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Implementing Dietary and Physical Activity Guidelines in a College Health Center

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IMPLEMENTING DIETARY AND PHYSICAL ACTIVITY GUIDELINES
IN A COLLEGE HEALTH CENTER

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ABSTRACT

Obesity has been classified as a major national health care problem that results in a significant increase in morbidity, mortality, and health care related costs. Seventy percent of all adults age 18 and older have a body mass index (BMI) of 25 or greater, indicating they are overweight or obese. Thirty-six percent of college students are overweight or obese. Research has shown that lack of time has further decreased weight-related counseling by primary-care providers. Printed materials have been shown to be effective in cueing individuals to engage in healthy behaviors such as following physical activity and recommended nutritional guidelines. Currently, there are no evidence-based guidelines in place at a university student health center (SHC) for providing nutrition and physical activity recommendations.

The goal of this project was to create and test the content validity of an evidence-based printed brochure containing physical-activity and recommended nutritional guidelines. The mission of this project was to ease the barrier of lack of time for the provider in providing important and timely information to individuals at a university SHC. The development of this brochure specifically targeted the cues to action portion of the Health Belief Model to help trigger students to make a change. The brochure and survey questionnaire were developed and distributed to nutrition and physical activity experts to test the content validity. The content was deemed valid by sixteen out of seventeen experts that participated.

The goal of this DNP project was met by creating an evidence-based, content valid tool that providers can use at the university health center to address the barrier of lack of time to provide essential information to patients. By utilizing this tool, providers can start counseling students who are overweight or obese, which can then create healthy lifestyle changes.

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CHAPTER I

Introduction

Background and Significance

Obesity has been classified as a major national health care issue that results in a significant increase in morbidity, mortality, and health care related costs. The Centers for Disease Control (CDC) estimates that about 70% of all adults age 18 and older have a body mass index (BMI) of 25 or greater, indicating they are overweight or obese (CDC, 2016). Health consequences related to obesity can be detrimental to the individual. Hypertension, dyslipidemia, type 2 diabetes, coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep apnea, cancer, mental health issues such as depression, chronic pain, and increased mortality can all occur due to obesity (CDC, 2016).

In Nevada, approximately 30% of the two million adults 18 and older are classified as obese (Monnat, 2012). Furthermore, younger populations are experiencing an increase in rates of obesity, potentially leading to an increase in morbidity and mortality at a younger age. The CDC also reports that obesity rates in adults aged 18 to 29 have tripled since the 1970s to around 25% (CDC, 2016). Male and female college students, ages 18 to 24, have been identified as having even higher rates of obesity and sedentary behavior as well as decreased intake of fruits and vegetables (Winkleby & Cubbin, 2004).

The American College Health Association (2016) estimates that approximately 36% of college students are overweight or obese. The average college student will also experience a four-to-nine pound increase of weight per year, as opposed to a two pound increase per year estimated in average adults (Racette, Deusinger, Stube, Highstein, & Deusinger, 2008). Only one-third of college students surveyed met the dietary and physical activity goals recommended

by evidence-based guidelines (Racette et al., 2008). College has been recognized as a time that young adults develop behavior patterns related to nutrition and physical activity that last throughout life (Reed & Phillips, 2005). This makes preventative interventions in the college population essential to create behavior change to decrease adverse outcomes such as a chronic disease, myocardial infarction, or early death (Greenland et al., 2010). Approximately 58% of primary-care providers do not provide weight-related counseling such as physical activity and nutrition recommendations to obese patients (Kraschnewski, Sciamanna, Pollak, Stuckey, & Sherwood, 2013). This finding is consistent with what I have witnessed in my practice at a large southwest university health center.

Research shows that there are multiple barriers to providers performing weight-related counseling, such as lack of formal training, feeling unable to change patient behavior, negative views toward obese patients, and feeling the patient is uninterested in treatment (Forman-Hoffman, Little, & Wahls, 2006). Providers have also identified insufficient time as a major barrier to providing weight-related counseling due to high patient loads (Huang et al., 2004). Failure to provide weight-based recommendations to patients may result in missed opportunities for behavior change to prevent occurrence of chronic conditions. Research has shown that providing patients with printed materials on nutrition and physical activity increased the chance for the patients to have healthy behavior changes (Humpel, Marshall, Iverson, Leslie, & Owen, 2004; Marcus et al., 2007; Marcus, Owen, Forsyth, Cavill, & Fridinger, 1998; Marshall, Leslie, Bauman, Marcus, & Owen, 2003; McClinchy, Dickinson, Barron, & Thomas, 2011). Providing patients with a printed handout can be an efficient way for providers to ensure patients are receiving information on physical activity and nutrition recommendations to encourage behavior change.

Problem Statement

Currently, there are no evidence-based guidelines in place at a large southwest university student health center (SHC) for providing nutrition and physical activity recommendations. Patients are not consistently provided with weight-related counseling to encourage behavior change. It becomes crucial to provide evidence-based care and recommendations on nutrition and physical activity to these individuals to prevent complications later in life, such as coronary heart disease, stroke, diabetes, myocardial infarction, or early death (Greenland et al., 2010).

Purpose Statement

The aim of this project was to create and test the content validity of an evidence-based printed brochure containing nutrition and physical activity guidelines to be distributed at a large southwest university SHC after content validity is established. This brochure will ease the barriers such as lack of time and comfort level for the provider in providing important and timely information.

CHAPTER II

Review of the Literature

A literature review was performed to examine the prevalence and consequences of obesity and recognized barriers for health care professionals providing weight-based counseling to overweight and obese patients. A review of nutrition and physical activity guideline as well as printed materials utilized for nutrition and physical activity interventions was conducted. The following databases were used: Academic Search Premier, Google Scholar, National Guidelines Clearinghouse, and PubMed. To search for related literature, the following terms were used: *obesity, obesity in college students, obesity complications, obesity counseling, provider bias, barriers to obesity counseling, obesity guidelines, nutrition, physical activity, physical activity printed materials, and nutrition printed materials* to find material from 1997 to the present.

Obesity Prevalence and Consequences

The Framingham study (Parikh et al., 2007) has been examining cardiovascular risk since 1948 and found that the incidence of overweight or obese adults progressively increases with each decade; the prevalence of being overweight has increased two-fold and the prevalence of obesity has increased three-fold since the 1950s. This data confirms that this is a consistent trend over several decades and not just a recent occurrence (Parikh et al., 2007).

