

FIELD EXPERIENCE REPORT  
NUTRITION EDUCATION FOR CHILD BASKETBALL TEAMS

by

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FIELD EXPERIENCE Report

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MASTER OF PUBLIC HEALTH

Department of Human Nutrition  
College of Human Ecology

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Approved by:

Major Professor  
Richard Rosenkranz

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## **Dedication**

To my Mom. No one else will ever know the strength of my love for you. I loved you from the moment I opened my eyes.

# **Field Experience Report**

## **Introduction**

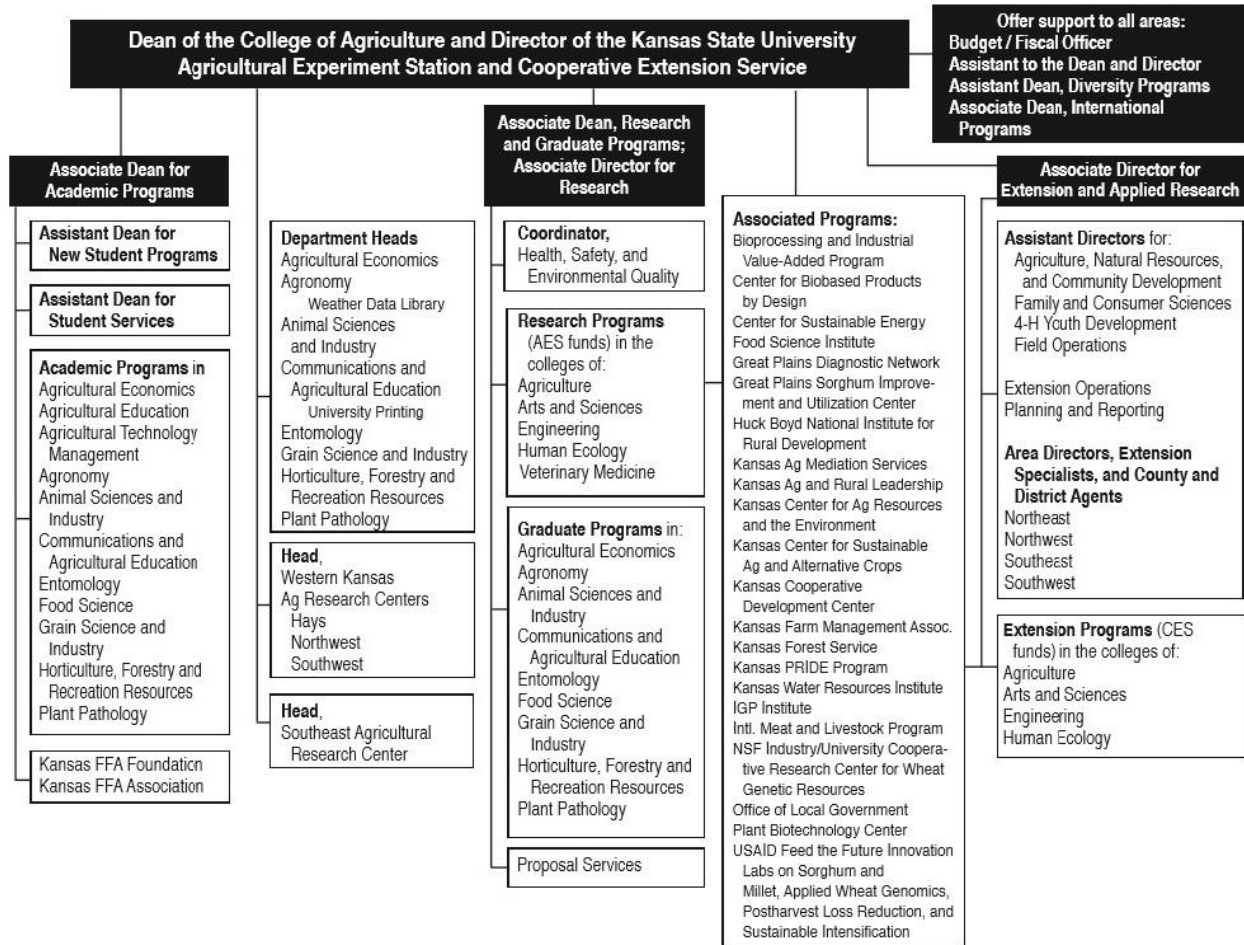
Kansas State University was founded as a land-grant institution, and still holds to its mission to bring research to the community, and to disseminate and apply knowledge. For my field experience part of the MPH Nutrition program, I completed one hundred and eighty hours working with the Riley County Research and Extension office at 110 Courthouse Plaza, that is supported by Kansas State University. Required hours were completed between January 15, 2015 and March 12, 2015. In order to help the community to become a better place to live and work, the K-State Research and Extension office (Kansas Agricultural Experiment Station and Cooperative Extension Service) states that its goal is to assist the population technically and to provide evidence-based programs to the community. To fulfil this mission and provide resources and materials on agriculture, economics, family science and youth development as well as leadership and business to the community, the office partners with College of Agriculture, College of Arts and Sciences, College of Engineering, College of Human Ecology, and College of Veterinary Medicine. The structure of K-State Research and Extension office is shown in Figure 5-1.

The Cooperative Extension was founded in 1914, and programs for the county were funded through government sources and land-grant university support (Kansas State University for Riley County). The Riley County Research and Extension office is run by the county extension director who works with extension agents, receptionist and assistants; extension agents work mostly in fields of family and consumer sciences, 4-H program, horticulture and agriculture (Riley County, 2014). Riley County Extension is an active participant of the Flint



Hills Wellness Coalition, and is currently focusing on increasing access to healthier foods (vending, concessions) and creating a tobacco-free community (Riley County, 2014).

