

UNIVERSITY OF WISCONSIN-LA CROSSE

Graduate Studies

THE DEVELOPMENT AND IMPLEMENTATION OF COMPREHENSIVE
NUTRITION EDUCATION LUNCH AND LEARN WORKSHOPS FOR
COMMUNITY COLLEGE EMPLOYEES

A Chapter Style Project Submitted in Partial Fulfillment of the Requirements for the
Degree of Master of Public Health in Community Health Education

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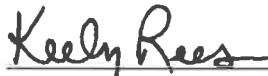
May, 2016

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COMMUNITY COLLEGE EMPLOYEES

By Flannery Cerbin-Bohach

We recommend acceptance of this thesis in partial fulfillment of the candidate's requirements for the degree of Master of Public Health in Community Health Education

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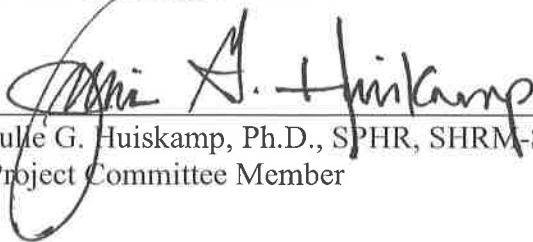
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ABSTRACT

Cerbin-Bohach, F.P. The development and implementation of comprehensive nutrition education lunch and learn workshops for community college employees. Master of Public Health in Community Health Education, May 2016, 129pp. (K. Rees)

As obesity and overweight rates have skyrocketed, employee health care costs are of growing concern. In order to address strains on health care costs, many employers have implemented worksite wellness programs that encompass health education and health promotion for employees. This project outlines the development and implementation of six *Nutrition Education Lunch and Learn Workshops* that were created as part of a community college's comprehensive wellness program. The purpose of this project was to raise employee awareness of nutrition-related concepts and issues through the implementation of *Nutrition Education Lunch and Learn Workshops*, while also providing insight into the creation and refinement of the workshop series. In order to capture successful elements and challenges of the project, surveys were administered to workshop participants and analyzed using descriptive statistics, as well as basic coding for themes. Additionally, employees' self-reported changes in awareness were measured. Through this project several recommendations were made for employers, or other interested professionals, to use in the development and implementation of a worksite nutrition intervention.

ACKNOWLEDGEMENTS

“The journey of perseverance begins with fire, with passion for our cause, with hope to change things.” – Margaret J. Wheatley

In a few weeks I hope to be standing in a gown and hood surrounded by friends, family and mentors celebrating the end of a journey. The following thoughts and acknowledgements are just a sliver of the gratitude I have felt over the course of this journey. It has been a privilege to attend graduate school and to have the opportunity to collaborate on this capstone project with Northeast Iowa Community College and the University of Wisconsin-La Crosse!

Several years ago I began to entertain the idea of going back to school — not fully appreciating that my undergraduate background from Oberlin College and Luther College, my service with AmeriCorps, my employment with the Northeast Iowa Food and Fitness Initiative, and my employment with FoodCorps would provide such a solid footing for graduate coursework in the Master of Public Health in Community Health Education at University of Wisconsin-La Crosse. I am thankful for my previous professors and professional mentors who provided a safe space for me to explore the intersections of global issues relating to health, nutrition, agriculture and environmental degradation.

I would also like to acknowledge those at University of Wisconsin-La Crosse who helped this project come to fruition. Dr. Keely Rees, who volunteered to chair this project, despite being extremely busy. She provided the much needed oversight. Dr. Rees has a very realistic, calm way of conveying what needs to happen, when it needs to happen. I am fortunate Dr. Rees nudged me to write and revise on a timeline.

A special thank you to professor Katie Wagoner whose undergraduate/graduate level nutrition course inspired this project. I thoroughly enjoyed her class. She presented many relatable experiences and examples. I appreciated her focus on holistic methods of teaching nutrition. Her flexibility with her course syllabi allowed me to incorporate my professional and personal interests into the class, which catalyzed the idea of this project. Professor Wagoner also served on my project committee.

I should also mention a final University of Wisconsin-La Crosse acknowledgment to Dr. G.D. Gilmore, who upon meeting me several years ago sensed I would find “a home” in the Master of Public Health program. Dr. Gilmore was right! I appreciated his instruction, advice, attention to detail and kind-heartedness.

Additionally, Dr. Julie Huiskamp, my supervisor and mentor at Northeast Iowa Community College (NICC), has my deepest respect. From our first conversation in April, 2015 I sensed she would become a mentor and great friend. I appreciate her bold leadership and charisma. There are already so many times I have asked myself “what would Julie do?” Julie has been understanding of my, sometimes frenzy, of managing my Preceptorship, employment at both the University of Wisconsin-La Crosse and NICC, my graduate coursework, graduate project and personal endeavors. She has dedicated a great part of herself to the NICC community. In a few months, Julie will embark on an exciting new adventure...retirement! I look forward to maintaining a lasting friendship with Julie beyond our shared hallway at NICC. Julie also served on my project committee.

Additionally, I owe special gratitude to all NICC employees who attended one or more of the nutrition education workshops. Many showed great curiosity about nutrition

topics, which fueled my desire to continue with this project and provided me with a deep sense of purpose. Attendees were open to new ideas, asked great questions and provided constructive feedback.

On a personal note, a resounding thank you to my parents, who taught me many practical skills and life-lessons. I am extremely fortunate to have had both my parents as my first educators and role models. I attribute my interest in nutrition to my Mother, as she exposed me to gardening, growing food and cooking at a young age. She has always been liberal with advice too. Even though I do not always seem receptive to her advice, there are many times when I am appreciative of her perspective. My Father taught me about having perseverance and endurance, as I grew up witnessing his deep dedication to his work at the University of Wisconsin-La Crosse and to daily exercise. This project and my graduate degree have required persistence. Although, painful at times, I am fortunate to have had years of my Father's constructive criticism on essays, reports, cover letters and resumes. His feedback has taught me about the importance of revision, and his feedback has also pushed me to develop critical thinking skills. My Father conveniently opened his office as my temporary workspace while I was on campus. I will miss seeing him on a more regular basis.

Lastly, I would like to acknowledge, Adam, my best friend and partner for life for helping me on this journey. I am proud of the life we are building together, founded on shared interests and values. I appreciate that I have been able to talk, sometimes at ad nauseam, about my passions with Adam. It is also meaningful that I am sharing this milestone with Adam, as I recall awaiting the results of Adam's oral defense in Bozeman, Montana. He breezed through a Master of Science in Science Education program,

making it look far too easy. He showed me I could accomplish similar goals. Adam has been a most patient sounding board for my ideas, self-discoveries and frustrations throughout my graduate studies and my graduate assistantship.

I started my graduate studies, a short three and a half weeks before Adam and I hosted our family and friends at the celebration of our marriage. Surviving that September was remarkable. No doubt, there have been many stretches of busy schedules over the past two years. Adam has had to endure the harsher realities of my graduate studies— my fretting about road conditions between our home (Decorah, IA) and campus and the annoyance of many dropped phone calls, as I traversed home after class on the rural backgrounds of Minnesota and Iowa. I thank Adam for baring the brunt of household chores including making meals, tending the chickens, taking out the trash every Monday night for the past two years, and serving as the driver on nearly all our road trips the past two years so I could do homework. I am really excited to start our next adventure!

This has truly been a wild, journey full of perseverance and hope, as Margaret Wheatley says, to change things.

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CHAPTER I
INTRODUCTION
Statement of Purpose

Researchers demonstrate how good nutrition can have protective effects against many chronic diseases, such as heart disease, stroke, some cancers, diabetes and osteoporosis. Good nutrition including a healthy, balanced diet has been shown to assist with weight management and reduce the risk of obesity (Workplace Health Promotion, 2013). The average American is more likely to die from a condition or disease stemming from poor diet or physical inactivity than the combination of automobile accidents, homicides and infectious diseases (Morton, McElhone, & White, 2011). Many individuals face barriers to understanding ‘why to’ and ‘how to’ eat healthfully to prevent chronic illnesses and realize optimal health. This is largely due to the fact that the food environment in the United States is increasingly complex and there is a plethora of complicated, often contradictory, nutrition-related information in the mass media (Contento, 2011).

The workplace has become an avenue by which employees can learn about health topics by engagement in worksite wellness programs. The workplace is a practical setting for health promotion, because the average American spends nearly one third of his or her wakeful hours at a desk (Michaels & Greene, 2013). Since 1993 the average workweek has increased by three hours (Michaels & Greene, 2013). Additionally, the workplace has the potential for structured social support to encourage employees to make

healthier decisions and form lasting healthy habits (Ickes & Sharma, 2009; White, 1999). There are many worksite wellness programs across the United States and elsewhere around the world that, provide employees opportunities to promote healthy lifestyles.

One such example of a holistic and comprehensive worksite wellness program began at Northeast Iowa Community College (NICC) located in Calmar, Iowa in summer of 2015. The College committed to a wellness program by hiring two *Wellness and Life Stage Program Managers* to coordinate and oversee wellness activities for faculty and staff. The job goal of the *Wellness and Life Stage Program Managers* is to inspire employees to realize optimal health. To do this, the focus of NICC's wellness program is on the many dimensions of wellness (e.g. physical, social, financial). The *Wellness and Life Stage Program Managers* are assisted by a campus-wide *NICC Wellness Team*. The team is comprised of two sub-committees the *NICC Calmar Campus Wellness Team* and the *NICC Peosta Campus Wellness Team*. Both of these sub-committees have faculty, support staff and professional staff representatives that champion wellness events at their respective locations. The *Wellness and Life Stage Program Managers* and the *NICC Wellness Team* offer many hands-on opportunities for employees to learn about health topics and reflect on their own health, while also working to change the culture and status quo at the College to prioritize healthy habits. The wellness-related events and opportunities have included coordinating a campus-wide activity challenge that utilized activity monitors, ordering ergonomic products for employees' workspaces, facilitating a campus-wide blood draw, presenting wellness-related topics at professional development events, facilitating an online financial literacy course and organizing campus-specific fitness classes.

This project coupled the myriad of wellness opportunities at NICC. Specifically, the purpose of this project was to raise employee awareness of nutrition-related concepts and issues through the development of *Nutrition Education Lunch and Learn Workshops*. The *NICC Wellness Interest Survey* conducted in August, 2015 by the *Wellness and Life Stage Program Managers* identified “faculty and staff workshops” as a desirable communication strategy by which NICC employees would like to receive health education (see Appendix A for summary of results from the *NICC Wellness Interest Survey*). Yet, successful worksite wellness programs focus, not only on raising awareness, but also on addressing the work environment (Ickes & Sharma, 2009). Comprehensive wellness programs are multi-faceted and include such interventions as tobacco cessation programming, stress management reduction and changes to the social and physical work environment to promote healthy behaviors, as well as supportive policies. Specifically, behavior change interventions in the workplace should focus on skill development that aligns with employees’ readiness for change (Carnethon, et al., 2009). This project ideally provides the groundwork for continued development of a holistic and comprehensive worksite wellness program that addresses cultural, biological, emotional and psychological factors contributing to employees’ food choices and the food environment at the NICC’s cafeteria and break rooms.

The secondary purpose of this project was to provide insight into the creation and refinement of *Nutrition Education Lunch and Learn Workshops* as an element of a comprehensive worksite wellness program at a community college. The knowledge and attitudes of participants were assessed in order to identify changes throughout the

workshop series. The following research questions were used to design the evaluation tools for the *Nutrition Education Lunch and Learn Workshops*:

1. What are the most successful elements of *Nutrition Education Lunch and Learn Workshops* for a community college?
2. What challenges exist in the development and implementation of *Nutrition Education Lunch and Learn Workshops* for a community college?
3. Have there been changes in participant awareness or knowledge during the *Nutrition Education Lunch and Learn Workshops*?

Rationale

In the United States roughly 34% of the population is obese and 34% are considered overweight. State-level data shows that Iowa ranks sixteenth for adult obesity in the United States (State of Obesity, n.d.). As obesity and overweight rates have skyrocketed, employee health care costs are of growing concern. Sixty-seven percent of employers identified poor health habits of employees as a top challenge for maintaining affordable health care coverage (Mattke, Schnyer, & Van Busum, 2012).

With two campuses located in Peosta and Calmar, Iowa, NICC employs 1,531 individuals and offers health insurance to 340 full-time employees and retirees. Like other institutions, NICC has an interest in keeping its employees healthy. Northeast Iowa Community College operates under a self-funded insurance model and insured employees directly benefit from a reduction in insurance claims realized by healthier employees. Additionally, happy, healthy workers report greater satisfaction and are generally more productive at the workplace (Carnethon, et al., 2009).

In general, NICC employees are interested in nutrition-related topics identified in

the *NICC Wellness Interest Survey* administered in August, 2015; however the knowledge and understanding of “what is healthy?” varies greatly amongst employees. Additionally, the food environment at NICC and the surrounding area is complex. There are challenges to food access. Many NICC employees commute to campus, as the population of Calmar, Iowa is under 1,000 people. This creates stressors, such as a lack of time for meal preparation at home and perpetuates sedentary habits. Employees either eat breakfast and/or lunch on campus in the NICC cafeteria, pack food or drive off-campus to purchase food at the local gas station. The city of Calmar does not have a grocery store, in fact many of the neighboring communities lack grocery stores leaving food deserts. Employees do most of their major grocery shopping in Decorah, Iowa (12 miles north of campus) or in West Union, Iowa (16 miles south of campus).

The *Nutrition Education Lunch and Learn Workshops* are part of a holistic and comprehensive wellness program at a community college. This project can be replicated in the future at NICC, while applying best practices learned during this pilot experience. The materials and findings may also be replicated at other community colleges across the region or potentially be refined to bring to other institutions of education, businesses or corporations.

Definition of Terms

Dimensions of wellness: Wellness is a transformable process that is constantly changing as we (humans) try to maintain homeostasis and align our head, heart and hands with our values. The dimensions of wellness include: social, occupational, emotional, environmental, mental, intellectual and physical (Abbott & Braun, 2015).

Disconnected Values Model: The Disconnected Values Model (DVM) focuses on the long-term consequences of poor health-related decisions. This model is based on the idea that individuals will experience discomfort if there is discrepancy between their values and their action (Brinthaupt et al., 2013).

Food environment: A food environment is vast and multidimensional. A food environment includes federal, state and local policies that influence agricultural production and communication policy. It also includes the built environment in which people obtain food (Healthy Food Environment, 2012).

Health Belief Model: The Health Belief Model (HBM) was developed in the 1950s. This model attempts to explain engagement in a health behavior based on readiness and personal beliefs (Abood, Black, & Feral, 2003).

Nutrition Education Lunch and Learn Workshops: The intervention in this project that involved community college employees attending hands-on, 25 minute educational sessions about nutrition topics. The topics ranged from appropriate portion sizes to overconsumption of sugar in the United States.

Mediators of Behavior Change: Mediators of behavior changes are the factors and influences on why people act in certain ways that harm and/or enhance their health (Contento, 2011).

Obesity: Obesity is often measured on the *Body Mass Index* (BMI) scale, calculated by taking a person's weight and dividing by the square of their height. A BMI from 25.0 to 29.9 falls within the overweight range and a BMI of 30.0 is considered obese (Defining overweight and obesity – Centers for Disease Control and Prevention, n.d)

Return on investment: The return on investment (ROI) is often used in business administration; however, applied to worksite wellness programs a ROI means the outputs of a wellness intervention are ideally less than the financial inputs. Another term for ROI is cost effectiveness (Van Dongen, et al., 2011).

Self-Determination Theory: The Self-Determination Theory (SDT) attempts to explain intrinsic and extrinsic types of human motivation. Further, it posits that humans are motivated at some degree of basic psychological needs. (Teixeira, Carraça, Markland, Silva, & Ryan, 2012).

Stages of Change Model or Transtheoretical Model: The Stages of Change Model proposes that behavior change occurs in a process of six stages and that health-related interventions should match the stage that most closely aligns with a person's attitudes or behaviors (Contento, 2011).

Worksite wellness: Worksite wellness is the intentional effort made at the workplace to address any combination of the following: employees' mental, physical, social, emotional, financial, intellectual or environmental health through workplace interventions or opportunities.

Literature Review

Current Health Trends and the Workplace

Roughly 70% of Americans suffer from disease related to lifestyle habits. These habits include tobacco use, sedentary behaviors, poor diets and excessive alcohol consumption (Michaels & Greene, 2013). One of the implications of poor diets and sedentary behavior is obesity, which has doubled for adult populations in the United States between 1980 and 2004. One in three individuals in the United States is now

considered obese (Ickes & Sharma, 2009). Obesity is linked to an increase risk of hypertension, type II diabetes, coronary heart disease, stroke, sleep apnea, some cancers, as well as a low quality of life and clinical depression (Adult Obesity Causes and Consequences, 2015).

Obesity is linked to higher rates of health care claims, absenteeism, sick leave, disability and injuries in the workplace (Task Force on Community Preventive Services, 2009). One study found that 25% to 30% of companies' medical costs per year are spent on employees who have one or more of the following risk factors: use tobacco products, are obese, have hypertension or are physically inactive (Carnethon, et al., 2009). The private employer sector spent \$45 billion on health care costs related to obesity in 2002 (Heinen & Darling, 2009). However, the problem is not just exemplified in the workplace, for example from 1987 to 2001 27% of the growth in health care spending in the United States was a direct result of obesity (Heinen & Darling, 2009; Thorpe, Florence, Howard, & Joski, 2004).

Additionally, obesity and overweight can be perpetuated in the workplace with long work hours, shift work and job stressors (Task Force on Community Preventive Services, 2009). Americans spend nearly one third of their waking hours at work, and since 1993 the average workweek has increased by three hours (Michaels & Greene, 2013). The increased reliance on technology and sedentary habits associated with many occupations increases risks, not only of obesity and overweight, but of such conditions as Carpal Tunnel Syndrome, vision impairment and low back pain (Haines et al., 2007).

Worksite Wellness

Worksite wellness programs have been adopted in order to address the growing health and financial concerns in the workplace. The efforts are part of national initiatives under the Centers for Disease Control and Prevention, *Healthy People 2010* and *Healthy People 2020*, as well as many state and local entities, private businesses, and corporations. *Healthy People 2010* stated that 75% of all worksites in the United States, regardless of the number of employees, should offer comprehensive wellness programs (Carnethon et al., 2009).

Worksite wellness programs are sometimes referred to as health promotion programs, health improvement programs, disease prevention programs or preventive medicine programs (Bowdon, Fry, Powell, Rosene, & Shewanown, 2010). Worksite wellness programs target places of employment to include businesses, industries, institutions and organizations. These programs focus on health promotion, as well as education and safety programming to foster healthier work environments and cultivate happier, more productive workers.

Benefits of Worksite Wellness Programs

Social support. A worksite is an efficient place to address obesity, promote healthy habits and conduct wellness education (Ickes & Sharma, 2009). Worksite wellness programs can counter poor employee health habits by offering opportunities for employees to consume healthy foods, be physically active, as well as focus on their health on a daily basis. There have been studies documenting positive health outcomes associated with worksite wellness programs, such as decreased risk of cardiovascular disease, colon cancer, diabetes, and mood disorders from participating in regular physical

activity and consuming healthy foods (Thornton & Johnson, 2010). Additionally, worksite wellness programs have the ability to reach adult populations that would otherwise be difficult to engage in health education (Ickes & Sharma, 2009). Employee-peer networks can be a source of social support to enhance healthy habits. Strong social support can create motivation for individuals to improve and maintain healthy habits by such forces as peer-accountability and/or workplace health competitions (Morton et al., 2011).