Weight gain in college can start as early as the first year. It has been reported in several studies that freshmen gained an average of two to six pounds in their first year (Hoffman, Policastro, Quick, & Lee, 2006; Holm-Denoma, Joiner, Vohs, Heatherton, 2008; Levitsky, Halbmaier, & Mrdjenovic, 2004). Holm-Denoma et al. (2008) reported that weight gain for college males increased with lack of exercise and poor relationships with parents; however, for college females, weight gain increased due to lack of exercise but weight also increased when

there was a positive relationship with parents. Levitsky et al. (2004) reported that for college freshmen eating in the all-you-can-eat dining hall, weight gain increased by 20% and eating high fat and high sugar foods increased weight gain by another 20%. This reveals that access to unlimited food, which is common in many dining halls across the United States, may be the cause of weight gain in the first year of college. Weight gain was found in college students who did not meet the recommended physical activity and nutrition guidelines (Racette et al., 2008), and college has been recognized as a time that young adults develop behavior patterns related to nutrition and physical activity that last throughout life (Reed & Phillips, 2005). This makes preventative interventions in the college population essential to create behavior change.

Obesity can cause negative consequences to the individual, such as cardiovascular disease, type 2 diabetes, cancer, and chronic pain (CDC, 2016; Greenland et al., 2010). It has been shown that obesity has a strong correlation to increased mortality risk in adults (Masters et al., 2013). Studies have shown that obesity can also be strongly associated with depression, especially with female adults (Luppino et al., 2010; Scott et al., 2008).

Barriers to Weight Counseling

It is estimated that over half of primary care providers do not counsel obese patients regarding weight (Kraschnewski et al., 2013). Lack of obesity training, feelings of inability to change patient behavior and personal bias against obese patients are a few of the barriers identified by providers who do not counsel obese patients (Forman-Hoffman et al., 2006). Another potential barrier to implementing obesity guidelines is that there may be some underlying provider bias towards counseling an overweight or obese patient. It has been found that about 40% of physicians surveyed had negative thoughts toward obese patients and only 56% of these physicians felt qualified to treat obesity (Jay et al., 2009). A major barrier

identified by providers is lack of time to provide weight-related counseling (Huang et al., 2004). Research has shown that lack of time has further decreased the prevalence of weight-related counseling by primary-care providers (Kushner, 1995; Kolasa & Rickett, 2010).

Utilizing Printed Materials

Evidence shows that printed is sufficient for patients to start a healthy behavior change (Humpel et al., 2004; Marcus et al., 2007; Marcus, Owen, Forsyth, Cavill, & Fridinger, 1998; Marshall et al., 2003; McClinchy et al., 2011). Participants in one study were encouraged to walk for exercise via a telephone call or mailed printed materials, and more participants reported increased walking for exercise from receiving printed materials compared to telephone calls (Humpel et al., 2004). In a study by Marcus et al. (2007), physical activity increased by 90 minutes per week for adults who were given either Internet or printed materials after one year post-intervention ($p=.74$). Marshall et al. (2003) also found that printed materials were slightly more effective ($p=0.04$) than web-based materials in increasing physical activity for sedentary adults ($n=655$). Similar results have been found for printed nutritional materials, which were shown to be helpful in providing information to patients to help improve knowledge and create behavior change (McClinchy et al., 2011). Research has shown that interventions such as printed materials can increase behavior change by influencing participants to eat more fruits and vegetables (Pomerleau, Lock, Knai, & McKee, 2005). Furthermore, print-delivered nutrition materials and Internet-based materials had a similar impact (Kroeze, Oenema, Campbell, & Brug, 2008). In a literature review by Noar, Benac, and Harris (2007) 57 studies were examined and it was revealed that the most successful printed materials for behavior change interventions were focused on preventative behaviors and included pamphlets with visual elements.

Guidelines for Managing Obesity

Screening adults for obesity. The U.S. Preventive Task Force (USPTF) recommends screening all adults over age 18 for obesity through measuring BMI by calculating measured height and weight, at least annually. If BMI is found to be 30 kg/m^2 or greater, then behavioral interventions such as increasing physical activity and modifying diet are recommended (Moyer, 2012).

Nutrition. The U.S. Department of Health and Human Services and U.S. Department of Agriculture (2015) established the 2015-2020 Dietary Guidelines for Americans to help increase overall health, prevent chronic disease, and maintain a healthy weight. These guidelines are based on calorie needs for all age groups but focus on increasing vegetables and fruits and limiting sweets, sugary beverages, saturated fat, and sodium. The dietary guidelines recommended for adults 18 years and older illustrate that daily calories should come, from carbohydrates (30%), protein (20%), vegetables (40%), and fruits (10%). Added sugars and saturated fat consumed should be less than 10% of daily calories, as they are shown to increase obesity, type 2 diabetes, and cardiovascular risk (U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2015; Malik, Popkin, Bray, Despres, & Hu, 2010). To reduce cardiovascular disease, stroke, and coronary heart disease, less than 2300 mg of sodium should be ingested daily (Aburto et al., 2013). The guidelines focus on healthy, life-long eating behavior changes. The 2015-2020 Dietary Guidelines for Americans recommends daily calorie needs by age and level of physical activity. These needs are displayed in Appendix A. For weight loss of one to one and a half pounds per week to occur, calories should be reduced by 500 to 750 from the recommended daily calories (U.S. Department of Agriculture and U.S. Department of Health and Human Services, 2015). For an easier interpretation of the dietary guidelines, the U.S. Department of Agriculture (2012) has created a tool called MyPlate, which

is a visual of appropriate serving sizes of grains, protein, fruits, dairy, and vegetables (U.S. Department of Agriculture, 2012).

Physical activity. The United States Department of Health and Human Services developed the Physical Activity Guidelines for Americans (2008) to help maintain a healthy weight, promote lifelong health benefits, and promote chronic disease prevention. Adults need at minimum 150 minutes per week of moderate-intensity aerobic activity, such as brisk walking from one and a half miles to three miles per day, at a rate of four miles per hour or 75 minutes a week of vigorous-intensity aerobic activity, such as running for three miles at a rate three to four miles per hour. At least two days a week of muscle-strengthening activities that work all major muscle groups is recommended to help prevent cardiovascular disease and increase aerobic work capacity (U.S. Department of Health and Human Services, 2008). Furthermore, it is explained that this can be done in 10-minute increments, as any activity is better than no activity (U.S. Department of Health and Human Services, 2008). Research has confirmed that following recommendations of diet and physical activity have resulted in significant weight loss and increased cardiovascular wellness (Goodpaster et al., 2010). Out of 43 studies involving 3,476 participants, exercise alone resulted in small weight loss, but exercise combined with dietary changes resulted in a much higher weight loss (Shaw, Gennat, O'Rourke, & Del Mar, 2006). Additionally, for higher intensity exercise such as running, weight loss was greater (Shaw et al., 2006).

