that they take the time to prepare fresh meals and wait for all family members to be present before eating. From conversations, it appears that international collegiate athletes when home with their families take the time to enjoy each other’s company and the foods they prepare. Amos and colleagues (2014) also stated that the participants’ meal-times including the preparation and consumption was based upon what they did with their families in their homeland. In the current study, it was found that for the participants from Spain, they ate mostly ate dinner at 10:00 pm, so coming to the U.S. and eating with teammates around 6:00 pm was a big adjustment for them.

During this study, participants also presented contrasting views on American food culture in comparison to their native cultures. Many participants commented on vast differences in portion sizes, food quality and availability of healthy food options. It is important to point out, that from our analysis, it appears that participants from Canada were not as impacted by dietary acculturation compared with participants from European countries. Stated by one participant regarding cultural differences “Wasn’t that different for me, its pretty similar to Canada. The people, the culture, the food that’s available.”

These findings are consistent with Edward and colleagues (2010), who found that cultural distances determine the nature of acculturative stress experienced by migrants.

Participants that live in countries closer to the U.S. may experience less neophobia than participants that live further away overseas.¹

In a study conducted by Yan et al. international students felt uncomfortable with the drinking culture in the US. This is comparable to the current study where participants discussed the binge drinking culture in the US and how there is less appreciation for the social aspects of alcohol consumption compared to other cultures. Participants emphasized how alcohol is an accompaniment to social interactions; sitting down with a meal among family and friends and having a drink. Participants also addressed the differences in drinking ages between the US and overseas. Participants indicated that the introduction to alcohol begins at any early age and in the company of family. This appeared to have an impact on their appreciation for alcohol and how to better manage their alcohol intake.

Furthermore, participants in our study also described the physical changes they experienced, including weight gain, when adapting to the US culture. Participants directly implicated the poor quality of food and increased portion sizes. These findings are consistent with other research studies which showed that when coming to the United States, migrants experience weight gain.⁶⁻⁸ Amos and colleagues (2014) found that participants experience a physical toll on their body when eating foods from a new culture, particularly experiencing digestion issues. Yan and colleagues mentioned that several international students who participated in a study experienced weight gain in the

US from the “rich food”. Other students experienced weight loss as foods were so different from their home country, they had a hard time adjusting. In the current study, some participants also shared their weight loss struggles since coming to the US as they have experienced a drastic change in their dietary patterns.

Where there are clear parallels to our study and existing literature is around campus dining options. A study conducted by Amos and colleagues (2014) evaluated the acculturation process for physical activity, diet and drinking behavior among international students on a college campus. The main conclusion of the study is that international students experience a unique acculturation process in the college environment. International students are exposed to the host cultures students’ behavior, and diet and physical activity environment which can influence the migrant’s health behaviors. The international students’ own cultural background interacts with their personal factors, American lifestyle, and campus environment, all of which may vary between individuals, experiencing different ways to acculturate. Yan and colleagues (2015), looked at international students and eating on campus. A majority of international students revealed that they did not prefer the food provided on campus as options differed from their home foods and overall foods were higher in fat and calories. As a result, students reported a greater frequency of ordering out, visiting super markets and moving off campus.

This differs greatly from what we found in our study. Participants identified several factors that actually result in greater reliance on campus dining options including their ability (or lack of skills) to cook and lack of time to cook. Participants in our study were

clear that the demands they face in their sport preclude them from preparing meals on their own. Cultural differences alone are inadequate for understanding the nutritional challenges of international athletes. Lack of transportation, demand of sport with associated barriers to cook are all factors leading to why these international student athletes are unable to prepare meals on their own. With the required time they are to put into sport and their limited transportation access to grocery stores, international athletes find it easier to eat on campus. Due to the convenience of dining halls on campus, it may be options that are unhealthy and quick, which potentially could harm their athletic performance.

It appears in our study that food served on campus is the most convenient food option for international collegiate student athletes. The conveniences of dining options on campus for international students were also confirmed in several previous studies.^{5,7,11-15} Amos and colleagues (2014) discussed the availability and prevalence of convenience foods and negative experiences that were associated with increased consumption. Participants were exposed to larger portion sizes compared to their home eating practices and also consumed more snack foods, fast food and calorically dense beverages. It appears that participants in our study experience similar dietary changes given the availability of these food types on campus. Study participants indicated that when they eat on campus they perceive their diet to be of poorer quality and are offered larger portions of food. This appears to be a challenge for many of our participants, particularly since the more popular dining locations are “all you care to eat” or buffet style. Yet participants also recognized that dining at buffet style locations allowed them the option

to consume a greater amount of food for the cost. Alluding to previous discussion on cultural differences, participants were eager discuss foods from home and the lack of abundance of these foods, particularly on campus. This lead to students making suggestions to campus dining of including more culturally diverse foods.

Other studies have found that international students desire a greater variety of foods from home to be served on campus.^{1,5,15} Amos and colleagues stated that students found access to traditional foods on campus but the quality and taste were poorer compared to foods in their home countries. The more dissimilar the participant's home culture was the more unpleasant reaction to the new culture's ethnic food availability and quality. Collectively these findings demonstrate the instrumental role that campus dining facilities have in the dietary choices for international students and international collegiate athletes. We recommend that administrators of campus dining work closer with international students to better understand their dietary needs and preferences.