**Figure 0.1 Organizational chart for Kansas State Research and Extension.**



Virginia (Ginny) Barnard was my supervisor for the field experience program. Ginny got her graduate degree in Public Health from Kansas State University and currently works as the Family and Consumer Sciences Agent for Riley County. Ginny is involved with numerous projects/programs for the Research and Extension Office regarding nutrition, food safety, healthy lifestyles and overall well-being. From January to March, 2015 I was involved in several projects that Ginny was in charge of, that fit my interests, skills and education.

As a part of my field experience I had two big projects and several minor projects that required my participation. One of the programs I was involved in was nutrition education for school-aged children playing basketball through Parks and Rec program. Another important part of the field experience was the DIET FREE program (nutrition education and wellness for adults). I was also attending yoga sessions for elementary school kids with Ginny, and participating and leading one of the lunch series lectures at the City Hall in Manhattan, KS.

### ***Nutrition Education for Child Basketball Teams***

One of my responsibilities was to lead nutrition education sessions for school-aged children participating in basketball program for Parks and Rec Services in Manhattan, KS. Healthy nutrition is essential for optimal athletic performance, and promotes physiological and biochemical adaptations in the body (Maughan, 2002). Exercise increases nutrient requirements, therefore, overall health, recovery time and athletic performance are affected by athlete's dietary intake (Rodriguez, DiMarco, & Langley, 2009). With regard to providing nutrition information for athletes. Coaches play an important role in disseminating nutrition information, however, they are not always knowledgeable about the subject (Griffin & Harris, 1996). Studies show, that both coaches (Smith-Rockwell, Nickols-Richardson, & Thye, 2001) and athletes (Pratt & Walberg, 1988) are in need of nutrition education for better athletic performance. Another important nutrition-related topic for athletes is hydration, as children are not as efficient in terms of thermoregulation as adults especially when they exercise (Allen, & Overbaugh, 1994). Sweat production in exercise may cause not only loss of fluid, but often the loss of electrolytes (Na, Fe, Ca) (Maughan, 2002). Even a minor decrease in body weight from sweat can affect athlete's performance, and put athlete at risk of heat illness (Casa, Clarkson, & Roberts, 2005). Fluid intake prior, during, and post-exercise helps prevent dehydration, hyperthermia, tachycardia,

cardiac strain (Sawka, Montain, & Latzka, 2001). Depending on intensity and exercise duration, athletes need to meet requirements for macronutrient intakes; it is extremely important to maintain adequate carbohydrate, protein, and fat intake (Rodriguez, DiMarco, & Langley, 2009).

### ***DIET FREE Program for Adults***

As a part of my field experience, Ginny assigned me to help her with coaching the DIET FREE class. DIET FREE is a lifestyle program developed by Zonya Foco, RD, CHFI, CSP. The program is 10 weeks long; focusing on 8 habits promoting healthy eating and physical activity.

Obesity and chronic diseases are the major health concerns in the U.S. (Wang, & Beydoun, 2007). Most weight-loss programs are experimental and lack scientific validation (Lustig, 1991). In the systematic review by Tsai and Wadden (2005), the overall findings were that effectiveness of the majority of commercial weight-loss programs was suboptimal. A wellness approach to weight loss was discussed in the publication by Bowles, Picano, Epperly, and Myer (2006). The researchers showed statistically significant improvement in terms of weight loss, BMI reduction, and healthy lifestyle change. The core areas of DIET FREE program are similar to those of other wellness programs, and those are adopting healthy eating behaviors, committing to stay physically active and living a healthy lifestyle, and the author emphasizes the importance of health benefits that come along with the healthy weight loss.

Most of the habits in the DIET FREE program are based on Dietary Guidelines for Americans 2010 (Ahmed, & Blumberg, 2009), and focus on fruit and vegetables, whole grains consumption, water over sugar-sweetened beverages, etc. In weekly videos, the author of the program links healthy eating with reduced risk for chronic diseases. Foco also points out the importance of daily physical activity, and provides videos with workouts for program participants. With regard to lifestyle changes participants are given advice and tips (e.g., to park

the car further away from the mall, and walk to the mall; presentation on reading nutrition labels for different kinds of foods and choosing healthier options; tracking television/sedentary time versus active time on daily bases and reducing the sedentary part of it along with increasing active time, etc.) in program videos, through extra class materials and program supplementary materials. In the outline for each class the last 15-20 minutes are reserved for interactive extra class activities. Foco provides examples for those activities that coaches may use, but we developed several extra class activities according to the topic of the class, including tasting sessions, small presentations with regard to the session topic (for example, on healthier options for snacks, dips; or reading nutrition labels to make healthy choices), and workout options.

### **Focus and Scope of Work**

During our first meeting in December, 2014 Ginny asked me about my interests in Public Health, and gave several potentially interesting programs to choose from for my field experience. I chose to do nutrition education targeting different populations: adolescent boys and girls involved with Parks and Rec basketball program, and adults from Manhattan community.

We started the program with youth basketball teams in late January, 2015; teams had different starting dates because of practice schedules. Each team was to participate in nutrition education sessions regarding basic nutrition knowledge on macronutrients, pre-exercise and post-exercise snacks and meals, and hydration. Each session was held prior to or after practice, and the average length of the session was 15-20 minutes. Children were asked to fill in surveys at the beginning of the first and at the end of the last session; coaches were asked to fill in a questionnaire once during the first session. We brought healthy snacks for several sessions.