Current Nutritional and Physical Activity Practices of College Students

College students have been found to not follow nutrition or physical activity guidelines consistently (Brunt, Rhee, & Zhong, 2008; McLean-Meyinsse, Harris, Taylor, & Gager, 2013; Plotnikoff et al., 2015; Irwin, 2004; Keating, Guan, Piñero, & Bridges, 2005). It has been found

that college students' daily nutrition is limited in fruits and vegetables and high in saturated fats, salt, and sugar (Brunt et al., 2008). This may be due to college students transitioning to independent living and being left to make their own decisions regarding food for the first time. This may lead to developing unhealthy habits such as skipping meals due to unwanted weight gain, which can lead to bingeing on snacks and unhealthy foods (Brunt et al., 2008). Approximately 50–90% of college students reported they do not eat the recommended servings of fruits and vegetables daily (McLean-Meynsse et al., 2013; Plotnikoff et al., 2015). McLean-Meynsse et al. (2013) found that the college students who did not eat the recommended servings of fruit and vegetables rated themselves as in good health, which suggests that they did not see any need to change their diet. Plotnikoff et al. (2015) examined 41 studies in a meta-analysis of nutrition and physical activity in college students and found that many college students do not have accountability to follow nutrition or physical activity guidelines, which often resulted in not eating the recommended servings of fruits or vegetables as well as weight gain.

Approximately half of college students in the United States meet physical activity guidelines (Irwin, 2004; Keating et al., 2005). Irwin (2004) examined 19 studies regarding physical activity in college students and found that students who live on campus are more likely to be inactive than those off campus and that women are more likely to be inactive than men, although it is not discussed why this is the case. Keating et al. (2005) examined various studies in a meta-analysis of college students and physical activity. Personal factors such as gender, age, and ethnicity; social factors such as family support; cognitive factors such as self-motivation; and environmental factors such as climate or campus safety were all shown to determine how likely a student was to participate in physical activity (Keating et al., 2005).

Literature Review Summary

Review of the literature reveals that obesity affects the college population and that unhealthy habits created in college can prevail throughout life, causing long-term consequences such as cardiovascular disease or early death. The U.S. Department of Agriculture and U.S. Department of Health and Human Services developed physical activity and nutrition guidelines that provided a framework for the brochure developed in this study. Health care providers have the opportunity to help create behavior change in overweight or obese college students, but lack of time is a major barrier. An evidence-based brochure with physical activity and nutrition guidelines for college students can help ease this barrier and initiate behavior change for a healthier lifestyle.

Needs Assessment

Currently, the student health center (SHC) in this study does not have evidence-based guidelines on nutrition and physical activity readily available to give to students. In my current practice, I noticed a lack of information offered to students regarding this information. Based on the literature, it is clear that college-age students are in need of information that could help create healthy behaviors, and a printed brochure can help initiate behavior change. A brochure to hand to the patient on nutrition and physical activity guidelines will help ensure this information is provided or at least trigger the provider to discuss behavior modifications for weight loss with the patient.

Population Identification

The population of interest was college students. Another population of interest was the physicians and nurse practitioners who would utilize the handout to provide recommendations to patients with body mass index greater than 25 and the college population.

Key Stakeholders

Key stakeholders for this project were health care providers who manage obesity in adults 18 and older at the student health center. Other key stakeholders were students who may benefit from the handout regarding nutrition and physical activity guidelines as well as counseling from their provider. Therefore, the university student body was a key stakeholder, as this project was aimed to help promote lifelong wellness. The president of the university and board of regents were also stakeholders, as the goal of the university is to promote wellness among the student body and encourage life-long success amongst graduates who will continue to thrive in the workforce.

Description and Scope of the Project

The DNP project concentrated on the development of an evidence-based brochure for eventual use in a university student health center for overweight or obese students age 18 years or older. The theoretical framework used was the health behavior model.

The scope of the DNP project focused on the creation of an evidence-based brochure with dietary and physical activity guidelines to be tested for content validity to help promote change in behavior for overweight or obese college students. The content was reviewed by 17 experts in the field of primary care, exercise physiology, nutrition, and physical activity who had a special interest in overweight or obese college students.

Mission

The mission for this DNP project was to help educate college students and providers on evidence-based physical activity and dietary guidelines to help recognize lifestyle modifications that would influence behavior change. The evidence-based brochure that was developed will eventually assist with providing students with information to help in developing healthy habits in overweight or obese college students that will last throughout life.

Goals and Objectives

The goal of this DNP project was to create an evidence-based brochure with dietary and physical activity guidelines that was tested for content validity to help provide evidence-based information for patients with a body mass index greater than 25. The guidelines will provide an opportunity for the student to reflect on lifestyle modifications for behavior change and create an efficient way for the provider to counsel patients who are overweight or obese. The primary objective of the project was to design the brochure to be tested for content validity.

CHAPTER III

Theoretical Framework

The goal of this DNP project was to provide an evidence-based brochure to promote healthy dietary and physical activity to overweight or obese students. However, the development of the brochure needed to be focused on triggering a behavior change in the student. For this reason, the DNP project development occurred using the health belief model (HBM) (Glanz, Rimer, & Viswanath, 2008).

Health Belief Model

The health belief model (HBM) was originally developed in the 1950s with the assistance of social psychologists and public health officials to help provide reasons as to why people did not utilize health-related resources to prevent and detect diseases (Glanz et al., 2008). The HBM examines individual beliefs about health problems, individual perceived benefits and barriers to improved health, and triggers for the individual to perform the health promotion behavior.

The model examines the following categories for the individual: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy. Perceived susceptibility is the individual's own belief about how likely it is they will get the condition or disease (e.g., how likely a person contemplating a screening colonoscopy is to think they will get colon cancer). Perceived severity is the belief about how seriously the individual thinks about developing the condition or disease. This could involve how a condition, such as diabetes, would impact the individual's work life, family life, and overall wellbeing. Perceived benefits refers to how effective the individual feels the intervention will be in reducing risk of developing the condition or disease, while the perceived barriers are potential risks and costs to the individual, whether mentally, physically, or even financially. Cues to action are the triggers

that are needed to promote change in the individual. Self-efficacy is the individual's view on how likely they are to take the action for health promotion (Glanz et al., 2008).

