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Influences of Coach Leadership Related to Nutrition on Collegiate Student Athletes' Dietary
Choices

Maria Fruechte

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CHAPTER 1

INTRODUCTION

It is well known that athletes need proper nutrition to optimize health and performance. Proper nutrition promotes improvement in physical activity, performance, and recovery (Torres-McGehee et al., 2012). Most collegiate athletes are aware of the importance of training for their sport, but often overlook the value of having optimal energy availability to support health and performance (Torres-McGehee et al.). Collegiate student-athletes have a rigorous schedule when considering academics, finances, social life, performance, etc. (Torres-McGehee et al.). They also have limited time with demanding schedules, and limited space in dorms or shared housing (Dunn, Turner, & Denny, 2007). Without proper nutrition, athletes are put in danger for nutrient deficiency illnesses (Witta, Stombaugh, & Buch, 1995). It is important that athletes have a basic understanding in nutrition, including energy needs, body composition, macronutrient and micronutrient requirements, hydration, and training diets (Torres-McGehee et al.).

Statement of the Problem

Research continuously proves that athletes lack knowledge of nutrition and practice poor nutritional habits (Dunn et al., 2007; Reading, McCargar, & Marriage, 1999). Often, athletes are misinformed about their nutritional needs, as they do not all have top level resources (Torres-McGehee et al., 2012). Research conducted by Dunn, Turner and Denny (2007) found athletes have incorrect beliefs towards carbohydrate needs, as many athletes believe they should decrease the amount in their diet (Discussion section, para.2). In fact, 60% of energy should come from carbohydrate sources (Witta et al., 1995). Ideally, a registered dietitian would have the greatest influence on collegiate athletes' nutritional knowledge and habits (Torres-McGehee et al.).

However, not all schools have access to this resource, it is important for coaches to be able to disseminate correct information effectively (Torres-McGehee et al.; Wiita et al.). When individuals have greater knowledge and understanding, they are more likely to choose healthier dietary choices (Dunn et al.). Therefore, coaches are influential in giving information in a way that shapes athletes' attitudes towards nutrition in a positive manner (Wiita et al.).

Background of the Problem

There is sufficient evidence that shows collegiate athletes have limited knowledge regarding nutrition (Reading, et al., 1990; Kessler, Gilham, & Vickers, 1992; Dunn et al., 2007). Wiita, Stombaugh, and Buch's (1995) research sheds light on several misconceptions athletes hold regarding nutrition. Some of these misconceptions include thinking sweets would provide proficient energy through competition, complex carbohydrates offer few nutrients besides calories, protein is the main form of energy, and athletes do not need higher sodium levels (Wiita et al.). These misconceptions cause concern because a poor diet can have ramifications that affect reproductive health, bone health, and performance (Wiita et al.). Athletes should have general knowledge of caloric intake, hydration, and timing of meals, but they are often misinformed (Cotugna, Vickery, & McBee, 2005). This lack of information could be attributed to their source of nutritional information. Cotugna, Vickery and McBee's (2005) concluded athletes often get their information from magazines, internet, food store personnel, coaches and other athletes. Also, most coaches have limited knowledge and training on nutrition (Cotugna et al.). Torres-McGehee et al. (2012) found athletic trainers and strength and conditioning specialists have adequate knowledge to give to athletes, but are confident even when their information is incorrect. This highlights the importance of having a registered dietician available on campus, but this is not always possible (Torres-McGehee et al.).

As research above demonstrates, since registered dietitians are not always available, athletes have very limited correct knowledge of nutrition, and their sources are not always reliable, it is important for coaches to offer correct nutritional information in a positive format. For the purpose of this study, athletic trainers, sport coaches and strength and conditioning specialists will all be referred to as coaches to represent athletic leaders. Athletic trainers, strength and conditioning specialists and sport coaches spend a great deal of time with their athletes and develop relationships which allow conversation about nutrition to take place (Torres-McGehee et al., 2012). There is a need for coaches to have a strong knowledge base of nutrition and potentially go through educational programs themselves (Torres-McGehee et al.). Reading, McGargar and Marriage (1990) suggest small-group discussions to encourage questions, clarifications and review.

Purpose of the Study

The purpose of this study is to better understand how coach leadership related to nutritional information influences collegiate student athletes' acquisition and application of nutrition. This will be followed up to consider how the information and expectations of coaches influences athletes' knowledge and dietary choices.

Theoretical Framework

A theoretical framework offers groundwork to understand research and interpret the results (Lochmiller & Lester, 2017). This broad perspective allows the researcher to project the position they are conveying through their research (Lochmiller & Lester). Ajzen and Fishbein's (1980) theory of reasoned action explains that behavior is driven by an intention, which is driven by attitude and social or environmental norms. Individuals' actions will be driven by their beliefs

and perceived outcomes, as well as the beliefs of individuals around them (Ajzen & Fishbein, 1980). Wiita, Stombaugh and Buch (1995) suggest that with increases in knowledge, along with a change in attitude, athletes improve dietary choices and eat healthier. Wiita et al. (1995) highlight the influence coaches have on impacting their athletes' knowledge and attitude toward nutrition. The more that is known about nutrition, the better athletes can understand how food groups and nutrients impact their health and performance. Dunn, Turner and Denny (2007) offer research which shows that athletes who have gone through nutrition education are more likely to eat or avoid certain foods. The research stated above, begins to support the Theory of Reasoned Action, in that increases in knowledge may impact attitudes and beliefs that will encourage individuals to better dietary habits.

Procedure

This study is a qualitative in nature, including an online survey and a virtual, one-on-one interview. The survey is meant to collect information about a group at one specific time (Lochmiller & Lester, 2017). It will allow the researcher to develop an understanding for what is happening presently within the conversations between coaches and athletes regarding nutrition. The survey will utilize a 5-point Likert Scale to understand the frequency of information, importance of information and frequency of utilization of information. These questions will allow comparisons to be made and will be included in the triangulation process. The Likert Scale questions will be followed by a general and sport nutrition knowledge questionnaire.

Following the completion of the survey, participants electing to be interviewed will be contacted for the one-on-one interview portion of this study. A qualitative case study design is selected to gather participant experiences with nutrition information acquisition and application. Case study methodology works to understand individuals, their relationships, and how they

impact one another (Lochmiller & Lester, 2017). A semi-structured interview guide will lead the interview questions as Lochmiller and Lester (2017) state ensure descriptive and explanatory responses. A qualitative, individual, virtual, face-to-face interview mutually arranged between the researcher and participants will be conducted. The interview guide is intended to dive deeper into the experiences of student athletes involving the coaches' leadership toward the importance of nutrition in performance, and their attitudes towards that information.

Research Question

Based on explored literature, the main research question for this study is as follows:

RQ1: What are the experiences of student athletes' acquisition and application of nutritional information related to coach leadership in this area?

RQ2: How does coach leadership with nutritional information and expectations help student-athletes understand the value of nutrition?

RQ3: How does an athlete's nutritional knowledge impact his/her dietary choices?

Definitions

Student Athlete Demographic: Collegiate student-athletes have the same academic and social stressors as other students, but additional stressors related to athletics, including time spent at practice, games, meetings, travel, injuries and mental preparation (Comeaux & Harrison, 2011).

Adequate Athlete Nutrition: Eating in a way that allows an athlete to achieve and maintain health as well as reduce fatigue, train longer, recover faster and optimize performance (Ozdogan & Ozelik, 2011).

Energy Availability: The amount of energy left to support normal physiological functions (growth, thermoregulation, locomotion, immune system, etc.) after energy for exercise is expended (Logue et al., 2017).

Limitations

Limitations of this study include the honesty of the participants during the survey and interviews. Participants can withhold information, or only tell part of the story. Potential study participants could decide not to participate in the interview process or at all. Because nutrition and dieting can be a sensitive subject, participants may not feel comfortable discussing information about their eating habits in totality. To make participants more comfortable, the researcher will be transparent and honest about purpose of the study, steps to ensure confidentiality, and speak with kindness and respect.

Delimitations

This study is delimited to Winona State University, a Division II university in southeast Minnesota. The participants are delimited to current student athletes that have been at the University for at least one semester. All quantitative data will be reported in aggregate and participants will not be identified. Where necessary, pseudonyms will be used in the qualitative case studies.

Significance of Study

This study may be significant for collegiate sport coaches who recognize the importance of nutrition for collegiate student athletes. The outcomes of this study may inform how to make information impactful for student athletes. This study may highlight the amount of correct or incorrect information given to student athletes, along with the amount of importance student

athletes give to nutrition. Lastly, this study may show how to better communicate and emphasize the importance on nutrition for all student-athletes. This information may be compelling for more than just coaches, but also athletic administration, health nurses, parents and teachers who are interested in conveying nutritional information. Because this study will be performed with a Division II university in Minnesota, this study may not be applicable to universities of different sizes, or in different geographical locations.

Summary

This study is divided into five chapters. Chapter one has offered the foundation of the study, including an introduction and background to the problem, the purpose of the study, research question and procedures. This chapter also identifies the theoretical framework, limitations and delimitations of the study, definitions of key terms and the significance of this study. Chapter two will examine the current literature on the subject, including other studies relevant to this study. Chapter three will conclude the research proposal by presenting an overview of the research itself, including the procedure, research questions, and participant selection. Chapter four and five will then describe results, emerging themes and draw conclusions based off the study.

CHAPTER II

The study of nutrition is not anything new, but it has gained popularity more recently with its implications on sport and performance (Ozdogan & Ozelik, 2011). Nutrition is said to be one of the most controllable factors impacting long-term health and sport performance (Furber, Roberts, & Roberts, 2017). A quality diet with all aspects of nutrition help in maintaining health, recovering faster, training longer and reducing fatigue (Ozdogan & Ozelik). Training with proper nutrition allows positive changes to occur in the body. Physical activity makes many positive changes including stronger bones and muscles, and improved lipid levels in the blood (Slater et al., 2017). Increased muscle can give athletes a competitive edge with increased speed, power or endurance because there is less work needed at lower levels of effort (Adams, Goldufsky, & Schlaff, 2016). Improper nutrition can potentially lead to unfavorable changes in body composition, decreased performance, slowed adaptations, and other negative health outcomes (Hull et al., 2016).

Though it would be beneficial for athletes to strategize their diet to achieve peak athletic performance, it is commonly reported that athletes are under nourished and in negative energy balance (Furber et al., 2017). It has been found that only around 25% of athletes eat the recommended amounts of protein, and even less eat the recommended amounts of carbohydrates (Adams et al., 2016). Females often perform and compete in an under nourished, calorically deficit state (Adams et al.). Furber and colleagues (2017) point out a number of different potential reasons athletes may not be taking advantage of a well-balanced diet. They are as follows:

- 1) the athlete knows what to consume but does not do so;
- 2) the education messages given to the athlete are inaccurate;
- 3) the athlete is not getting educated in nutrition;

4) the athlete does not think nutrition is an important aspect of performance; and 5) the athlete thinks their nutrition habits are adequate. (Background section, para. 1).

Ozdogan and Ozcelik (2011) contribute similar ideas by stating athletes may have a lack of knowledge, lack of interest, or lack of means (finances and time) to create healthier diets (Background section, para. 3). Slater et al. (2017) explains that appetite is not reliable in relaying energy needs around activity, and for that reason, it is important to understand good nutritional habits regarding sports nutrition to replenish demands (p. 212).

This literature review aims to better understand the huge implications an inadequate diet has on sport and performance, as well as build a foundation for why coaches must be able to effectively communicate correct nutritional information. The purpose of this study is to better understand how coach leadership related to nutritional information influences undergraduate collegiate student athletes' dietary choices.