The DIET FREE program started on January 8, 2015. Participants filled in surveys at the beginning of the first class and at the end of the last class on March 12, 2015. From January to

March we held 10 sessions following the DIET FREE program guide by Zonya Foco, RD. Sessions were dedicated to a certain habit that participants were to develop. We followed the outline for each session according to the study guide, but we also developed handouts and interactive presentations for the last 15-20 minutes of each class. Program participants were to track their habits, read the book by Zonya Foco, and complete weekly homework.

An additional part of my field experience was to attend three lunch lecture series events at City Hall in Manhattan, KS, and to read one of the lectures (“Stress Management”) on February 6, 2015. I also accompanied Ginny to yoga sessions with T. Roosevelt Elementary School students for several weeks.

I think every component of my field experience fit my interests, education, and skills. It was beneficial for me to learn about the scope of Ginny’s work, the scope of work and structure of the Research and Extension office, and to acquire knowledge and get new skills via participating in all kinds of community programs.

### **Learning Objectives**

Ginny helped me develop my learning objectives so that they were related to my interests in the field of Public Health Nutrition. The first objective was to gain a deeper understanding of the motivations/barriers for adults wanting to make healthy behavior changes. When teaching DIET FREE classes, we spent a lot of time on participants’ questions and feedback weekly. I’ve learned from Ginny to ask questions regarding both motivations and barriers of the program participants, and then not only to listen, but to provide them feedback and tips, based on the knowledge that I gained as an MPH Nutrition student. I think it was my favorite part of our weekly classes to learn how the participants worked on their homework, what difficulties they

faced, and what, on the other hand, they found easy to do. It was a great experience to learn about real-life challenges that highly motivated people face when trying to make a change.

The second learning objective was to learn what established social norms, traditions, and environmental factors influence an individual's ability to increase physical activity and improve access to healthy foods. This objective was very interesting to learn about and accomplish as well. When working with the DIET FREE program, we watched 20-30 minute videos by Zonya Foco in class, and she addressed a lot of environmental and social factors that contribute to one's ability to perform a change. Program participants discussed some of those factors after videos (e.g., one of the participants was leaving for a conference to Wichita, and was concerned about her ability to access healthy foods throughout the day at the conference), and tried to find solutions to overcome those factors/barriers.

The third objective was to be able to describe what internal/external rewards adults may need to successfully change health behaviors. Working with the DIET FREE program participants I discovered how motivation to make a healthy choice is influenced by both internal and external rewards. Internal rewards are one's feelings about performing a certain behavior, for example, one of the study participants shared how she enjoyed herself after doing a simple workout. External rewards usually come from another person: one of the videos discussed the importance of family support (we had several study participants from the same family); another example would be support from other program participants.

The fourth objective was to understand how community partners/organizations work together to impact access to healthy foods and support physical activity. I accomplished this objective when attending Flint Hills Wellness Coalition Meetings. Health professionals from different organizations (Mercy Regional, Fort Riley base, public schools, Research and

Extension office, etc.) meet monthly to discuss what is being done and needs to be done to impact access to healthy foods, support physical activity, make healthy choices easy for the community. In the meeting we were discussing introducing more healthy options to vending machines and concession stands. Meeting participants discuss opportunities, share thoughts and their experiences.

The last objective was to consider the scope of work of K-State Research and Extension. I have learned that extension agents work mostly in fields of family and consumer sciences, 4-H program, horticulture and agriculture; and in community programs. A lot of work is done to promote healthy eating habits, to change the environment to make healthy choices easy, to promote physical activity (for example, annual Walk Kansas program), and expand tobacco-free zones, etc.

## **Activities performed**

### ***Nutrition Education for Child Basketball Teams***

Nutrition education for child basketball teams was a new project. We (Natalie Updyke and I) started with obtaining a list of coaches (with emails) working for Parks and Rec services. The flyer was developed and sent out to all the coaches according to the list. The flyer contained information about an opportunity to participate in a series of short nutrition education sessions focusing on healthy nutrition for better athletic performance. It was my first experience in developing promotion flyer for a program. Within a week we started getting emails from coaches and scheduling sessions.

For each session we developed flyers that kids could take home that contained all the information we presented; we used those flyers as outlines for sessions. We used “Eat to Compete” materials from Iowa State Outreach department (Litchfield, Westberg, & Metcalf,

