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## Nutritional Awareness of Undergraduate Healthcare Students

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### ABSTRACT

Overweight and obesity rates are an epidemic in the United States (U.S.) with these rates increasing dramatically in recent decades (Sogari et al., 2018). According to McEligot et al. (2020) college students classified as overweight and/or obese in the U.S. increased from 29% to 32.5% from 2000 to 2009. College is a critical time for young adults in terms of dietary choices and the relationship between students and weight gain. The purpose of this DNP project was to assess if undergraduate healthcare students in the Midwest showed poor nutritional dietary habits and showed a willingness to change their poor habits for a healthier lifestyle. The data would be used to assist the college healthcare clinic in providing proper nutritional awareness and guidance for the students. Undergraduate nursing students at a Midwest university completed an assessment tool, in the form of a 16-question Rapid Eating and Activity Assessment for Patients, Abbreviated Version (REAPS) survey that assessed their knowledge regarding nutrition and their food choices. Each question had a numeric scale (1-3) scoring system with defined results. The descriptive statistics tool in SPSS was used for analysis of the survey results. This study showed that 62.43% of the responses from undergraduate nursing students that were surveyed had poor dietary habits. 96.29% of the students that were surveyed did have a willingness to change in order to have a healthier lifestyle. Undergraduate healthcare students would benefit from increased nutritional awareness while on and off campus. The college health clinic can help promote a healthy lifestyle and decrease obesity related illnesses for students. There are numerous opportunities for colleges to promote nutritional awareness among their student body.

Keywords: nutritional; healthcare; students

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### INTRODUCTION

Overweight and obesity rates are an epidemic in the United States (U.S.), with these rates increasing dramatically in recent decades (Sogari et al., 2018). According to the Centers for Disease Control and Prevention (CDC) (2022), based on body mass index (BMI), the prevalence of obesity is 40% among young adults aged 20–39 years and 44.8% among adults aged 40–59 years. Although BMI does not directly measure body fat, it is somewhat associated with more precise measurements of body fat (CDC, 2022). Underweight people have a BMI under 18.5; healthy people have a BMI between 18.5 and 25; overweight people have a BMI between 25.0 and 30; and obese people have a BMI of greater than 30. Weight above what is considered healthy for a person's height is classified as overweight or obese. The World Health Organization (WHO) states that 1.6 billion obese people are predisposed to obesity related complications, such as hypertension, heart disease, diabetes, stroke, osteoporosis, and cancer (Burgess et al., 2017). In addition to medical problems, obesity is associated with serious psychosocial problems that have multiple adverse effects on individuals, such as depression, anxiety, eating disorders, and low self-esteem (Sogari et al., 2018). As a result, the CDC has identified obesity as one of the most emerging threats that could harm the entire global health system (CDC, 2022).

The burden of disease in young adults is due to unhealthy behaviors beginning in adolescence, such as unhealthy eating habits (WHO, 2022). According to McEligot et al. (2020), college students classified as overweight and/or obese in the U.S. increased from 29% to 32.5% from 2000 to 2009. A major factor with undergraduate healthcare college students is the lack of nutritional awareness combined with the psychological stress experienced in school resulting in unhealthy habits (Alghamdi et al., 2021).

According to Sogari et al. (2018), financial hardship and financial stress associated with the high costs for tuition, books, and housing are challenges undergraduates can face. This financial hardship can compromise a nutritionally

balanced diet due to the current cost of food, which has become a serious public health problem affecting college students in the United States. College students are found to skip meals due to exam preparation and abnormal sleep cycles. It was also found that college students do not use the kitchen for cooking and prefer fast food.

About 90% of the population of the United States do not consume the recommended daily amounts of fruits, vegetables, nuts, and seeds (United States Department of Agriculture [USDA], 2020). Meanwhile, consumption of added sugars, processed meats, and trans fats are above the recommended daily allowance. In the short term, an unhealthy diet can increase stress and fatigue and can impair one's ability to work. In the long term, it increases the risk of developing heart disease, diabetes, depression, and anxiety, as well as decreasing brain health and function. Foods high in carbohydrates, saturated fats, and sugar can cause health problems, such as plaque buildup on arteries (atherosclerosis) and chronic inflammation. A diet deficient in nutritious whole foods may cause deficits in some essential vitamins and minerals, which can lead to a weakened immune system (Cullen et al., 2020). A healthy diet boosts immunity, which reduces the risk of heart disease, type 2 diabetes, and improves digestive system function (CDC, 2021). According to Winpenny et al. (2018), college is a critical time for young adults in terms of dietary choices and the relationship between students and weight gain. While the effects of undergraduates' unhealthy eating habits may not affect them now or years from now, an unbalanced and unhealthy diet could negatively impact their entire lives (Sogari et al., 2018).