REVIEW OF LITERATURE

Low Energy Availability (LEA)

Female Athlete Triad. Low energy availability (LEA) occurs when there is inadequate energy to support normal physiological functions after energy lost from training has been accounted for (Logue et al., 2018). LEA has previously been better understood as the Female Athlete Triad (Triad) (Slater et al., 2017). The female athlete triad explains the negative health outcomes of female athletes from excessive training without proper nutrition causing low energy availability, low bone density and menstrual dysfunction, with or without disordered eating (Slater et al.). Research on the Triad dates back to the 1960's when researchers realized girls in poor rural areas reached menarche much later than well-nourished urban girls (Slater et al.). In

the 1960's literature was presented raising concern for females to exercise, and in the 1970's, research showed that female athletes reached menarche later than non-athletes (Slater et al.). Then, in 1997, the ACSM (American College of Sports Medicine) published to inform athletic staffs the screening, prevention and treatment of the Triad (Otis et al., 1997). Research in the 2000's showed that other health concerns including increased cardiovascular risks appear along with the typical three associated with the Triad (Slater et al.).

Low Energy Availability (LEA). Today in 2019 it is known that LEA does not only impact females, but males as well. LEA occurs when the body does not have enough energy to sustain both physiological processes and exercising (Slater et al., 2017). Low energy availability may come from inadequate energy intake through diet, excessive exercise, or combination of the two (Slater et al.). Deficiencies in micronutrients and macronutrients can cause health concerns and decreases in performance (Slater et al.; Logue et al., 2018). Positive benefits of exercise then become detrimental due to the lack of energy for normal physiological functions (Slater et al.). These detrimental effects are on bone health, lipid levels, hormones, the immune system, and reproductive health (Slater et al.). Logue and colleagues (2018) found that most athletes who followed the current fad diet of low-carbohydrate, high-fiber or high-protein diets often have LEA (p. 84-85).

Athletes' Current Knowledge

Misconceptions. Furber et al.'s (2017) study found athletes' knowledge lacking most in the areas of fluids and sport nutrition (Discussion section, para. 3). Sport Dieticians from Hull et al.'s (2016) research suggest athletes need to have a better understanding of the importance of being fueled during training and competitions, staying hydrated throughout training and competition, and the negative effects of consuming alcohol. Hunger implies the athlete is not

correctly fueling before competition, as in LEA, and impairing his/her ability to perform at a high level and recover and create adaptations (Hull et al., 2016). Ozdogan and Ozcelik (2011) continue with research that shows athletes do not have enough understanding of post-training meals either. Torres-McGehee et al. (2012) found athletes are limited in their knowledge pertaining to weight management, nutrient intake, hydration, supplements and eating disorders. Hull et al. (2016) also found only 30% of Division I athletes could identify the recommended amount of carbohydrate and only 3% the protein recommendations. Ozdogan and Ozcelik (2011) had many findings concerning athletes' nutritional knowledge. Ozdogan and Ozcelik (2011) stressed the importance of athletes understanding that protein is not a main energy source, saturated and unsaturated fats have different effects on health, and males and females have different nutritional needs.

Competencies. Ozdogan and Ozcelik (2011) continue to offer a number of areas where the majority of athletes have a basic understanding, with some contradictory to the findings mentioned above. Though athletes may not be properly fueling before practices nor know the amount of carbohydrates to be eating, they do understand simple carbohydrates are not appropriate for athletes, meals should be eaten 3-4 hours before competitions and carbohydrates are important for glycogen stores (Ozdogan & Ozcelik). Female athletes understand the importance of iron on oxygen delivery in the bloodstream, and more than half of athletes know that vitamin supplements are not necessary with a well-balanced, diverse diet (Ozdogan & Ozcelik). Lastly, athletes understand alcohol negatively affects absorption and utilization of nutrients (Ozdogan & Ozcelik).

Theoretical Framework

Wiita, Stombaugh and Buch (1995) suggest that with increases in knowledge, along with a change in attitude, athletes improve dietary choices and eat healthier. Wiita et al. (1995) highlight the influence coaches have on impacting their athletes' knowledge and attitude toward nutrition. The more that is known about nutrition, the better athletes can understand how food groups and nutrients impact their health and performance. Dunn, Turner and Denny (2007) offer research which shows that athletes who have gone through nutrition education are more likely to eat or avoid certain foods. Hull et al (2016) offer research that shows athletes who work with sport nutritionists partake in better dietary habits. Fourth year students who had gone through nutritional courses had more nutritional knowledge, so Ozdogan and Ozcelik (2011) emphasize the importance of education and the positive influences on peoples' health. Adams et al (2016) continue with the notion and suggest educating athletes along with their staff to improve their dietary habits. This compounding research supports the Theory of Reasoned Action, which suggests that action is driven by beliefs, perceived outcomes, and social and environmental norms (Ajzen & Fishbein, 1980). In conclusion, the more athletes and their leaders know, the better their dietary habits will be, and in turn give them a better chance to perform at the top of their abilities.

Connection to the Research

The purpose of this study is to better understand how coach leadership related to nutritional information influences collegiate student athletes' dietary choices. Nutrition is one of the most controllable factors impacting health and athletic performance, it is pertinent for athletes to understand what a healthy diet looks like, and how they can utilize it to achieve peak performance (Furber et al., 2017). If athletes are performing with low energy availability, they will not be able to perform to the best of their ability and their immune system and overall health

will suffer (Slater et al., 2017). Athletes have many areas of nutritional information they do not have adequate knowledge in, for this reason it is pertinent coaches and athletics staffs are communicating nutritional information in the best way possible.

To better understand how athletes understand utilize information best, this study will be guided through these questions:

RQ1: What are the experiences of student athletes' acquisition and application of nutritional information related to coach leadership in this area?

RQ2: How does coach leadership with nutritional information and expectations help student-athletes acquire nutritional knowledge?

RQ3: How does an athlete's nutritional knowledge impact his/her dietary choices?

Summary

Chapter 2 presented the review of literature regarding the importance of nutrition for athletes. It discussed energy availability and how LEA creates a negative environment for athletes to grow and develop and presented information to show where athletes current knowledge on nutrition stands. Chapter 2 finished by explaining the theoretical framework this study will be presented through. Chapter 3 will offer a detailed methodology of the study. It will include the research rationale, setting, instrumentation, data collection and analysis, and IRB process. Chapter four will then present results and answer the research questions. This will conclude with Chapter 5 discussing emergent themes, draw conclusions and offer recommendations for future practice and research.

CHAPTER III

METHODOLOGY

This study aims to understand the experiences of student athletes' acquisition and application of nutrition information based off the leadership given by the coach in this area. The purpose of this study is to better understand how coach leadership related to nutritional information influences collegiate student athletes' acquisition and application of nutrition. This will be followed up to consider how the information and expectations of coaches influences their own knowledge and dietary choices. Chapter three includes a description of the research design, rationale for the design and research questions. The chapter sections continue with the setting, sampling, participant selection and role of the researcher. The chapter concludes with sections on instrumentation, data collection, triangulation and data analysis.

Research Design

This study is qualitative in nature, using a case study approach. This study has two separate portions, both qualitative in nature. It includes a qualitative survey, and a qualitative, virtual, one-on-one interview. First, an email containing the survey will be sent out to all student athletes at University A. Completing the survey will be considered voluntary implied consent. The participants will not be penalized for choosing non-participation in the return of the survey. A section inquiring demographic information will be included at the beginning of the survey. The next component of the study will utilize 5-point Likert Scale questions to understand the frequency of nutritional information, value of the information and utilization of that information. These questions are qualitative in nature and will be used in the triangulation process during

analysis. The last portion of the survey will include a general and sport nutrition questionnaire, to gain information of the student athletes' knowledge of nutrition.

Following the completion of the survey, participants who self-identified as electing to be interviewed for the second portion of this study will be purposely selected. This will be based on their knowledge of nutrition. The 7 participants with the highest nutrition knowledge scores and elected to be interviewed will be chosen.

A qualitative case study design is selected to use to gather participant experiences with nutritional information acquisition and application. Case study methodology works to understand individuals, their relationships and how they impact one another (Lochmiller & Lester, 2017, p. 102). A qualitative, individual, virtual, face-to-face interview mutually arranged between the researcher and participants will be conducted. The interview guide is intended to dive deeper into the student athletes' experiences regarding their coach's leadership toward the importance of nutrition in performance, and their attitudes towards that information. A semi-structured open-ended interview guide (SOIG) will lead the interview questions as Lochmiller and Lester state ensure descriptive and explanatory responses.

Rationale for the Method

Research that utilizes a qualitative design allows research to build an understanding personal experiences and gives individuals an opportunity to be descriptive and explain situations (Lochmill & Lester, 2017). Utilizing a survey will allow the researcher to develop an understanding for what is happening presently within the conversations between coaches and athletes regarding nutrition (Lochmiller & Lester). This study's survey will be a form based off Furber, Roberts and Roberts' (2017) General and Sport Nutrition Knowledge Questionnaire, but

will need to be altered to fit the geographical area of this study. Other questions will include a 5-point Likert Scale regarding frequency of coach leadership on nutrition and student athlete perceived importance. The closed-ended questions of this survey allow comparisons and connections to be made amongst athletes' knowledge much easier, but it also limits athletes from expanding and offering more personal information (Lochmiller & Lester; Creswell). For this reason, the qualitative portion of the study will include semi-structured interviews. This will give the researcher flexibility and allow a fluid conversation lead by predetermined questions (Lochmiller & Lester, p. 151). Case study methodology also works to understand individuals, their relationships and the impact these relationships have on one another (Lochmiller & Lester).

Research Questions

The research will be guided by these three primary questions for the mixed methodology:

RQ1: What are the experiences of student athletes' acquisition and application of nutritional information related to coach leadership in this area?

RQ2: How does coach leadership with nutritional information and expectations help student-athletes understand the value of nutrition?

RQ3: How does an athlete's nutritional knowledge impact his/her dietary choices?

Setting

A university town located in the corner of a midwestern state is the setting for this study. The town is home to nearly 30,000 people and one public university, one private university and one college. It is mostly urban, with some rural community members. This study participants will be selected directly from University A, which is a four-year, public university, consisting of

undergraduate, graduate, and doctoral programs. This university is health minded, including majors in Exercise and Rehabilitative Sciences, Healthcare Leadership and Administration, Public Health, and Nursing. It also includes an Integrated Wellness Complex for all university students, as well as on-campus health and wellness services for physical and mental health. University A has 13 NCAA Division II teams and one Division III team. The approximate enrollment for this university is 8,000 students, with about 360 of them being student-athletes. There are 5 men's teams and almost 200 male athletes and 10 women's teams made of up of around 165 females. Head coaches are comprised of 12 males and 3 females.

Sample

The sample for this study will consist of student-athletes attending University A. Athletes may participate in baseball, men's or women's basketball, men's or women's cross country, football, men's or women's golf, gymnastics, women's soccer, softball, women's tennis, women's indoor and outdoor track & field, or women's volleyball. Majority of these athletes are from the Midwest, but some from all over the United States and a few from other countries. These male and female athletes will be anywhere along their collegiate experience, from freshmen to graduate students, aging from 18 to 23. The sample will contain athletes of different ethnicities, including Caucasian, African American, Hispanic and Asian. All 362 athletes are eligible to take the survey.

All participation in this study will be voluntary and confidential. Completion and return of the emailed quantitative portion of the study will mean voluntary and implied consent. Participants will sign the consent form before participation of the one-on-one interview. All identifiable information will be kept to researcher's knowledge only, changed in research paper, and destroyed after completion of the study. There are no risks of participating in this study.

Selection of Participants

The initial selection of participants for this study will be a convenience sample of student athletes in the university database. Being the researcher works at University A, the participants will also all be from the same university as the researcher is employed. Every student-athlete will have the opportunity to participate in the survey portion of the study. Completion and return of the emailed quantitative survey will mean voluntary implied consent.

Participants of the survey will have the option to volunteer for a follow-up virtual, in person interview when completing the survey. Seven student-athletes with the highest level of nutrition knowledge will be asked to convene for a virtual, one-on-one interview with the researcher via Zoom and time of participant's choice. This describes a sample based off both convenience and purpose. An email will be sent to see if these athletes are still willing to do the interview, and if so, an informed consent for the qualitative interview will be completed. The participant will be asked about best time to do the interview process. The seven athletes are stated below:

Athlete 1 is a male, redshirt junior attending University A. He participates in baseball and is a Movement Science major.