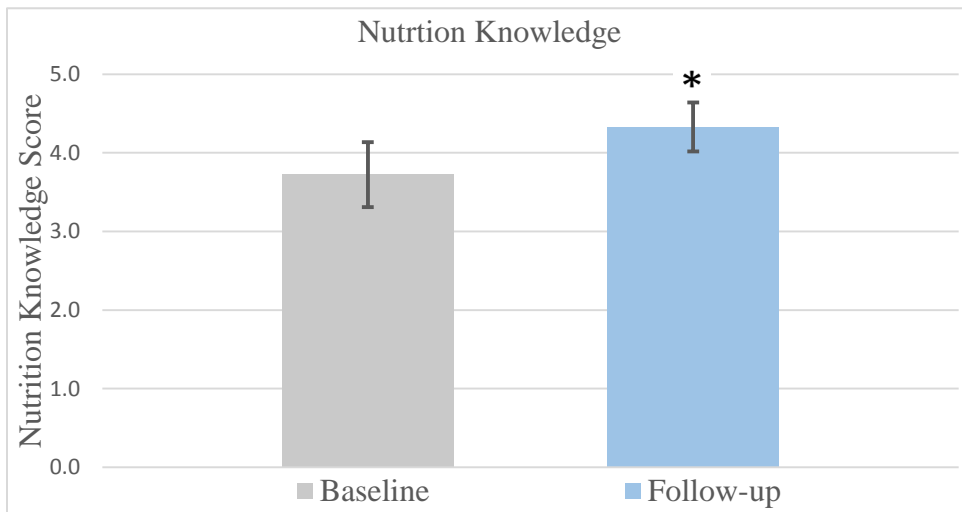
2012). The first flyer contained general information on macronutrients and importance of pre-exercise or pre-game meals and snacks on one side; with healthy snack and meal ideas on the other side of the flyer. The flyer for the second session had information about the importance of post-exercise snacks and meals, and basic information about glycogen (its importance for athletes) on the front page; post-exercise and post-game ideas for healthy meals and snacks were presented on the back side of the flyer. Our third flyer for kids focused on importance of proper hydration. The third flyer had only one page, and it focused on basic information about water, benefits of hydration and effects of dehydration, athlete guidelines for proper hydration for better athletic performance, recommended serving sizes of low-fat chocolate milk, 100% fruit juice, and Gatorade, and a quick review on sweat rate estimation.

At the beginning of the first session children filled out a survey on their dietary habits, nutrition knowledge and importance of healthy nutrition for better athletic performance. At the end of the last session we asked our program participants to fill out the same survey. Coaches were to fill out a questionnaire once (on the first day of program). We obtained data on demographics, coaching experience, and nutrition knowledge.

As I have already mentioned, each flyer was used as an outline for nutrition education sessions. It was not my first experience of teaching children basic nutrition information, so I had a chance to improve my skills. At the beginning of each session we would ask children several questions with regard to the topic of the session, and then guide them through flyers emphasizing the most important information. At the end of each session we would either play a game that would require children to use obtained knowledge or give them time to eat or drink a snack we would bring.



After we were done with the program, I was able to review and analyze the data. We had a 50% dropout rate (six teams started participating in the program, three teams completed all the sessions). We do not know the reason of the dropout, thus, coaches were emailed to schedule next sessions, but we did not get emails back from two teams' coaches; one of the teams that dropped out had their practices with the team that completed the program, but the coach would not leave 15 minutes out of practice time for sessions. For the three teams that completed the program, we had one team of seven boys with the age (mean  $\pm$  SD) of  $11.6 \pm 0.8$  years; a team of six girls with the age (mean  $\pm$  SD) of  $10.8 \pm 1.0$  years; another team of six girls with the age (mean  $\pm$  SD) of  $10.5 \pm 0.9$  years. We ran paired-sample t-test to assess the difference in nutrition knowledge across time (statistical significance was set at  $p < 0.05$ ), and we saw significant improvement from baseline to post-intervention ( $t = -4.652$ ,  $df = 18$ ;  $p < 0.001$ ).



**Figure 0.2 Mean scores for nutrition knowledge (Child Basketball Teams)**

Higher scores indicate better knowledge in participants. Error bars indicate 95% CI

\*Statistically significant difference between baseline and follow-up knowledge scores ( $p < 0.05$ )

### ***DIET FREE Program for Adults***

Major responsibilities for the DIET FREE class were to help Ginny teach classes following the program guide, to answer participants' questions, provide them feedback, and to

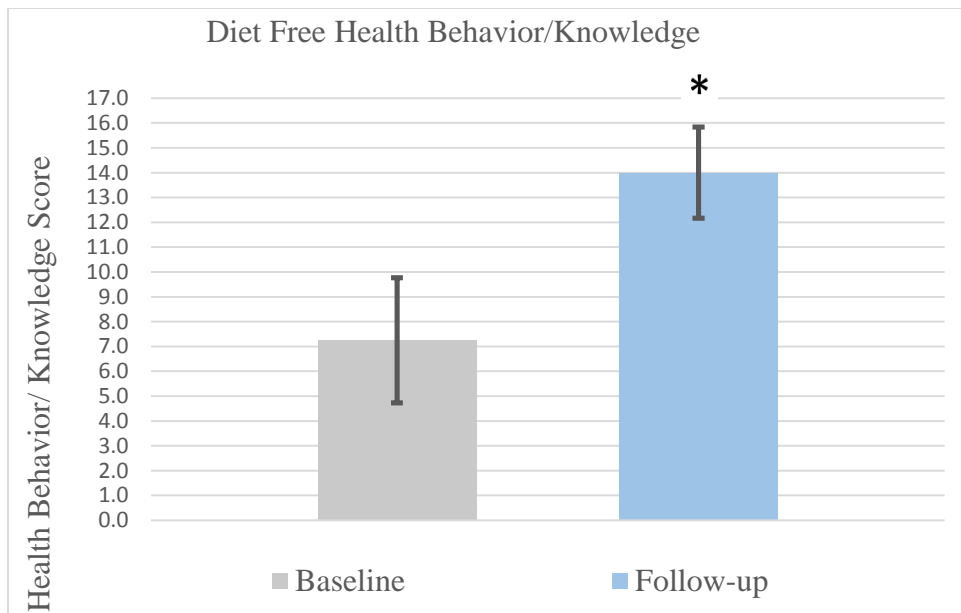
organize and lead interactive extra class activities for the last fifteen to twenty minutes of the class.