Health Belief Model for DNP Project

The evidence-based dietary and physical activity brochure was developed utilizing the health belief model (HBM). The recommendations in the brochure were developed by utilizing evidence-based guidelines that were evaluated for content validity but also considered how to inspire behavior change in the patient. The development of this brochure specifically targeted the cues to action portion of the model to help trigger students to make a change. Research has shown that printed handouts can be effective in creating behavior change, with increased physical activity and improved nutrition (Humpel et al., 2004; Marcus et al., 2007; Marcus et al., 1998; Marshall et al., 2003; McClinchy et al., 2011). Although behavioral outcome was not measured in this project, the ultimate goal was to develop an evidence-based brochure to help inspire healthy behavior change.

CHAPTER IV

Project Plan

Plan

The plan for the DNP project was to implement and test the content validity of a brochure utilizing evidence-based guidelines to encourage healthy physical activity and nutrition in overweight or obese college students. The content validity of the handout was reviewed by 17 experts, including health care providers, exercise physiologists, registered dietitians or nutrition experts, and the director of the university recreation center for validity. The validity was assessed through survey results from a developed questionnaire. These survey results were used to determine the brochure's content validity index (CVI).

Setting

The questionnaire regarding the content of the brochure was completed by the expert panel via the Qualtrics on-line survey system. Expert evaluators were sent the brochure via email. After reviewing the information in the brochure, the evaluator was asked to log into Qualtrics to complete survey questionnaire on the content. After completion of the questionnaire by 17 experts, the CVI was analyzed.

Population of Interest

The population of interest was experts in obesity, nutrition, and physical activity, such as health care providers, exercise physiologists, registered dietitians or nutrition experts who encountered college students with a body mass index of 25 or greater. Once the brochure was completed and implemented, feedback was requested regarding the validity.

Measures and Activities

The validity was assessed through questionnaire results from Qualtrics developed utilizing the CVI. Each of the 17 experts that agreed to participate received a letter regarding the evidence-based brochure and a request for completion of the questionnaire for content validity after review. The questionnaire was developed after the brochure was completed to match the specific content being tested.

Timeline and Project Tasks

Development of the brochure occurred from September 2017 until October 2017. Development of the questionnaire for content validity was from September 2017 until October 2017. IRB submission and approval occurred October 2017. Finding and identifying the experts occurred from June 2017 until January 2018. Distribution of the brochure for content validity occurred in November 2017 until January 2018. The Qualtrics survey was opened from November 2017 until January 2018 for experts' evaluation for content validity. Analysis of data occurred February 2018.

Resources and Supports

Resources utilized for the development of the brochure were the evidence-based guidelines established by the United States Department of Health and Human Services (2008; 2015) and the United States Department of Agriculture (2015). Support was from the local university campus recreation services and other faculty, such as in the Department of Health and Human Sciences and Nutrition, and staff that encounter overweight or obese students on campus.

Risks and Threats

To analyze risk for this project, an analysis of strengths, weaknesses, opportunities and threats of implementing a new initiative took place (Reavy, 2016). The strength of this project was that there were already evidence-based established guidelines for physical activity and

nutrition through the U.S. Department of Health and Human Services and U.S. Department of Agriculture. Weaknesses included finding experts to analyze the content of the brochure. The opportunity for the project was to create an evidence-based brochure for college students on physical activity and dietary guidelines that will have content validity. A risk was not developing an evidence-based brochure. Threats were not obtaining experts to review the content and not obtaining content validity of the brochure.

Institutional Review Board Approval

The initial DNP proposal was accepted by the committee on April 26, 2017. The brochure, informed consent and the questionnaire to establish content validity were submitted to the University of Nevada, Las Vegas, Biomedical Institute Review Board (UNLV IRB) for review during the fall 2017 semester. On November 8, 2017, the UNLV IRB determined this project exempt (See Appendix C IRB Approval).

Evaluation Plan

Plan

A questionnaire was developed to survey the content of the dietary and physical activity guidelines brochure. The CVI was used to determine content validity based on the responses. Qualtrics was utilized for the questionnaire, as it could be completed easily on-line. The main question to be answered was whether the content was accurate for current practices regarding healthy dietary and physical exercise in a college student. A Likert scale was used to calculate the percentage of responses from the experts. According to the CVI, four points are commonly used: not relevant, somewhat relevant, quite relevant, and highly relevant (Polit & Beck, 2008). For this project, the four points were disagree, somewhat disagree, somewhat agree and agree.

Responses calculated to be between .80 and 1.00 were considered to have excellent content validity (Polit & Beck, 2008), which will be the goal.

CHAPTER V

Summary of Implementation and Results

Precis of the phenomenon of interest and the problem and purpose of the project

The purpose of this DNP project was to develop an evidence-based printed brochure containing dietary and physical activity guidelines and to measure the content validity amongst nutrition and physical activity experts. The final brochure will be used at a large southwestern university health center and will ease the barriers such as lack of time and comfort level for the provider in providing care to the overweight or obese college student.

The brochure was made using the evidence-based guidelines established by the U.S. Department of Health and Human Services and U.S. Department of Agriculture Dietary Guidelines and Physical Activity Guidelines. The online design site Canva (www.canva.com) was utilized to create the brochure.

After IRB approval was obtained, the materials and online survey were distributed via e-mailed links through the American College Health Association mailing list software for college health professionals, the American Dietetic Association, and UNLV departments of nutrition and kinesiology through the online survey tool Qualtrics from November 14, 2017 until January 31, 2018 a total of three times. The initial deadline was December 1, 2017 to encourage participants to complete the survey in a timely manner, however, only 11 responded by that deadline. The materials and online survey were sent out again December 11, 2017 resulting in three more participants. The third and final distribution of the survey was January 22, 2018 which resulted in four more participants for a total of 18.

Threats and barriers to the project

Two threats to the DNP project were predicted prior to implementation. The first was not gathering an appropriate number of experts for the sample size. This was addressed by continuing to recruit past the initial deadline that was set in the timeline. The other threat identified was not obtaining content validity of the brochure. The content validity of the brochure was obtained. One barrier that was not identified until implementation was utilizing free text boxes for suggestions in Qualtrics for each portion of the brochure. Qualtrics did not provide a way to require an answer and provide space for free text suggestions for each question. This only affected one participant who did not answer the questions for the survey but only provided the free text suggestions. This participant was not used in the overall CVI calculation.