Decrease in health care costs. Employers will financially benefit from healthier employees. It is increasingly difficult for employers to provide affordable health insurance to workers and an unhealthy workforce is likely to cause higher rates for health care and more employee absenteeism. In fact, employers pay \$1.4 trillion per year on employee health care, which is 30% of the nation's annual health care bill (Ickes & Sharma, 2009). A large proportion of expenditures arise from employing an obese workforce. The rate of obesity continues to grow, with the largest rise at, what is coined, "grade-III obesity" or those with a body mass index (BMI) of 40 or more. Overweight male employees, with a BMI of 25.0 to 29.9, paid an average of \$175 per year for expenditures related to obesity, while female employees with a BMI of 35.0 to 39.0 paid on average \$2,485 per year on expenditures related to obesity. Absenteeism in obese female employees is, on average, five days more per year than their non-obese female colleagues, while the average is slightly lower at two days more per year for obese males compared to non-obese male colleagues (Finkelstein, Fiebelkorn, & Wang, 2005).

Employers often seek return on investment (ROI) when implementing wellness programs. To achieve a positive ROI for a worksite wellness program they would aim

for an inverse relationship between expenditures invested in wellness programming, and costs associated with medical expenditures and absenteeism. For example, over the course of three years Elkhart General Hospital (Elkhart, IN) achieved a cost-savings in health care costs due to their wellness programming. The hospital achieved a \$340,000 savings in health care costs after implementing a wellness program (Thornton & Johnson, 2010). Another way to examine ROI is by calculating the cost of disease. The Centers for Disease Control and Prevention estimates an overweight or obese employee who reduces his or her body weight by just 10% will reduce lifetime medical expenses by \$2,300 to \$5,300 (Carnethon et al., 2009). A 10% drop in body weight is an attainable goal achievable by modest lifestyle modifications, potentially in the workplace.

Increase in productivity. By offering worksite wellness programs, employees and employers are likely to see an increase in productivity and health care savings, in addition to increased camaraderie and worker morale (Michaels & Greene, 2013). One study suggests that worksite wellness programs help retain employees and increase “presenteeism” or the concept of being on task at the office (Bowdon et al., 2010). Additionally, effective worksite wellness programs have the potential to attract exceptional employees and enhance employee moral (Carnethon et al., 2009).

Worksite Wellness at Institutions of Higher Education

At colleges and universities emphasis is typically placed on student wellness services and faculty health is often understudied (Smith, Chen, McKyer, & Lisako, 2009). In response to *Healthy People 2010* the American College Health Association developed *Healthy Campus 2010* for institutions of higher education to address the multi-dimensions of health on campus communities (Ewing, Ryan, & Zarco, 2007). The

prevalence of worksite wellness programs is still low despite the top-down commitments. In 1995, 20% of college campuses had wellness programs and another survey conducted in 2012 indicated only 42% of community colleges surveyed had wellness programs for employees (McMillen, 1986; Thornton & Johnson, 2010).

Higher education should serve as model organizations for communities and the rest of the world to include role modeling health and wellness, as well as aiming to prevent disease and foster health education. The former President of the University of North Dakota, Dr. Charles E. Kupchella, stated health is at the very heart of education, "...but not only is good health directly and fundamentally important to all graduates, it also has very much to do with the entire purpose of education" (Kupchella, 2009). Since 1989, researchers with the Higher Education Research Institute at the University of California Los Angeles have studied faculty stress. The top two reasons for stress were limited free time and their own expectations, while budget cuts were another source specifically for those faculty members at public institutions (Hurtado, Eagen, Pryor, Whang, & Tran, 2012). Other reasons faculty are stressed stems from financial constraints, lack of time and educating underprepared students. It is harder for professors to secure full-time teaching jobs and achieve tenure status, while many in the natural and physical sciences feel the stress of "publish or perish" or have to secure grant money to pursue research while also teaching (Berrett, 2012). Faculty experiencing more stressors due to various factors creates barriers for authentic role modeling of healthy habits to students and the broader community, as well as creates long-term health consequences (Berrett, 2012).

Stress can lead to burnout, which is associated with health-related problems,

stress and general lack of productivity (Blix A., Cruise, Mitchell, & Blix, G., 1994). In 2004 a study of 263 full-time faculty members found that 20% were at the highest burnout level. This study indicates emotional exhaustion was one of the primary results. In addition, the researchers in this study found stress in faculty has negative consequences on teaching, as well as the teacher/student relationship (Lackritz, 2004). Worksite wellness programs, specifically tailored to address stress management, could address the burnout that faculty increasingly feel in the workplace.

There are multiple examples of campus wellness programs across the United States. One nursing program at an institution of higher education started a program called *Wellness Wednesdays*, designed to meet the individual needs of faculty and staff, as it related to several aspects of wellness. The program targeted 1,586 faculty and staff on the main campus at a large public institution. The health intervention was individual health-related goal setting. The facilitators of the wellness programming included nursing students engaged in service learning. The nursing students recorded 165 new visits and 37 follow-up visits during the first year of the program with an additional 147 visits the third semester, including 91 initial visits and 56 as returning visits (White, 1999). Another example of a wellness-related intervention from a large public institution was the creation of a virtual walking program for faculty and staff. The goal was to improve health status, as well as perceived psychological well-being. The researchers found a decrease in BMI and blood glucose, amongst other modest health-benefits, as well as increased health awareness, and two participants lost over 35 pounds of excess weight (Haines et al., 2007).

Elements of Effective Worksite Wellness Programs

Specific workplace strategies. Worksite wellness programs often look different across sectors and many programs are tailored to meet the needs and interests of employee populations. Worksite wellness programs are often coordinated or lead by a wellness coordinator, wellness director or wellness program manager. Some common efforts of coordinators might be to analyze need, involve stakeholders in planning and decision-making, integrate activities in management practices and develop interventions based on theories (Maes et al., 2011). A coordinator would also need to communicate with the employee population that wellness programs are for their benefit. Additionally, a coordinator should mention participation in a wellness program is not linked to an employee's job performance or part of their responsibilities. In fact, worksite wellness programs have many specific policies established by the United States Department of Labor to address employee confidentiality, equal opportunities of engagement for all employees, and other legal issues (Carethon et al., 2009).

General strategies to improve worksite health and wellness include incentivizing health behaviors of employees, creating a healthy work environment, cultivating a culture of health at the workplace, and engaging family members as the support network for employees (Heinen & Darling, 2009). Worksite wellness programs typically focus on one or more dimensions of health, such as physical, mental, social or spiritual. Schröer, Haupt and Pieper synthesized 15 studies to determine if multi-component interventions, for example focusing on nutrition and physical activity, were more successful than a single-component intervention on employee weight management. They found the two or

more targets were more effective in employee weight management (Schröer, Haupt, & Pieper, 2014).

Comprehensive worksite wellness programs and theory. Comprehensive worksite wellness programs are typically grounded in theory, but also address a broad range of objectives including changes to the work environment. For example, changing the work environment might mean creating healthier options in a work cafeteria or building an employee locker room with showers to encourage active commuting by bicycle. Educational or informational strategies might facilitate adoption of healthy behaviors that could create the knowledge base and interest in environmental changes in the workplace (Anderson et al., 2009). A study done by Carnethon and others in 2009 found that of 1,553 worksites surveyed, only 6.9% had a comprehensive worksite wellness program or had elements of health education, supportive social and physical work environment, integration of worksite wellness efforts across the business/company, and/or a worksite health screening with health education (Carnethon et al., 2009).

Theories can be a guidance system for the development of specific worksite wellness interventions. Theories can be used to create materials for employees to make positive health behavior changes. Health behavior change theories identify and address relevant influences on why people act in certain ways that harm and/or enhance their health. These influences are called mediators of behavior change (Contento, 2011).

Theory has been applied to help create worksite wellness interventions, as well as conceptualize why employees choose or do not choose to participate in worksite wellness programs. Self-regulation and self-influence models serve to help predict or understand factors about participants' motivation for health behaviors (Contento, 2011). For

example, the Health Belief Model (HBM) was used in one study to explore the reasons why employees might avoid participation in wellness programming. In the HBM, mediators of behavior change include perceived severity, perceived susceptibility, perceived benefits and perceived barriers to making a health-related change. For example, a perceived barrier for employees engaged in wellness programming is a lack of time to participate in wellness opportunities. Employees might not feel like a wellness program would have a direct benefit to them, which illustrates the construct of perceived benefits. Additionally, employees did not feel susceptible to risks associated with their health-related lifestyle choices, which demonstrates the construct of perceived susceptibility (Olson & Chaney, 2009). In general, the literature states the reasons for low participation in wellness programming for employees is a lack of interest, a lack of resources, and/or a lack of support from management (Ickes & Sharma, 2009).

Social Cognitive Theory (SCT) has also been used to understand the reason for non-engagement in health behavior change. This model suggests that individuals are influenced strongly by personal factors and their environment. One example of a mediator of behavior change in the SCT is outcome expectations. Outcome expectations could be considered the cost versus benefit an individual makes to weigh the consequences of engagement in a behavior (Contento, 2011).

The Stages of Change Model, or Transtheoretical Model, is also commonly used by health educators to address behavior change. The Stages of Change Model centers on the idea that individuals undergo a series of six stages when making a behavior change. The stages include Precontemplation, Contemplation, Preparation, Action, Maintenance and Termination. The targeted behavior should, ideally, match what stage the individual

aligns with. As such, a health promotion specialist some times requires adjusting his or her helath messages. For example, an individual in the Precontemplation stage would benefit from consciousness-raising or the idea of increasing awareness of a health-related problem or cause before being told specific health-related information (Contento, 2011).

Self-Determination Theory (SDT) can be applied to wellness programs by encouraging interventions that are based on intrinsic motivations. Research supports SDT for increasing healthy behavior. Research suggests that worksite wellness programs are more successful when they incorporate self-generated goals and strategies rather than externally imposed goals (Brinthead, Kang, & Anshel, 2013).

Disconnected Values Model (DVM) has also been applied to improving health habits in individuals in the workplace. The DVM focuses on the long-term consequences of poor health-related decisions. This model is based on the idea that individuals will experience discomfort if there is discrepancy between their values and their actions. For example, a worksite wellness intervention that might use the DVM would be the availability of a health coach to guide an employee to identify his or her poor health behaviors and encourage him or her to self-reflect on the costs and benefits of engaging in healthy or unhealthy behaviors. The employee creates an action plan and self-determines the health behaviors he or she would like to improve (Brinthead et al., 2013). In one study, researchers examined the effects of DVM on changing university faculty and staff exercise compliance. Fifty-three university faculty and staff members, self-classified as non-exercisers, participated in a 10-week fitness-oriented wellness program that aligned with the DVM model. The researchers saw a significant change in the

participants' overall fitness scores and an increase in participants' overall commitment to engage in physical activity (Brinthaup et al., 2013).

Nutrition education. An intervention encompassed in many worksite wellness programs is a focus on nutrition education and/or changing the food environment at the workplace. Worksite wellness programs often target physical activity and nutrition in efforts to reduce overweight and obesity and risk factors for many other chronic diseases (Hutchinson & Wilson, 2011). A national survey conducted by an affiliate with the American Heart Association sampling 3,000 employees found that of participants who had engaged in nutrition interventions, 40% felt better, 36% ate healthier, 32% lost weight, 19% lowered cholesterol and 18% lowered blood pressure (Carethon et al., 2009).

Successful nutrition education in the workplace varies depending on the size of the institution or business and/or workplace culture; however there have been some studies performed to define general best practices for nutrition education in the workplace. The World Health Organization lists successful nutrition-based interventions in the workplace being linked to formative assessments, applicable to wide variety of settings, having clearly stated objectives that are met, and demonstrate feasibility and sustainability in their current setting (Steyn, Parker, Lambert & Mchiza, 2009). Additionally, researchers performed a meta-analysis of 30 articles about nutrition education programs in the workplace and highlighted some of the commonalities for the most successful programs, such as interventions were based on the different stages in the Stages of Change Model, employees were involved in the planning and implementation of the nutrition program, dietitians performed the nutrition education, and multimedia was used in the lessons (Steyn et al., 2009).

Researchers performed a systematic review of six articles that illustrated the link between changes to a worksite food environment and worksite food-related education. The changes in the food environments in the workplace included cafeteria menu changes, changes in how food was presented in cafeteria, inclusion of food labeling, and increasing the availability of fresh foods in the workplace. Five of the six studies also included some component of nutrition education either in a group and/or individual setting. Group education methods included menu planning, dissemination of educational materials, group informational sessions, and employee-targeted newsletters. The various studies measured combinations of changes in nutrition knowledge, changes in fruit and vegetable intake, changes in clinical health status, changes in self-efficacy, coworker support, and changes in food purchasing patterns. Researchers argue none of these interventions were developed using guidelines established by the *Medical Research Council* for developing, evaluating, and implementing complex interventions, nor did the researchers in any of these examples indicate how the interventions were developed (Geaney et al., 2013).

CHAPTER II

METHODS

The following procedures were used to develop *Nutrition Education Lunch and Learn Workshops* from August, 2015 through April, 2016.

Assessment of Needs and Initial Interest

The *NICC Wellness Interest Survey* created on a *Survey Monkey Gold* account was a 21-item survey that assessed current employees interest in wellness opportunities. The survey was released to the NICC community on August 17, 2015 and remained available until August 29, 2015. The response rate was 38%, which is consistent with other college-wide surveys. The items included ranking interest in nutrition, physical activity, financial health, emotional/mental health, as well environmental changes in the workplace. Additionally, there were questions about best times to participate in wellness activities, as well as questions about perceived benefits and barriers to wellness in the workplace. It was apparent from the survey that nutritional topics were of interest. Additionally, it was noted that faculty/staff focused workshops (64%), hands-on workshops (58%) and lunch and learns (56%) were the preferred modes of communication to learn about wellness and health topics. This survey provided the justification for utilizing lunch and learns as a communication method to deliver nutrition education with faculty and staff. Additionally, the survey results showed that nutrition topics were of high interest, including healthy taste-tests (67%).

Development of Protocol and Review of Literature

A study protocol was developed, which outlined the project's purpose, research questions and an initial search of the literature. The protocol outlined the proposed methodology, evaluation strategies and an overview of the literature. In order to find relevant, evidence-based literature the academic search engines EBOSCHOST and J-STOR were used. Boolean searches included "worksite wellness programs", "worksite health promotion programs", "worksite food environment", "worksite nutrition", and "employee nutrition workshops."

Institutional Review Board Approval

Institutional Review Board (IRB) approval was sought in November, 2015 through the University of Wisconsin-La Crosse and included a review of the study's informed consent document (see Appendix B for sample of informed consent letter for the *Endpoint Evaluation Survey*). The process was deemed exempt and expedited due to the low-risk nature of the research (see Appendix C for Institutional Board Approval Letter from the University of Wisconsin-La Crosse). The Institutional Board Approval process was not required with NICC.

Development of Curriculum

Background

The *Nutrition Education Lunch and Learn Workshops* were developed over the course of six months. The topics and objectives were determined in October, 2015 while the lesson plans and materials were usually developed one to two weeks prior to the delivery of the specific workshop. The *Wellness and Life Stage Program Manager* asked for feedback about topics from the *NICC Calmar Campus Wellness Team*. The *Wellness*

and Life Stage Program Manager was also responsible for developing the workshop content and delivering the presentations.

Workshop topics were designed to meet the needs of employees and fit the current season. The curriculum was developed for a 25-minute timeframe. Each workshop session was repeated twice by the *Wellness and Life Stage Program Manager* to accommodate employee lunch schedules. The topics were chosen based on anecdotal evidence of need and seasonality. The workshops included some background information about the topic and a hands-on activity for the participants. The curriculum was developed from evidence-based resources about nutrition topics and was also built on theory and the mediators of behavior change. The curriculum was developed using a systematic approach, including building rationale for the need for each workshop and creating focused behavioral goals and educational goals for each workshop.

The October workshop - *The Science of Sweet* took place on October 27, 2015 and was about excessive sugar consumption in the United States. The workshop included strategies for curbing sugar cravings. The November workshop- *Gratitude and Mindfulness for our Food* was inspired by the Thanksgiving holiday and focused on gratitude for food and mealtime. It took place on November 17, 2015. The December workshop- *Food as Immunity* focused on how certain foods or diets provide benefits that protect against anything from the common cold to cancer. This workshop took place on December 8, 2015. The January workshop- *Realistic Goal-Setting* included strategies for setting achievable wellness goals for 2016 and took place on January 18, 2016. The February workshop *Companion Foods* was about food pairings that aid digestion and nutrient absorption. This workshop took place on February 23, 2016. The March

workshop- *Proportion Distortion* focused on illustrating skewed portion sizes in the United States and teaching appropriate serving sizes. This workshop took place March 15, 2016. The workshop presentation scripts are included in Appendix D.

Table 1. Summary of *Nutrition Education Lunch and Learn Workshops*

Title of Workshop	Topic	Date delivered
<i>The Science of Sweet</i>	Excessive sugar consumption in the United States and healthier snack options	October 27, 2015
<i>Gratitude and Mindfulness for our Food</i>	Mindfulness about where food comes from and who prepares it	November 17, 2015
<i>Food as Immunity</i>	How food can be used to bolster immunity	December 8, 2016
<i>Realistic Goal-Setting</i>	Use of S.M.A.R.T. objectives to set wellness oriented goals	January 18, 2016
<i>Companion Foods</i>	Food pairings that aid in digestion of foods	February 23, 2016
<i>Proportion Distortion</i>	Skewed portion sizes in the United States and overview of appropriate serving sizes	March 15, 2016

October workshop - *the science of sweet*. Sugar consumption was identified as the focus for the October workshop- *The Science of Sweet*. There were two reasons for focusing on sugar consumption. The first was the workshop took place on October 27, 2015 just a few days before Halloween, a common time of the year when candies and treats are in excess. The second reason for focusing on sugar consumption was because of the excessive sugar in American diets is of growing national concern. According to Whitney & Rolfes, excessive sugar in the diet maybe associated with more fat on the body. One of the biggest culprits of hidden sugar in American’s diet are sugar-sweetened beverages, which makes it relatively easy to over-consume calories (Whitney & Rolfes, 2011).

The goals for the October workshop, the *Science of Sweet* related to sugar consumption. The overarching educational goals for this workshop were for participants to have an increased awareness of the prevalence of added sugar in the average American diet and to enhance motivation for reducing added/refined sugars. The overarching behavioral goal for this workshop was for participants to reduce added sugars in their diets. The specific behavioral objectives for the October workshop, *Science of Sweet* are listed below. Also included are the corresponding mediators of behavior change:

1. At the end of the workshop, participants will be able to identify consequences of over consumption of added sugars in the average American's diet (*perceived risk*).
2. At the end of the workshop, participants will be able to correctly identify the recommended amounts of added sugars to the average diet from the American Heart Association for males and females (*consciousness-raising*).
3. At the end of the workshop, participants will be able to quickly and easily convert grams of sugar to teaspoons of sugar using a food label (*behavioral capability*).