Athlete 2 is a female, sophomore, softball player at University A. She is majoring in Nursing

Athlete 3 is a female, senior, soccer player at University A. Her major is Movement Science.

Athlete 4 is a male, 5th year senior, attending University A. He plays baseball and majors in English (Applied Linguistics) and Spanish, and minors in Biology.

Athlete 5 is a female, senior, gymnast at University A. Her major is Exercise Science.

Athlete 6 is a male, redshirt sophomore at University A. He plays football and is majoring in Business Administration and Marketing.

Athlete 7 is a female, senior, track athlete at University A. Her major is Movement Science.

Role of the Researcher

In this study, the researcher is a human instrument in collecting and making sense of the data (Lincoln & Guba, 1985, as cited in Lochmiller & Lester, 2017, p. 93). This makes the study more subjective, and therefore requires the researcher to continually reflect personal bias during research and analysis (Lochmiller & Lester). The researcher is also connected to some of the athletes through coach-athlete relationships. All measures will be taken to eliminate conflicts of interest in the qualitative participant selections. This may create some bias in understanding, or cause influence on athletes' answers. To avoid influencing the results, the researcher will communicate the importance of honesty, transparency, confidentiality, and facilitate an open environment. The researcher has also worked for some of the head coaches and may therefore have known what coaches have offered for nutrition information in the past. Answers and information received during interviews will be taken as stated by athlete, and if questions arise, athletes will be asked for further explanation.

Instrumentation

The main forms of instrumentation will be a survey and the semi-structured open-ended interview guide. The survey will start with a demographic section with questions regarding: name, age and sport played. The survey will then ask a series of questions involving where

athletes receive information about nutrition, how often they utilize this information and the importance they find in this information. The last section of the survey will be an edited form of the General and Sport Nutrition Knowledge Questionnaire created by Furber, Roberts, and Roberts (2017). This questionnaire was found to be both a valid and reliable tool to assess general and sport nutrition for athletes (Furber, Roberts, & Roberts, 2017). Because this study was done in the United Kingdom, some questions will need to be adapted to foods and measurements found commonly in the United States. The survey appears in entirety in Appendix B.

The one-on-one interview portion of this study will be conducted by the researcher using the SOIG instrument in the interviews. The researcher will need to be transparent in understanding the bias held and how it impacts understanding of interview answers. The semi-structured open-ended interview protocol will offer a guided interaction, including open-ended questions and time for participants to expand on thoughts (Lochmiller & Lester, 2017). Prompts may be used to get clarification or gain understanding in participant responses to questions. The SOIG is presented in its entirety in Appendix E.

Limitations

The main limitation in this study is the questions created in the survey inquiring about nutritional resources, utilization of information and importance of nutrition to the athlete. Another limitation will be the participation of student-athletes. This study's validity relies on participants answering honestly, accurately and taking time for thoughtful responses. The researcher's lack of experience in interviewing is another limitation.

Institutional Review Board (IRB) Process

Approval from University A's IRB will need to be obtained before any data collection will take place. To do this, the researcher will need to complete the education model, determine the type of review needed, complete the package related to this review and submit the package to the IRB. Based on the recommendations the IRB proposes, changes will be made to the study. Contact with participants or engagement in the study will not take place until the IRB has approved it. During the study, information and data will be kept on a password protected computer and in completion of the study, all data will be destroyed.

Data Collection

Once IRB approval is achieved and necessary changes have been made, potential participants will receive an email containing the survey. Participation will be voluntary. After one week, another email will be sent with the survey in hopes of more participants. After an additional week, surveys will be evaluated to find common themes. Participants who have the highest scores and responded "yes" to being willing to do a face-to-face interview will then be emailed asking if they are still interested. Those willing to be interviewed will be asked to choose a time they feel most comfortable for meeting with the researcher via Zoom. Interviews will be recorded with a recording and transcribing app called Otter for evaluation. Upon completion of the study, data will be destroyed.

Triangulation

The case study methodology offers multiple data sources to recognize commonalities and relationships amongst participants and their responses. Triangulation presents the opportunity to find these relationships and prove their validity by using different sources of data (Creswell & Miller, 2000). Denzin (1979) pointed out there are different types of triangulation, which can

involve participants, researchers, data, and theory (as cited in Lochmiller & Lester, 2017, p. 105). This study will mostly utilize data triangulation to find common themes in responses. The main data collection will be through in person interviews. Responses will be compared to Likert Scale questions, as well as previous research in similar areas.

Data Analysis

The interview portion of the study will be analyzed by using the Constant Comparative Method to code for common words, categories and themes throughout the interview process (Lochmiller & Lester, 2017). The interviews will be transcribed, reviewed for coding, and categorized to find common, emerging themes that create the foundation of the findings (Creswell, 2012).

Summary

Chapter three discussed the research methodology, including research design and rationale, setting, sample, instrumentation, data collection and analysis, and more. Chapter four will talk about results and chapter five will be a discussion on the findings.

CHAPTER IV

RESULTS/FINDINGS

This qualitative study explored how coach leadership regarding nutrition impacted athletes' experiences, acquisition and use of nutritional knowledge. Chapters 1 – 3, introduced the importance of nutrition for athletes, current research regarding nutrition in athletics, and explained the research methodology. Chapter four will first review the study, and then discuss the participant demographics, the findings of the survey, and most importantly, explain key themes found to answer research questions, as well as other important findings.

Review of Study

Problem Statement

Research proves that athletes lack knowledge of nutrition and practice poor nutritional habits (Dunn et al., 2007; Reading et al., 1999). When individuals have greater understanding, they are more likely to make healthier, well-informed choices (Dunn et al.) The purpose of this study was to develop an understanding in how coach leadership related to nutritional information influences collegiate athletes' acquisition and application of nutritional knowledge.

Research Design

The study is qualitative in nature using case study methodology. It includes an online survey, aiming to develop an understanding of athlete's perception of their own and their coach's value of nutrition, as well as test them on their nutrition knowledge. The survey was followed by a semi-structured interview, guided by questions and allowing conversation to take place. The seven athletes who scored highest on the nutrition survey and stated they would be open to an

interview were chosen for this, virtual, face-to-face interview. The interview aimed to answer these three research questions:

RQ1: What are the experiences of student athletes' acquisition and application of nutritional information related to coach leadership in this area?

RQ2: How does coach leadership with nutritional information and expectations help student-athletes understand the value of nutrition?

RQ3: How does an athlete's nutritional knowledge impact his/her dietary choices?

To analyze the data, the interviews were transcribed, coded, and reviewed for emergent themes. All information was kept on a password protected computer, and names and other telling information were changed.

Triangulation

Triangulation is used within a qualitative research design to ensure validity, by using three methods of data collection during research (Creswell & Miller, 2000). This study utilized the online survey, one-on-one interviews and previous research as its methods of triangulation. The online surveyed allowed nonbiased information to be collected and created an understanding of athletes' perceptions on value towards nutrition as well as their current knowledge. One-on-one interviews allowed interviewees to provide first-hand experiences and information that the researcher can use to answer the research questions. Lastly, previous research offers comparison and a nonbiased eye to consider this study's results. Triangulation assures this study is valid and solid.

Demographics

Fifty-five athletes took the online, adjusted General and Sport Nutrition Knowledge Questionnaire. Those athletes ranged from 18 to 23, and accounted for 10 different sports. Those sports included baseball, softball, volleyball, football, women's basketball, track & field, cross country, women's golf, gymnastics and soccer. Seven athletes were then chosen for the face-to-face, virtual interview. Of these athletes, two were sophomores, one was a junior and four were seniors. Their sports included softball, football, soccer, track & field, gymnastics and baseball.

Table 1:

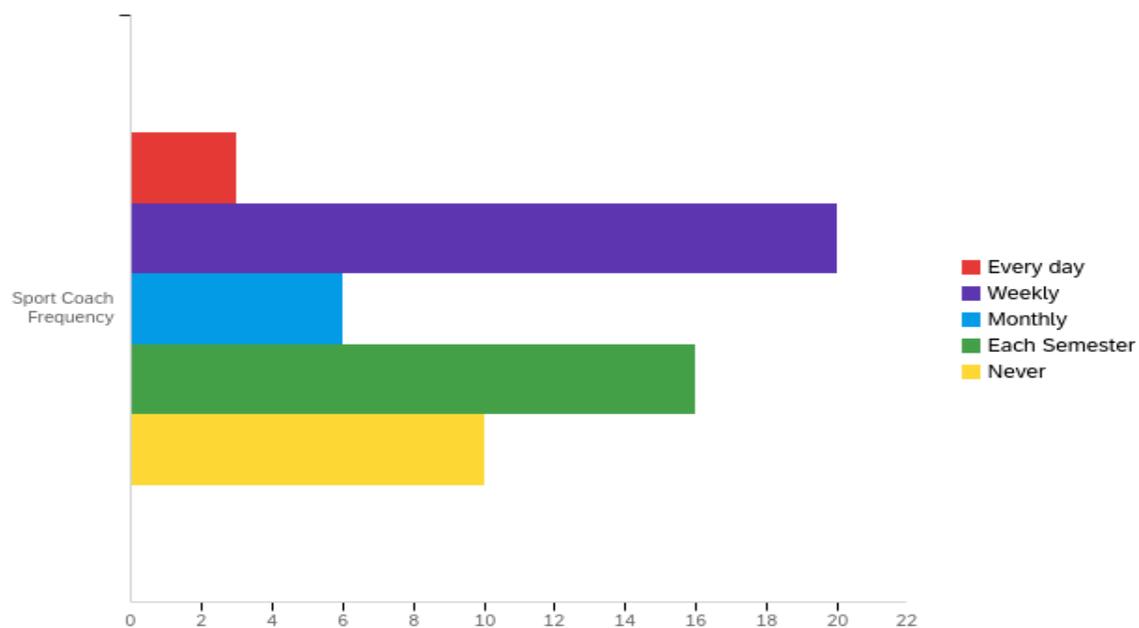
Demographics of Interview Participant				N=7
Athlete	Gender	Class	Sport	
1	Male	Junior	Baseball	
2	Female	Sophomore	Softball	
3	Female	Senior	Soccer	
4	Male	Senior	Baseball	
5	Female	Senior	Gymnastics	
6	Male	Sophomore	Football	
7	Female	Senior	Track	

Findings – Qualitative Survey

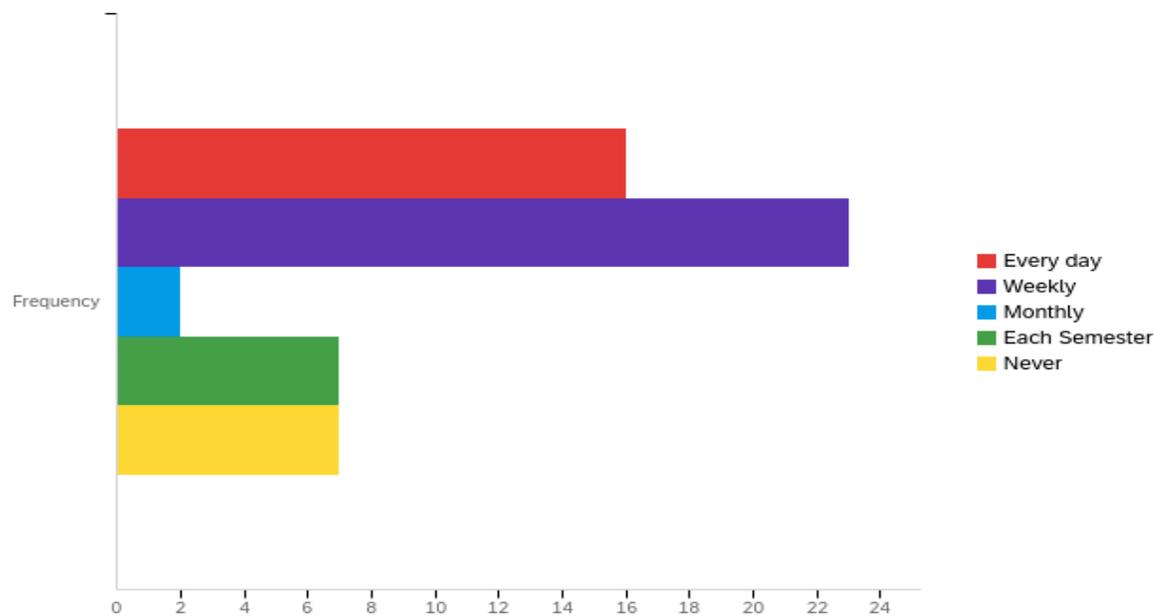
This section will begin by breaking down the qualitative portion of the online survey. The survey included 9 questions, inquiring how often athletic leaders discuss nutrition, the value they hold for nutrition, and how the athlete regards nutrition. 20 of 55 athletes responded their sport coach talks to them about nutrition weekly, and 16 said they talk to them each semester about nutrition. Ten said never, 6 said monthly, and 3 said every day. When asked how often their strength coach discusses nutrition with them, 16 athletes said every day and 23 said weekly. Of the remaining athletes, 2 said monthly, 7 said each semester, and 7 said never. Last of the

athletic leaders discussed was Athletic Trainers. Athletes expressed less conversation happening here about nutrition, as 2 said every day, 11 weekly, 13 monthly, 10 each semester and 19 never.