Monitoring of the project

The brochure and survey were created using the U.S. Department of Health and Human Services and U.S. Department of Agriculture Dietary Guidelines and Physical Activity Guidelines and submitted to the IRB. Once IRB approval was obtained, the materials were distributed. The results were monitored through logging into Qualtrics, the online survey tool, daily and receiving e-mail notifications from Qualtrics when there was a completion of the survey.

Data collection

After IRB approval, nutrition and physical activity experts were recruited through the American College Health Association mailing list software for college health professionals, the American Dietetic Association, and UNLV departments of nutrition and kinesiology. Informed consent (See Appendix D) and eight survey questions were (See Appendix F) uploaded to Qualtrics, the online survey tool, for data collection. The brochure was attached to the e-mail requesting participation. The first question requested consent and the second question asked the

participant to identify themselves as an expert in nutrition, physical activity or both. Questions 3-8 asked participants to rate each item on a 1-4 Likert scale to be used to help determine content validity. Polit and Beck (2008) explain that a four-point scale should be used to avoid any neutral responses, which was done in this project. Each of these questions also contained a free text box for suggestions. A total of three e-mails were distributed over a timeline of three months requesting participants. The initial goal was ten expert participants, however, after the third attempt a total of 18 responded.

Data analysis

Ten participants identified themselves as nutrition experts, one identified as a physical activity expert, and seven identified themselves as both nutrition and physical activity experts. One nutrition expert was not calculated in the final analysis due to not actually answering any of the survey questions and simply providing suggestions. Out of seventeen experts, only one expert who was identified as a nutrition expert, disagreed with every single question. Sixteen experts either agreed or somewhat agreed with the six questions regarding content validity of the brochure.

CVI analysis

Polit and Beck (2008) established the standards used for this DNP project to test for content validity. The minimum recommendation of experts to establish validity is three, however, it is mentioned that closer to ten is more appropriate (Polit & Beck, 2008). This project obtained 17 experts. A four-point scale should be used to avoid any neutral responses which was done in this DNP project (Polit & Beck, 2008). According to Polit and Beck (2008) a satisfactory score for relevance is greater than .80 CVI and anything less than .78 should be re-examined. As mentioned above, one expert was not incorporated in the overall CVI score due to not answering

the survey questions and one expert who was identified as a nutrition expert, disagreed with the six questions. The remainder of the 17 experts somewhat agreed or agreed with all six questions. The CVI score calculated was 0.94 or 94% of the experts agreed the content was valid (See Appendix G CVI Calculation).

Project Results

The content of the evidence-based brochure was determined to be valid with a CVI of 0.94 to 1.0 or 94% to 100%. The nutrition and physical activity experts were also able to leave suggestions regarding modifications to the brochure (See Appendix F).

Project Impact

With successful creation of a content valid evidence-based brochure, the project can be further advanced to assist providers in the student health center in providing guidance toward healthy lifestyle modifications regarding dietary and physical activity. This project specifically eases the barrier of time when addressing the issue of obesity. The DNP project utilized the health belief model (HBM) cues to action portion to trigger a behavior change in a student (Glanz et al., 2008). With the simple step of handing the patient a content-valid brochure, the cue to action for change can occur and possibly lead to further changes regarding diet and physical activity. At minimum, it can lead to a conversation between student and healthcare provider regarding appropriate healthy diet and physical activity changes. The distribution of the brochure will be the start of initiatives to assist providers, address the time constraints and provide an efficient way to provide lifestyle counseling regarding diet and physical activity.

Project Results and Evidence in the Literature

The goal of this DNP project was met by creating an evidence-based brochure tested for content validity to promote healthy nutrition and physical activity for overweight or obese

students. Prior evidence shows that printed education is enough for patients to start a healthy behavior change (Humpel et al., 2004; Marcus et al., 2007; Marcus, Owen, Forsyth, Cavill, & Fridinger, 1998; Marshall et al., 2003; McClinchy et al., 2011). It has been proven that in terms of physical activity, printed materials helped increase walking for exercise (Humpel et al., 2004). Printed materials also have increased physical activity by 90 minutes per week for adults (Marcus et al., 2007). In terms of nutrition, printed materials helped participants to eat more fruits and vegetables (Pomerleau, Lock, Knai, & McKee, 2005). Studies show that the most successful printed materials are those that focus on preventative behaviors such as diet and exercise (Noar, Benac, & Harris, 2007). The DNP project utilized the health belief model (HBM) to simply trigger a behavior change in a student. Although behavior modification was not tested as part of the DNP project, this will eventually be done when the brochure is utilized in the student health center. Printed materials using the HBM as a framework have resulted in healthy behavior changes (Campbell et al., 1994; Lutz et al., 1999).

Project Relevance to Nursing Practice

The DNP project will be utilized in a clinical setting to assist providers with conversations regarding dietary and physical activity guidelines with college students. This was identified as a need in the student health center and through literature review, as providers do not have time or resources to discuss this vital information to help with lifestyle changes. By using this simple tool, providers will be able to start discussions with students who are overweight or obese, which can then create lifestyle changes.

Potential for sustainability

The evidence-based brochure can be used in multiple settings; however, it is meant to be used with the college population. It was already recognized on the student health center needs

assessment that providers do not have tools to provide to students that are evidence based and content validity tested. This has been addressed through the DNP project and will be utilized in the student health center. The content validity was established; however, there were multiple suggestions from participants regarding visual changes to be made such as font size, pictures and removing some information to make the brochure aesthetically pleasing. To make this project sustainable for the student health center, these changes will be made without changing the content of the brochure. The student health center has a marketing department which will be used to make the brochure more attractive and the use of the UNLV logo will make it more personalized to the campus. Once the brochure has gone through these minor visual changes, it will then be available for use by the providers in the student health center. An in-service will be done to educate the providers on the brochure and also ways to present diet and physical activity recommendations to students.

Utilization and plan for dissemination of the results

This DNP project focused on providing a tool for providers in the student health center to help initiate conversations with overweight or obese students and encourage healthy behavior changes related to diet and physical activity. Once the brochure has gone through the minor visual changes without changes to the content, the findings of this project will be discussed with the student health center and the brochure will be used by the providers.