November workshop- *gratitude and mindfulness for our food*. The second workshop occurred on November 17, 2015 just a few days before Thanksgiving. The impetus for this workshop again involved the timing of a common holiday and the notion that American culture is becoming more fast-paced and thoughtless in actions (Bayes, 2009). The workshop was focused on the need for reconnecting with the internal cues of satiety and/or reasons for eating (Gordinier, 2012).

The goals of the November workshop *Gratitude and Mindfulness for our Food* related to gratitude. The overarching educational goal was for participants to increase their awareness of authentic gratitude and how gratitude is undervalued in American culture. The behavioral goals of November workshop- *Gratitude and Mindfulness for our Food* were to enhance motivation for participants to practice gratitude and mindfulness exercises before meals. Participants were provided with tools to engage in mindfulness practices before eating meals. The specific behavioral objectives for the November workshop, *Gratitude and Mindfulness for our Food*, are listed below. Also included are the corresponding mediators of behavior change:

1. At the end of this workshop, participants will be able to state three benefits for those who practice gratitude activities daily (*outcomes expectations*).
2. At the end of the workshop, participants should be able to evaluate the effects of a consumer-driven culture on our food system (*perceived threat*).
3. At the end of the workshop, participants will demonstrate increased confidence in performing mindfulness activities relating to food (*self-efficacy*).

December workshop— *food as immunity*. The December workshop, *Food as Immunity*, took place on December 8, 2015. The impetus for this workshop involved timing in the year. The winter months are often associated with an increase in the common cold or rhinovirus. According to the Centers for Disease Control and Prevention, the common cold is most prevalent during the winter and spring months, but can occur at any time of the year. It is also one of the most common reasons employees miss work (Common Colds: Protect Yourself and Others Centers for Disease Control and

Prevention, n.d). Common colds are often treated by consuming lots of fluid and getting plenty of rest, but often times diet is ignored.

The goals for the December workshop, *Food as Immunity*, related to food and its potential for protective and healing effects. The overarching educational goal of the December workshop, *Food as Immunity*, was to increase participant awareness of the vitamins and minerals, beyond Vitamin C, that play a role in immune system function.

The overarching behavioral goal of the December workshop, *Food as Immunity*, was for participants to be able to identify changes or additions of certain foods to their own diet that could help bolster immunity. The specific behavioral objectives for the December workshop, *Food as Immunity*, are listed below, as well as the corresponding mediators of behavior change:

1. At the end of this workshop, participants will be able to identify four vitamins and minerals that are essential to proper immune system function (*consciousness-raising*).
2. At the end of the workshop, participants will demonstrate increased confidence in being able to make changes or additions to their own diets to benefit their immune system health (*self-efficacy*).
3. At the end of the workshop, participants will be able to state the benefits of consuming whole foods to support immune system health rather than solely relying on vitamin and mineral supplementation (*outcomes expectations*).

January workshop— *realistic goal-setting*. The January workshop, *Realistic Goal-Setting*, took place on January 18, 2016. The workshop dovetailed with the New Year holiday and the tradition of setting New Year resolutions or goals. The Task Force

on Community Preventive Services within the Centers for Disease Control and Prevention, advocates for a systematic approach to the development of worksite wellness program. They have found that guidance with goal-setting and maintenance is a tenant of comprehensive worksite wellness program (Carter, Kelly, Alexander & Holmes, 2011). This workshop was meant to raise participant awareness of how to set a wellness-related goal. The overarching educational goal of this workshop was to help participants learn how to create a specific wellness-related goal by using such strategies as S.M.A.R.T objectives. The overarching behavioral goal of this workshop was for participants to write a wellness-related goal for 2016. Their anonymous goals were published in the bimonthly NICC faculty/staff newsletter, the *Friday TakeOut*. The specific behavioral objectives for the January workshop, *Realistic Goal-Setting*, are listed below, as well as the corresponding mediators of behavior change:

1. At the end of this workshop, participants will have written a personal wellness-related goal incorporating on the specific, measurable, attainable, realistic, and time-sensitive (*goal-setting*).
2. At the end of this workshop, participants will be able to identify barriers keeping them from engaging in their specific wellness-related goal (*perceived behavioral control*).
3. At the end of this workshop, participants will share their goal anonymously for publication in the NICC campus-wide electronic bulletin the *Friday TakeOut* and for display in the administration building (*behavioral intention*).

February workshop– *companion foods*. The February workshop- *Companion Foods* took place on February 23, 2016. The workshop included the concept of food

synergy or the idea that foods in certain combinations enhance the digestion or bioavailability of nutrients found in those foods, which helps enhance overall health (Jacobs, Tapsell & Temple, 2011). The overarching educational goal was for participants to partake in a hands-on activity, demonstrating some common and accessible food pairings, such as red peppers and black beans and onions and garlic. The overarching behavioral goal was for participants to increase their consumption of unique food pairings.

The specific behavioral objectives for the February workshop, *Companion Foods*, are listed below, as well as the corresponding mediators of behavior change:

1. At the end of the workshop, participants will be able to identify common food pairings (*behavioral capability*).
2. At the end of the workshop, participants will be able to demonstrate appreciation for the importance of eating a variety of healthful foods (*outcome expectations*).

March workshop— *proportion distortion*. The March workshop, *Proportion Distortion*, took place on March 15, 2016. The workshop focused on the notion of supersized proportions in American culture, as well as featuring several strategies for participants to maintain proper serving sizes. The overarching educational goal was for participants to be more aware of the correct serving sizes for many popular foods. The overarching behavioral goal was for participants to utilize simple comparison strategies for appropriate serving sizes with common household items (e.g. a checkbook is roughly one serving size for fish). The specific behavioral objectives for the March workshop, *Proportion Distortion*, are listed below, as well as the corresponding mediators of behavior change:

1. At the end of the workshop participants will be more aware of many of the distorted serving sizes in American culture (*consciousness-raising*).
2. At the end of the workshop participants will be able to use common household items or their hand (e.g. fist, palm, tip of index finger) to represent an appropriate serving size of common foods (*self-efficacy, behavioral capability*).

Advertisement of Workshops

The *Nutrition Lunch and Learn Workshops* were advertised via a campus-wide email roughly one week prior to the workshop. The email, sent via the campus portal, included a brief summary of the workshop topic, in addition to details about the location. The workshops were also advertised via word-of-mouth, as many became “regulars” and encouraged their colleagues to attend. Incentives were also part of this workshop series. At each workshop, there were random drawings for modest prizes, including such items as kitchen utensils, to draw attendance. Additionally, every participant was given a wellness punch card (please see Appendix E for sample of wellness punch card). The wellness punch card served as a reminder for participants about how many workshops they had attended. At the end of the workshop series in May, 2016 there will be a grand prize drawing for those with the highest number of punches on their card.

Implementation of Workshops

The *Nutrition Education Lunch and Learn Workshops* took place on Tuesdays from 11:30AM to 11:55AM and 12:15PM to 12:40PM. The schedule of two, 25-minute time periods was designed to accommodate for faculty and staff schedules. The specific dates of the workshops were October 27, 2015, November 17, 2015, December 8, 2015 and January 19, 2016, February 23, 2016 and March 15, 2016.

The *Nutrition Education Lunch and Learn Workshops* took place in a classroom on the NICC campus with a maximum capacity of about 40 individuals. The classroom had a desktop PC with reliable Internet connection, a podium, a Smart Board, a whiteboard, and video conferencing equipment. At the November through March workshops, participants had the option to joining remotely using a video-conference system called, *Zoom Conferencing*. The classroom and video-conference line had to be reserved ahead of time using the campus-wide scheduling system, *AdAstra*. Once room approval was granted email communication advertising the workshop was sent via a campus-wide listserv.

The *Wellness and Life Stage Program Manager* greeted workshop participants and asked participants to sign their name and email on a blank sheet of paper to track attendance. Participants also wrote their name on a note card for a random drawing. Their wellness punch card was marked using a hole-puncher. After the workshop series ends in May, 2016 the wellness punch cards will be collected and used for a larger prize drawing. At the beginning of each workshop, participants were reminded to take a to complete the *Post-Workshop Evaluation Survey* in a link that would be sent out after the workshop. Additionally, participants were invited to bring and eat their lunch during the workshop. In some instances, the *Wellness and Life Stage Program Manager* provided a healthy taste-test as part of the workshop curriculum. The ingredients and preparation of these snacks occurred prior to the workshop and were shared at the end of the 25-minute presentation. The *Wellness and Life Stage Program Manager* sent a follow-up email to workshop attendees no later than one-day after the workshop concluded. This email

included a hyperlink to the Google Slides presentation, hyperlinks to any additional resources and a hyperlink to the *Post-Workshops Evaluation Survey*.

Development and Implementation of Evaluation

In order to better measure the dual purposes of this project, the first being to raise employee awareness of nutrition-related concepts and issues and the second providing insight into the creation and refinement of *Nutrition Education Lunch and Learn Workshops*, several evaluation tools were created. Additionally, specific research questions were developed upon the onset of the *Nutrition Education Lunch and Learn Workshops* to further refine the objectives of this project. The following research questions helped inform the development of the multiple *Post-Workshop Evaluation Surveys* and the single *Endpoint Evaluation Survey*:

1. What are the most successful elements of *Nutrition Education Lunch and Learn Workshops* for a community college?
2. What challenges exist in the development and implementation of *Nutrition Education Lunch and Learn Workshops* for a community college?
3. Have there been changes in participant awareness or knowledge during the *Nutrition Education Lunch and Learn Workshops*?

Post-Workshop Evaluation Surveys

There were several drafts of a *Post-Workshop Evaluation Survey* developed at the beginning of this workshop series in Fall, 2015. There were a total of six *Post-Workshop Evaluation Surveys*, sent to workshop attendees immediately following the workshops. These included process evaluation questions on a six-item survey. There were three, five-point Likert scale questions and three open-ended response questions. The *Post-*

Workshop Evaluation Surveys was significantly changed after the October workshop, *The Science of Sweet*, as such the *Post-Workshop Evaluation Survey* data from the October workshop- *The Science of Sweet* is not reflected in this report. The *Post-Workshop Evaluation Surveys* were sent electronically to all participants via the *Survey Monkey Gold* account. The only exception to this was the survey in November, which was administered via a hard copy, because the items had not been uploaded into the *Survey Monkey Gold* account. Participants wrote their name and contact information on a sign-in sheet at the start of each workshop. This tracked their attendance and became the listserv for sending a hyperlink to the specific *Post-Workshop Evaluation Survey* at the end of each workshop. The hyperlink was included in a summary email with information about the workshop materials, including access to the Google Slides presentation used by the *Wellness and Life Stage Program Manager* and any recipes used in the workshop or additional health-related information. Participants were reminded to complete the *Post-Workshop Evaluation Survey* after the initial email. The *Post-Workshop Evaluation Surveys* were kept anonymous and confidential. The data from each *Post-Workshop Evaluation Surveys* was aggregated and analyzed using descriptive statistics and the three open-ended response items were coded for themes.

Endpoint Evaluation Survey

The *Endpoint Evaluation Survey* was sent electronically to everyone who attended a minimum of one workshop from October, 2015 to March, 2016. The *Endpoint Evaluation Survey* included two Likert scale items about the overall satisfaction of the workshop series. Additionally, the *Endpoint Evaluation Survey* had one item per workshop, which focused on any self-reported change in awareness or change in behavior

that resulted from attending a workshop. The survey measured employee awareness in the following ways.

1. Participants indicated how much the workshop in general *expanded their awareness* of the topic.
2. Participants indicated the extent to which they shared information from the workshop with family and other employees. Sharing information indicates heightened awareness of the workshop topics.
3. Participants indicated whether they sought out additional information about the topic as a result of the workshop.
4. Participants indicated whether they incorporated specific workshop recommendations or ideas in their own activities.

This survey instrument was created on *Survey Monkey Gold*, which allowed for the insertion of a logic feature. This logic feature allowed participants to be automatically directed only to the workshops they indicated they had attended. This survey opened on March 15, 2016 and closed March 22, 2016. The raw data from the *Endpoint Evaluation Surveys* were kept anonymous and confidential. The data from each *Endpoint Evaluation Surveys* was aggregated and analyzed for descriptive statistics and the short answer items were coded for themes.

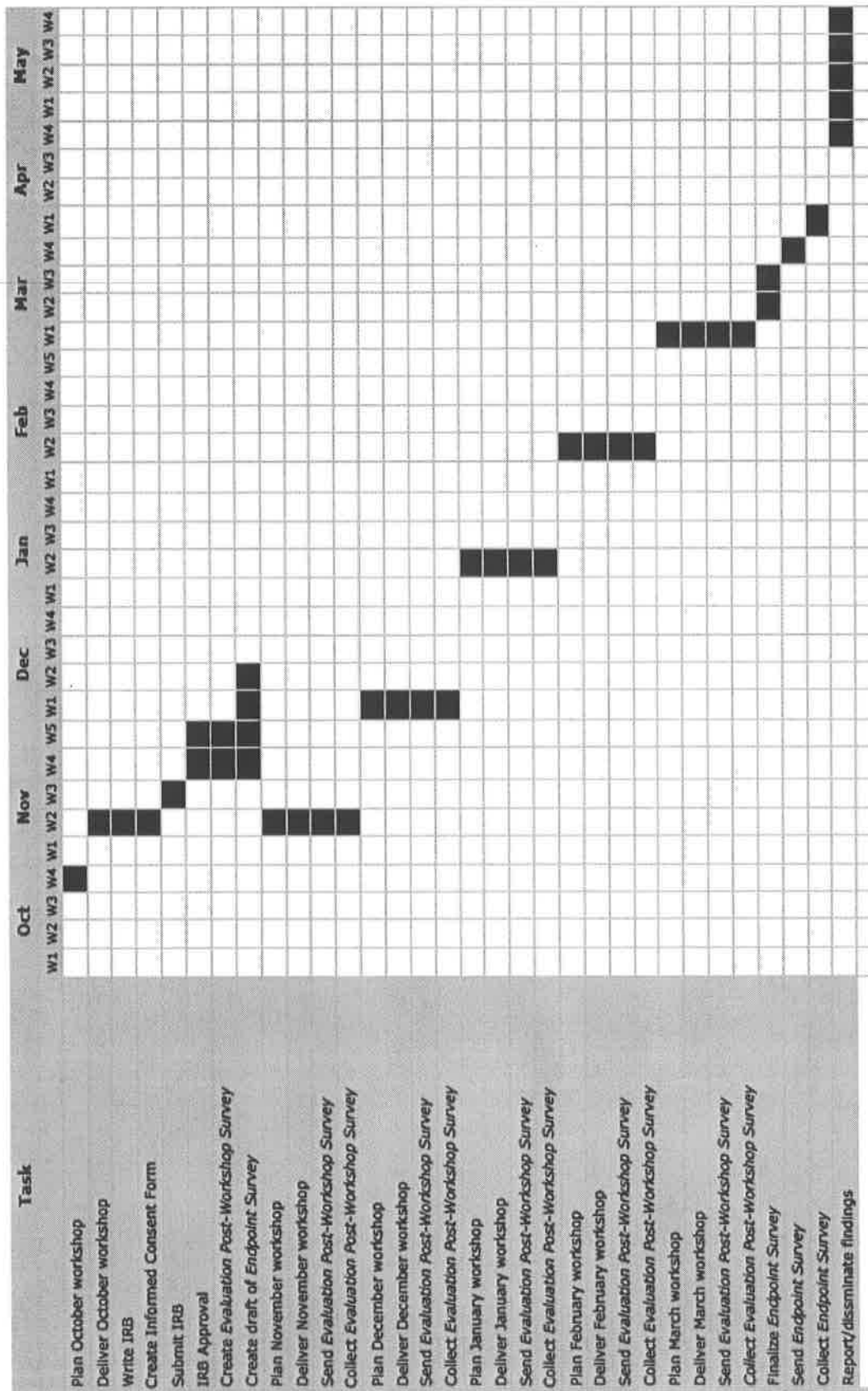


Figure 1. Timeline of Project

CHAPTER III

FINDINGS

General Demographics

There were 113 participants in the *Nutrition Lunch and Learn Workshops* from October through March, with 44 of those being unique attendees to workshops. Approximately 37% of participants attended one workshop, approximately 16% of participants attended two workshops, approximately 19% of participants attended three workshops, approximately 14% of participants attended four workshops, approximately 12% of participants attended five workshops and less than 1% attended all six workshops.

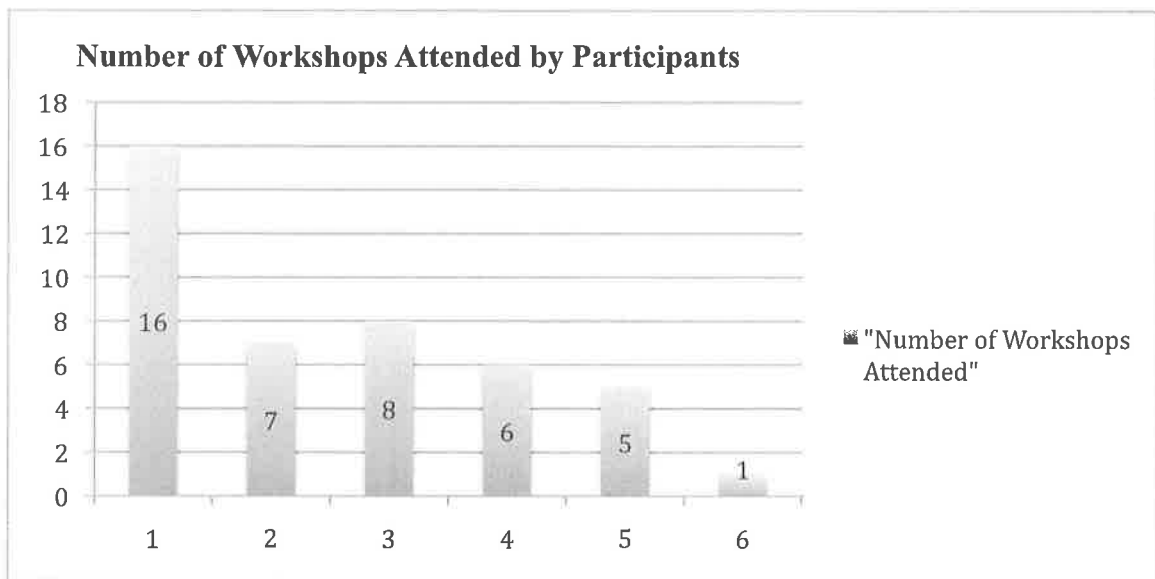


Figure 2. Number of Workshop Attended by Participants

The response rates for the electronically administered *Post-Workshop Evaluation Surveys* included a December workshop- *Food as Immunity* rate of 81%, a January workshop- *Realistic Goal-Setting* rate of 92%, a February workshop- *Companion Foods*

rate of 87% and a March workshop- *Proportion* Distortion rate of 91%. Thus, the overall average response rate across all electronically administered *Post-Workshop Evaluation Surveys* was 88%.