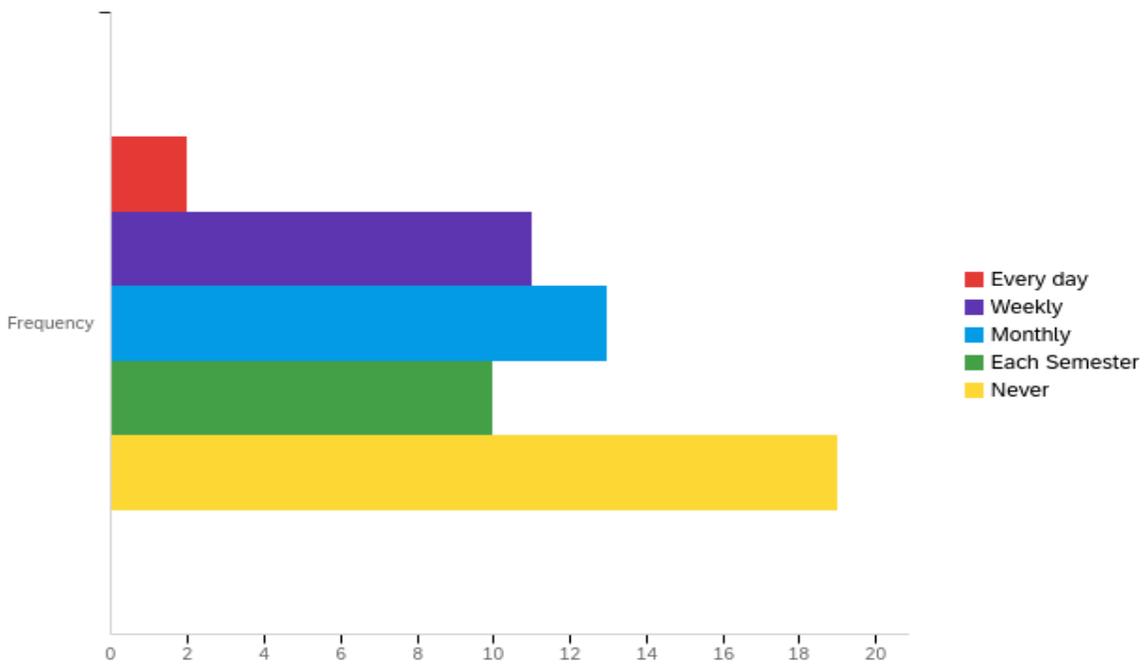
Sport Coach Discusses Nutrition



S&C Coach Discusses Nutrition

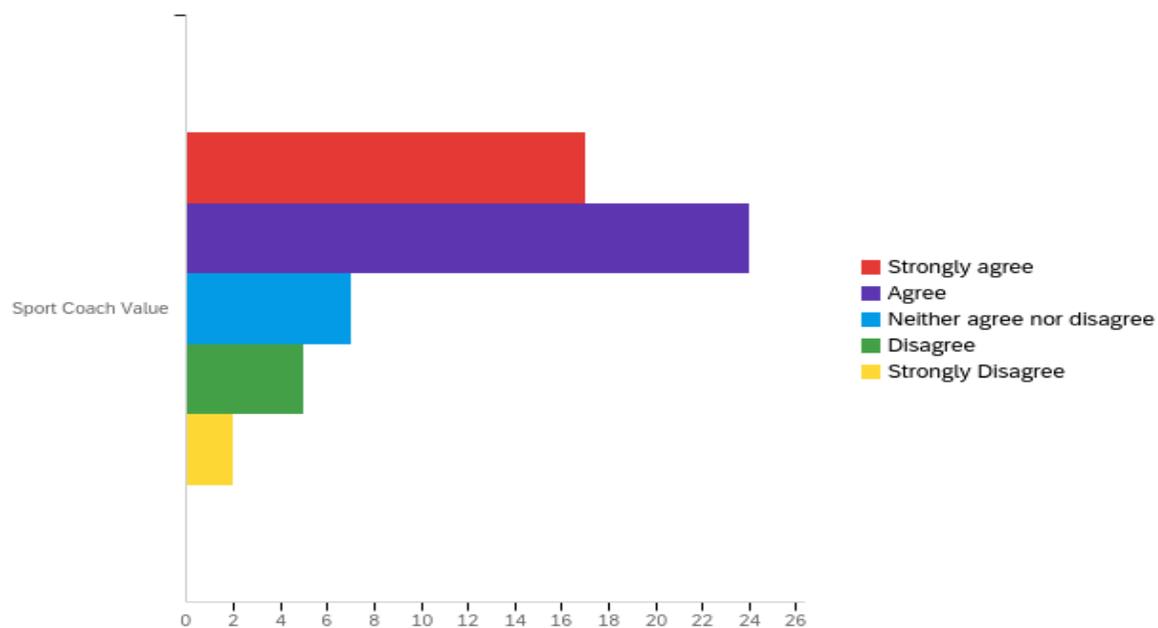


Athletic Trainer Discusses Nutrition

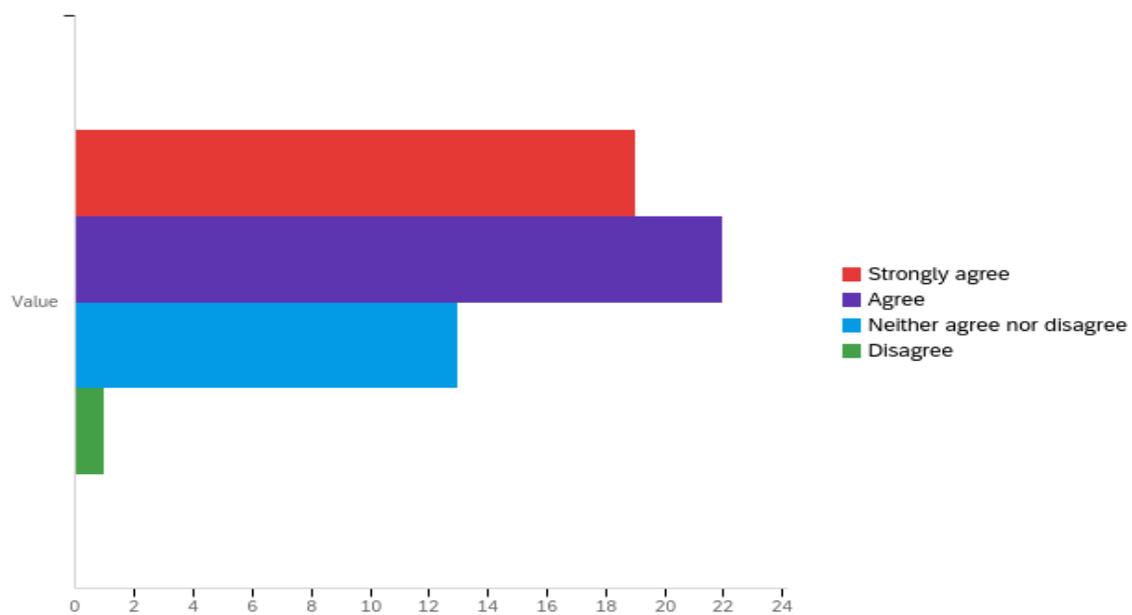


The next set of questions asked about how much value each of these athletic leaders held for nutrition. 44 of the 55 athletes (75%) agreed or strongly agreed their sport coach and their athletic trainer valued the role nutrition played in performance. A slightly higher amount, (49 or 80%) of athletes agreed or strongly agreed their strength and conditioning coach valued the role nutrition in performance.