The plan will be to target college health-related resources to publish the brochure. The goal will be that other college health providers may find this tool useful and will be able to use it in their own practice to help encourage healthy lifestyle changes.

Appendix A: 2015–2020 Dietary Guidelines for Americans

Males				Females ^[d]			
Age	Sedentary ^[a]	Moderately Active ^[b]	Active ^[c]	Age	Sedentary ^[a]	Moderately Active ^[b]	Active ^[c]
9	1,600	1,800	2,000	9	1,400	1,600	1,800
10	1,600	1,800	2,200	10	1,400	1,800	2,000
11	1,800	2,000	2,200	11	1,600	1,800	2,000
12	1,800	2,200	2,400	12	1,600	2,000	2,200
13	2,000	2,200	2,600	13	1,600	2,000	2,200
14	2,000	2,400	2,800	14	1,800	2,000	2,400
15	2,200	2,600	3,000	15	1,800	2,000	2,400
16	2,400	2,800	3,200	16	1,800	2,000	2,400
17	2,400	2,800	3,200	17	1,800	2,000	2,400
18	2,400	2,800	3,200	18	1,800	2,000	2,400
19-20	2,600	2,800	3,000	19-20	2,000	2,200	2,400
21-25	2,400	2,800	3,000	21-25	2,000	2,200	2,400
26-30	2,400	2,600	3,000	26-30	1,800	2,000	2,400
31-35	2,400	2,600	3,000	31-35	1,800	2,000	2,200
36-40	2,400	2,600	2,800	36-40	1,800	2,000	2,200
41-45	2,200	2,600	2,800	41-45	1,800	2,000	2,200
46-50	2,200	2,400	2,800	46-50	1,800	2,000	2,200
51-55	2,200	2,400	2,800	51-55	1,600	1,800	2,200
56-60	2,200	2,400	2,600	56-60	1,600	1,800	2,200
61-65	2,000	2,400	2,600	61-65	1,600	1,800	2,000
66-70	2,000	2,200	2,600	66-70	1,600	1,800	2,000
71-75	2,000	2,200	2,600	71-75	1,600	1,800	2,000
76 & Up	2,000	2,200	2,400	76 & Up	1,600	1,800	2,000

Figure B1. Dietary guidelines for Americans. Projected caloric needs per day, by age and physical activity level (U.S. Department of Agriculture and U.S. Department of Health and Human Services, 2015).

Appendix B: Project Timeline

Table A1

Project Timeline

Timeline	Activity
August 2016-April 2017	Literature review and project creation
April 2017	Proposal defense
September 2017-October 2017	Brochure creation
September 2017-October 2017	Creation of survey for content validity
September 2017-October 2017	Development of letter for expert recruitment
October 2017	UNLV IRB submission and approval
June 2017-January 2018	Identification of experts and distribution of letter for request of participation.
November 2017-January 2018	Distribution of brochure and link to Qualtrics survey for content validity
January 2018	Analysis of survey data
February 2018-March 2018	Complete written report
March 2018	Present completed DNP project

Appendix C: Institutional Review Board Approval



UNLV Biomedical IRB - Administrative Review Exempt Notice

DATE: November 8, 2017

TO: Patricia Gatlin, PhD
FROM: Office of Research Integrity - Human Subjects

PROTOCOL TITLE: [1145686-1] Nutrition and Physical Activity Guideline Brochure

ACTION: DETERMINATION OF EXEMPT STATUS
EXEMPT DATE: November 8, 2017
REVIEW CATEGORY: Exemption category # 2

Thank you for your submission of New Project materials for this protocol. This memorandum is notification that the protocol referenced above has been reviewed as indicated in Federal regulatory statutes 45CFR46.101(b) and deemed exempt.

We will retain a copy of this correspondence with our records.

PLEASE NOTE:

Upon final determination of exempt status, the research team is responsible for conducting the research as stated in the exempt application reviewed by the ORI - HS and/or the IRB which shall include using the most recently submitted Informed Consent/Assent Forms (Information Sheet) and recruitment materials.

If your project involves paying research participants, it is recommended to contact Carisa Shaffer, ORI Program Coordinator at (702) 895-2794 to ensure compliance with the Policy for Incentives for Human Research Subjects.

Any changes to the application may cause this protocol to require a different level of IRB review. Should any changes need to be made, please submit a **Modification Form**. When the above-referenced protocol has been completed, please submit a **Continuing Review/Progress Completion report** to notify ORI - HS of its closure.

If you have questions, please contact the Office of Research Integrity - Human Subjects at IRB@unlv.edu or call 702-895-2794. Please include your protocol title and IRBNet ID in all correspondence.

Office of Research Integrity - Human Subjects
4505 Maryland Parkway . Box 451047 . Las Vegas, Nevada 89154-1047

Appendix D: Informed Consent

UNLV

EXEMPT RESEARCH STUDY
INFORMATION SHEET
Department of Nursing

TITLE OF STUDY: Implementing Dietary and Physical Activity Guidelines in a College Health Center

INVESTIGATOR(S) AND CONTACT PHONE NUMBER: Dr. Patricia Gatlin, PhD 702-895-5935 and Terry Bartmus, MSN DNP student 702-895-3370

The purpose of this study is to develop and test the content validity of an evidence-based printed brochure that contains nutrition and physical-activity guidelines to be given at the UNLV Student Health Center after content validity is established. This brochure will ease the barriers such as lack of time and comfort level for the provider in providing important and timely information.

You are being asked to participate in the study because you meet the following criteria: An expert in nutrition and /or physical activity guidelines

If you volunteer to participate in this study, you will be asked to do the following: Review the content of a tri-fold brochure with nutrition and physical activity guidelines. Complete an anonymous 7 question online survey regarding the validity of the content.

This study includes only minimal risks. Your information will be kept confidential and only the investigator will be reviewing surveys. Any electronic data will be stored on a computer that is password protected with a password that is only known by the investigator. All paper and electronic data will be destroyed within one year after the project is completed. The results of this project may be published and or discussed in an educational setting; no participant names will be identified in any of the written materials used in this project. The study will take 30 *minutes* of your time. You *will not* be compensated for your time.

For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact **the UNLV Office of Research Integrity – Human Subjects at 702-895-2794, toll free at 877-895-2794, or via email at IRB@unlv.edu.**

Your participation in this study is voluntary. You may withdraw at any time. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Participant Consent:

I have read the above information and agree to participate in this study. I am at least 18 years of age. A copy of this form has been given to me.