The program started in early January with an Introduction seminar. Twenty study participants filled out self-assessment forms (self-assessment snapshot, current knowledge and habits survey) provided by the program, watched the introductory video, obtained their DIET FREE kits (DIET FREE lifestyle guide and habit tracker; DIET FREE novel, Water with Lemon; Everyday Fitness: movement training program DVD; CD set of DIET FREE audio seminars; “LIVE DIET FREE” reminder band, and online video streaming of 10 DIET FREE seminars). We were to meet weekly on Thursdays, and learn about eight habits (one habit a week) that would potentially improve health and result in weight loss in study participants. We saw that participant started to skip classes and even drop out the second week. Throughout the program 8-14 people out of twenty would attend classes. After the first introductory class, we held eight weekly classes on eight habits according to the program guide (drink water; include breakfast and commit to be fit; eat often and include a fruit or vegetable each time; tame your sweet tooth; find the fat (learn about different kinds of dietary fat; replace processed foods with wholesome; eat until no longer hungry; exercise every day). Each class had similar outline: first, we would ask about the previous week and adoption of the new habit, what was difficult and what was easy about it, provide program participants with feedback, and answer their questions; second, we would watch the program video around 20-30 minutes long; third, we would discuss homework; and the last part of the class – was set aside for interactive extra class activities. We developed extra class activities according to the topic of the class: we made presentations on healthier options for dips, cereal and snacks; did several food tasting activities (smoothie preparation; we baked bread and cookies from the program cookbook and brought those to classes), we learnt

about two types of hunger (physical and emotional) and ways to distinguish and control those, and did extra exercise programs. The final class focused on putting everything together, answering questions, providing final feedback for the participants, and the same personal assessment forms were filled out by the study participants. We obtained both baseline and after-program data from eight out of twenty participants.

We did not assess anthropometrics or demographics of the study participants. We had a wide range of ages in the program participants. To perform statistical analysis on the data, we ran paired-sample t-test to assess the difference in nutrition knowledge across time (statistical significance was set at  $p < 0.05$ ), and we saw statistically significant results with regard to nutrition knowledge from baseline to post-intervention: from self-assessment snapshot,  $p = 0.005$  ( $t = -4.027$ ,  $df = 7$ ); from baseline/follow-up current knowledge and habits survey  $p < 0.001$  ( $t = -6.661$ ,  $df = 7$ ).

**Figure 0.3 Mean scores for nutrition knowledge (DIET FREE program)**



Higher scores indicate better behavior/knowledge in participants. Error bars indicate 95% CI  
\*Statistically significant difference between baseline and follow-up health behavior/knowledge scores ( $p < 0.05$ )


## **Products Developed**

### ***Nutrition Education for Child Basketball Teams***

We started working on the flyer for coaches prior to the actual start of the field experience. Personally, I had no previous experience in making flyers for any purposes (to recruit participants for the program, or flyer-handouts for kids), but it was interesting and entertaining to learn. I have learned about effective marketing ideas for promotion flyers, about components of flyers, layout and design considerations. I discovered that flyers are a useful communication tool, making it is easy to spread information quickly and inexpensively.

When working on flyer-handouts we used previously published materials from the “Eat to Compete” program introduced by the Extension and Outreach office of Iowa State University (Litchfield, Westberg, & Metcalf, 2012), and lecture materials (Rosenkranz, 2014). The information provided by “Eat to Compete” is for use by “recreational athletes, competitive athletes, coaches or any person interested in improving overall health through nutrition and exercise” (Iowa State Research and Outreach, 2015). All the flyers developed are presented in figures 5-4 to 5-9.

Figure 0.4 Nutrition Education for Basketball Teams. Coach Flyer



**10-15 minute session at practice**

**Discussion Topics:**

- Importance of Proper Hydration
- Fueling for Practice and Competition
- Significance of Protein and Carbohydrate Consumption for Athletic Performance and Recovery

**Activities:**



- Prepare Healthy Snacks for Athletes
- Play Games and Activities

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**SPORTS NUTRITION FOR OPTIMAL ATHLETIC PERFORMANCE**

If you and your team are willing to participate contact either Natalie or Natasha to get more information and set a practice for a session

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Research and Extension

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Figure 0.5 Nutrition Education for Basketball Teams Flyer for Session 1 (front page)



**Fueling for Success**

<b>Do</b>	<b>Don't</b>
<p><b>Day Before:</b> Do consume:</p> <ul style="list-style-type: none"> <li>• plenty of complex carbs (whole grains, veggies, and fruits)</li> <li>• moderate source of low-fat protein</li> </ul> <p><b>3 to 4 hours before:</b> Do consume meal/snack:</p> <ul style="list-style-type: none"> <li>• high in complex carbs</li> <li>• moderate in protein</li> <li>• low in fat</li> </ul> <p><b>Immediately before:</b> Do consume low calorie snack with high-carbohydrate and low -protein</p>	<p><b>Day Before:</b> Don't consume:</p> <ul style="list-style-type: none"> <li>• foods with little nutritional value (fast food, highly processed foods, sodas, etc.)</li> </ul> <p><b>3 to 4 hours before:</b> Don't consume meal/snack:</p> <ul style="list-style-type: none"> <li>• high in fat</li> <li>• simple carbohydrates</li> <li>• with new foods</li> </ul> <p><b>Immediately before:</b> Don't consume:</p> <ul style="list-style-type: none"> <li>• high fiber foods</li> <li>• high fat foods</li> </ul>

**Carbohydrates**  
Your body stores carbohydrates as glycogen, which is quickly available to use as fuel. Carbohydrate consumption during high-intensity competition can prevent muscle glycogen depletion and can improve performance.