The following is a summary of the demographics from those participants who completed the *Endpoint Evaluation Survey*. The response rate for the *Endpoint Evaluation Survey* was 59% ($n=26$). According to calculations, approximately 77% of the surveyed participants were female, approximately 12% were male and approximately 12% did not respond to the question. Approximately 19% of surveyed participants were between 25-34 years of age, approximately 19% were between 35-44 years of age, approximately 27% were between 45-54 years of age, approximately 31% were between 55-64 years of age and less than 1% were between 65-74 years of age. Amongst surveyed participants, approximately 50% had either a trade/vocational degree or Associate's degree, approximately 27% had a Bachelor's degree, and approximately 23% had a Master's or Doctorate degree.

Successful Elements

For the *Nutrition Education Lunch and Learn Workshops* results of the *Post-Workshop Evaluation Surveys* and the *Endpoint Evaluation Survey* were examined. The first research question addressed in this project was, "What are the most successful elements of the *Nutrition Education Lunch and Learn Workshops* for a community college?" This question was measured by examining overall participants': 1.) satisfaction after each workshops, 2.) increase in awareness of the topic, and 3.) plans for using the information from the workshops. Additionally, the *Wellness and Life Stage Program*

Manager reflected on what she thought went well and what needed improvement in the various workshops.

Overall Value

Illustrated in Table 2. Mean Scores of Participant Rated Value, Awareness and Plan of Use from the *Nutrition Education Lunch and Learn Workshops* is a summary of participants' average rating of their perceived overall value of each workshop, spanning from November to March. According to the analysis of the *Post-Workshop Evaluation Survey*, the December workshop- *Food as Immunity* had the highest overall value to attendees ($\bar{x} = 4.29, n = 14$), while the lowest-valued workshop was the February workshop- *Companion Foods* ($\bar{x} = 3.92, n = 13$). The total mean score of self-reported value of the five workshops was 4.06.

The *Endpoint Evaluation Survey* data indicated a mean score across five workshops as 4.08 ($n=25$). Additionally, participants freely wrote on the *Post-Workshop Evaluation Surveys* about overall satisfaction. For example, one participant responded to an open-ended question in the *Post-Workshop Evaluation Survey* for the December workshop- *Food as Immunity* that, "I'm just so glad that this knowledge is being provided by NICC for NICC staff."

Increase in Awareness

Illustrated in Table 2. Mean Scores of Participant Rated Value, Awareness and Plan of Use from the *Nutrition Education Lunch and Learn Workshops* show the mean scores for participants' self-reported increases in awareness about the topic after each workshop, spanning from November to March. Participants indicated the highest increase in awareness of the topic in the December workshop- *Food as Immunity* ($\bar{x}= 4.12$,

$n=14$) and participants indicated they had the least increase in awareness in the January workshop- *Realistic Goal-Setting* ($\bar{x}=3.50, n=8$). An item on the *Endpoint Evaluation Survey* demonstrated a mean score of increase in awareness of topic across the five workshops as 4.2 ($n=25$). There were also comments on the *Post-Workshop Evaluation Surveys* that indicated increases in awareness in the topic. For example, in one instance a participant who attended the February workshop- *Companion Foods* reported to an open-ended question on the *Post-Workshop Evaluation Survey*, “I had never heard of pairing foods before. I liked being introduced to a new topic. I’m glad we have a nutrition expert to lead us.”

Plan of Use

Illustrated in Table 2. Mean Scores of Participant Rated Value, Awareness and Plan of Use from the *Nutrition Education Lunch and Learn Workshops* showed that in the December workshop- *Food as Immunity* participants had the highest self-reported ranking of likelihood to use the information from the workshop ($\bar{x}=4.35, n=14$). The February workshop- *Companion Foods* had the lowest mean score for likelihood to use the information from the workshop ($\bar{x}=3.54, n=9$). Participants self-reported what they planned to do with the information they learned at the end of each workshop in the *Post-Workshop Evaluation Surveys*. For example, one participant who attended the January workshop- *Realistic Goal-Setting* said they would, “better appreciate the support systems that facilitate my success.” In other surveys, participants indicated they would try a recipe used in the workshop. For example, after the December workshop- *Food as Immunity* a participant said they would make the yogurt honey broccoli salad.

Table 2. Mean Scores of Participant Rated Value, Awareness and Plan of Use from the *Nutrition Education Lunch and Learn Workshops*

Workshop title	To what degree did you find this workshop of value to you?	To what degree did the workshop expand your awareness or understanding of the topic?	To what degree do you plan to use the information from this workshop in your everyday life?
<i>Gratitude and Mindfulness for our Food</i>	3.93 (n=15)	4.07 (n=15)	4.20 (n=15)
<i>Food as Immunity</i>	4.29 (n=17)	4.12 (n=17)	4.35 (n=17)
<i>Realistic Goal-Setting</i>	4.18 (n=12)	3.50 (n=12)	4.30 (n=12)
<i>Companion Foods</i>	3.92 (n=13)	3.54 (n=13)	3.83 (n=13)
<i>Proportion Distortion</i>	4.00 (n=10)	4.00 (n=10)	4.00 (n=10)
Total mean score	4.06	3.85	4.14

Additionally, some additional insights in the *Endpoint Evaluation Surveys* illustrated what were successful elements of the workshop(s). Participants responded to open-ended questions about what they liked most about the workshop(s) they had attended. For example, one participant indicated in response to the prompt, “The cleverly titled, seasonal topics...the interactive activities with fellow staff in attendance...two or three time options for participating, and the reminders and notifications...[and the] punch cards and fun prizes.” While other participants indicated that the workshops, “provided practical strategies for improving everyday nutrition. Also the use of simple, concise explanations and analogies to present information, suggestions and demonstrations so that knowledge gained from the workshops was memorable and easy to comprehend.”

Challenges

For the *Nutrition Education Lunch and Learn Workshops* results of the *Post-Workshop Evaluation Surveys* and the *Endpoint Evaluation Survey* were examined. Additionally, as the primary researcher and workshop coordinator, the *Wellness and Life Stage Program Manager* reflected on what she thought went well and what needed improvement in the various workshops. The second research question addressed in this project was, “What challenges exist in the development and implementation of the lunch and learn nutrition education workshop series for a community college?” This question was measured by coding for themes about participant recommendations in the open-ended question in the *Post-Workshop Evaluation Surveys* and an open-ended question from the *Endpoint Evaluation Survey* was coded for themes.

Table 3. Summary of Participant Recommendations from *Nutrition Education Lunch and Learn Workshops*

Recommendations	Workshops	Percentage of employees making recommendation
Handouts	December workshop February workshop	23.5% (<i>n</i> =17) 7.69% (<i>n</i> =13)
Audience participation	November workshop December workshop	6.67% (<i>n</i> =15) 5.88% (<i>n</i> =17)
More time to discuss	February workshop	15.4% (<i>n</i> =13)
Technology not working	November workshop	20% (<i>n</i> =15)
Presentation Style	December workshop	11.8% (<i>n</i> =17)

More depth	January workshop	16.7% (<i>n</i> =12)
Too much time to get activity set up	February workshop	15.4% (<i>n</i> =13)

Personal Observations

In the following section, the voice will switch from third-person to first-person, as the *Wellness and Life Stage Program Manager* is the primary researcher of this project, as well as the workshop coordinator and facilitator.

Technology. I received written and verbal feedback about the technology during this workshop series. There were several instances when the video-conferencing system did not work or I misunderstood its functionality. For example, during the December workshop- *Food as Immunity* I planned to have a *Zoom* conferencing line available so that participants could join remotely in real-time during the workshop. I advertised this option at only one of the workshop times. I planned to record the workshop, using *Zoom*, during the second workshop time. I learned during the course of the workshop that the computer system lacked the functionality to record the session. In order to adjust after each of the workshops I recorded the presentation using my personal laptop. This meant more time invested in the presentation and resulted in more time to upload the videos and download the videos in the correct sequence.

I worked with a technology specialist at NICC to learn about *Zaption*, a platform that allows for edits to be made to a MP4 video file. With *Zaption*, I was able to insert questions, text slides or trim the clips from my recorded presentation. The *Zaption* features allowed the video recording to be more interactive; however, I had a few

technological difficulties with *Zaption* that required assistance from *Zaption's* technology support line. I eventually learned the proper steps for creating an interactive video. In a number of instances, I sent out the hyperlinks of the recorded presentations to those who requested the hyperlink. There has not been a place to archive the hyperlinks to these videos on NICC employee web-resources; however, conversations are presently taking place to develop a wellness homepage as part of the web-based professional development resources.

The workshop series was a good opportunity to learn many campus procedures, such as *AdAstra*, NICC's online room reservation system. There were several instances, early in the series when I had difficulty navigating these systems as a new employee. However, by March, 2016 I felt much more confident in reserving a room using *AdAstra*.

Time. The workshop series involved a lot of upfront investment of time, which proved was rather difficult for one part-time person to manage. As a part-time employee at NICC, efficient use of my time on campus is important. The creation of presentation content and development of the *Google Slides* presentations ranged from a few hours to six to seven hours of preparation. This varied because for some presentations I made snacks and needed to purchase supplies. The presentations required some background research and a preparation of talking points or a script. There was a plethora of information available online about the topics; however, nothing I found could serve as a ready-to-go presentation or lesson plan. I found myself spending time outside of work hours to plan the content.

Attendance. Unfortunately, attendance varied significantly from workshop to workshop. The highest number of attendees for one of the workshops was in the October

workshop- *The Science of Sweet* with 38 participants and the lowest attendance was in the January workshop- *Realistic Goal-Setting* and in the March workshop- *Proportion Distortion*. Those who viewed the recorded versions of the workshops were not factored into this attendance record, because there was no efficient way of tracking online participation. The variability in attendance could be contributed to activities going on elsewhere on campus. There is also the possibility that conflicts existed with campus-wide trainings and often times when weather conditions are poor (e.g. snow, wind, or rain) attendance decreases for events on campus. Several participants in the *Endpoint Evaluation Survey* indicated they disliked that they were not able to attend the workshops because of schedule conflicts.

Lunch. Lastly, I noticed that very few people chose to eat lunch during the workshops. I advertised the workshops as a place to eat lunch and listen to a short presentation. I am unaware as to why people did not eat.

Changes in Participant Awareness or Knowledge

The final research question addressed in this project was “Have there been changes in participant awareness or knowledge during the *Nutrition Education Lunch and Learn Workshops*?” Data from the *Post-Workshop Evaluation Surveys* and the *Endpoint Evaluation Survey* were used to determine behavioral changes or changes in awareness of participants.

According to the results from the *Post-Workshop Evaluation Surveys*, participants reflected via an open-ended question how they would use the information they learned in each workshop. The following recaps behavioral intentions indicated by workshops participants:

- In the November workshop- *Gratitude and Mindfulness for our Food*, 42% of attendees ($n=12$) of individuals indicated they planned on being more mindful when and what they ate.
- In the December workshop- *Food as Immunity*, 65% of attendees ($n=17$) indicated they wanted to eat healthier, with a popular response being, increasing the variety of types of foods they would consume.
- In the January workshop- *Realistic Goal-Setting*, 50% of attendees ($n=12$) individuals indicated they would apply goal-setting strategies to their own goals, while 17% of attendees ($n=17$) indicated they would use the strategies to maintain current wellness goals.
- In the February workshop- *Companion Foods*, 55% of attendees ($n=15$) indicated they would plan to use food pairings more frequently.
- In the March workshop- *Proportion Distortion*, 90% of attendees ($n=10$) indicated they would be more aware and/or reduce portion sizes.

Also, in the *Post-Workshop Evaluation Surveys* from the November to March workshops, seven individuals indicated in open-ended responses, they were planning on sharing the information with others either with family, friends or their students.

Additionally, from the November to February workshops, two individuals indicated they would plan to explore the topic more on their own.

The *Endpoint Evaluation Surveys* were administered roughly six months after the first workshop took place. Many of the survey items measured the extent to which participants engaged in an activity or behavior after each of the workshops. These

activities or behaviors were selected based mediators of behavior change in each workshop.

In the *Endpoint Evaluation Surveys* there were three behaviors that were the same across all workshops. In Table 4. Frequency of Self-Reported Behavior or Activity across six *Nutrition Education Lunch and Learn Workshops* the values represent the number of individuals who self-reported participating in the behavior either “several times” or “many times” after the each of the respective workshops.

Table 4. Frequency of Self-Reported Behavior or Activity across six *Nutrition Education Lunch and Learn Workshops*

Behavior or activity	October workshop- <i>The Science of Sweet</i> (n=21)	November workshop- <i>Gratitude and Mindfulness for our Food</i> (n=13)	December workshop- <i>Food as Immunity</i> (n=14)	January workshop- <i>Realistic Goal-Setting</i> (n=11)	February workshop- <i>Companion Foods</i> (n=11)	March workshop- <i>Proportion Distortion</i> (n=10)	Totals
I shared information I learned with family and friends	11	7	5	4	5	5	37
I shared information I learned with coworkers	13	7	4	3	6	4	37
I researched more about the topic on my own	3	3	4	1	1	1	40

The following Table 5. Percentage of Participants who Self-Reported Engaging “Several Times” or “Many Times” with a Behavior Change or an Activity Following Six *Nutrition Lunch and Learn Workshops*, indicates participants self-reported a behavior change specific to the corresponding *Nutrition Lunch and Learn Workshop*. For example,

81% of participants ($n=21$) who completed the *Endpoint Evaluation Survey* for the October workshop- *The Science of Sweet* indicated they “... consciously decreased by sugar intake” after the workshop either “several times” or “many times.”

Table 5. Percentage of Participants Who Self-Reported Engaging “Several Times” or “Many Times” with a Behavior Change or an Activity Following Six *Nutrition Lunch and Learn Workshops*

Workshop and survey response	Percentage of participants who self-reported engaging “several times” or “many times” with a behavior change or an activity		
October workshop- <i>The Science of Sweet</i>	“I consciously decreased by sugar intake”	“I tried one or more of the suggested snack alternatives from the presentation”	“I looked at food labels for sugar content and converted grams of sugar to teaspoons of sugar”
Total ($n=21$)	81.0%	61.9%	61.9%
November workshop- <i>Gratitude and Mindfulness for our Food</i>	“I practiced mindfulness exercises before eating”	“I was more aware of where my food came from, such as how it was prepared and who prepared it”	“I focused more on experiences rather than material things”
Total ($n=13$)	61.5%	61.5%	76.9%
December workshop- <i>Food as Immunity</i>	“I incorporated more fruits and/or vegetables into my diet”	“I incorporated more fruits and/or vegetables into my family's diet”	“I made the honey yogurt broccoli salad”
Total ($n=14$)	78.6%	78.6%	14.3%
January workshop -- <i>Realistic Goal-Setting</i>	“I continued to make steps towards achieving the goal or goals I set in the workshop”	“I reflected on the barriers that keep me from achieving my goals”	“I reflected on why my goals matter to me”
Total ($n=11$)	81.8%	63.6%	72.7%
February workshop- <i>Companion Foods</i>	“I intentionally paired foods when cooking and/or eating that I learned about in the workshop”	“I tried a new food I learned about in the workshop”	“I tried making the bean dip”
Total ($n=11$)	36.4%	27.3%	18.2%
March workshop- <i>Proportion Distortion</i>	“I used the recommended tips for	“I used the common household serving size	XX

	reducing portion size”	comparisons when eating a meal”	
Total (n=10)	100%	100%	XX

Study Assumptions, Limitations, and Delimitations

Assumptions

There were several assumptions in the study. The first was all participants were NICC employees who were attending the on a *Nutrition Education Lunch and Learn Workshops* on a voluntary basis. There was also an assumption that all participants were literate and able to understand the *Post-Workshop Evaluation Surveys* and the *Endpoint Evaluation Survey* questions, while also answering to the best of their ability.

Limitations

There were several limitations with *Nutrition Education Lunch and Learn Workshops*. Foremost, a study design limitation was the surveys were self-reported. The *Endpoint Evaluation Survey* required participants to self-identify if they had attended a specific workshop. It is possible participants were not able to accurately recall if they had attended a workshop or not, despite listing the date and description of the workshop. The survey items also might have been interpreted differently than intended or participants may have experienced difficulties accessing *Survey Monkey Gold*. Additionally, those who attended a workshop opted to be there because they had interest in the subject matter. Thus, the sample was not random and these individuals might have already been more motivated to make behavioral changes or learn about topics.

The average attendance of a workshop was 18 participants, yet smaller numbers of participants completed the *Post-Workshop Evaluation Surveys* and the *Endpoint Evaluation Survey*. The average of response rate across all *Post-Workshop Evaluation*

Surveys was 90%; however, this value is likely lower because it was not possible to track how many participants watched the recorded presentations nor attended the live workshops via the *Zoom Video Conferencing System*. The *Endpoint Evaluation Survey* had a response rate of 65%; however, it was possible that some individuals who participated in the workshops were not factored into this responses rate. It is also likely there were groups or individuals on campus that would have otherwise attended one or more of the lunch and learn sessions, but could not attend due to scheduling conflicts, as the workshops were typically held on Tuesdays during the noon hour. Additionally, the time constraints of this project limited data collection from October, 2015 to March, 2016. The *Nutrition Education Lunch and Learn Workshops* will conclude in May, 2016.

Delimitations

The final instrument was not completed for the October workshop-*The Science of Sweet*, as a result there was no *Post-Workshop Evaluation Survey* data collected from this workshop. Data from the November workshop- *Gratitude and Mindfulness for our Food* was collected using hard copy surveys, which likely increased the response rate. It was decided after the November workshop- *Gratitude and Mindfulness for our Food* that the survey instrument should be administered via electronic methods rather than hard copy due to time constraints at the end of workshops and easier data analysis. The *Endpoint Evaluation Survey* data was collected for all workshops from October and March and administered online.

A limiting factor of the *Endpoint Evaluation Survey* was the surveys were not matched pre- and post- surveys. Thus, it is not possible to examine any changes in attitudes or behaviors or to make any correlations. Northeast Iowa Community College

employees decided which workshops to attend and none of the workshops were mandatory. As a result matching pre- to post- surveys, while maintaining anonymity and confidentiality, would have been extremely difficult.

Another delimitation of this project was the fact the *Wellness and Life Stage Program Manager* selected what was assumed to be possible behavioral changes or changes in awareness or attitudes in the items from each workshop in the *Endpoint Evaluation Survey*. Although there was a chance for participants to respond with additional comments, this potentially excluded some behavioral or attitude changes.

Lastly, the March workshop- *Proportion Distortion* was implemented only one week prior to the collection of the *Endpoint Evaluation Survey*, as such those items might have been answered differently than had more time passed between the end of the workshop and the completion of the *Endpoint Evaluation Survey*.

CHAPTER IV
DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

Personal and Professional Gain

In the following section, the voice will switch from third-person to first-person as the *Wellness and Life Stage Program Manager* is the primary researcher of this project, as well as the workshop coordinator and facilitator.

As a new employee when this project started, I had the task of coordinating the College's wellness program. This program was new, so it meant I had to start laying the foundation. I personally enjoy this freedom and ability to create; however, at times the task was overwhelming. This project was a tangible deliverable I could provide relatively soon after I started employment. I appreciated having that focus!