Appendix E: Physical Activity and Dietary Guidelines Brochure

Estimated Calorie Needs per Day			
MALES			
Age	Sedentary	Moderately Active	Active
18	2,600	2,900	3,200
19-20	2,600	2,800	3,000
21-25	2,600	2,800	3,000
26-30	2,600	2,600	3,000
31-35	2,400	2,600	3,000
36-40	2,400	2,600	2,800
41-45	2,200	2,600	2,800
46-50	2,200	2,400	2,800

FEMALES			
Age	Sedentary	Moderately Active	Active
18	1,800	2,000	2,400
19-20	2,000	2,300	2,400
21-25	2,000	2,300	2,400
26-30	1,800	2,000	2,400
31-35	1,800	2,000	2,200
36-40	1,800	2,000	2,200
41-45	1,600	2,000	2,200
46-50	1,600	2,000	2,000

Cup and Ounce Equivalents

- 1 Cup Raw Spinach= 1/2 Cup Vegetables
- 1/2 Cup Strawberries= 1/2 Cup Fruit
- 1 Slice of Bread= 1 Oz of Grains
- 1/2 Cup Rice= 1 Oz of Grains
- 6 Oz of Yogurt= 3/4 Cup of Dairy
- 1 Egg= 1 Oz of Protein
- 1/2 Cup of Black Beans= 2 Oz of Protein

Physical Activity and Dietary Guidelines for the College Student

Sedentary- Physical Activity for Daily Living Only

Moderately Active- Walking At Least 1.5 to 3 Miles/Day at 3-4 Miles/Hour

Active- Walking More Than 3 Miles/Day at 3-4 Miles/Hour

Health Benefits Associated with Regular Physical Activity and Eating Healthy

- Lower Risk of Early Death
- Lower Risk of Heart Disease
- Lower Risk of Stroke
- Lower Risk of High Blood Pressure
- Lower Risk of High Cholesterol
- Lower Risk of Type 2 Diabetes
- Lower Risk of Colon Cancer
- Lower Risk of Breast Cancer
- Reduced Depression



Physical Activity for Health Benefits

150 minutes each week of moderate-intensity aerobic physical activity
or
75 minutes each week of vigorous-intensity aerobic physical activity



Examples of Moderate Intensity Activities

- Walking 3 Miles/Hour or Faster
- Water Aerobics
- Bicycling 10 miles/Hour or More
- Tennis (doubles)
- Ballroom Dancing

Examples of Vigorous Intensity Activities

- Running 3 miles/Hour or Faster
- Tennis (singles)
- Aerobic Dancing
- Bicycling 10 miles/Hour or Faster
- Jumping Rope
- Hiking Uphill or with a Heavy Backpack

Full Information on the physical activity and dietary guidelines established by the U.S. Department of Health and Human Services and U.S. Department of Agriculture can be obtained at:

Dietary Guidelines for Americans:
<https://health.gov/dietaryguidelines/2015/>

Physical Activity Guidelines for Americans:
<https://health.gov/paguidelines/guidelines/>



Please contact the UNLV Student Health Center at 702-895-3370 to schedule an appointment with a health care provider to discuss healthy lifestyle changes.

Appendix F: Summary of Survey Results

Ratings:

- 1= Disagree (Not included in the CVI calculation as it was not deemed relevant)
- 2= Somewhat Disagree (Not included in the CVI calculation as it was not deemed relevant).
- 3= Somewhat Agree (Included in the CVI calculation as it was deemed relevant).
- 4= Agree (Included in the CVI calculation as it was deemed relevant).

Question 1	I consent	I do not consent
I have read the above information and agree to participate in this study	17	0

Question 2	Nutrition	Physical Activity	Both Nutrition and Physical Activity
I am an expert in	9	1	7

Question 3	Disagree	Somewhat disagree	Somewhat agree	Agree
The section on daily nutritional guidelines represent the Dietary Guidelines for Americans	1		2	14

Suggestions:

Helps readers understand what a cup of fruits or vegetables is and what an oz of protein or grains is.

Question 4	Disagree	Somewhat disagree	Somewhat agree	Agree
The section on estimated calorie needs per day represents the Dietary Guidelines for Americans	1		2	14

Suggestions:

1. The chart is too busy, just give some estimates for the college student or not at all.
2. If you are focusing on the college population why include the older ages. The size is too small to be legible
3. With a collegiate audience, perhaps make a note that for collegiate athletes, kcal needs would be much higher.
4. If this is a guide for college students I don't think you need the entire chart, it provides more info than needed and isn't visually that attractive. I'd just put a single line for each gender with the ranges for each activity level, i.e. Males Sedentary 2,200-2,600. I'd also include an explanatory statement saying that calorie needs vary by size (height/weight) and goals (such as wt loss or wt gain), it could also say age.
5. I don't think I'd have cal's in there or if you do, put a disclaimer about how this is individual and varies person to person based on a number of factors. I would also source it in line with #s.

Question 5	Disagree	Somewhat disagree	Somewhat agree	Agree
The section on cup/ounce equivalents represent the Dietary Guidelines for Americans	1		1	15

Suggestions:

1. Some parts of this seem confusing - if you say students need 2.5 cups of vegetables then you say 1 cup=1/2 cup? If you decide to keep those equivalents I would use more general terms such as 1 cup raw leafy green vegetables (such as spinach) = 1/2 cup

Question 6	Disagree	Somewhat disagree	Somewhat agree	Agree
The section on health benefits with regular physical activity and eating healthy represent the Dietary and Physical Activity	1			16

Guidelines for Americans				
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Suggestions:

1. Great to have the different recommendations of what the 3 activity levels are!
2. You could really shorten this section - most college students just don't care that much about these long term risks - they can't relate or think "this won't happen to me". The reduced depression or improved mental health is good and wt control is also good to mention but the other things could be lumped together and much shorter.
3. Where it says walking at 3-4 miles per hour...an easier way for people to grasp is by using the term 'brisk' or 'moderate'...i just think people won't know how fast 3 miles per hour is

Question 7	Disagree	Somewhat disagree	Somewhat agree	Agree
The section on physical activity for health benefits represent the Physical Activity Guidelines for Americans	1		2	14

Suggestions:

1. Needs to have a third option (OR a combination of moderate AND vigorous). Also, these are college students, so would sum up the current bullets into one bullet, and add some fun benefits in there like improved mental and emotional health, improved memory retention, etc.