The main goal of this study was to assess nutritional awareness among undergraduate nursing students. It was important to identify if undergraduate students exhibited unhealthy eating habits and lacked knowledge of healthy food choices. It is also important for college health centers to provide healthy food education for students, which could be accomplished with toolkits such as MyPlate (USDA, 2022).

## METHOD

The project design was descriptive with the goal to assess a student's nutritional awareness and if they had positive dietary habits, such as consuming adequate amounts of fruits, vegetables, and actively trying to avoid high salt and fatty foods. The study addressed the following questions:

1. Do undergraduate healthcare students aged 18-25 display/identify dietary choices that reflect unhealthy habits?
2. Do undergraduate healthcare students aged 18-25 report a willingness to change behaviors to adopt a healthier lifestyle?
3. Do undergraduate healthcare students demonstrate knowledge of healthy food choices that reflect nutritional awareness?

The dependent variables were dietary habits and nutritional awareness. The independent variable was undergraduate healthcare college students. By August 2022, a REAPS survey (Segal-Isaacson, et al. 2022) was emailed to 356 undergraduate nursing college students at a Midwest university. The survey was only emailed to undergraduate nursing college students due to a misunderstanding, which caused the request letter for participation to be emailed to only the nursing director of the Midwest University. The survey was readily available electronically on a cellular phone, tablet, laptop, or desktop computer. The deadline for submissions was September 8, 2022.

Data was collected from the REAPS survey after it was completed on September 8, 2022. The level of significance was set at .05. Descriptive statistics were used to determine dietary habits based on years in college and willingness to change. The statistical software used was SPSS.

To ensure participant safety the researcher did seek approval by the Institutional Review Board (Appendix C) at Wichita State University (WSU). The researcher also sent a letter via email to the directors of the undergraduate nursing program at WSU for permission to conduct the research (Appendix D). Surveys were kept anonymous and did not contain any identifying information. The researcher saved the survey results in a password protected folder. The encrypted flash drive with data is kept at Wichita State University School of Nursing.

## RESULT

Twenty-seven students participated in the REAPS survey online and responded to all the survey questions. There were zero males and 27 females that participated. Out of the 27 participants, one student was a freshman, one student was a sophomore, six students were juniors, and 19 students were seniors. The students' weights ranged between 98 pounds to 255 pounds. The students' heights ranged from 60 inches to 73 inches. The students' BMI ranged from 17.4 to 39.9.

The survey responses for dietary habits were adjusted to numerical data to be evaluated in SPSS software and were as follows: Rarely/Never (3), Sometimes (2), Usually/Often (1). The survey responses for willingness to change were

adjusted to numerical data to be evaluated in SPSS software and were as follows: Very willing (3), Somewhat willing (2), Neither willing nor unwilling (1). All survey responses that included a response of “Does not apply to me” were removed to avoid skewing the data.

Figure 1 showed the participants’ dietary habits compared to their year in college. The survey data (Table 1) showed that 30.64% of the students’ responses showed they usually/often had poor dietary habits. The data also showed that 31.79% of the students’ responses showed they sometimes had poor dietary habits and 37.57% rarely/never had poor dietary habits. All data in this category was found to be statistically insignificant, based on the set p-value of 0.05 (Figure 2). However, considering only 37.57% of students’ responses rarely/never had poor dietary habits, the majority of students’ responses sometimes or always had poor dietary habits.

Figure 3 showed the participants’ willingness to change their eating habits in order to become healthier compared to their year in college. The survey data (Table 1) showed that 44.44% of the students were very willing to change their dietary habits to become healthier. The data also showed that 51.85% were somewhat willing to change and 3.70% were neither willing nor unwilling to change their dietary habits to become healthier. All data in this category was found to be statistically insignificant, based on the set p-value of 0.05 (Figure 4). However, the majority of the students were either very willing or somewhat willing to change their dietary habits to become healthier. Only one student’s response showed they were neither willing nor unwilling to change their habits.