The workshops helped me deepen relationships – as the topics provided a talking point in other situations or contexts. I also believe the workshop series helped me build rapport and credibility with NICC employees. The October workshop- *The Science of Sweet* was one of the first times I was in front of a group of employees at NICC. I tried to keep the workshops informal and light, which I sense was appreciated by participants as I received positive feedback.

There was great attendance at the October workshop- *The Science of Sweet*, which reinforced the notion that people were supportive of wellness programming on the NICC campus. I have not felt like I have needed to “sell” wellness. The workshops have also provided me with a sense of purpose. I feel like I am making a difference, exposing

individuals and groups to new information and inspiring people to take action for their health. The *Post-Workshop Evaluation Surveys* showed that for the most part participants ranked their satisfaction for the workshop series above average.

The most rewarding aspect for me has been hearing positive comments from people who attend the workshops. For example, one woman after attending the October workshop- *The Science of Sweet* about excess sugar in Americans diets decided to reduce her soda intake. She gradually transitioned from having a bottle of soda in the afternoon to purchasing the small cans. In another instance, a college employee who was responsible for planning a departmental retreat asked if the *Wellness and Life Stage Program Managers* would present a topic relating to wellness in the workplace. She had heard many positive comments from employees returning from various *Nutrition Education Lunch and Learn Workshops*. She wanted to have a similar session for the departmental retreat. There were other instances when participants approached me with questions or comments after the workshops that indicated they had reflected on the material. There were other comments on the *Endpoint Evaluation Survey* that supported the notion that participants had reflected on the information. For example, one participant said about the workshops, “[they] provided practical strategies for improving every day nutrition. Also, [the presenter] used simple, concise examples and analogies to present information, suggestions and demonstrations so that knowledge gained from the workshops was memorable and easy to comprehend.”

I enjoyed the opportunity to personally learn more about the various nutrition topics. The *Nutrition Education Lunch and Learn Workshops* were also a creative outlet, which I appreciated. I have been able to decide and direct the content of the

presentations. I have tried to not use much text on the *Google Slides* and have enjoyed looking for graphics and photos to represent my talking points. Additionally, I have enjoyed the opportunity to create hands-on activities for each presentation. My favorite activity to design was for the February workshop- *Companion Foods*, which entailed a matching game. To illustrate the concept of companion foods, or the idea that certain foods when eaten together aid in the digestion of one or both of those foods and/or aids in the absorption of vitamins and minerals, I created a game. Inspired by Valentine's Day and the concept of E-Harmony, participants were given a card with a food item (e.g. kale, beans, dark chocolate) and a description of their ideal companion. For example, one card had olive oil written on it and the description was "my ideal partner ... is fleshy and snazzy, has Italian roots and loves a good hot summer!" Participants had to wander the room, keeping their food identity hidden, but seeking their ideal food match.

I have also had to continue to hone my skills of being culturally sensitive and portraying information in culturally appropriate ways. Foremost, there were a number of participants who would probably be characterized as morbidly obese, with a BMI of greater than 40. It was important to address the audience with an open-mind and not convey any biases or judgment about weight.

I have had to be careful to share only evidence-based research or advice about how and what to eat that is "politically neutral." For example, a branch of NICC includes the Northeast Iowa Dairy Center Foundation, which focuses on education, demonstration and research to foster the growth and prosperity of families who make dairy farming their way of life. I have mentioned milk alternatives in my presentations, but need to be sensitive to the fact that many are either directly or indirectly connected to the dairy

industry. In the workshops, I was explicit to not advocate for specific foods or products and tried to express the underlying notion of balance, variety and moderation in diet, as well as consuming whole foods whenever possible. There is also sensitivity around the complicated dichotomy between conventional methods of growing commodities and growing in alternative markets. As a result, I have not tended to share politically charged material or ideas about conventional agriculture versus sustainable agriculture practices.

Conclusions and Recommendations for Others in the Field

The following are a series of recommendations based on my experience as the primary researcher of this project, as well as the workshop coordinator and facilitator of the *Nutrition Education Lunch and Learn Workshops*.

Comprehensive in Nature

Foremost, it is important to remember that any sole health intervention at a worksite should be part of a larger, comprehensive effort to improve the health of employees. The *Nutrition Education Lunch and Learn Workshops* was just one element of a coordinated effort at NICC. Additionally, not everyone at a worksite will be interested in attending an event or engaging in a program. In this instance, a small fraction of college employees participated in the workshops. There were 113 participants in the *Nutrition Lunch and Learn Workshops* from October through March with 43 of those being unique attendees to workshops. It is quite likely that many of the participants of the workshops were those employees who were ready make health-related behavior change, in other words they fall into the Preparation, Action or Maintenance stage of the Stages of Change Model. Workshop participants were likely already interested in health-related topics and more receptive to the information. A future goal should be to try to

target those “higher risk employees” or those employees who might not be as concerned or interested in their health. This is not only important for a greater return on investment for a wellness program, but also because these are the individuals who are likely going to need to hear and understand the importance of health-related messages.

It is also important to note that building a comprehensive wellness program takes time, as does developing quality interventions like the *Nutrition Lunch and Learn Workshops*. It is important to allow for sufficient time to coordinate workshops (e.g. reserving space, securing food), advertising the workshop with time to reach all potential targets, planning the curriculum, and/or preparing the presentation. The investment of time was always more than anticipated.

Survey Employees

There is value in surveying employees to understand their current desires and interests. The *NICC Wellness Interest Survey* provided the evidence need to support this project, as the data showed employees wanted to learn via lunch and learn format and were interested in nutrition-related topics. A more focused survey including opportunities for faculty and staff to describe specific nutrition-related topics would have been beneficial, as well. A member of the *NICC Calmar Campus Wellness Team* expressed the idea of surveying faculty and staff, which I noted for future reference. A pre-survey might also illustrate resources needed or what incentives might be most popular.

The results from the *Post-Workshop Evaluation Surveys* helped in the refinement of the *Nutrition Education Lunch and Learn Workshops* as they unfolded. For example, participants indicated after the November workshop – *Gratitude and Mindfulness for our Food* that they wanted it to be more interactive. I was able to modify the future

workshops to include more hands-on activities. I also received feedback about my presentation style after the December workshop- *Food as Immunity* and tried to make an intentional effort to slow my pace. There were several recommendations indicated on the *Post-Workshop Evaluation Surveys* that I did not accommodate due to time constraints. For example, some employees desired handouts, but I did not have the capacity to develop handouts about the content with every workshop. In the future, this would be a possibility with more time to prepare for the lessons. Additionally, I need to better learn the technological capabilities of the various rooms in the building where the workshop series was held. In any public presentation circumstance, it is a good idea to test the technology prior to using it with an audience.

Content Development and Delivery

Cultural sensitivity. Like most instances in health education, developing the *Nutrition Lunch and Learn Workshops* required cultural sensitivity. There could have been employees struggling with severe chronic conditions or body image concerns. It was important to avoid “fat shaming” or stereotyping groups.

Subsequently, it is also important to be attuned to potentially sensitive subject matters especially within the field of nutrition there are many conflicting viewpoints on what is healthy. There are several ways to ensure accuracy and build credibility with participants. Foremost, using evidence-based research and providing a list of cited sources helps build rapport and trust. Additionally, being honest and admitting when there are various viewpoints on a subject matter seems to be one approach. For example, in the February workshop- *Companion Foods*, I briefly shared information about complete proteins, or the idea that some foods high in protein do not contain all the

essential amino acids needed for healthy growth and development, but when these foods are consumed with other certain foods the complete amino acid profile is achieved. There is new research to suggest that complete proteins might be a fallacy. I talked about the notion of complete proteins in the workshop, but also shared the conflicting evidence.

Interactive material. I noted that participants seemed to engage more with the material when it was hands-on; however, this was difficult to structure in a mere 25-minutes. The timeframe made it difficult to have truly deep conversations. A lunch and learn should provide an audience with a topical overview of an issue or idea and spark an interest. The audience will take initiative to learn more about the topic on their own if they are truly interested in the subject matter. The *Endpoint Evaluation Surveys* showed several positive comments about the engagement with the material, because the presentations were hands-on and interactive. Examples of interactive material included asking questions throughout 25-minute presentation, creating goal-setting worksheets, or playing games. It was more difficult to provide interactive options for the recorded versions of the presentations; however, modalities like *Zaption* allow for inserting questions and hyperlinks. I did not want to make the *Nutrition Education Lunch and Learn Workshops* too intense or overwhelm participants with information, as I sensed participants would be discouraged from attending. After all, the participants were voluntarily attending the workshops.

Incentives. The use of incentives is recommended in the literature as a way to lure engagement in wellness programs. Although, this is a form of extrinsic motivation the use of incentives can sometimes be the hook to “get individuals in the door.” I could tell that participants liked partaking in the raffle at each workshop and as the series

progressed many remembered their Wellness Punch Cards without me reminding them to use it.

Conclusion

In conclusion, the workplace has become an avenue by which employees can learn about health topics by engagement in worksite wellness programs. As healthcare costs continue to rise, employers are looking to strategies to prevent the onset of modifiable diseases, such as type II diabetes and heart disease. Northeast Iowa Community College adopted a wellness program, much like other employers, to proactively address the overall health and wellness of their employees. The development and implementation of *Nutrition Education Lunch and Learn Workshops* was one of many interventions to build a comprehensive wellness program. The *Nutrition Education Lunch and Learn Workshops* included six months of learning opportunities for community college employees. They took place over the noon hour and were repeated twice in 25-minute time periods to accommodate employees' schedules. The topics ranged from excessive sugar consumption in the United States, to wellness oriented goal-setting, to correct proportions of serving sizes. Participants completed *Post-Workshop Evaluation Surveys* after attending a workshop and a single *Endpoint Evaluation Survey* at the end of the entire series to help identify the successful elements of the *Nutrition Education Lunch and Learn Workshops* and the challenges that existed for the development of the *Nutrition Education Lunch and Learn Workshops*.

In sum, the successful elements included such highlights as above average ranking of participant self-reported value of the information given in the workshops. The challenges included the incorporation of technology into the workshops. In addition,

evaluations were collected to determine if there were any changes in participant awareness or knowledge during the *Nutrition Education Lunch and Learn Workshops*. There were a number of supporting facts that indicated employees made positive changes to their health as a result of attending a workshop(s). The project identified the interest and support at NICC for *Nutrition Education Lunch and Learn Workshops*, which provides strong footing for continuing such workshops and other wellness interventions to expand the College's comprehensive wellness program (please see Appendix F for NICC Takeaway that summarizes this project).

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APPENDIX A
SUMMARY OF WELLNESS INTEREST SURVEY RESULTS

NICC WELLNESS INTEREST SURVEY SUMMARY

Fall 2016

The Basics

NOTE: PERCENTAGES
ROUNDED TO THE NEAREST
WHOLE NUMBER

Demographics of Respondents:

75% female / 25% male

Location: Calmar - 42%, Peosta - 42%, Dubuque Town Clock- 13% & other NICC Centers - 6%

Survey Response

Rate: 38%

Calmar Employees

Staff: 297

Faculty: 200

Total: 497

Peosta Employees

Staff: 285

Faculty: 244

Total: 529

Grand total: 1,026

1. Nutrition-related activities

Most popular time: Monday - Thursday/ between 11:30AM & 1:30PM

- Opportunities to use water cooler at work – 73%
- Healthy lunch menu features in Cafeteria – 68%
- Healthy taste-tests – 67%

2. Physical activities & topics

Most popular time: Monday to Thursday / between 4:00PM & 6:00PM

- Yoga sessions on campus/at centers – 47%
- Circuit training offered through local gym and subsidized by the College – 45%
- Structured walking groups – 44%

3. Physical, mental & financial health related topics

Most popular time: Monday to Thursday / between 11:30AM & 1:30PM

- Work-life balance strategies – 53%
- Guidelines for appropriate health screenings (e.g. breast, prostate, colon cancers, depression, stress-related screenings) – 48%
- Meditation exercises – 47%

4. Work environment tweaks

- Additions of healthy options to the lunch menus – 75%
- Structural changes to campus environment (e.g. water fountains, outdoor common spaces, bike racks and bike commuter showers, recreation facilities, walking trail) – 66%
- Workplace ergonomics (e.g. posture, carpal tunnel, etc.) – 59%

The Logistics:

Frequency of wellness programming		Duration of wellness programming	
Once/month	32%	30 minutes	63%
Bimonthly	27%	45 minutes	32%
Once/week	24%	60 minutes	17%

*percentages have been rounded to the nearest whole number

Health Risk Assessments (HRA)

Interest in participation? 60% "yes", 15% "yes" with incentive only

*When asked if employees would pay for HRA – 44% said "no amount/not interested" / 28% would contribute monthly- \$1-5 & 22% \$6-10

Preferred Modes of Communication

- 1.) Faculty/staff-focused workshops/classes – 64%
- 2.) Monthly wellness e-newsletter – 60%
- 3.) Hands-on workshops – 58%
- 4.) Lunch and learns – 56%

Top 3 Incentives

- 1.) Wellness-related give-a-ways (e.g. Fitbits or pedometers, balance ball work station, fitness equipment, cookbooks, cookware, etc.) – 73%
- 2.) Possibility of earning a "wellness day" – 60%
- 3.) Discounted gym membership – 54%



APPENDIX B

INFORMED CONSENT LETTER FOR THE ENDPOINT EVALUTION SURVEY

The Development of a Comprehensive Nutrition Education Workshop Series for Community College Employees

Thank you for attending one or more of the nutrition lunch and learn education workshops at Northeast Iowa Community College. The following endpoint evaluation survey will be instrumental in the refinement of how to develop a comprehensive worksite wellness lunch and learn series at a community college. This survey will also include questions about your awareness and any changes you made to your diet or health habits as a result of attending a workshop or workshop series. Completing the survey is voluntary and should take 10-15 minutes to complete. By completing this survey and submitting you have agreed to participate in this research. By completing this survey you have agreed to participate in this research. Once you have submitted your survey and responses are recorded, you will be unable to rescind your participation, because the surveys are anonymous and confidential. The data will be aggregated. The results of this project may be published. Please submit the survey by **March 22, 2016**.

As the study's principal investigator, please feel free to contact me directly with any questions you may have about the survey or study, Flannery Cerbin-Bohach at cerbin.flan@uwlax.edu. Questions may also be directed to study advisor, Dr. Keely Rees, at University of Wisconsin- La Crosse at krees@uwlax.edu. Questions regarding the protection of human subjects may be addressed to the Institutional Review Board for the Protection of Human Subjects at University of Wisconsin- La Crosse (608-785-8124 or irb@uwlax.edu).

Thank you for your time and attention. Your participation in this project is greatly appreciated!

Participant signature: _____

Date: _____

Researcher signature: _____

Date: _____

APPENDIX C
INSITUTIONAL REVIEW BOARD APPROVAL LETTER



To: Flannery Cerbin-Bohach

From: Bart Van Voorhis, Coordinator
Institutional Review Board (IRB) for the
Protection of Human Subjects
bvanvoorhis@uwlax.edu
5-6892

Date: December 4, 2015

Re: RESEARCH PROTOCOL SUBMITTED TO IRB

The IRB Committee has reviewed your proposed research project entitled: *"Developing and Implementing a Comprehensive Nutrition Education Workshop Series for Community College Employees"*

The Committee has determined that your research protocol will not place human subjects at risk. The attached protocol has been approved and is exempt from further review per 45CFR46, 46.101(b)(2).

However, it is strongly suggested that Informed Consent always be used. Remember to provide participants a copy of the consent form and to keep a copy for your records. Consent documentation and IRB records should be retained for at least 3 years after completion of the project.

Since you are not seeking federal funding for this research, the review process is complete and you may proceed with your project.

Good luck with your project.

A handwritten signature in cursive script that reads "Bart Van Voorhis".

cc: IRB File
Keely Rees, Faculty Advisor

APPENDIX D

NUTRITION EDUCATION LUNCH AND LEARN WORKSHOP CURRICULUM

The Science of Sweet - Nutrition Education Lunch and Learn Workshop

Overview

This workshop will explore why humans have an innate craving for sugar. There will be visuals of how much sugar the average American consumes and a discussion of healthier ways to satiate a sweet tooth.

Objectives

- The educational goal for this workshop is for participants to have an increased awareness of the prevalence of added sugar in the average American diet and enhance their motivation for reducing added/refined sugars.
- The behavioral goal for this workshop is for participants to reduce added sugars in their diets.

Activities- 25 minutes

- Presenter explains the background to excessive sugar consumption in the United States.
- Presenter engages audience in guessing game in middle of workshop. The facilitator shows several beakers filled with sugar, representing the amounts of added sugar in common food items and asks participants to guess which food items matches with corresponding beaker.
- Presenter offers suggests for snack alternatives that are low in sugar

and healthy options for the workplace.

- Presenter introduces the “Switch Witch” or the make-belief character that takes children’s Halloween candy and replaces it with a material gift.

Evaluation

Possible evaluation questions for this workshop include:

- To what degree did you find this workshop of value to you? (scale)
- To what degree did the workshop expand your awareness or understanding of the topic? (scale)
- To what degree to you plan to use the information from this workshop in your everyday life? (scale)
- What recommendations do you have to improve the workshop in the future? (open-ended)
- What was the idea that was most important to you in this workshop? (open-ended)
- What do you plan to do with the information you learned today? (open-ended)

Materials

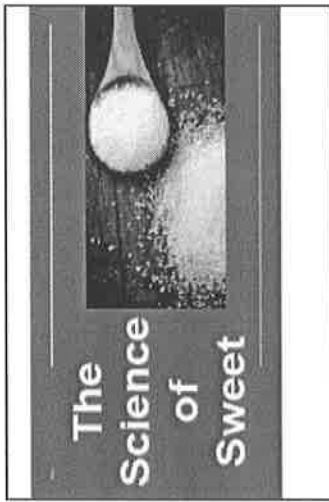
- Computer and projector
- Sugar demo kit (beakers filled with granulated sugar corresponding to refined sugar in certain food items). Convert grams to teaspoons ($X \text{ grams} / 4 = \text{teaspoons of sugar}$) for each of the food. Then measure granulated sugar corresponding to the teaspoons and place this sugar in clear beakers or small clear

containers. Label the beakers with the amount of sugar underneath for reference.

- (Optional) a costume or a witches hat to use for the Switch Witch.

Other Resources

Please refer to presenter notes for more details.



Slide #1:

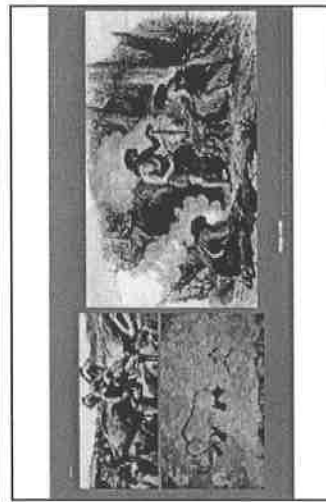
Start with an introduction and thank the audience of attending the first workshop in this yearlong lunch and learn nutrition education series. Tell the audience to please feel free to eat their lunch and they are welcome to ask questions at any point.

If you want to pass out wellness punch cards, do so at this time or at the end of the workshop!



Slide #2:

Briefly state the objectives for today.



Slide #3:

Once upon a time, humans were hunter / gatherers. (Tell a little bit of a story here) we spent nearly every waking hour totally consumed by foraging and hunting for food.