**Protein**  
Your protein needs can easily be met if you are eating enough food from a balanced diet, and you avoid empty calories (foods that are high in added sugars and/or solid fats with little nutritional value).

**Fat**  
You need fat in your diet, so do not try to eliminate it completely. Instead, incorporate omega-3 fat containing foods like fatty fish (tuna, salmon), walnuts, and flaxseeds into your diet. This type of fat is heart healthy and prevents inflammation. Olive and canola oil, or foods containing them, are also monounsaturated fat that is heart healthy.

Figure 0.6 Nutrition Education for Basketball Teams Flyer for Session 1 (back page)

- |   |  |
|---|--|
| <p><b>≥ 3-4 hours pregame meal ideas:</b></p> <ul style="list-style-type: none"> <li>• Low-fat sandwiches with whole grain bread/rolls</li> <li>• Beans (black, pinto, kidney, garbanzo)</li> <li>• Lean meat (turkey, chicken, pork) or fish</li> <li>• Baked potatoes with veggies and cheese</li> <li>• Pasta (preferably whole grain)</li> <li>• Rice (preferably whole grain)</li> <li>• Hummus or peanut butter with whole grain bread</li> <li>• Fruits, vegetables, salads</li> </ul> | <p><b>Pregame/practice snack ideas:</b></p> <ul style="list-style-type: none"> <li>• Sports drinks</li> <li>• Fruit</li> <li>• Cereal</li> <li>• Granola or bar</li> <li>• Half of wheat bagel with jam</li> <li>• Cereal/fruit bar</li> <li>• Yogurt</li> <li>• Hummus with pita</li> <li>• Crackers</li> <li>• Pretzels</li> </ul> |
|---|--|



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Figure 0.7 Nutrition Education for Basketball Teams Flyer for Session 2 (front page)



**Do**

**Within 15 minutes:** Do consume:

- liquid carbohydrate
- juice, milk, and sports drink as needed

**Within 2 hours:** Do consume meal/snack:

- high in carbohydrate, preferably complex carbs
- moderate in protein
- low in fat
- pasta with lean meat, chocolate milk

**Glycogen**

- an energy storage molecule in your muscles
- composed of glucose molecules
- is an easily available source of energy for your muscles during exercise
- within an hour after exercise your body is most efficient in producing glycogen

**Benefits of Post-Exercise Meal**

- improved recovery
- reduced soreness
- improved immune function
- improved bone strength and density
- improved body fat utilization

**Why**

- carbohydrate will help to restore glycogen in muscles
- reduce fatigue/ low energy level
- protein will help your muscles recover and grow stronger
- combination of protein and carbs helps to optimize glycogen replacement




Figure 0.8 Nutrition Education for Basketball Teams Flyer for Session 2 (back page)

- |   |   |
|---|---|
| <p><b>≥ 3-4 hours post-practice meal ideas:</b></p> <ul style="list-style-type: none"> <li>• Low-fat sandwiches with whole grain bread/rolls</li> <li>• Beans (black, pinto, kidney, garbanzo)</li> <li>• Lean meat (turkey, chicken, pork) or fish</li> <li>• Baked potatoes with veggies and cheese</li> <li>• Pasta (preferably whole grain)</li> <li>• Rice (preferably whole grain)</li> <li>• Hummus or peanut butter with whole grain bread</li> <li>• Fruits, vegetables, salads</li> </ul> | <p><b>postgame/practice snack ideas:</b></p> <ul style="list-style-type: none"> <li>• Sports drinks</li> <li>• Fruit</li> <li>• Cereal</li> <li>• Granola or bar</li> <li>• Half of wheat bagel with jam</li> <li>• Cereal/fruit bar</li> <li>• Yogurt</li> <li>• Hummus with pita</li> <li>• Crackers</li> <li>• Pretzels</li> </ul> |
|---|---|



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**Figure 0.9 Nutrition Education for Basketball Teams Flyer for Session 3**



**Estimate sweat rate:**

1. weight before training –weight after training=total weight loss
2. fluid consumed during exercise (15oz=1lb)
3. (total weight loss during training+ weight of fluid consumed)/total hours of training=sweat rate

Replace 150% of fluids lost per hour.

**Recommended serving sizes:**

- Low-fat chocolate milk=6oz
- 100% fruit juice=4oz
- Gatorade=8oz

**Before Practice/Game:**

- 2-3 hours before drink 12-16oz water (about 1-1½ standard bottles)
- 10-15 min before drink 5-8 oz. water (about 1/2 standard bottle)

**During Practice:**

- Use thirst as an indicator for drinking
- Take drinks during breaks (5 oz.)

**After Practice:**

- Immediately afterwards, replace fluids lost during exercise
- For every pound lost during exercise consume 24 oz.

**Benefits of Hydrating**

- Water helps regulate body temperature which could prevent headaches, nausea, and exhaustion
- Water prevents muscle cramps
- Water helps with nutrient transport and waste removal in the body

**Effects of Dehydration**

- Even small level of dehydration (1-2%) can have negative impacts on heart rate, core temperature, heart and lung function
- In extreme cases dehydration can increase risk of kidney failure

**Key Points**

- **WATER** is the best fluid, especially if the practice/game lasts less than one hour
- **Pre-hydrating** before completion can decrease risk of dehydration during the game
- Consuming dilute carbohydrate solution before and after exercise can increase fluid absorption (≤19g per 8oz)
- Consuming beverages with sodium and/or salted snacks with water can help retain fluid (50-170mg per 8oz)
- Consuming a whole 20 oz. Gatorade is not necessary
  - An 8oz serving will adequately replace ions lost during a 1 hour game or practice





## **Alignment with Public Health Core Competencies**

The field experience part of the MPH Nutrition program helped me gain a lot of knowledge and experience, and meet the core competences of public health. With regard to biostatistics, I applied the knowledge and gained more relevant experience when working on both of the major programs – Nutrition Education for Basketball Teams and DIET FREE. Coaching these programs I utilized surveys and ran statistical analyses on the data that allowed me to answer questions on effectiveness of both programs with regard to nutrition knowledge acquired; the questions tested are relevant to public health, and fit the area of my interest.