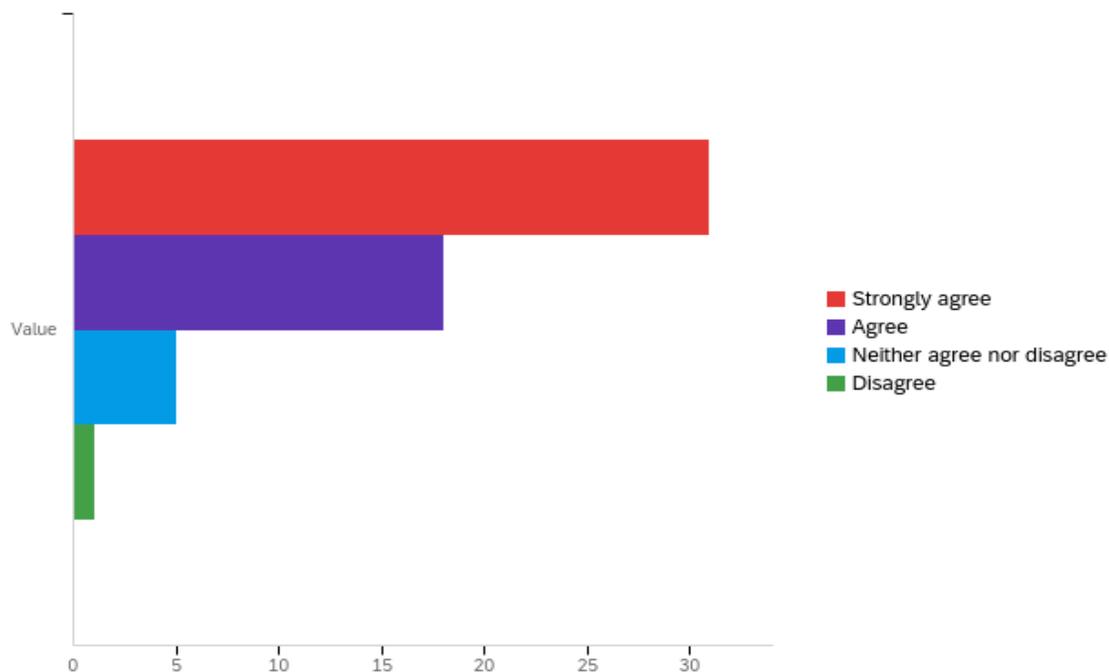
Sport Coach Values Role of Nutrition



Athletic Trainer Values Role of Nutrition

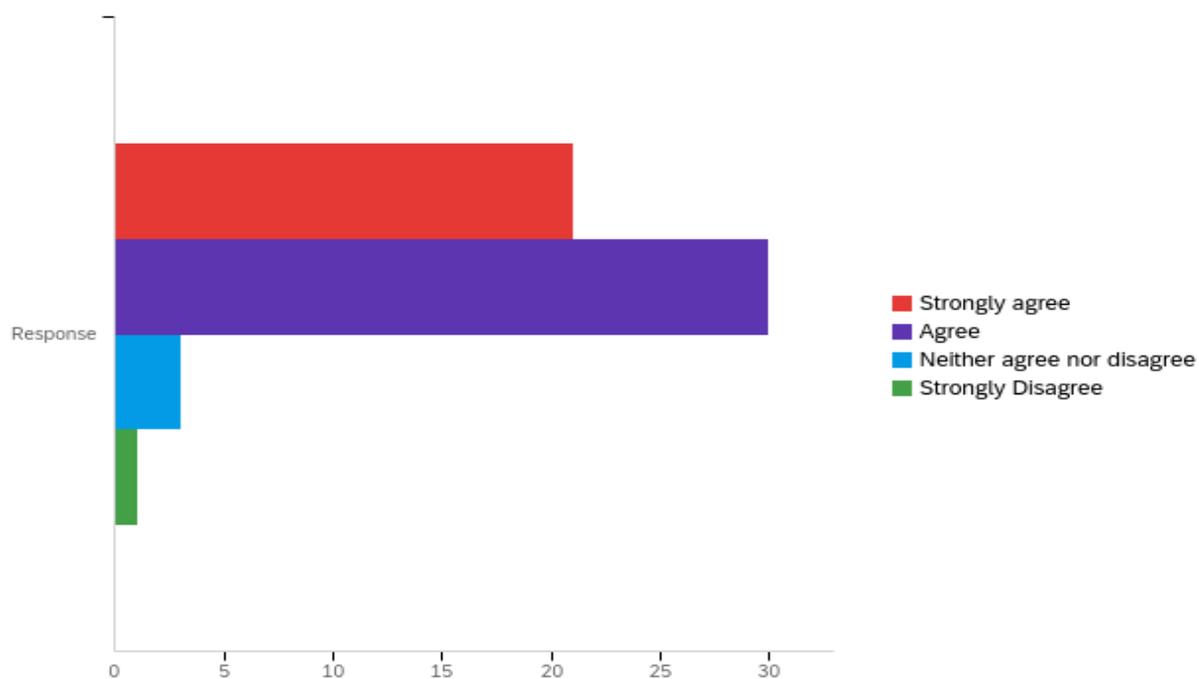


S&C Coach Values Role of Nutrition

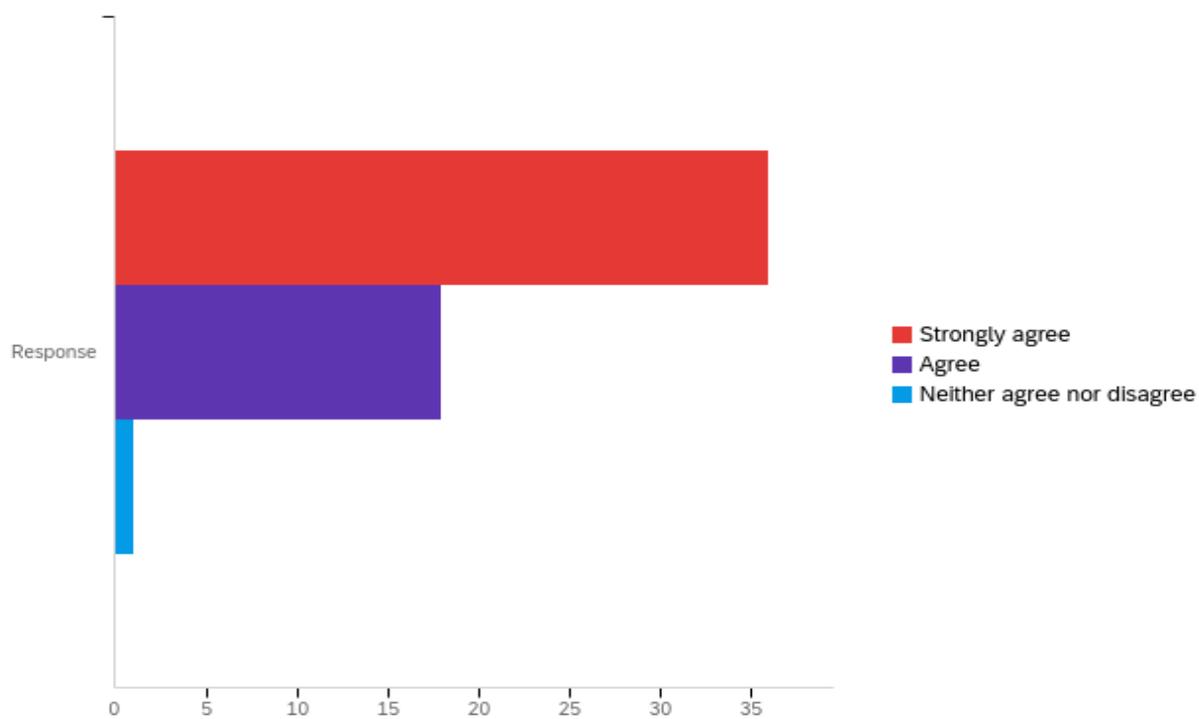


The last set of qualitative survey questions inquired about how athletes value nutrition for their performance. To the statement “I take what my athletic leaders say about nutrition very seriously,” 51 of 55 athletes stated they agreed or strongly agreed. Only one athlete disagree that nutrition impacts their performance (compared to the other 54 that agreed or strongly agreed). Forty-eight of the 55 student athletes agreed or strongly agreed that they utilize the information athletic leaders give them. The last 7 neither agreed or disagreed.

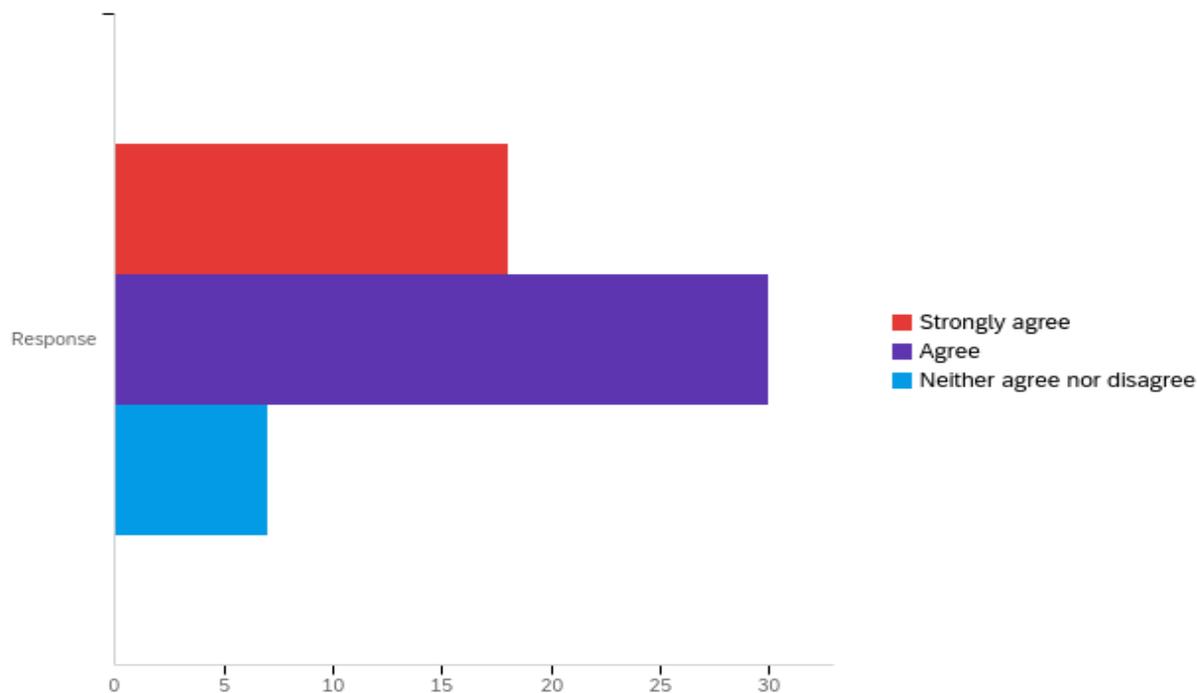
I take what my Athletic Leaders say about nutrition very seriously.



I think nutrition impacts my performance.



I utilize the nutritional information I learn from my Athletic Leaders.



Findings - Qualitative Interview

The findings for the virtual, face-to-face interview will begin by explaining the findings for each research question, showing evidence by quotes of interviewees. This section will then continue to explain other findings that were unintended, but important in that they are educational for future situations and beneficial for athletic leaders to know. These findings will also connect to theoretical models discussed previously in this study and new but fitting models.

Research Question 1. What are the experiences of student athletes' acquisition and application of nutritional information related to coach leadership?

Interview questions used to answer this question:

Interview Question 1 – In what ways have you acquired your nutritional knowledge?

Interview Question 5 – Are there any big experiences involving nutrition or diet that stick with you? How so, can you describe them?

All athletes interviewed have experienced their sport coach offer general reminds, when it comes to nutrition. Things such as, “make sure you’re eating right,” “get some protein on your way out,” or “take care of your body” are examples of what an athlete might hear from their sport coach. Athlete 7 says “We don’t do a lot of nutrition talk. I’d say the main thing my coaches say is to make sure we stay hydrated. They don’t really get into the specifics of things.” Though some athletes have experienced their sport coach making more specific efforts. Athlete 7 also says her team does athlete led discussions, and one time had a professional come speak to them which was helpful. Athlete 3’s coach once brought in a nutritionist to speak to the team, but she explained the nutritionist was too specific for athletes to get anything out of it. “I didn’t really find that (nutritionist meeting) helpful... eat this many ounces of something, doesn’t really help. No one’s gonna go weigh something out.” Athlete 1’s coach hung posters up in the locker room with nutritional information. He found most benefit from the examples of healthy meals on a budget.

These athletes have found more benefit from conversation with their strength and conditioning (S&C) coach. Athlete 4’s S&C coach offered athletes an opportunity to fill out a diet log and then have a discussion about the good and not so good pieces of their diet, as well as strategies to improve the diet. He also said, “our strength coach just kind of gave knowledge here and there. You know, what to eat in your diet, what you should eat after the lift, before the lift. I think that was really helpful.” Almost all the athletes mentioned their S&C coach has offered them informational resources as well. Athlete 5 mentioned that each S&C coach throughout the years had offered a pamphlet that discussed what to eat to fuel her body, before and after practice meals, as well as “good/better/best” options. She commented “It was awesome to see the difference,” after following advice from those resources.

Research Question 2. How does coach leadership with nutritional information and expectations help student-athletes understand the value of nutrition?

Interview questions used to answer this question:

Interview Question 3 – In what ways have your coaches or athletic leaders offered nutritional information? What value have you found in that information?

Interview Question 4 – Describe the value your coach puts on nutritional information. In what ways does he or she exemplify this?

Most of athletes interviewed did not find much value from their sport coach's leadership regarding nutrition. The general theme was that coaches offer general information, but not much more than that. Athlete 4 mentioned "I just don't think our coaches in general put a big emphasis on that (nutrition). Which is fine, they have other things to do." He continued later, "I think the biggest thing our coaches stress is eating a diet that boosts your immune system... our coach always says, 'Ketchup and OJ.' ... In terms of value, it's the hope we eat a diet that keeps us healthy during the year." Athlete 6 shows another side and said he is offered protein and peanut butter sandwiches after morning lifts, and he considers that a daily reminder to be on top of their nutrition. He says his sport coach definitely values nutrition and checks body weights regularly to make sure they are heading in the direction he wants. Athlete 6 explains "I just remember the first thing that he told me when he came here was that we want to be as big..., as fast, and as strong as possible, and to do that by eating the right foods." This athlete finds benefit from the reminders and team meetings discussing nutrition and other important aspects of health and performance, like sleep. He was told to speak to a S&C coach about nutrition, but decided to do research on his own.