Imagine you've been plopped into this region and there is no infrastructure - no cars, roads, businesses or towns. It's just you and your family. Let's say there wasn't even agriculture yet, how many of us now could survive in the woods today and find a diverse-enough diet? What would you find? Sure, we have deer, squirrels, rodents, but think of how unlikely it would be to find

Slide #4:



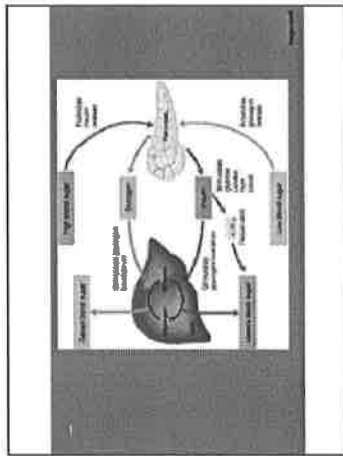
This cartoon made me chuckle, so I thought I would share it with you today. Maybe some of us think of cavemen times as healthy right, because the air and water was cleaner, there was so much exercise and everything was free-range and organic. Well, we know differently.

Slide #5:



Fast-forward a couple of million years later. We don't have to forage, unless it's the grocery aisles.

Slide #6:



Actually, we need sugar! The glucose and its stored-form, glycogen, account for half of our body's energy needs. Our brains can't function with out glucose. This complicated diagram represents metabolism that happens in the body when you eat sugar. In sum, let's say you eat a cookie – this elevates your blood sugar, which tells the pancreas release insulin. Then it's insulin's job is to stimulate glucose uptake from the blood. The excess sugar is either stored as glycogen by the liver or used immediately.

Slide #10:

This graphic represents the average yearly sugar consumption per year for one American in 1800, 1870 and today – 2lbs., 123lbs. and 156 lbs (could say that's 3 lbs/week)



Slide # 11:

So what's the deal with sugar? Well, it contributes to nutrient deficiencies by supplying energy without nutrients (stored as fat) and is a major player in the increase in chronic disease. It also contributes to tooth decay.

You could introduce a conversation about artificial sweeteners such as Splenda (sucralose), NutraSweet (aspartame), Equal (aspartame) and Sweet 'N Low (saccharin). Our bodies view these artificial (fake, synthetic) substances as "foreign invaders" and do not know how to properly digest

So, what?!

- ✦ Contributes to nutrient deficiencies by supplying energy without nutrients
- ✦ Contributes to tooth decay



Slide # 12: The American Heart Association recommends that women get no more than 25 grams (or about 100 calories), and that men get no more than 37.5 grams (or about 150 calories) of added sugars in our daily diet. Added sugars are those that are not naturally occurring in whole foods (like fruits and vegetables), but that are added during processing to enhance flavor or texture.

"Guess the Sugar!" Activity:

- ½ cup Prego 3-Cheese = 11 grams sugar, 80 calories
- 16 oz Nesquick Fat Free Chocolate Milk = 54 grams sugar, 300

What does this look like in my diet?



How Much Sugar should You Consume?

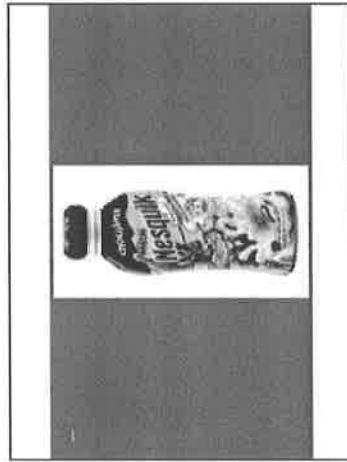
Men (150 grams)
Women (100 grams)

Is your consumption of added sugars within the recommended amount?

½ cup Prego 3-Cheese = 11 grams sugar, 80 calories



16 oz Nesquik Fat Free Chocolate Milk = 54 grams sugar, 300 calories



6 oz Yoplait Original 99% fat free, Lemon Burst= 31 grams sugar, 180 calories



20 oz (590 ml) bottle of Fruit Punch Gatorade = 34 grams sugar, 130 calories



Slide #19:

Offer some pointers for the audience to try some alternatives.

- Food dairy – keep track of your consumption daily – add up your sugars!
- Alternative food options. I'm not a dessert heater, in fact, I say you bake it and cook it it's probably better for you. There are some options for satisfying your sweet tooth though without opting for highly sugary snacks and candy.

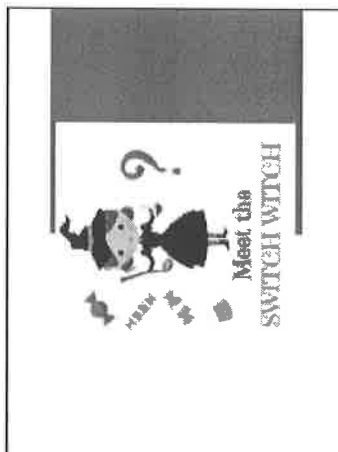
Try:

- Chocolate covered strawberries- benefits of fruit.
- Smoothies – be careful with adding voqruts and sweetened juices.



Slide #18:

Lastly, with Halloween coming up, there's a strategy for reducing the avalanche of sugar your kids are sure to come home with. The Switch Witch appears in some households because children leave their candy for her! In exchange, she brings them something else - a new art set, Legos or board game. The challenge then becomes for you, the adult, to decide what happens to that candy :-)



Gratitude and Mindfulness for our Food - Nutrition Education Lunch and Learn Workshop

Overview

This Thanksgiving-inspired workshop will focus on gratitude for food and mealtime. There will be an exercise focusing on mindful eating.

Objectives

- The educational goal is for participants to increase their awareness of authentic gratitude and how gratitude is undervalued in American culture.
- The behavioral goal is for participants to practice gratitude and mindfulness exercises before meals.

Activities – 25 minutes

- Presenter explains the concept of mindfulness and why it is important before meals.
- Presenter facilitates mindfulness exercise involving a raisin and a series of questions about the where the raisin came from.

Evaluation

Possible evaluation questions for this workshop include:

- To what degree did you find this workshop of value to you? (scale)
- To what degree did the workshop expand your awareness or understanding of the topic? (scale)
- To what degree do you plan to use the information from this workshop in your everyday life? (scale)
- What recommendations do you have to improve the workshop in the future? (open-ended)
- What was the idea that was most important to you in this workshop? (open-ended)
- What do you plan to do with the information you learned today? (open-ended)

Materials

- Computer and projector.
- Enough raisins for each participant to have one.

Other Resources

Bayes, J. (2009). *Mindful eating: a guide to rediscovering a healthy and joyful relationship with food* (1st ed. p. 208). Boulder, CO. Shambhala Publications.

Please refer to presenter notes for more details.

Slide #1

Thank you for joining me today!

Gratitude & Mindfulness
for our Food
...

Slide #2

To get our juices flowing I would like you to turn to a neighbor and discuss one positive food-related memory from your childhood.



Slide #3

Here are our goals for today!

- Our Goals....
- What's gratitude?
 - Mindfulness exercise

Slide #4

A little trivia today- 27 percent of Americans did this last Thanksgiving break.
What was it?

27% percent of Americans did this last Thanksgiving break.
What was it?

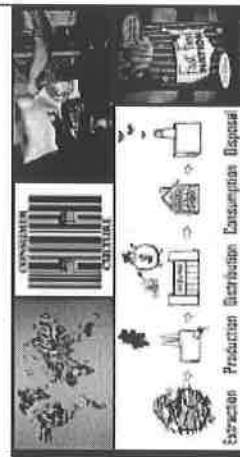
Slide #5

So what's gratitude? Start with facts about what gratitude is not...
86.9 million shoppers in 2014 alone. Walmart/Target/Kohls/Macys/Best Buy...retailers open their doors bright and early on Friday AM - some camp out or stay up all night. Some stores open at midnight on Thanksgiving.
For what? To get the latest gadget or gizmo or a new TV.
Occupational Safety and Health Administration issued safety guidelines for



Slide #6

And it's not just on Black Friday do we see a nation overrun by consumerism.
It's everywhere.



Slide #7

What's gratitude?

Expressing appreciation for what one has ... as opposed to, for example, a consumer-driven emphasis on what one wants.

So, that question again... what's gratitude? It's an emotion expressing appreciation for what one has—as opposed to, for example, a consumer-driven emphasis on what one wants. It's not what we just saw on the last two slides.

Slide #8

Buy Experiences, Not Things

Use experiences, generate more experiences. Now. Make it work. The Happiness Advantage by Fredrickson & Loewenstein



Recently scientists have begun to chart a course of research aimed at understanding gratitude and the circumstances in which it flourishes or diminishes. They're finding that people who practice gratitude consistently report a host of benefits:

- Stronger immune systems and lower blood pressure
- Higher levels of positive emotions
- More joy, optimism, and happiness
- Acting with more generosity and compassion

Slide #9



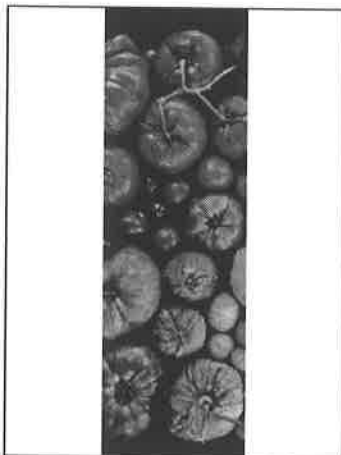
So, why am I talking about gratitude...when this is supposed to be about food? Well, arguably the same consumer-driven focus has been applied to our food system and our mealtime. We have a general lack of gratitude for our food in this country. Food is cheap, farmers don't necessarily get the respect they deserve and we think meals should be eaten in the car. Over 30 percent of the food in this country that is grown for human consumption is wasted. What if we were more thoughtful/grateful for our meals?

Slide #10



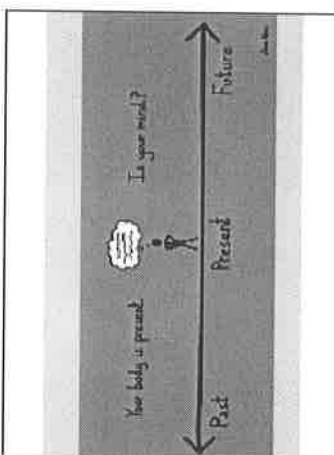
I'd like to share a clip from A Place at the Table about hunger. Please see if any of this resonances with you. End clip at 1:29.

Slide #11



Often when we think of gratitude for our food, how many of us are thankful for having food, but how often do you stop to think about the food (where it came from, how it was made, etc) and how often do we share togetherness in mealtimes. We have one-two holidays a year focused on such. Thanksgiving is the one socially constructed holiday when the focus is on pause to give thanks for the food and the preparers of that food (but don't pause too long because Walmart opens at midnight).

Slide #12



One of the ways to exercise gratitude is by practicing mindfulness. What's mindfulness? "mindfulness is deliberately paying attention, being fully aware of what is happening both inside yourself – in your body, heart and mind – and outside yourself in your environment." I found this eloquent prose in Mindful Eating: A Guide to Rediscovering a Healthy and Joyful Relationship with Food, by Dr. Jan Chozen Bays about mindfulness/gratitude for food:

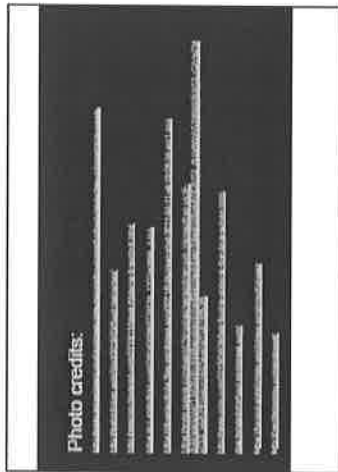
"How grateful would you be for a slice of bread if you had to weed and plow

Slide #13

Now, we are going to partake in a mindfulness activity (pass out raisins). Tell the attendees they should not eat the raisin as this activity.

Start by restating/instructing the following from the book *Mindful Eating: A Guide to Rediscovering a Healthy and Joyful Relationship with Food*, by Dr. Jan Chozen Bays

Pick up the raisin and hold it in your hand. Look at it with your physical eyes.



Food as Immunity - Nutrition Education Lunch and Learn Workshop

Overview

The focus for this workshop is on how certain foods or diets provide benefits that protect against anything from the common cold to cancer.

Objectives

- The educational goal is for participant to have increased awareness of the vitamins and minerals, beyond Vitamin C, that play a role in immune system function.
- The behavioral goal is for participants to be able to identify changes or additions of certain foods to their own diet that could help bolster immunity.

Activities – 25 minutes

- Presenter explains the importance of vitamins and minerals essential to immune system health, including Vitamin C, zinc, magnesium and Vitamin D.
- Presenter shows a clip from the documentary Forks over Knives
- Presenter provides a sample of honey broccoli salad.

Evaluation

Possible evaluation questions for this workshop include:

- To what degree did you find this workshop of value to you? (scale)
- To what degree did the workshop expand your awareness or understanding of the topic? (scale)
- To what degree do you plan to use the information from this workshop in your everyday life? (scale)
- What recommendations do you have to improve the workshop in the future? (open-ended)
- What was the idea that was most important to you in this workshop? (open-ended)
- What do you plan to do with the information you learned today? (open-ended)

Materials

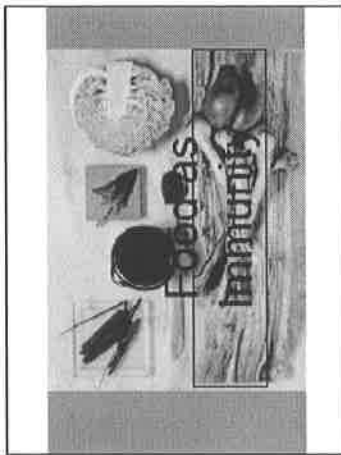
- Computer and projector.
- Honey broccoli salad. The recipe can be found here:
http://www.simplyrecipes.com/recipes/broccoli_salad/

Other Resources

Fulkerson, L., Wendel, B., Corry, J., Campbell, T. C., Esselstyn, C. B., Lederman, M., Pulde, A.,... Virgil Films. (2011). *Forks over knives*. Santa Monica, CA: Monica Beach Media.


Slide #1

Welcome! Please make sure I punch your wellness punch card. This is the third lunch and learn covering a topic, that I sense will be relevant to us all. Who has been sick before?



Slide #2

So, here is our brief agenda for the day!



Agenda:

- Beyond Vit C
- Short video clip
- A case study
- Quick activity

Slide #3

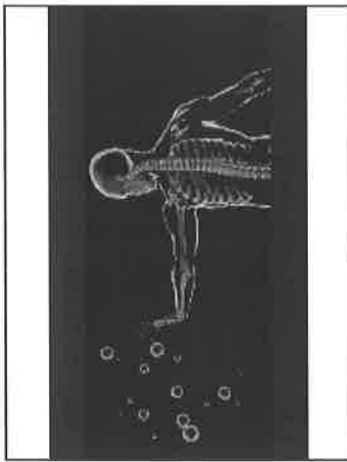
Immune system strength is measured by the body's ability to maintain equilibrium of vital functions and to respond to extraordinary challenges to that equilibrium



"Let food be thy medicine and medicine be thy food."
-Hippocrates

Slide #4

Immune system strength is measured by the body's ability to maintain equilibrium of vital functions and to respond to extraordinary challenges to that equilibrium



Slide #5

According to Harvard's Department of Health, "the jury is still out on vitamin C and the immune system. Many studies have looked at vitamin C in general; unfortunately, many of them were not well designed. Vitamin C may work in concert with other micronutrients rather than providing benefits alone." (<http://www.health.harvard.edu/>) What this means is that we cannot assume that taking Vitamin C rich foods are enough to support our immune system. This is not to discredit the importance of Vitamin C, but just to remind us that there is more to the story. Remember that Vitamin C can be found in other

Vitamin C

- What's good for?
- Antioxidant (removes free radicals)
- Strengthens blood vessel walls
- Formal cartilage
- Fights infections and assists in both Ascorbic

Slide #6

Many researchers have shown that zinc deficiency can lead to greater susceptibility to pathogens, both bacterial and viral. Zinc, a mineral, seems to work on many levels of the immunity, ranging from better skin health to enhanced immune cell function. Four ounces of meat, like beef, contains approximately 40% of the daily zinc requirements according to Mayo Health. Seafood also serves as a good source of zinc. If you don't eat much seafood or red meat, there are certain grains that contain zinc, but you may want to consider a supplement. Caution! Taking higher than recommended upper

Zinc

- What's good for?
- Antioxidant with health development
- Involved in making growth hormones
- Aids immune function
- Aids wound healing
- Assists in bone formation
- Helps normal development of a fetus

Slide #7

Magnesium

- What's good for it?
- Helps with protein
- Aids in normal muscle contraction and to make neurotransmitters
- Maintains bone
- Helps support functioning of immune system

Magnesium, like zinc, is another immune boosting mineral that is often absent from people's diet. Magnesium is an essential mineral in chlorophyll, a pigment in the leaves of plants that is needed for capturing the sun's energy. It should not be a surprise to you then that dark leafy greens, like spinach and kale, are some of the best sources of magnesium. In fact, the best sources for magnesium come from plants, not meat! Whole grains, beans and nuts are also excellent sources of magnesium.

Slide #8

Vitamin D

The "Sunshine" Vitamin

What's good for it?

- Maintenance of bones
- Aids immune function

Even more so than Vitamin C, this vitamin has garnered a lot of recent attention from researchers. In 2013, a 30-page meta-analysis of Vitamin D was published touting the benefits of it. "Low vitamin D status has been associated with an increased risk of type 1 diabetes mellitus, cardiovascular disease, certain cancers, cognitive decline, depression, pregnancy complications, autoimmunity, allergy, and even frailty." The best source of Vitamin D actually comes from exposure to sunlight, but this can be challenging for people living at far norther and southern latitudes that are

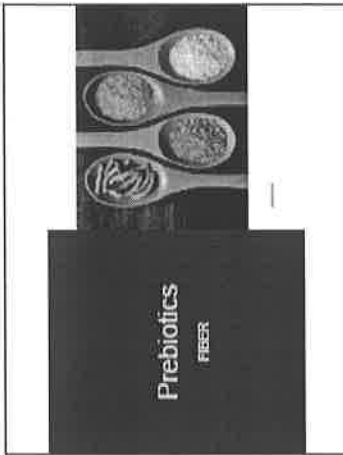
Slide #9

Probiotics

- What are they?
- Do they work?