Environmental health is the second core competency of public health professionals, and I think I learned the most about it from attending Flint Hills Wellness Coalition meetings. Public health professionals working on different sites in the community discussed and planned how to solve various problems connected to environmental health that are urgent in the community. During the meetings we focused on air quality problems (concern about tobacco use) and food safety and availability, specifically – problems with vendors and concession stands.

Epidemiology is the third core competency that I met while working on my field experience. Designing an intervention requires deep knowledge and understanding of epidemiology from a public health professional. When developing interventions for both the thesis and field experience, I spent a lot of time on background research that would allow me to make assumptions and test those. Applying epidemiology knowledge in my thesis research and field experience programs, helped me better to understand the importance of it.

The fourth core competency is related to healthcare administration. I learned a lot about organization of healthcare in the county. I also learned the importance of community-based prevention programs and their impact on the overall community health, as well as the important role of K-State Research and Extension office for the Riley County healthcare services.

The fifth core competency is connected to social and behavioral sciences. Human behaviors are complex, and understanding those requires deep knowledge in the field. I have learned about the importance of behavior choices on health, and that shifting those choices towards improvement is one of the key roles of any health professional, for example, utilizing a theoretical framework targeting behavior change to design a nutrition education intervention.

### **Conclusion**

I always thought that it is crucial to enjoy what you are doing. I truly enjoyed my field experience, and definitely improved my knowledge and acquired a whole set of new skills and experiences. Working on the programs, I became more observant and passionate about my field of interests. This experience at Kansas State University allowed me not only to grow as a future professional, but as a person. I believe that I learned a lot from my professors and mentors, but I do understand that there is still a lot to learn about and to explore.

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# Appendix A - Basketball Team Surveys

**Figure B.1 Child Survey (baseline, follow-up)**

Name \_\_\_\_\_ Team \_\_\_\_\_

Age \_\_\_\_\_ Gender M / F Date \_\_\_\_\_

1. How often do you usually do the following?  
Tick one box in each row

	Never/rarely OR Less than once/week	About 1-3 times/week	About 4-6 times/week	Every day
	1	2	3	4
a. Drink water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Drink fruit juice or fruit juice drink	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Drink soda (not including diet soda)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Carry a water bottle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Eat chocolate or candy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. French fries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Eat potato chips	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Eat fast food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Help choose or buy groceries for the family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Help prepare your dinner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Eat dinner with most of the family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Eat dinner in front of the television	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Eat snacks in front of the television	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. How many serves of vegetables do you usually eat each day?  
(1 serving = 1 cup of salad vegetables, OR ½ a cup of cooked vegetables, OR 1 medium potato)

1.  I don't eat vegetables
2.  Less than 1 serve a day
3.  1-2 serves a day
4.  3-5 serves a day
5.  More than 5 serves a day

3. How many serves of fruit do you usually eat each day?  
(1 serving = 1 medium piece, OR 2 small pieces of fruit e.g. clementine ("Cutie") or apricots, OR 1 cup of diced pieces)

1.  I don't eat vegetables
2.  Less than 1 serve a day
3.  1-2 serves a day
4.  3-5 serves a day
5.  More than 5 serves a day

How many servings of fruit do you think we should eat per day? \_\_\_\_\_

How many servings of vegetables do you think we should eat per day? \_\_\_\_\_

<b>1. How beneficial is being properly hydrated for you athletic performance?(Select one)</b>	
Not beneficial at all	<input type="radio"/>
Not very beneficial	<input type="radio"/>
Somewhat beneficial	<input type="radio"/>
Beneficial	<input type="radio"/>
Very beneficial	<input type="radio"/>
Completely beneficial	<input type="radio"/>
<b>2. How beneficial is maintaining a healthy diet for you athletic performance?(Select one)</b>	
Not beneficial at all	<input type="radio"/>
Not very beneficial	<input type="radio"/>
Somewhat beneficial	<input type="radio"/>
Beneficial	<input type="radio"/>
Very beneficial	<input type="radio"/>
Completely beneficial	<input type="radio"/>
<b>3. How beneficial is eating throughout the day (before practice/game) for you athletic performance?(Select one)</b>	
Not beneficial at all	<input type="radio"/>
Not very beneficial	<input type="radio"/>
Somewhat beneficial	<input type="radio"/>
Beneficial	<input type="radio"/>
Very beneficial	<input type="radio"/>
Completely beneficial	<input type="radio"/>
<b>4. How beneficial is eating after practice/game for recovery and future athletic performance?(Select one)</b>	
Not beneficial at all	<input type="radio"/>
Not very beneficial	<input type="radio"/>
Somewhat beneficial	<input type="radio"/>
Beneficial	<input type="radio"/>
Very beneficial	<input type="radio"/>
Completely beneficial	<input type="radio"/>