Question 8	Disagree	Somewhat disagree	Somewhat agree	Agree
The section on examples of moderate and vigorous activities represent the Physical Activity Guidelines for	1		2	14

Americans				
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Suggestions:

1. Nice variety here - are those activities most college students relate with? Also, visually, I would unbold the resources on the right side for the text underneath the title of each (i.e. bold PA Guidelines for Americans: unbold the link).
2. This is great! Students don't get this concept!

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Expert 7	Expert 8	Expert 9	Expert 10	Expert 11	Expert 12	Expert 13	Expert 14	Expert 15	Expert 16	Expert 17	Number in agreement	Item CVI
3	X	X	X	_	X	X	X	X	X	X	X	X	X	X	X	X	X	16	0.94
4	X	X	X	_	X	X	X	X	X	X	X	X	X	X	X	X	X	16	0.94
5	X	X	X	_	X	X	X	X	X	X	X	X	X	X	X	X	X	16	0.94
6	X	X	X	_	X	X	X	X	X	X	X	X	X	X	X	X	X	16	0.94
7	X	X	X	_	X	X	X	X	X	X	X	X	X	X	X	X	X	16	0.94
8	X	X	X	_	X	X	X	X	X	X	X	X	X	X	X	X	X	16	0.94
																			Mean I-CVI 0.94
Proportion relevant	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1		Mean Expert Proportion 0.94

CVI calculation

Questions 1-2 were not used in CVI calculation due to establishing content and expert field.

Questions 3-8 were included in the CVI calculation.

Ratings:

1= Disagree (Not included in the CVI calculation as it was not deemed relevant)

2= Somewhat Disagree (Not included in the CVI calculation as it was not deemed relevant).

3= Somewhat Agree (Included in the CVI calculation as it was deemed relevant).

4= Agree (Included in the CVI calculation as it was deemed relevant).

Formula for Calculation of CVI

$$\frac{\text{Number of Items rated 3 or 4}}{\text{Total Number of Items}} = \frac{16}{17} = 0.94 \text{ CVI} \times 100\% = 94\% \text{ agreement}$$

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CURRICULUM VITAE

Terry Lynn Bartmus, MS, APRN, FNP-BC

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Education

University of Nevada Las Vegas (Anticipated 2018) Doctor of Nursing Practice
University of Nevada Las Vegas (2013) Masters of Science in Nursing, Family Nurse Practitioner
Nevada State College (2009) Bachelors of Science in Nursing
University of Nevada Reno (2005) Bachelors of Science in Biology

Honors & Awards

2013. Sigma Theta Tau International Honor Society of Nursing
2010. Perfect Attendance Award, Desert Springs Hospital
2010. Service Excellence Award, Spring Mountain Treatment Center
2009. Magna Cum Laude, Nevada State College

Licensure/certifications

Family Nurse Practitioner License: Nevada, Massachusetts
Advanced Cardiac Life Support
Basic Life Support
Pediatric Advanced Life Support

Professional experience

Nurse Practitioner/Associate Director (March 2014-present)

UNLV Student Wellness Center, 4505 S. Maryland Parkway Las Vegas, NV 702-895-3370

- Provide medical care and treatment to the university population
- Perform history taking and physical assessments in the clinic
- Order, interpret and evaluate diagnostic tests to identify and assess client condition
- Document physical exam findings and treatment in Medcat EMR
- Prescribe medications or other forms of treatment such as respiratory therapies or fluid resuscitation
- Provide appropriate referrals based on physical exam or test findings
- Work collaboratively with providers to ensure continuity of client care
- Provide education to students regarding diagnoses, preventative care, and overall wellness

Family Nurse Practitioner: Emergency Department (March 2014-Present)

Fremont Emergency Services, 2380 W. Horizon Ridge Pkwy., Suite 110 Henderson, NV 702-823-4255

- Provide emergency medical care and treatment to the acute and chronically ill or injured in the community
- Perform history taking and physical assessments in a fast paced setting with high acuity/high census
- Order, interpret and evaluate diagnostic tests to identify and assess patient condition.
- Document physical exam findings and treatment in Cerner or Medhost EMR
- Formulate a plan and discuss patient care with physician and other health care professionals.
- Prescribe medications or other forms of treatment such as respiratory therapies or fluid resuscitation

- Perform procedures such as suturing of lacerations, reduction of fractures/dislocations of bones, incising and draining appropriate wounds, performing local anesthesia

Registered Nurse: Emergency Department (August 2013-March 2014)

Aya Healthcare, 5930 Cornerstone Court West, Ste 300 San Diego, CA 866-767-9411

- Agency contract at Cambridge Health Alliance Whidden/Somerville/Cambridge Campus in Boston, MA
- Ensured the quality of emergency medical nursing care to patients as a travel agency nurse

Registered Nurse: Emergency Department (April 2013-March 2014)

Advantage On-Call Staffing 1050 E Flamingo Rd Suite R-281 702-733-1599

- Traveled to multiple emergency rooms as an agency nurse to fill needs in the community

Registered Nurse: Adult Emergency Department (February 2011-April 2013)

Sunrise Hospital, 3186 Maryland Pkwy Las Vegas, NV 702-731-8080

- Provided emergency nursing care at a Level II Trauma Center
- Ensured the quality of emergency medical nursing care to patients
- Provided orientation and training to new staff and nursing students

Lead Intake Coordinator RN (July 2010-Mar 2012)

Spring Mountain Treatment Center, 7000 W Spring Mountain Rd Las Vegas, NV 702-873-2400

- Performed psychiatric assessments on clients and determined need for acute inpatient care.
- Developed appropriate treatment plans and communicated with psychiatrist and hospital unit.
- Supervised and provided direction to the mobile unit staff during evening shift

Registered Nurse: Cardiac Care Unit/IMC (December 2009-July 2010)

Desert Springs Hospital, 2075 E. Flamingo Rd. Las Vegas, NV 702-733-8800

- Provided care to clients pre and post cardiac procedures as well as general intermediate care patients

Quality Assurance Associate (August 2006-December 2009)

United Blood Services, 6930 W. Charleston Blvd. Las Vegas, NV 702-228-4483

- Ensured quality of blood products provided to the community
- Generated deviation reports and statistical analysis
- Assisted with hiring and training new employees in the department
- Performed audits to guarantee all processes performed per Standard Operating Procedures
- Ensured compliance with certifying agencies such as the FDA and AABB
- Certified as a quality assurance associate with six sigma quality training
- Responsible for creation and presentation of monthly quality assurance data involving directors from each department