There is some debate still among the medical community about 1.) what are probiotics? and 2.) what health benefits do they produce, if any? What we do know is that our digestive system is teeming with bacteria, so much in fact that for every human body cell, there are ten other bacteria cells in your body. Bacteria get a bad "rap" but in fact there are more helpful bacteria than harmful. Bacteria can directly help us. They live on our skin and in our digestive systems, thus helping to prevent the growth of unwanted bacteria. In our digestive system, the bacteria can help to reduce inflammation and

Slide #10



Probiotics are direct sources of bacteria, such as foods and supplements, that can be taken to introduce new strains of good bacteria or replace bacteria that have been lost, such as following an episode of antibiotic treatment (antibiotics kill all types of bacteria, including the good ones in your gut). But there are other ways of boosting the populations of your gut bacteria. Rather than taking them directly, you can take foods that feed the bacteria you already have, thus increasing the number of bacteria you have. These foods are called "PRE-biotics" and are usually high in fiber. Because

Slide #11



Probiotics don't just have to contain a lot of fiber. Like ourselves, bacteria like to eat other things too. From Livestrong.com, "A research project funded by the National Honey Board found that Bifidobacteria cells, a strain of bacteria often found in the intestines, grew more rapidly when honey was added to their media. A 2006 article in "Complementary and Alternative Medicine" also found that feeding honey to mice increased the levels of healthy bacteria in their guts." You may have heard that honey is also helpful in preventing allergies, especially when eating local honey that may contain

Slide #12



For example, work sites can make it easier for employees to make healthy food choices and create social norms that support healthy eating by creating policies to ensure that fruits and vegetables are provided at work-site gatherings, including meetings, conferences, and other events.

Watch brief clip from Forks over Knives.

Slide #13

If Americans were to follow current USDA recommendations for daily consumption of fruits and veggies, those numbers would go up to more than 127,000 lives and \$17 billion saved (Mayo Clinic).

"If Americans ate just **ONE MORE SERVING** of fruits or vegetables per day, this would save more than 30,000 lives and \$5 billion in medical costs each year."

Journal of Generalized Geriatrics

Slide #14

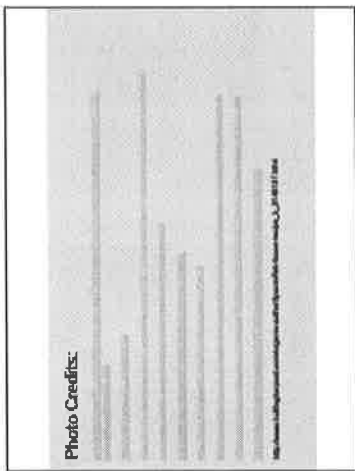
Story from Des Moines Register in 2013 of a woman who reversed her MS symptoms by completing changing her diet. Source: <http://www.desmoinesregister.com/story/news/2014/03/17/doctor-turns-to-new-diet-after-health-decline/6512153/>



Slide #15

Ask the audience how they can makeover Meal #1 - Meat Tacos to incorporate more health-boosting foods based on what they learned today.





Realistic Goal-Setting Nutrition Education Lunch and Learn Workshop

Overview

The focus for this workshop is on helping participants set and/or maintain health-related goals for the coming year. Participants will learn strategies, such as S.M.A.R.T objectives and engage in a goal-setting activity.

Objectives

- The educational goal of this workshop is to help participants learn how to create a specific wellness-related goal by using such strategies as S.M.A.R.T objectives.
- The behavioral goal of this workshop is for participants to write a wellness-related goal for the current year.

Activities – 25 minutes

- Presenter explains the essential components of setting specific, measurable, attainable, realistic and time-bound health goals.
- Presenter has participants engage in a goal-setting process using a handout.

Evaluation

Possible evaluation questions for this workshop include:

- To what degree did you find this workshop of value to you? (scale)
- To what degree did the workshop expand your awareness or understanding of the topic? (scale)
- To what degree do you plan to use the information from this workshop in your everyday life? (scale)
- What recommendations do you have to improve the workshop in the future? (open-ended)
- What was the idea that was most important to you in this workshop? (open-ended)
- What do you plan to do with the information you learned today? (open-ended)

Materials

- Computer and projector.
- Goal-setting handout (see following page).

Other Resources

Please refer to presenter notes for more details.

Realistic Goal Setting

Slide #1

Hello and welcome to the first lunch and learn of the year - Realistic Goal Setting!

Slide #2

Here is the agenda for today!

Agenda:

- Setting wellness goals
- Your turn

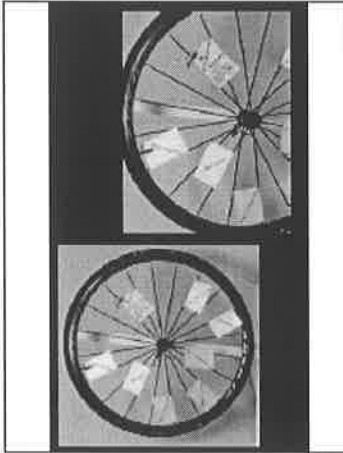
Slide #3

By a show of hands, how many of you have made new year's resolutions or goals for 2016? Are they wellness related? Maybe this first picture is your attitude or maybe this second photo is more of your hope this year? Well, I'm advocating that we all need need to take the second approach to form realistic wellness goals. Everyone can work to improve something, despite maybe thinking we're Calvin. Even if you feel like your wellness wheel is balanced we still have maintenance.



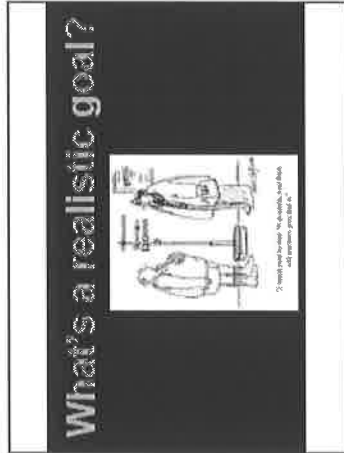
Slide #4

Recall the wellness wheel... We have lots of options to find a goal.



Slide #5

Realistic - Setting a very lofty or complicated health goal is overwhelming – making it much less likely that you'll achieve it, or even stick with it at all. In addition, setting goals such as "I want to eat healthier" or "I want to eliminate stress from my life" are both goals that will benefit your health, but are far too general. Set realistic goals that are simple, concise and achievable. How many of you have heard of or used SMART goals? Specific / Measurable / Attainable / Relevant / Time-Bound
it would be more realistic to set up a SMART goal:
Specific –You have a much greater chance of accomplishing a specific goal



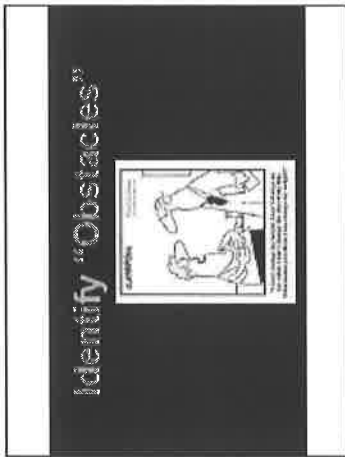
Slide #6

Okay here are some tips or strategies to help you...



Slide #7

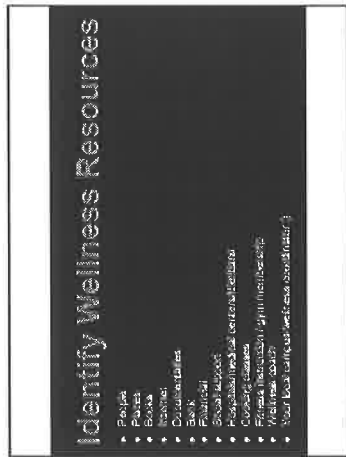
Identify obstacles such as time. I hear you- we all are hard pressed for time. However, doing research for this presentation today, I discovered that the average US adult, aged 35-49, watches more than 33 hours or 5 hours a day. This might not be you, but maybe you do plop down to watch your favorite show or two. What else could you be doing with that time to help you achieve your wellness goal? I'm not hating on TV, but I don't have one. I can tell you about it some time.



Slide #8

Identify wellness resources in your area.d

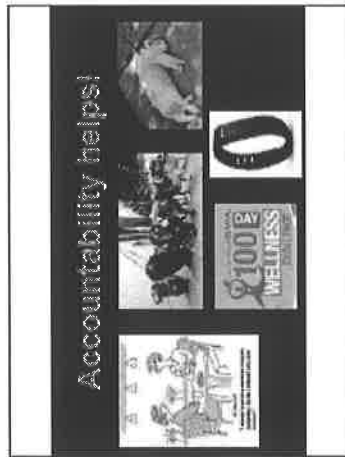
- Identify Wellness Resources
- People
 - Peers
 - Books
 - Blogs
 - Social media
 - Podcasts
 - Social support
 - Hospital/medical centers/bellara
 - Cooking classes
 - Friends in local/national membership
 - Friends in local/national membership
 - Your local wellness board (ask!)



Slide #9

Tell Others - Don't keep your goal a secret. Announcing your goal to family, friends and co-workers will help keep you accountable. Consider setting up an appointment with your physician to let them know about your health goal. You are much more likely to keep working toward your goal if others know about it. I had a healthy psychology professor that biked to campus on every working day, rain or shine. In order to hold himself accountable he told us on the first day of class and sure enough we saw him biking even in terrible conditions. Another way of holding yourself accountable is to get a pet you can walk on a leash!

Accountability helps!

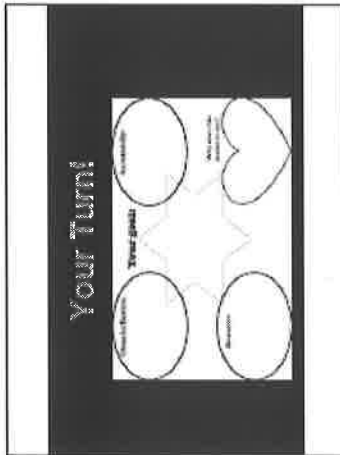


Slide #10

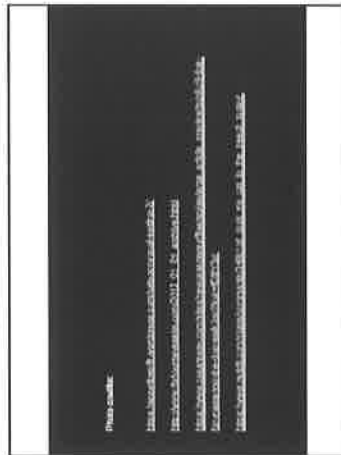


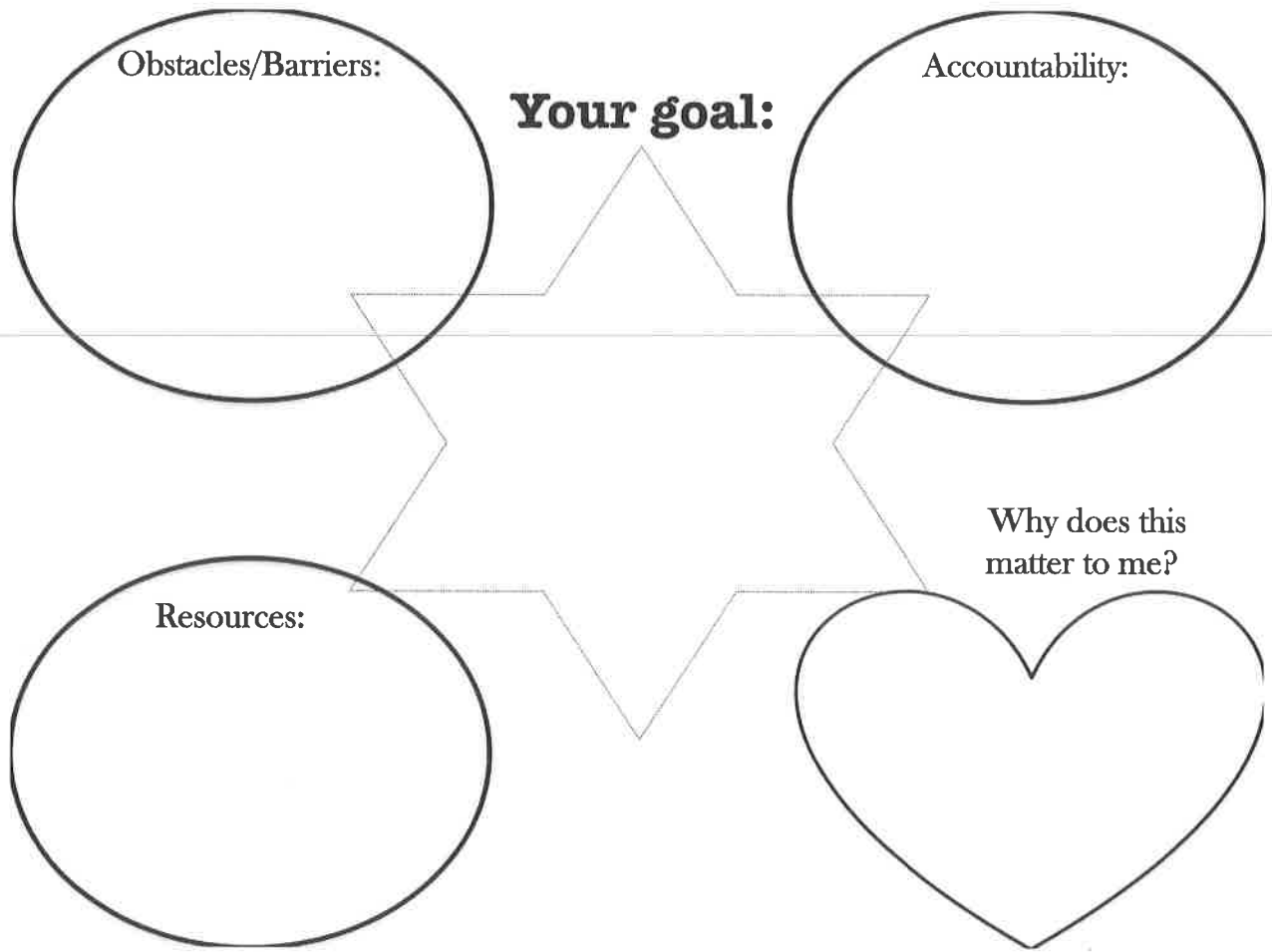
Share a personal story of asking my mom to participate in my 8th grade science fair project. She was my lone study participant to see how exercise affected resting heart rate. She signed a contract with me to walk on the treadmill for two miles day for six weeks. Guess what happened? She developed a habit and walks daily.

Slide #11



It's activity-time. I'm going to need to you get out a pen and refer to this handout. Please think of a health-related goal you would like to make this year, and what steps you'll need to take to get there. Please identify any barriers, who will hold you accountable, needed resources and why this goal matters to you. If you're interested, please also write your goal anonymously on a Post-it note. I will place in the Friday Takeout (weekly campus publication) and my office window as a layer of accountability.





Companion Foods - Nutrition Education Lunch and Learn Workshop

Overview

This workshop will explore the concept of food synergy or the idea that foods, in certain combinations, enhance the digestion or bioavailability of nutrients found in those foods, which helps enhance overall health.

Objectives

- The educational goal is for participants to partake in a hands-on activity, demonstrating some common and accessible food pairings, such as red peppers and black beans and onions and garlic.
- The behavioral goal was for participants to increase their consumption of unique food pairings.

Activities – 25 minutes

- Presenter explains the concept of food synergy and pairing foods in combinations to enhance the availability of nutrients.
- Presenter has participants engage in a group matching activity. Participants will try to find their

ideal food pair or partner, using a few facts they receive on a card.

Evaluation

Possible evaluation questions for this workshop include:

- To what degree did you find this workshop of value to you? (scale)
- To what degree did the workshop expand your awareness or understanding of the topic? (scale)
- To what degree do you plan to use the information from this workshop in your everyday life? (scale)
- What recommendations do you have to improve the workshop in the future? (open-ended)
- What was the idea that was most important to you in this workshop? (open-ended)
- What do you plan to do with the information you learned today? (open-ended)

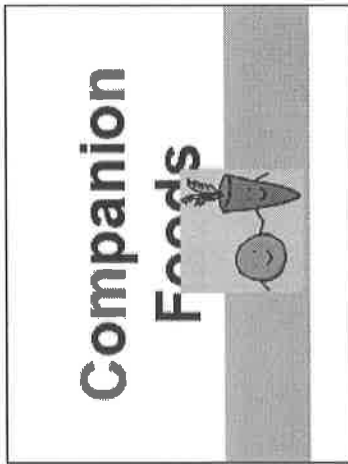
Materials

- Computer and projector.
- Game cards (see handout on following page)

Other Resources

Please refer to presenter notes for more details.

Slide #1



Welcome to this lunch and learn! Thank you for joining me today.

Please make sure I punch your incentive card - speaking of incentive cards. Do any of you have ideas of what you'd like to see as a grand prize at the end of this series?

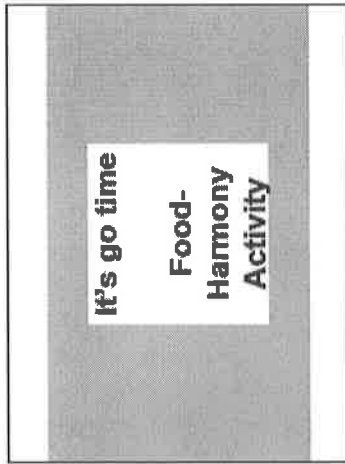
Also, please make sure you fill the brief survey that I will send out after the lunch and learn... I'm getting close to wrapping up my data collection for my grad project. Next month I'll be sending out an Endpoint Evaluation to

Slide #2



Here's the agenda for today.

Slide #3

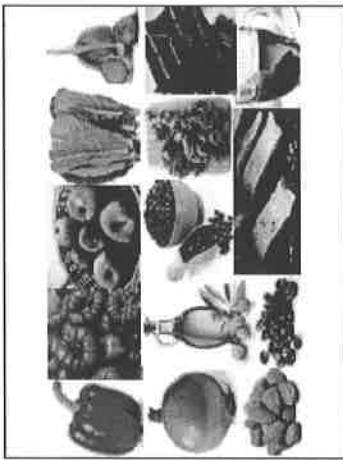


We're going to start with an activity. What you'll need to know before we start is there are foods that synergically work together - aid the human body in digestion or increase the macro/micro nutrient absorption of the other food. You're going to be a food today seeking your perfect food match. Who has heard of E-Harmony? Well, this is a similar concept.

You'll need you to get up and moving for this activity. There 14 perfect food pairs out there (depending on audience numbers people might have to buddy

Slide #4

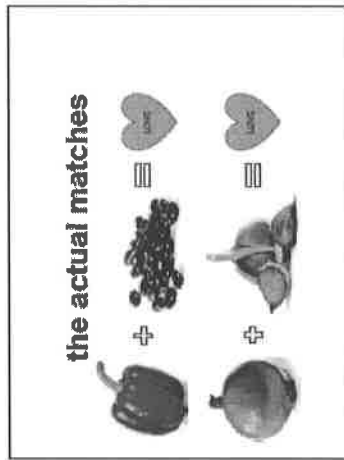
Here are the foods that are described on the cards.



Slide #5

Ok, let's see what the matches are, shall we?