**Figure B.2 Youth Coach Survey**

**Youth Coaching Survey**

**INSTRUCTIONS:** Please read all the questions carefully.  
 Name/Team \_\_\_\_\_

1. What is your age? \_\_\_\_\_ years

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2. I describe myself as: (Select one)

Male	<input type="radio"/>
Female	<input type="radio"/>

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3. I describe myself as: (Select one)

Coach	<input type="radio"/>
Assistant Coach	<input type="radio"/>
Other	<input type="radio"/>

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4. I describe myself as: (Select one or more)

Hispanic or Latino	<input type="radio"/>
American Indian or Alaska Native	<input type="radio"/>
Asian	<input type="radio"/>
Black or African American	<input type="radio"/>
Native Hawaiian or Other Pacific Islander	<input type="radio"/>
White	<input type="radio"/>
Don't know/not sure	<input type="radio"/>
Prefer to not answer	<input type="radio"/>

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5. Highest level of education completed: (Select one)

Less than high school	<input type="radio"/>
High school	<input type="radio"/>
Some college or associates degree	<input type="radio"/>
Graduated college	<input type="radio"/>
Master's degree or above	<input type="radio"/>
Prefer to not answer	<input type="radio"/>

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6. Do you have any previous experience coaching?(Select one or more)

Coached basketball at least once before	<input type="radio"/>
Coached for a competitive, non-school program at least once before (e.g., Club teams)	<input type="radio"/>
Coached for a school program at least once before	<input type="radio"/>
Coached for a recreational, non-school program at least once before (e.g., Parks and Recreation)	<input type="radio"/>
No previous experience	<input type="radio"/>

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7. Do you have any coaching-specific training? (Select one or more for each)

Participant ID # \_\_\_\_\_

Degree related to coaching (Physical Education, Exercise Science, Kinesiology, etc.)	<input type="radio"/>
Coaching certification(s)	<input type="radio"/>
Coaching workshop(s)	<input type="radio"/>
National Youth Sport Coaching Association training (provided through Manhattan Parks and Recreation)	<input type="radio"/>
No coaching-specific training	<input type="radio"/>

**8. Do you have any past experience in sport? (Select one or more)**

Participation in organized basketball	<input type="radio"/>
Participation in competitive organized sport (School affiliated, club teams, etc.)	<input type="radio"/>
Participation in recreational organized sport (city leagues, company leagues, intramurals, etc.)	<input type="radio"/>
Participation in unorganized sport (pick-up games, etc.)	<input type="radio"/>
No past participation	<input type="radio"/>

**9. What is your primary reason for being a youth sport coach? (Select one)**

My own child(ren) enrolled in the program	<input type="radio"/>
Volunteer experience	<input type="radio"/>
Enjoyment of coaching	<input type="radio"/>
Asked to volunteer	<input type="radio"/>
Don't know/not sure	<input type="radio"/>
Prefer to not answer	<input type="radio"/>

**10. I have had previous formal nutrition education..... (Select one)**

From a Dietician/Health Professional	<input type="radio"/>
During a Clinic/Conference/Workshop	<input type="radio"/>
From a University	<input type="radio"/>
I've never had formal nutrition education	<input type="radio"/>
Other(specify) _____	<input type="radio"/>

**11. How confident are you in your sports nutrition knowledge? (Select one)**

Not confident at all	<input type="radio"/>
Not very confident	<input type="radio"/>
Somewhat confident	<input type="radio"/>
Confident	<input type="radio"/>
Very confident	<input type="radio"/>
Completely confident	<input type="radio"/>

Participant ID # \_\_\_\_\_



**12. How confident are you in your health-oriented nutrition knowledge?**  
(Select one)

Not confident at all	<input type="radio"/>
Not very confident	<input type="radio"/>
Somewhat confident	<input type="radio"/>
Confident	<input type="radio"/>
Very confident	<input type="radio"/>
Completely confident	<input type="radio"/>

**13. How beneficial do you think teaching your athletes about nutrition for better performance would be?** (Select one)

Not beneficial at all	<input type="radio"/>
Not very beneficial	<input type="radio"/>
Somewhat beneficial	<input type="radio"/>
Beneficial	<input type="radio"/>
Very beneficial	<input type="radio"/>
Completely beneficial	<input type="radio"/>

**14. How beneficial do you think teaching your athletes about nutrition for better health would be?** (Select one)

Not beneficial at all	<input type="radio"/>
Not very beneficial	<input type="radio"/>
Somewhat beneficial	<input type="radio"/>
Beneficial	<input type="radio"/>
Very beneficial	<input type="radio"/>
Completely beneficial	<input type="radio"/>

**15. How beneficial do you think teaching your athletes about avoiding injury would be?** (Select one)

Not beneficial at all	<input type="radio"/>
Not very beneficial	<input type="radio"/>
Somewhat beneficial	<input type="radio"/>
Beneficial	<input type="radio"/>
Very beneficial	<input type="radio"/>
Completely beneficial	<input type="radio"/>

**16. How beneficial do you think teaching your athletes about home-based fitness programs would be?** (Select one)

Not beneficial at all	<input type="radio"/>
Not very beneficial	<input type="radio"/>
Somewhat beneficial	<input type="radio"/>
Beneficial	<input type="radio"/>
Very beneficial	<input type="radio"/>
Completely beneficial	<input type="radio"/>

Participant ID # \_\_\_\_\_

17. What information about nutrition would you like to know? (hydration, snacks, pre/post workout, etc.)

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18. What aspects of nutrition and health could be improved at practices and games?

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19. Any other comments on these topics?

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Participant ID # \_\_\_\_\_