Limitations

There were limitations within this study. Although many participants were recruited, some were unable to attend the focus groups due to sport schedules excluding their cultural backgrounds and opinions from the data. By using focus groups, participant interaction was increased, but not all participants vocally contributed. Therefore, their cultural experiences could have added to the data. The final limitation of the qualitative study was the language barrier and the inability for participants to fully communicate

their thoughts and experiences in English. A number of participants did not speak English as their first language.

Appendix A- Demographic Questionnaire

Focus group date and time: _____

Demographic Questionnaire

How old are you? _____

Length of time (years) you have been living in the United States (round to the nearest year)

1 2 3 4 3 4 5 6 7

What year did you begin at JMU? _____

What sport do you play? _____

What is your country of origin?

What language do you primarily speak?

Please list any additional languages spoken:

Race/ Ethnicities: (Check All That Apply)

White

Black, African American

Hispanic: Cuban Mexican, Mexican American Puerto Rican Other

Hispanic _____

Asian: Asian Indian Cambodian Chinese Japanese Amerasian Korean Laotian

Vietnamese Filipino Other Asian _____

Pacific Islander: Hawaiian Guamanian Samoan Other Pacific Islander _____

Aleut/Alaska Native American Indian, Native American Eskimo

Other, not listed above _____

Appendix B

Focus Group Moderator Guide

INTRODUCTION

My name is Dr. Michelle Hesse and I am a professor in Health Sciences. I will be the moderator of the focus group session today. First, I want to take the time to talk about what a focus group is. Focus groups help us gather information about people's opinions and experiences about a particular topic. The purpose of our discussion today is to talk about food choices and foods you eat. Our session will last about an hour.

Since all of you are athletes at JMU, you may have heard your coaches, peers, teammates and others talk to you about food choices and those people may have told you what to eat. However, when answering the questions today, I want to know what you think and what your opinions are. We look forward to hearing about what you have to say. There are no wrong answers to any question and you don't have to worry about us going back to your coaches, teammates, etc and telling them what you said. Since some of you may know each other, we ask that do not share with others what has been discussed today.

We hope that everyone will talk at some point during the focus group, but do not feel that you have to answer each question. Only answer the questions that you want to! We ask for you to talk one person at a time- everyone who wants to speak will get a turn. We also ask you to avoid having side conversations since it is distracting to the group and we wouldn't want to miss anything you have to say!

Our conversations will be audio taped today and we will be taking some notes of our conversations. We ask that before you speak to state the pseudonym that was provided to you. This helps us to keep track of who is talking and when. If you forget to state your pseudonym in the beginning, please try and state it after your response.

We will also ask that you turn off any cell phones or pagers to prevent interruptions during this session. Are you ready to get started?

QUESTIONS

My first question to you will be one to get to know each other a little better.

- Icebreaker: Where are you from?
- What do you think was your greatest challenge when coming to America?
- What do you feel is the biggest difference from your culture compared to the American culture?
- What changes have you noticed in your diet since coming to America?
- What kinds of foods do you like to eat?
- What food options from home are available here to you in America?
 - What challenges have you faced accessing your food choices?
- Where do you typically eat?
 - For those of you who rely on campus food options, where can you find foods that are similar to home?
 - What suggestions might you have for the university to make these foods more available to you?
- As an athlete, how do you feel your food choices affect your athletic performance?

Appendix C- Code Book

Code	Definition
Challenges in US	Hardships international collegiate student athletes face when adjusting to the American culture.
Challenges of Coming to America	Difficulties international collegiate student athletes face when arriving in the United States.
Alcohol Culture	Tradition of foreign countries using alcohol as a social aspect.
Alcohol Quality	Higher value and savor of alcohol in foreign countries.
American Lifestyle	The way Americans behave compared to foreigners.
American Privilege	Affluent populations within the United States
Appreciation of Food	Pleasure of eating food to a greater extent in foreign countries.
Attitude within Sport	Outlook of sport in Americans vs. international collegiate student athletes.
Availability of Family Owned Restaurants	Number of Mom and Pop restaurants existing compared to chain restaurants
Breakfast Foods	Different quality and idea of breakfast in United States compared to overseas.
Chain Restaurants	Distinct fast casual dining restaurants.
Changes in Diet	Modification of what international collegiate student athletes eat when coming to the United States.
Commercialization of Food	Mass production of food in the United States.
Comparison to Home Culture	Difference of food from United States to overseas.
Convenience of Food	Accessibility of food in the United States.
Cost of Food	Expense of food in the United States.
Critique of American Food	Judgment of American meals.
Cultural Differences	Diversity among participants' ethnicities compared to the United States.
Dining Out	Eating meals at a restaurant.
Drinking Age	Legal age to consume alcohol which varies per country
Drinking Culture	Appreciation of alcohol overseas.
Fast Food Chains	Low cost and quality food that is prepared quickly.
Food Culture	Ethnicity of food within countries.