Three athletes mentioned they did not think their coach valued nutrition at all (Athlete 3, 4 and 5), and the others offered ways their coach shows value in nutrition. Travel meal options were evidence in both situations. Athlete 5 said she was offered meals during travel or competition that she did not want after a long competition and she felt set a bad example of what

the athletes needed. Athlete 1 and 2 on the other hand used it as examples of how their coach values nutrition, offering healthier choices (Subway), and consulting a nutritionist to offer ideas for between games.

Like stated above, many athletes found a lot of value out of conversation and resources from strength and conditioning coaches. Athletes most appreciated examples of what meals should look like, and simple explanations of why. Athlete 7 found discussion more helpful when it was a professional, rather than just teammates because she could offer resources.

Research Question 3. How does an athlete's nutritional knowledge impact his/her dietary choices?

Interview questions used to answer this question:

Interview Question 2 – What are specific rules or guidelines you attempt to follow when making your dietary choices?

Interview Question 6 – How do you feel nutrition impacts your training/ability/performance?

Interview Question 7 – What specific guidelines do you attempt to follow specifically for your athletics?

Interview Question 8 – Has your diet changed since learning or better understanding nutritional information?

All athletes but one said their diet has changed since better understanding nutrition. The one who hasn't said she wish it has but doesn't feel she has the money or time. The main way athletes say their diet has improved is by adding fruit and vegetables, eating more protein, especially after training, and eating carbohydrates before training. Some athletes make sure to eat breakfast and have protein with their snacks. Additionally, some athletes limit their sweets, snacking and alcohol intake as well.

These athletes have felt the direct difference nutrition can play in training and performance and understand the benefits of eating well. Athlete 6 explained, "It's like night and

day for my workout... I would say it affects me greatly.” Athlete 4 felt similarly and mentioned “Knowing what I know now, I definitely think it’s every bit as important as what you do in the weight room... They (nutrition and training) work hand in hand, if you don’t have one, you’re not going to have the [benefits of the] other.” There are multiple examples of how athletes feel when they have fueled correctly and when they don’t. They mentioned if they don’t eat well, they feel slow, groggy, shaky or weak. They also experience GI distress when they eat too close to practice. Athlete 2 eats a small lunch before practice and follows it with a big dinner. These athletes have felt how energized they feel when they eat well before, and understand for some of them, they need carbohydrates to have the energy to perform. Especially Athlete 5. She says, “When I learned nutritional information, I finally incorporated more carbs into my diet and that helped a lot. I wish I would have learned that earlier, because you always just hear about how carbs are the enemy, and the bad thing, and they’re not at all!” These athletes use the information they have learned, because they have felt the impact proper nutrition can make on their training and performance. Athlete 2 sums it up by explaining, “When I eat good I perform better and feel stronger.”

Other Findings.

Though some athletes found benefit to what their coaches were doing to lead them in the area of nutrition, they did not consider it their main form of education. Four of the athletes were Exercise Science or Movement Science (HERS) majors. This means they were required to take nutrition courses as part of their curriculum, specifically “Nutrition for the Physically Active.” Athlete 1 explains he enjoyed that class and “learned a lot from that and it applies to my life the most.” Athlete 2 is not a HERS major, but accredits her knowledge to a general nutrition and anatomy class she has taken.

Athlete 4 and 6 do not have any college education in nutrition within the university, but have been influenced by people in their lives while they've been in college. Athlete 4 moved in with a group of guys his sophomore year that were very knowledgeable in nutrition and made a huge impact on him. "They were definitely a step up on me nutritionally, so I kind of learned from them. I kind of thought to myself, 'Hey what do I need to do, to kind of be at the level that they're at?'" He would ask them questions about what they were doing, and why they were doing it, and started doing some research on his own as well. Athlete 6 had a family member that lost over 100lbs by following what he learned in his college nutrition class. This athlete would ask him questions, and quiz him and fact check him. As he did, he began to do more research on his own, and built an understanding of nutrition.

The last main finding of this study is that these athletes were goal oriented and genuinely curious in how nutrition could benefit them. They asked questions about nutrition, researched on their own, and found what worked best for them for their sport, nutritionally. Some athletes wanted to gain weight, some maintain, some just wanted to be properly energized and fueled for practice. These athletes felt the benefit of eating well surrounding practices and are better able to reach their goals by following what they have learned.

Summary

This study was designed to develop an understanding in what student-athletes have experienced that have positively impacted their dietary choices. It was found that most sport coaches offer general reminders, and occasionally offer meeting with a nutritionist or informational posters. Strength and Conditioning coaches offer more conversational information regarding dietary habits and give informational pamphlets that athletes have appreciated. For the most parts athletes don't find a ton of value from general statements about nutrition, but it may

be a subtle reminder throughout the day to eat well. They did appreciate the pamphlets and conversation as they were able to better understand what things should be eaten before and after practices. These athletes understood to eat fruits and vegetables, protein, and carbohydrates, and limit snacks, sweets and alcohol. They felt the difference in their training and were able to compete to a better ability when they did eat well. Lastly, all of these athletes were goal-oriented individuals and had nutritional education in college or had impactful relationships in college that influenced their dietary habits.

CHAPTER V

ANALYSIS, CONCLUSIONS, RECOMMENDATIONS

This purpose of this study is to analyze experiences of student athletes regarding nutritional knowledge, specifically how their coach influences it. Chapter one laid the foundation by explaining the background of the problem, problem statement, purpose of the study, significance, research method and the theoretical framework. Chapter two continued with a literature review, diving into the importance of nutrition and athletes' nutrition knowledge. Chapter three went into greater detail of the methodology, including rationale, setting, participants, IRB process, data collection and analysis. Chapter four analyzed the results and answered the research questions. Chapter five will discuss emerging themes and connect them to the theoretical frameworks, as well as recommend future practices and potential research.

Theme Analysis

After data collection, interviews were transcribed and coded to develop an understanding and recognize emerging themes within the data. Through this process, five main themes emerged, and are listed below.

Effective Coach Leadership

The overwhelming majority of athletes interviewed stated their sport coach showed limited value toward nutrition, and with few exceptions, only offered general reminders to eat well and take care of themselves. A few mentioned their coach showed effort in offering nutrition information, whether by meetings with nutritionists, Strength and conditioning coaches, or informational posters. Athletes had mixed opinions on the benefit of these interactions, but recognized the effort to prioritize nutrition. Athletes found the resources and informational

sheets from S&C coaches beneficial, especially the examples and purpose of balanced and nutritional meals. Athlete 4 summarized most athletes' opinions by stating, "It was nice to have those [nutritional informative] sheets... I think that (the example meals) was really helpful."

Goal-Oriented Athletes

Throughout the interviews, it was apparent each athlete was goal oriented, and recognized the importance of diet in achieving their goals. Athletes reported varying nutritional goals: gaining weight, maintaining weight, maximizing training, or fueling for long competitions. Interviewed athletes were willing to ask questions, meet with coaches or nutritionists and do research on their own. Athlete 4 explained his motivation to learn more about nutrition by sharing, "It was kind of a realization for me that, hey, just beyond lifting hard there are other things that you have to do in order to get that strength" Athlete 6 says he is "following a guideline of trying to put on weight... but I also am trying to do it the right way." Athlete 5 didn't have a good experience with her nutritionist, so she "stopped going and then that's when I did my own research... It's definitely been a four-year journey."

Impactful Results

One emerging theme throughout interviews, was the impact an appropriate diet has on athletes' performance and training. All athletes were able to distinguish the change in feelings, attitude, and athletic ability after eating a diet that properly fueled them. Athlete 2 stated it simply by saying, "When I eat well, I perform better and I feel stronger." Another example came from Athlete 7 who added, "When you're eating right, you just feel better training and performing." Other athletes have impressionable experiences that allowed them to recognize the benefits of proper nutrition. After Athlete 6 stopped eating junk food and started eating

healthier, he realized how good he could feel, and said “I started realizing that I could be so much of a better athlete if I treated my body right.” Athlete 5 had an important journey with nutrition and sport throughout her career that eventually led to recognize nutrition’s impact. After starting to fuel her body before practice, she described, “It was frustrating, but it was awesome to see the difference.” She also added “Whenever I eat a dinner that is really nutritious and really good, I always feel better the next day when I’m at practice.” These athletes recognized the impact of eating right, which encouraged them to stay consistent in their proper nutrition habits.

Education

Additionally, these athletes were college educated in nutrition. Five of the seven athletes interviewed took nutrition courses that taught them a lot. Specifically, a class called Nutrition for the Physically Active impacted a lot of the athletes, as it educates on their personal lifestyle. Athlete 1 and Athlete 7 agreed it applied the most to their life, so it was interesting and they were able to take a lot from it. Athlete 7 felt so strongly about the class she believes all athletes should have to take a more basic form of that class, with less science and more application.

Influential Relationships

Lastly, athletes had people in their lives that encouraged them to practice proper nutrition habits. The athletes who were not a part of education courses, had relationships that were very influential in their growth of nutrition knowledge. Athlete 4 lived with guys that were a “step up” on him, nutritionally, and made him think to himself, “What do I have to do to be at the level they’re at?” He would ask them questions and they would tell him why they were doing what they were doing. His roommate would tell him “A six pack is made in the kitchen,” and they

drilled into his head that what they did in the weight room wasn't enough, it works "hand in hand" with nutrition. Athlete 6 had a brother that lost over 100 pounds by following what he learned in his college nutrition course. Athlete 6 would quiz him and fact check his information. This influenced his own eating, and he started to realize how much better he could feel and perform by following this new knowledge as well. Other athletes had individuals in their life that also impacted them, whether it was a teammate with disordered eating, or a family member that had a change in attitude after improved eating. Relationships were reoccurring theme as well.

Connection to Theoretical Framework

Theory of Reasoned Action

The theory of reasoned action states that behavior is driven by intention, and intention is driven by the attitudes and beliefs surrounding an individual (Ajzen & Fishbein, 1980). An individual's action is driven by perceived outcome, and influenced by their surrounding environments (Ajzen & Fishbein). This was proven true in this study, as interviewees chose to eat a certain way which they perceived as beneficial for their performance. This perception was based off what they had learned from others, including professors from classes, and friends and family members that were influential to them. They also believed that fueling their body a certain way would have the outcome of improved performance and better health. This was reinforced when they recognized the improvements from the new dietary choices. The athletes' increased knowledge, improved outcomes, and supportive environment encouraged them to eat a diet beneficial for athletics.

Conclusions

Following the review of the collected data, there are three main characteristics that connect the interviewees: education, relationships, and motivation. Each athlete communicated some degree of nutrition education, specifically, involvement in college courses and personal research. Next, relationships with others seemed to impact athletes' beliefs and actions related to nutrition. For example, Athlete 4 communicated the impact of his roommates and Athlete 6 shared the impact of his brother. Others have experiences with Moms, teammates and strength coaches. The last, and potentially main characteristic all these athletes hold, is they are motivated, goal-oriented individuals, seeking impressionable results. These athletes are working to accomplish something, and have recognized the difference nutrition has made.

Each athlete had a slightly different take on how their coach valued nutrition, from not at all, to showing examples of efforts coaches have made to encourage healthy dietary habits. Though some athletes appreciated the general reminders coaches offered, they found most benefit from the specific examples of appropriate meals, and explanations as to why those meals are appropriate for specific times. The online survey strongly showed that athletes think they are following suggested guidelines, and value nutrition's role in performance. This study shows the importance of distribution of nutrition resources, such as informational packets and example meals.

Recommendations

Athlete's Recommendations

Interview question 9 inquired "If there was something the athletic department could offer regarding nutrition, that would be most beneficial and impactful for athletes, what would that be and how would that look?" The goal was to get the athletes' thoughts and perspective into what

could be done by their athletic leaders, that would actually make a positive and impactful difference. Since education and the class, Nutrition for the Physically Active, was such a strong commonality amongst the interviewees, it is suggested that athletes could be required to take part in a simplified, yet detailed college course that would educate athletes on nutrient timing, energy availability, and other things that are especially important for athletes. Athlete 7 did agree with this, and responded promptly to the question with this answer.