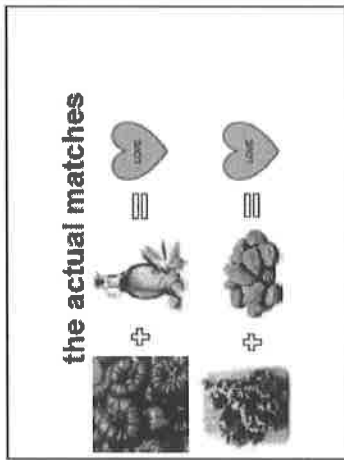
Would the red pepper and black bean pair please read their card. Black beans contain iron, which is essential for formation of red blood cells. The iron in beans is non-heme, meaning that the iron isn't as easily absorbed as iron in meat. The Vitamin C found in red peppers can help increase the absorption of non-heme iron by up to 6 times! Sample dishes with black beans and red peppers include enchiladas, burritos/tacos and our sample for



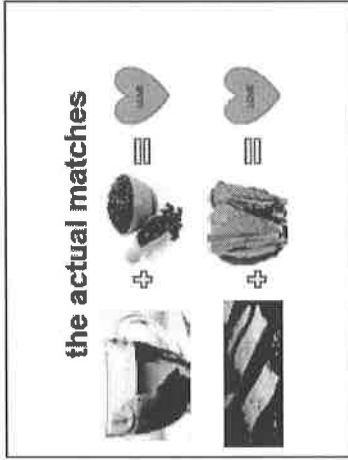
Slide #6

Another pair are tomatoes and olive point. This is a common pairing in Italian cuisine, tomatoes and olive oil have health enhancing benefits. Olive oil is heart healthy and reduces LDL cholesterol (the bad stuff) while increases HDL cholesterol (the good stuff). When paired with tomatoes it also helps increase the antioxidant absorption. Antioxidants are cancer fighting! Recipe ideas? Bruschetta, salsa, tomato soup or other Italian dishes.

A side-note: A recent study concluded that the Mediterranean diet may



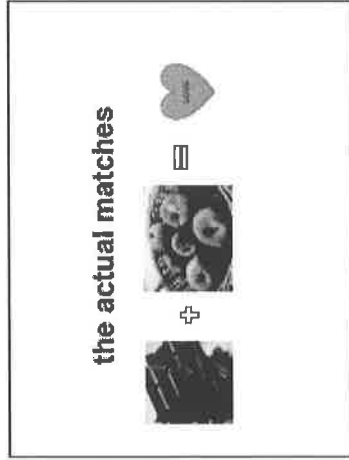
Slide #7



Green tea and black pepper is another unlikely pair. Black pepper has been shown to substantially increase the bioavailability of nutrients from food. The tea and black pepper combo contain lots of antioxidants to boost immunity and help relieve pain and inflammation.

Another pairing is salmon and collard greens. To get the most out of calcium intake, it's important to focus on getting enough Vitamin D in your diet. Salmon has Vitamin D and aids in the absorption of calcium found in dark

Slide #8



And our favorite apples and dark chocolate! Together apples and dark chocolate help improve cardiovascular health. Cocoa in dark chocolate is rich in an antioxidant that helps prevent the hardening of arteries, while the skin of apples contains antioxidants that have anti-inflammatory properties. Recipe ideas? Well for starters, try dipping apple slices in chocolate. There are other ideas though!

Slide #9



We have been talking about food synergy. Dr. David Jacobs, coined the concept that different components in a single food can work together to benefit our health, and so can components in different foods that are eaten together. We may get even more bang for our buck when certain foods are eaten together. Food influences our health in complex and highly interactive ways.

My ideal partner...
... has some serious
flash.

... has some pep in
their step.

... also helps me pump
the iron. 🏋️

My ideal partner...

... does pass a lot of
gas, but that's okay
because I don't have
a good sniffer.

... is super strong!

My ideal partner...

... is fluent in
Mandarin.

... is conscious about
weight.

... despite mostly a
Zen approach to life,
does get a little
steamed up.

My ideal partner...

... has some spice.

... can trace their
ancestors way back in
history.

... is versatile.

My ideal partner...

... has
Sanguivoriphobia
(fear of vampires)

... is culturally
adaptable.

My ideal partner...

... is a softy and cries
a lot.

... is deeply complex
and layered.

My ideal partner...

... has a rather hard
shell, but brings me
such joy.

... grew up hangin' in
trees.

... can be spicy or
sweet or just
themselves.

My ideal partner...

... does well in winter
climates.

... has this weird
obsession with
dinosaurs.

... can spend hours
getting all ornate.

My ideal partner...

... is fleshy and
snazzy.

... has Italian roots.

... loves a good hot
summer!

My ideal partner...

... likes a
Mediterranean breeze.

... Speaks fluent
Italian.

... brings out the best
in me, which helps
bring out my cancer
fighting properties.

My ideal partner...

... has a deep
Southern drawl that's
just simply irresistible.

... is so fixated on
bone health.

My ideal partner...

... is a water lover,
darlin'.

... travels a right far
distance to get to
their mama and
pappy's homeland
every year.

Proportion Distortion- Nutrition Education Lunch and Learn Workshop

Overview

The workshop focuses on the notion of supersized proportions in American culture, as well as featured several strategies for participants to maintain proper serving sizes.

Objectives

- The educational goal is for participants to be more aware of the correct serving sizes of many popular foods.
- The behavioral goal is for participants to utilize simple comparison strategies for appropriate serving sizes with common household items (e.g. a checkbook is roughly one serving size for fish).

Activities – 25 minutes

- Presenter explains the reality of proportion distortion in American culture, giving examples of comparing American meals compared to other culture and examples from restaurants.
- Presenter flips through a series of slides asking participants to guess the change in the number of calories there has been in common foods (e.g. pizza, turkey sandwich, etc) over the past 20 years. Answers should be reviewed.
- Presenter has participants engage in an activity where they work

together to match common household items with what approximate food serving size they represent.

Evaluation

Possible evaluation questions for this workshop include:

- To what degree did you find this workshop of value to you? (scale)
- To what degree did the workshop expand your awareness or understanding of the topic? (scale)
- To what degree do you plan to use the information from this workshop in your everyday life? (scale)
- What recommendations do you have to improve the workshop in the future? (open-ended)
- What was the idea that was most important to you in this workshop? (open-ended)
- What do you plan to do with the information you learned today? (open-ended)

Materials

- Computer and projector.
- Common household items: checkbook, golf ball, deck of cards, matchbox, light bulb, I-pod classic, baseball, dental floss, DVD, computer mouse, postage stamp, one-ounce shot glass and an ice cream scooper.

Other Resources

Please refer to presenter notes for more details.

Proportion Distortion

Slide 1:

Thanks for coming today!

Before we get started does anyone want to explain the difference between a portion size and a serving size? The portion size is what YOU take as the consumer and the serving size is what is listed on the back of a box or bag. For example, if you make Mac n' Cheese, the serving size is typically 1 cup, but you might end up taking 2 cups.

Slide 2:

Overview of the agenda for today.

Agenda

- Brief history
- Guessing Games!

Slide 3:

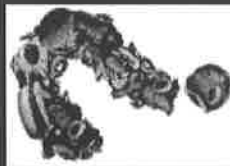
How have we changed as a nation?

In the early 1960s, the average American man weighed 166.2 pounds. In 2010, he weighed 195.5 pounds, gaining nearly 30 pounds.

Countless studies and examples of people coming to the US and gaining weight within a short period of time

In the early 1960s, the average American man weighed 166.2 pounds. In 2010, he weighed 195.5 pounds, gaining nearly 30 pounds.

Countless studies and examples of people coming to the US and gaining





Slide 4:

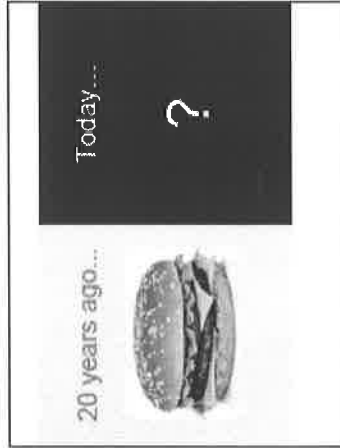
This video demonstrates the changes to the fast food industry over the past 50 or so years.

http://www.huffingtonpost.com/entry/mcdonalds-portion-sizes-over-the-years_us_55f171b4e4b002d5c0782ee8

Year	Burger Name	Calories
1960	McDonald's Cheeseburger	333
1970	McDonald's Cheeseburger	400
1980	McDonald's Cheeseburger	450
1990	McDonald's Cheeseburger	500
2000	McDonald's Cheeseburger	550
2010	McDonald's Cheeseburger	590

Slide 5:

I will talk about calories present in common food items next. Personally, I don't like to count calories and think we should focus more on cues to hunger and satiety. However, this is a good chart for you to glance at before moving on with the presentation. Take a look where you fall in caloric demand, so you have a baseline.



Slide 6:

A cheeseburger 20 years ago had 333 calories. How many calories are in today's cheeseburger? Answer: 590 calories
You'd have to lift weights for 1 hour and 30 minutes to burn off the 257 calories.


Slide 6:

20 years ago... 

Today... ?

Slide 7:


There were 500 calories in two slices of a large pepperoni pizza 20 years ago. How many calories are in two slices today? Answer: 850 calories. You'd need to ride a bike for 1 hour and 25 minutes to burn the extra 500 calories.

20 years ago... 

Today... ?

Slide 8:

There were 270 calories in 5 cups of movie popcorn 20 years ago. How many are in a tub of movie popcorn today? Answer: 630 calories. What exercise would you have to do burn off those calories? Water aerobics for 1 hour and 15 minutes to burn the extra 360 calories.

20 years ago... 

Today... ?

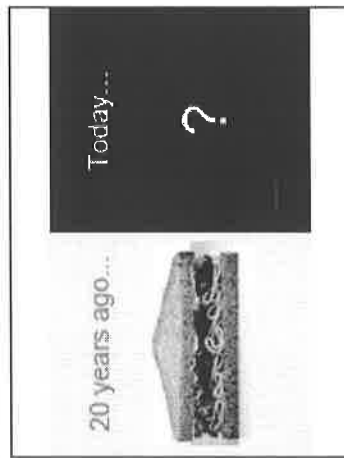
Slide 9:

A plate of spaghetti and meatballs 20 years ago had 500 calories. How many are there today? Answer: 1025 calories



Slide 10:

A bagel 20 years ago was three inches in diameter and had 140 calories. How many calories are in today's typical bagel? Answer: 350 calories (diameter of 6 inches)
You would have to rake leaves for 50 minutes to burn the extra 210 calories added over the last 20 years to the average bagel.



Slide 11:

A turkey sandwich 20 years ago 320 calories. How many are in today's turkey sandwich? Answer: 820. You'd need to ride a bike for 1 hour and 25 minutes to burn the extra 500 calories.



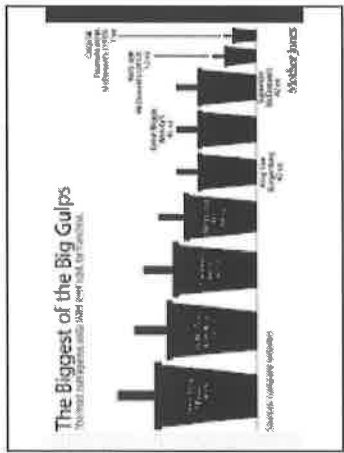
Slide 12:

There were 390 calories in a 1 1/2 cup salad 20 years ago. The average salad now is 3 cups and 790 calories. Yes, even "healthy" food has exploded in size over the last 20 years. You'd have to walk your dog for 1 hour and 20 minutes to burn the 400 calories.



Slide 13:

A 6.5 ounce portion of soda had 85 calories 20 years ago. How many calories are in today's 20-ounce portion? Answer: 250 calories



Slide 14:

This is a shocking image for me that represents how skewed our proportions have become in the United States. Look at the original fountain drink from McDonalds and the Team Guip from 7-Seven.



Slide 15:

From 1960 to 2009 the average plate size increased 3 inches in diameter, increasing the amount of food an individual can pile on his or her plate at the dinner table. Increasing portion size in restaurants as well has lead it to become a social norm leaving people expecting large amount of food. A study by Ellen van Kleef and colleagues (2012), it was found that when presented with smaller portions of highly craved foods, the participants felt equally satisfied to those presented with larger portions. This illustrates the idea that in order to feel

Slide 16:

Now we are going to test our skills at matching foods with their appropriate serving size. Feel free to find a partner and select 2-4 common household items and try to match them correctly with the food that they represent that food's serving size. Here is a list of the foods for those of you joining remotely.



Slide 17:

Great job! Now is a chance to review these correct proportions and have a conversation with the participants. Ask them questions, such as did any surprise you? Do restaurants serve these proportions?



Slide 18:

Here are some strategies if you don't have access to common household food items and you still want to estimate what proportion you are eating. For example a fist is about 1/2 cup, a palm is about 3 ounces or the correct serving size for meat, a fingertip is roughly a teaspoon and the thumb is roughly a tablespoon.



APPENDIX E
WELLNESS PUNCH CARD



NORTHEAST IOWA COMMUNITY COLLEGE

WELLNESS LUNCH and LEARN SERIES

NAME: _____

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

APPENDIX F
NICC TAKEAWAY

The Development and Implementation of a Comprehensive Nutrition Education Lunch and Learn Workshops for Community College Employees

By: Flannery Cerbin-Bohach, *Wellness and Life Stage Program Manager*

Northeast Iowa Community College

Calmar, IA 52132

A graduate project in collaboration with the University of Wisconsin-La Crosse

PROJECT BACKGROUND:

In the United States roughly 34% of the population is obese and 34% are considered overweight. State-level data shows that Iowa ranks sixteenth for adult obesity in the United States, according to the State of Obesity Iowa a project developed by the Trust for America's Health and the Robert Wood Johnson Foundation. As obesity and overweight rates have skyrocketed, employee healthcare costs are of growing concern. In order to address strains on healthcare costs, many employers have implemented worksite wellness programs to encompass health education and promotion for employees.

The *Nutrition Education Lunch and Learn Workshops* were part of a holistic and comprehensive wellness program NICC. In August, 2015 results from the *NICC Wellness Interest Survey (n=391)* provided the justification for a variety of wellness interventions for faculty and staff. Faculty/staff focused workshops (64%), hands-on workshops (58%) and lunch and learns (56%) were reported as preferred modes of communication to learn about wellness and health topics. Additionally, survey responses demonstrated interest in nutrition-related education.

The newly appointed *Wellness and Life Stage Program Manager* on the NICC-Calmar campus created, *The Development and Implementation of a Comprehensive Nutrition Education Lunch and Learn Workshops for Community College Employees* in collaboration with NICC and the University of Wisconsin-La Crosse in partial fulfillment for the requirements for a Master of Public Health in Community Health Education degree.

PURPOSE:

The aim of the project was to raise employee awareness of nutrition-related concepts and issues through the development of *Nutrition Education Lunch and Learn Workshops*, while also providing insight into the creation and refinement of the workshop series. The workshops took place once a month from October, 2015 to March, 2016 and were offered during two, 25-minute time periods over employee lunch breaks.

METHODS & RESULTS:

In order to capture successful elements and challenges of the project, *Post-Workshop Evaluation Surveys* were administered after each workshop. Additionally, an *Endpoint Evaluation Survey* was administered at the end of the entire series. Surveys were analyzed using descriptive statistics, as well as coding for themes.

In the *Post-Workshop Evaluation Surveys*, participants provided recommendations for improvement, what they liked about the workshop, as well as rated the value of the workshop, any perceived increase in awareness of the nutrition-related topic and how they planned to use the information from the workshop.

In the *Endpoint Evaluation Survey*, participants indicated:

- how much the workshop in general expanded their awareness of the topic.
- the extent to which they shared information from the workshop with family and other employees (sharing information indicates heightened awareness of the workshop topics).
- whether they sought out additional information about the topic as a result of the workshop.
- whether they incorporated specific workshop recommendations or ideas in their own activities.

CHANGES IN AWARENESS:

Workshop titles	Attendance (excluding online participants)
<i>The Science of Sweet</i>	35
<i>Gratitude and Mindfulness for our Food</i>	16
<i>Food as Immunity</i>	20
<i>Realistic Goal-Setting</i>	12
<i>Companion Foods</i>	15
<i>Proportion Distortion</i>	11
Total	109

Figure 1. Mean Scores of Participant Rated Value, Awareness and Plan of Use from the Nutrition Education Lunch and Learn Workshops (1 lowest / 5 highest)

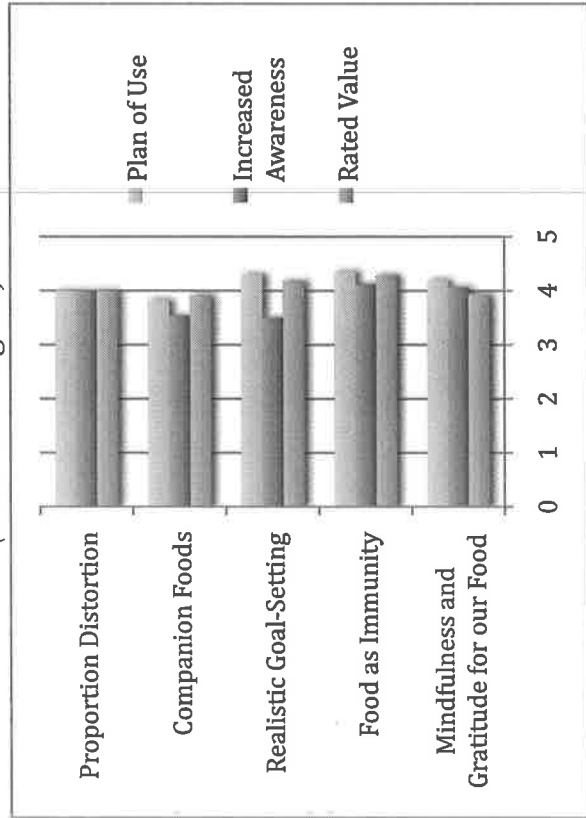


Table 1. Percentage of Participants that Self-Reported Engagement in a Behavior or Activity after attending Nutrition Education Lunch and Learn Workshops

Behavior or activity	October workshop- <i>The Science of Sweet</i> (n=21)	November workshop- <i>Mindfulness and Gratitude for our Food</i> (n=13)	December workshop- <i>Food as Immunity</i> (n=14)	January workshop- <i>Realistic Goal-Setting</i> (n=11)	February workshop- <i>Companion Foods</i> (n=11)	March workshop- <i>Proportion Distortion</i> (n=10)
I shared information I learned with family and friends	52%	54%	36%	36%	45%	50%

I shared information I learned with coworkers	62%	54%	29%	27%	55%	40%	
I researched more about the topic on my own	14%	23%	29%	< 1%	< 1%	10%	

<p><i>Prompt: What do you like about the workshop series?</i></p> <p>“I’m just so glad that this knowledge is being provided by NICC for NICC staff.” – participant from December workshop- <i>Food as Immunity</i></p>	<p><i>Prompt: What do you like about the workshop series?</i></p> <p>“The cleverly titled, seasonal topics...the interactive activities with fellow staff in attendance...two or three time options for participating, and the reminders and notifications...[and the] punch cards and fun prizes.” – participant in the <i>Nutrition Education Lunch and Learn Workshop Series</i></p>
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Additionally, participants gave helpful recommendations for improvement of the *Nutrition Education Lunch and Learn Workshops* from the *Post-Workshop Evaluation Surveys*, which included having handouts, more time to discuss, and better use of technology.

In conclusion, the workplace has become an avenue by which employees can learn about health topics by engagement in worksite wellness programs. As healthcare costs continue to rise, employers are looking to strategies to prevent the onset of modifiable diseases, such as type II diabetes and heart disease. Northeast Iowa Community College adopted a wellness program, much like other employers, to proactively address the overall health and wellness of their employees. The development and implementation of *Nutrition Education Lunch and Learn Workshops* was one of many interventions to build a comprehensive wellness program.