Food Differences	Variation of food between countries.
Food Expense	Cost of food.
Food Options From Home	Availability of foods from participants' native country.
Food Preferences	Foods individuals like and choose to eat.
Food Waste	Throwing away food that is not eaten.
Freedom of College	Independence of students living on their own while away at college.
Fresh Food	Unprocessed food that has not been processed or preserved.
Home cooked Meal	Food made at home.
Impact on Diet	How foods affects individual eating patterns.
Lack of Home Foods	Unavailability of food from international collegiate student athlete's home culture.
Lack of Understanding of American Culture	Limited knowledge and appreciation of American traditions
Language	Dialect spoken
Night Life	Social life at night.
Relationships	How individuals associate with others.
Demand of Sport	Required schedule college athletes adhere to.
Ability to Cook	International collegiate student athlete's capability of preparing their own food.
Barriers to Cook	Athletes' limitations to provide food for themselves.
College Athlete Lifestyle	Daily routine as a collegiate student athlete.
Eating on The Road With Sport	Consuming meals while traveling with athletics.
Foods Participants Prepared	How international collegiate student athletes cook their meals.
Sport Culture	Atmosphere of athletics.
Stress of College	High pressure due to college academics.
Timing of Meals	Times throughout the day when individuals eat.
Transportation	Ways of moving from one place to another.
Eating on Campus	Consuming meals on college campus.
Availability of Campus Food	Accessibility of food options on college campuses.

Availability of Food	Great quantity of food options in the United States.
Availability of Healthy Options	Amount of good quality of food accessible in the United States.
Availability of Unhealthy Options	Amount of poor quality of food accessible in the United States.
Barriers to Healthy Eating	Inability to eat good quality food on college campuses.
Comparison to Other Universities	Evaluation of JMU to other college campuses.
Convenience of Dining Dollars	Access to food with meal plan.
Critique of Cafeteria Food	Evaluation of college campus dining.
Critique of Personal Diet	International collegiate student athletes judge what they consume.
Dining Options on Campus	Availability of places to eat on college campus.
Expectation of Campus Dining	Belief of what college campuses should provide in dining halls.
Expense of Healthy Foods	Cost of high nutritional value food.
Food Expense	Cost of food.
Food Preparation	The way meals are made in the kitchen.
Food Quality	Characteristics of food.
Food Quality and Cost	The value and expense of food.
Food Spoilage	Food that is no longer edible due to deterioration
JMU Cafeteria Ranking	Standing of James Madison University's dining halls in comparison to others.
Lack of Cultural Variety	Limited ethnic diversity
Lack of Dietary Variety	Limited ethnic diversity in campus dining halls.
Meal Plan	Pre-paid number of meals that can be eaten on campus.
Overindulgence	Excess among of food consumed.
Physical Changes From American Food	Difference in body physique due to American food consumption.
Popularity of Fast Food Chains	Attractiveness of fast food restaurants in United States.
Portion Sizes	The amount of food consumed during a single eating occasion.
Quality of Food	Nutritional value of food.
Recommendation to Campus Dining	Suggestions to the Universities

Repetition of Food	Duplication of meals in campus dining halls.
Repetitive Meals	Duplication of food in campus dining halls.
Sourcing of Local Food	Using food from nearby food resources.
Taste of Food	Flavor of food.
Unhealthy Food Options	Foods of low nutritional value that are available.
Vegan	Individuals who do not consume animal products

Appendix D. - Recruitment Flyer

RESEARCH PARTICIPANTS NEEDED

*Are you an International Student
Athlete? Are you 18 Years or Older?
Then We Are Looking For You!*

- This study will examine eating patterns of international student athletes.
- The study involves:
 - Participating in one focus group, lasting approximately ~1 hour long.
 - Responding to a brief demographic survey.
- Research will be conducted by Cailey Ryan, ATC and Dr. Michelle Hesse, RD at James Madison University.



**For more Information, please
contact:**

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Glossary

Acculturation: The process of migrating, settling and adjusting to a new culture

Dietary Acculturation: The process of adopting dietary practices of a new culture.

Eating Patterns: Frequency, quantity, and variety of foods habitually consumed.

Culture Shock: State of disorientation as a result of migrating from a native culture to a new culture.

Cultural Identity: A way migrants claim their individuality and attachment to their native culture.

Field Notes: Researchers' observations noted during focus group sessions.

Phenomenon: Experiences or interpretations being studied, such as dietary acculturation.

Codes: Common words and phrases that highlight an interest or importance, distinguished by short phrases or words.

Axial coding: Reassembles the fragmented words, phrases and concepts into a more cohesive analysis.

Concepts: Each code that is related to a common theme will be grouped together

Themes: The framework of data coding to find and conceptualize the underlying matter. The relationship building among concepts.

Theory: Statement of relationship between abstract concepts that cover wide range of empirical observations.

Emergence: Words or phrases are recurrently materialize the phenomenon being studied.

Grounded Theory: A constant comparative method through the integration of categories, themes and codes to demonstrate that a theory is adequately developed.

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