All other athletes offered a potentially simpler suggestion. Just as they appreciated from their coaches, these athletes would like resources that offer detailed examples. Athletes wanted resources with sport-specific, practical meal options. Athlete 4 goes into detail and suggests, “plans could encompass 3-4 different options for each meal of the day, as well as snacks or meals that should be consumed before, after, or during events.” Multiple athletes stressed that it should be sport specific, and potentially position specific, as football linemen, football wide outs, basketball players, gymnasts, cross country runner and track runners, may all have very different needs from their nutrition. Athlete 6 mentions, “I don’t think a lot of kids really know what they should be eating... If there is something they’re given, like a weekly schedule of what a diet should look like, I think that would be really beneficial.” He later adds how examples by position, and by goal, “like if you’re looking to lose weight or looking to gain weight.” These athletes are looking for resources that explain reason and examples that simply lay out what kinds of thing to eat, when to eat it and why to eat it. Athlete 5 explains it could be as simple as sheets of paper handed out at the beginning of each season.

Future Research Recommendations

It is observed that athletes find value in nutritional information, and appreciate effort put forth to education and inform about nutrition guidelines. This research also showed an

inconsistency in athletes' perception of their athletic leaders' value of nutrition. It may be beneficial to consider how coaches perceive their value and effort toward nutrition and information distribution. A study could compare how a coach perceives his or her leadership regarding nutrition, and how their athletes' opinions compare.

Additionally, future research could consider many different aspects of the population that is more specific, such as age, teams, gender, etc. Cross-divisional research would be beneficial in that an understanding could be created in the differences between DI, DII, DIII and NAIA or Junior Colleges.

Lastly, throughout this research, disordered eating was mentioned in discussion. Further research could consider how leadership regarding nutrition influences the extent or severity of disordered eating on a team or school. Connections could potentially be made to coach leadership, nutritionist involvement, or other aspects of team dynamics.

Summary

This study aimed to develop an understanding of the experiences of student athletes' acquisition and application of nutrition information, and how coaches' leadership in this area influenced the acquisition and application of this information. Chapter 4 explained the results, answered research questions and introduced other findings. To continue, Chapter 5 offered emerging themes, connection to theoretical framework, and offered ideas for future research. There were five emergent themes: 1. Effective coach leadership 2. Goal oriented athletes 3. Impactful results 4. Education 5. Influential relationships. These themes were connected using the theory of reasoned action. Lastly, the researcher concluded the findings and offered recommendations for further practice and research.

APPENDICES

Appendix A

Research Study Email of Invitation for Survey

Hi All!

For my thesis, I am looking into nutrition knowledge of collegiate student athletes, and how coach leadership influences that. Below is a link to the survey. If you agree to participate, responding to the survey constitutes your consent. Participation is voluntary and you may stop at any time. The survey will take approximately 10 minutes.

I am super appreciative of your willingness to participate and look forward to learning the results. Thanks for your time!

Follow this link to the Survey: (link attached)

Maria Fruechte

Winona State University

Mfruechte15@winona.edu

Appendix B

General and Sport Nutrition Knowledge Questionnaire

Please fill out the following information:

Name (first & last)

Age

Sport

Are you willing to participate in an interview with the researcher? (Yes or No)

My Sport Coach discusses nutrition with my team,

Options: Every day, Weekly, Monthly, Each Semester, Never

My Strength & Conditioning Coach discusses nutrition with my team,

Options: Every day, Weekly, Monthly, Each Semester, Never

My Athletic Trainer discusses nutrition with my team,

Options: Every day, Weekly, Monthly, Each Semester, Never

My Sport Coach values the role nutrition plays in my performance.

Options: Strongly Agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree

My Strength & Conditioning Coach values the role nutrition plays in my performance.

Options: Strongly Agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree

My Athletic Trainer values the role nutrition plays in my performance.

Options: Strongly Agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree

I take what my Coach/AT/S&C coach say about nutrition very seriously.

Options: Strongly Agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree

I think nutrition impacts my performance.

Options: Strongly Agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree

I utilize the nutritional information I learn from my coach/AT/S&C coach.

Options: Strongly Agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree

General and Sport Nutrition Knowledge Questionnaire

Purpose: Understand athlete's current knowledge of nutrition that is influential to their performance.

Fill out the questions below to the best of your knowledge. Please do not guess, if you are unsure of an answer please tick the 'UNSURE' box.

CARBOHYDRATE

1. In general are these foods High or Low in carbohydrate? *(Please tick one box per food).*

	High	Low	Unsure
Beef	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pasta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Carrots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutella (Chocolate Spread)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Black beans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wholewheat bread	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chicken	<input type="checkbox"/>		
Gummi Bears	<input type="checkbox"/>		

2. Which athlete needs the higher percentage of their diet made up from carbohydrate? *(Please tick one box)*

Cross Country Runner	<input type="checkbox"/>
Football Linemen	<input type="checkbox"/>
Baseball Player	<input type="checkbox"/>
Unsure	<input type="checkbox"/>

3. Which of the following phrases best describes the glycemic index? *(Please tick one box).*

- | | |
|---|--------------------------|
| The amount of carbohydrate a food contains | <input type="checkbox"/> |
| The extent to which carbohydrate food raises blood sugar levels | <input type="checkbox"/> |
| The extent to which protein food raises blood sugar levels | <input type="checkbox"/> |
| The extent to which carbohydrate food raises blood pressure | <input type="checkbox"/> |
| Unsure | <input type="checkbox"/> |

4. Which of these foods are classified as High or Low in the glycemic index? *(Please tick one box per food).*

	High	Low	Unsure
Steel cut oats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chick Peas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sweets (e.g. Gummi Bears)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dark chocolate (>70% cocoa)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Honey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peanut butter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brown rice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sweet potato	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PROTEIN

5. Would you agree or disagree with the following statements? *(Tick one box per question).*

a) When lifting heavy weights the body uses protein as its main energy source.

Agree Disagree Unsure

b) Chicken is a very good source of energy to help fuel high intensity exercise.

Agree Disagree Unsure

6. Are the following foods High or Low in protein? (*Tick one box per food*)

	High	Low	Unsure
Chicken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kidney beans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Potato	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spaghetti Noodles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tuna	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Egg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peanut butter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spinach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cornflakes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. What is the main use for protein in the body? (*Please tick one box*).

Energy Source	<input type="checkbox"/>
Growth and repair	<input type="checkbox"/>
Improve hydration	<input type="checkbox"/>
All of the above	<input type="checkbox"/>
Unsure	<input type="checkbox"/>

8. Please order these food items by protein amount. 1 being the most. 3 being the least.

1 3oz can of tuna, 1 cup of skim milk, 1 slice of white bread.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

FAT

9. For improvements in health, what type of fat do experts recommend should be reduced in the diet? (*Please tick one box*).

	<input type="checkbox"/>
Monosaturated fat	<input type="checkbox"/>
Polyunsaturated fat	<input type="checkbox"/>
Saturated fat	<input type="checkbox"/>
Unsure	

10. Are these foods high in saturated or polyunsaturated fat (*Please tick one box per food*)?

	Saturated	Poly - unsaturated	Unsure
Pumpkin Seeds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pork Chop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Butter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Olive Oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Salmon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Potato chips	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. Do you think these foods are High or Low in fat? (*Please tick one box per item*).

	High	Low	Unsure
Orange	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avocado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cottage cheese	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
White bread	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peanuts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sunflower seeds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jam or jelly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Banana	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VITAMINS AND MINERALS

12. What is the role of antioxidants in the body? (*Please tick one box*)

Help with energy production	<input type="checkbox"/>
Help prevent against cell damage	<input type="checkbox"/>
Increase metabolic rate	<input type="checkbox"/>
Improve hydration status	<input type="checkbox"/>
Unsure	<input type="checkbox"/>

13. In general, the following foods are naturally rich in antioxidant. (*True or false*).

	True	False
Red Meat	<input type="checkbox"/>	<input type="checkbox"/>
White Fish	<input type="checkbox"/>	<input type="checkbox"/>
Fruit	<input type="checkbox"/>	<input type="checkbox"/>
Vegetables	<input type="checkbox"/>	<input type="checkbox"/>
Dairy	<input type="checkbox"/>	<input type="checkbox"/>
Unsure	<input type="checkbox"/>	<input type="checkbox"/>

14. If you want to eat something that is rich in iron, which of the following foods would you eat? (*Please tick one box per question*)

a) Spinach	<input type="checkbox"/>	Milk	<input type="checkbox"/>	Unsure	<input type="checkbox"/>
b) Chickpeas	<input type="checkbox"/>	Banana	<input type="checkbox"/>	Unsure	<input type="checkbox"/>
c) Cheerios	<input type="checkbox"/>	Yogurt	<input type="checkbox"/>	Unsure	<input type="checkbox"/>

15. If you want to eat something that is rich in calcium, which of the following foods would you eat?
(Please tick one box per question)

a) Kale	<input type="checkbox"/>	Chicken	<input type="checkbox"/>	Unsure	<input type="checkbox"/>
b) Skim Milk	<input type="checkbox"/>	Sunflower Seeds	<input type="checkbox"/>	Unsure	<input type="checkbox"/>
c) Potato	<input type="checkbox"/>	Cheddar cheese	<input type="checkbox"/>	Unsure	<input type="checkbox"/>

16. Which cooking method is best to help maintain the vitamin and mineral content within vegetables.
(Please tick one box).

Steam	<input type="checkbox"/>
Boil	<input type="checkbox"/>
Fry	<input type="checkbox"/>
Grill	<input type="checkbox"/>
Unsure	<input type="checkbox"/>

17. B vitamins are important for exercise because they help with: (Please tick one box).

Hydration status	<input type="checkbox"/>
Energy Production	<input type="checkbox"/>
Immunity	<input type="checkbox"/>
All of the above	<input type="checkbox"/>
Unsure	<input type="checkbox"/>

GENERAL NUTRITION

18. During each condition, which is the predominant energy source the body uses, (carbohydrate, protein or fat)? (Please tick one box).

	C	P	F
Resting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate Intensity Exercise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High Intensity Exercise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. How many calories are there in 1 gram of each of the following macronutrients and alcohol? (Please tick one box)

	Carbohydrate	Protein	Fat	Alcohol
2 kcal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 kcal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 kcal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9 kcal
 13 kcal
 Unsure

20. If you are trying to lose weight and want to have a snack what would be the best food to snack on, considering all amounts equal? (*Please tick one box per comparison*).

- | | | | | |
|-------------------------------|--------------------------|----|-----------------------------|--------------------------|
| a) Peanut butter on a bagel | <input type="checkbox"/> | or | Tuna sandwich | <input type="checkbox"/> |
| b) Chicken wrap | <input type="checkbox"/> | or | BBQ Pork Sandwich | <input type="checkbox"/> |
| c) Greens and tomato salad | <input type="checkbox"/> | or | Chocolate pudding | <input type="checkbox"/> |
| d) Cottage cheese and berries | <input type="checkbox"/> | or | Cheddar Cheese and crackers | <input type="checkbox"/> |

Fluid

21. After a 2-hour practice, outside, on a hot summer day, what type of fluid should you drink?

Water only	<input type="checkbox"/>
Water and Electrolytes (Gatorade/Powerade/etc.)	<input type="checkbox"/>
Electrolytes only (Gatorade/Powerade/etc.)	<input type="checkbox"/>
Unsure	<input type="checkbox"/>

22. In general, at what percentage of body dehydration would you start to see a decrease in exercise performance? (*Please tick one box*).

0.5 %	<input type="checkbox"/>
2 %	<input type="checkbox"/>
6 %	<input type="checkbox"/>
Unsure	<input type="checkbox"/>

23. You participate in a 2-hour practice outside, during a hot summer day. After a pre-practice and post practice weigh-in, you learn you have lost 2lbs, due to sweat loss. How much fluid should you drink? (1 cup of water is 8oz.)

2 cups of fluid	<input type="checkbox"/>
3 cups of fluid	<input type="checkbox"/>
4 cups of fluid	<input type="checkbox"/>
5 cups of fluid	<input type="checkbox"/>
Unsure	<input type="checkbox"/>

SPORTING PERFORMANCE AND SUPPLEMENTATION

Please note, if you have not heard of any of the supplements listed below or are unsure of how they work, please tick the UNSURE box.

24. A high protein meal 1 hour before competing in a power event is recommended to enhance performance. *(Please tick one box)*

True False Unsure

25. A high carbohydrate meal 2 – 4 hours pre exercise can lead to improvements in endurance performance. *(True or false?)*

True False Unsure

26. In general, which of the following meals would be recommended to eat 3 hours before training for optimal performance? *(Please Tick one box per question). ** How would change answer?*

- | | | | | |
|-----------------------------|--------------------------|----|------------------------------|--------------------------|
| a) Steak and chips | <input type="checkbox"/> | or | Quinoa and tuna | <input type="checkbox"/> |
| b) Mars bar and chips | <input type="checkbox"/> | or | Peanut butter&jelly sandwich | <input type="checkbox"/> |
| c) Grilled Chicken sandwich | <input type="checkbox"/> | or | Slice of Cheese Pizza | <input type="checkbox"/> |
| d) Mac-n-Cheese | <input type="checkbox"/> | or | Green leaf, vegetable salad | <input type="checkbox"/> |

27. In general, what would be the best item to snack on in the 30 minutes pre exercise? *(Please tick one box per question).*

- | | | | | |
|--------------------|--------------------------|----|------------------------------|--------------------------|
| a) Jelly beans | <input type="checkbox"/> | or | Peanuts | <input type="checkbox"/> |
| b) Chocolate | <input type="checkbox"/> | or | Banana | <input type="checkbox"/> |
| c) Sunflower seeds | <input type="checkbox"/> | or | ½ a white bread jam sandwich | <input type="checkbox"/> |
| d) Cereal Bar | <input type="checkbox"/> | or | Low fat chips | <input type="checkbox"/> |

28. For a 170lb power athlete trying to increase muscle mass how much protein should they be eating per day (g/lb BW = grams per lb of body weight). *(Please tick one box).*

- | | |
|---|--------------------------|
| 54.1 grams of protein/day = .32g/lb BW | <input type="checkbox"/> |
| 92.7 grams of protein/day = .54g/lb BW | <input type="checkbox"/> |
| 139.1 grams of protein/day = .82g/lb BW | <input type="checkbox"/> |
| 177.8 grams of protein/day = 1g/lb BW | <input type="checkbox"/> |
| 216.4 grams of protein/day = 1.3g/lb BW | <input type="checkbox"/> |
| Unsure | <input type="checkbox"/> |

29. If a track athlete is competing twice in one day, morning and evening:

- a) When is the optimum time to eat after the first event? *(Please tick one box).*

0 – 45 minutes
45 – 90 minutes
90 – 125 minutes
Eat after the second race.
Unsure

b) Is it more important to replace carbohydrate, protein or fat after the first event? (*Please tick one box*).

Carbohydrate
Protein
Fat
Unsure

30. Immediately post exercise, is it best to consume high or low glycemic index carbohydrates to support muscle glycogen recovery? (*Please tick one box*).

High GI
Low GI
Unsure

31. If using a whey protein supplement, how much protein (in grams) do guidelines state should be consumed in one serving? (*Please tick one box*).

10 – 17 g
18 – 24 g
25 – 30 g
31 - 37 g
38 – 45g
Unsure

32. Supplementing creatine has the same effect as supplementing with whey protein (*Please tick one box*).

True

False

Unsure

33. In general, which athletic group would benefit from supplementing creatine monohydrate? (*Tick as many as relevant*).

- Speed and power
- Endurance
- Unsure

34. If using creatine during a maintenance phase, how much is recommended you take per day? (*Please tick one box*).

- 1 gram
- 3 grams
- 5 grams
- 7 grams
- 9 grams
- Unsure

Appendix C

Research Study Email of Invitation for Interviews

Hi (Athlete's Name)!

Thank you for filling out my survey and being willing to participate in an interview! I am choosing the athletes who scored the highest on the nutrition quiz, and trying to gain an understanding of how you gained this knowledge and how your coach influenced it, if at all. If you are still willing, I'd love to interview you this week. It will take about ten minutes and be pretty straight forward. Whatever time works for you, can work for me. I am planning on using Zoom and will send you the Meeting ID when the time comes. I will also include the Consent form in that email as well. Let me know a time or two that works best.

Thanks a bunch (Athlete's Name). I hope you are doing well and finishing up school in this untraditional way is going smoothly.

Maria Fruechte

Graduate Assistant Strength & Conditioning Coach

Winona State University

MFruechte15@winona.edu

Appendix D

Interview Consent Form

Consent Form: Influences of Coach Leadership Related to Nutrition on Collegiate Student Athletes' Dietary Choices

What is this research study about?

This research study is designed to develop an understanding of how coach leadership related to nutritional information influences collegiate student athletes' acquisition and perceived application of nutrition. We hope to learn how a coach can lead and drive importance of nutrition to positively influence an athlete's dietary knowledge and habits. All data collected for this study is anonymous and will not be linked back to any of your identifying information.

What activities will this study involve?

If you decide to participate, you will participate in a face-to-face, semi-structured interview, including questions regarding the acquisition of nutritional knowledge, the value your coach places on nutrition, how you have applied this to your dietary habits. This interview will take around 10 minutes and only need to be done once.

How much time will this take?

Participation will require approximately 10 minutes of your time. Time and place of the interview will be chosen at your request.

Are there any risks for participating?

There are no appreciable risks from participating in this study.

Are there any benefits for participating?

There are no benefits from participating in this study.

What are my rights as a participant?

Participation in this study is voluntary and you may stop at any time. You may decide not to participate or to discontinue participation at any time without penalty or loss of benefits. A decision not to participate or withdraw will not affect your current or future relationship with Winona State University of the researcher.

Who can I contact if I have questions or concerns about this study?

If you have any questions about the study or your participation, contact Kristi Mally at 507.457.2263

Who can I contact if I have questions about my rights as a participant?

If you have questions about your rights as a participant, contact Human Protections Administrator Brett Ayers at 507-457-5519 or bayers@winona.edu. This project has been reviewed by the Winona State University Institutional Review Board for the protection of human subjects.

Name: _____

Date: _____

Appendix E

Interview Questions

1. In what ways have you acquired your nutritional knowledge?
2. What are specific rules or guidelines you attempt to follow when making your dietary choices?
3. In what ways have your coaches or athletic leaders offered nutritional information? What value have you found in that information?
4. Describe the value your coach puts on nutritional information. In what ways does he or she exemplify this?
5. Are there any big experiences involving nutrition or diet that stick with you? How so? Can you describe them?
6. How do you feel nutrition impacts your training/ability/performance?
7. What specific guidelines do you attempt to follow specifically for your athletics?
8. Has your diet changed since learning or better understanding nutritional information?
9. If there was something the athletic department could offer regarding nutrition, that would be most beneficial and impactful for athletes, what would that be and how would that look?

References

- Adams, V. J., Goldufsky, T. M., Schlaff, R. A. (2016). Perceptions of body weight and nutritional practices among male and female national collegiate athletic association division II athletes. *Journal of American College Health*, 64(1), 19-24.
doi:10.1080/07448481.2015.1062770
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston, MA: Pearson
- Creswell, J. W., & Miller, D. L (2000). Determining validity in qualitative inquiry. *Theory into Practice*, 39(3), 124-130. https://doi.org/10.1207/s15430421tip3903_2
- Comeaux, E., Harrison, K. C. (2011). A conceptual model of academic success for student-athletes. *Educational Researcher*. 40(5), 235-245. doi:10.3102/0013189x114152wil.
- Cotugna, N., Vickery, C. E., McBee, S. (2005). Sports nutrition for young athletes. *The Journal of School Nursing*. 21(6), 323-328. Retrieved from <http://search.proquest.com/docview/213160257/>
- Denzin, N. K. (1978). *The research act: A theoretical orientation to sociology methods* (2nd ed.). New York, NY: McGraw-Hill.
- Dunn, D., Turner, L. W., Denny, G. (2007). Nutrition knowledge and attitudes of college athletes. *The Sport Journal*. 10(4). Retrieved from <https://link-gale->

com.wsuproxy.mnpals.net/apps/doc/A170455884/HRCA?u=umn_winona&sid=HRCA&xid=53504197.

Furber, M. J. W., Roberts, J. D., Roberts, M. G. (2017). A valid and reliable nutrition knowledge questionnaire for track and field athletes. *BMC Nutrition*, 3(1). doi:10.1186/s40795-017-0156-0

Hull, M. V., Jagim, A. R., Oliver, J. M., Greenwood, M., Busteed, D. R., Jones, J. T. (2016). Gender differences and access to a sport dietitian influence dietary habits of collegiate athletes. *Journal of the International Society of Sports Nutrition*, 13(1). doi:10.1186/s12970-016-0149-4

Kessler, L. A., Gilham, B., Vickers, J. (1992). Peer involvement in the nutrition education of college students. *Journal of the American Dietetic Association*, 92(8), 989-991. Retrieved from https://link.gale.com/apps/doc/A13001215/EAIM?u=umn_winona&sid=EAIM&xid=408d17d5

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic observation*. Thousand Oaks, CA: SAGE.

Lochmiller, C. R., & Lester, J. N. (2017). *An introduction to educational research: Connecting methods to practice*. SAGE Publications.

Logue, D., Madigan, S. M., Delahunt, E., Heinen, M., McDonnell, S., Corish, C. A. (2017). Low energy availability in athletes: A review of prevalence, dietary patterns, physiological health, and sports performance. *Sports Medicine*, 48(1), 73-96. doi:10.1007/s40279-017-0790-3

- Otis, C. L., Dinkwater, B., Johnson, M., Loucks, A., Wilmore, J. (1997). ACSM position stand: The female athlete triad. *Medicine & Science in Sports & Exercise*, 29(5), i-ix.
doi:10.1097/00005768-199705000-00037.
- Ozdagan, Y., Ozcelik, A. O. (2011). Evaluation of the nutrition knowledge of sports department students of universities. *Journal of the International Society of Sports Nutrition*, 8(11).
doi:10.1186/1550-2783-8-11
- Reading, K. J., McCargar, L. J., Marriage, B. J. (1999). Adolescent and young adult male hockey players: Nutritional knowledge and education. *Canadian Journal of Dietetic Practice and Research*, 60(3), 166-169. Retrieved from
<http://wsuproxy.mnpals.net/login?url=https://search.proquest.com/docview/220821971?accountid=15069>
- Slater, J., Brown, R., McLay-Cooke, R., Black, K. (2017). Low energy availability in exercising women: Historical perspectives and future directions. *Sports Medicine*, 47(2), 207-220.
doi:10.1007/s40279-016-0583-0
- Torres-Mcgehee, T. M., Pritchett, K. L., Zippel, D., Minton, D. M., Cellamare, A., & Sibilias, M. (2012). Sports nutrition knowledge among collegiate athletes, coaches, athletic trainers, and strength and conditioning specialists. *Journal of Athletic Training*, 47(2), 205–211.
doi: 10.4085/1062-6050-47.2.205
- Wiita, B., Stombaugh, I., Buch, J. (1995). Nutrition knowledge and eating practices of young female athletes. *Journal of Physical Education, Recreation & Dance*, 66(3), 36-41.
Retrieved from

<http://wsuproxy.mnpals.net/login?url=https://search.proquest.com/docview/215769871?accountid=15069>