Table 1. Descriptive Statistics

|                         | N  | Minimum | Maximum | Mean   | Std. Deviation |
|-------------------------|----|---------|---------|--------|----------------|
| Skipbreakfast           | 27 | 1.00    | 3.00    | 1.9259 | 0.87380        |
| Restaurant              | 26 | 1.00    | 3.00    | 2.2692 | 0.77757        |
| Lesswholegrainsstarches | 27 | 1.00    | 3.00    | 2.2593 | 0.90267        |
| Lessfruit               | 27 | 1.00    | 3.00    | 2.0000 | 0.78446        |
| Lessvegetables          | 27 | 1.00    | 3.00    | 1.9630 | 0.70610        |
| Lessdairy               | 26 | 1.00    | 3.00    | 1.7308 | 0.87442        |
| Moremeat                | 27 | 1.00    | 3.00    | 1.7407 | 0.76423        |
| Highfatprocessedmeat    | 26 | 1.00    | 3.00    | 2.3462 | 0.79711        |
| Friedfoods              | 26 | 1.00    | 3.00    | 2.1923 | 0.84943        |
| Regularchips            | 27 | 1.00    | 3.00    | 2.0370 | 0.70610        |
| Addbutter               | 26 | 1.00    | 3.00    | 1.9615 | 0.82369        |
| Sweets                  | 27 | 1.00    | 3.00    | 2.1852 | 0.78628        |
| Sodajuce                | 27 | 1.00    | 3.00    | 2.2963 | 0.91209        |
| ShopsCooks              | 27 | 1.00    | 3.00    | 2.7778 | 0.64051        |
| FeelsWell               | 27 | 1.00    | 3.00    | 2.9259 | 0.38490        |
| Valid N (listwise)      | 24 |         |         |        |                |

Table 3. ANOVA<sup>a</sup> Test Result

|   | Model      | Sum of Squares | Df | Mean Square | F     | Sig.               |
|---|------------|----------------|----|-------------|-------|--------------------|
| 1 | Regression | 9.006          | 15 | 0.600       | 0.995 | 0.529 <sup>b</sup> |
|   | Residual   | 4.828          | 8  | 0.603       |       |                    |
|   | Total      | 13.833         | 23 |             |       |                    |

<sup>a</sup> Dependent Variable: Year

<sup>b</sup> Predictors: (Constant), FeelsWell, regularchips, lessdairy, lessfruit, Restaurant, Highfatprocessedmeat, Friedfoods, lessvegetables, Lesswholegrainsstarches, addbutter, Skipbreakfast, Moremeat, sweets, ShopsCooks, sodajuce

Table 3. Descriptive Statistics

|                    | N  | Minimum | Maximum | Mean   | Std. Deviation |
|--------------------|----|---------|---------|--------|----------------|
| Willing to Change  | 27 | 1.00    | 3.00    | 2.4074 | .57239         |
| Valid N (listwise) | 27 |         |         |        |                |

Table 4. ANOVA<sup>a</sup> Test Result

|   | Model      | Sum of Squares | df | Mean Square | F     | Sig.               |
|---|------------|----------------|----|-------------|-------|--------------------|
| 1 | Regression | 0.723          | 1  | 0.723       | 1.310 | 0.263 <sup>b</sup> |
|   | Residual   | 13.796         | 25 | 0.552       |       |                    |
|   | Total      | 14.519         | 26 |             |       |                    |

<sup>a</sup>Dependent Variable: Year

<sup>b</sup>Predictors: (Constant), Willing to Change

Table 5. Question Responses

|                       | Responses                     | Count (N) | Percent (%) |
|-----------------------|-------------------------------|-----------|-------------|
| Dietary Habits        | Usually/Often                 | 106       | 30.64       |
|                       | Sometimes                     | 110       | 31.79       |
|                       | Rarely/Never                  | 130       | 37.57       |
| Willingness to Change | Very willing                  | 12        | 44.44       |
|                       | Somewhat willing              | 14        | 51.85       |
|                       | Neither willing nor unwilling | 1         | 3.70        |

## DISCUSSION

Obesity is an epidemic affecting all age groups (Xue et al, 2021). According to the WHO (2022) data, about two billion adults are overweight, of which 650 million are classified as obese. This equates to 39% of adults over the age of 18 being overweight and 13% being obese. Frequent unbalanced diets and unhealthy eating habits among young adults are some of the major factors contributing to a weight gain trajectory and increased risk of noncommunicable diseases (NCDs), such as heart disease, cancer, and diabetes. NCDs are estimated to cause 41 million deaths every year and account for 71% of all deaths worldwide (WHO, 2022).

According to extensive literature, most undergraduates gain weight in their first year of college (Abraham et al., 2018; Choi, 2021; Sogari et al., 2018). During the transition from high school to college, college students may be unable to adapt to their unfamiliar environment and the accompanying stressors, such as unhealthy dietary consumption, sleep deprivation, and peer pressure (Choi, 2020; Rababah et al., 2019). Sogari et al. (2018), used an adapted version of the Ecological Model to develop a framework that included lifestyle factors as influences on the individual, society, university environment, and student diet. Their framework combined the healthy and unhealthy food choices of students with the health choices they made during college. Some of the major barriers to healthy eating were limited time to plan and prepare meals, limited budgets, and social and environmental impacts (Whatnall et al., 2021). A review study conducted by Rodrigues et al. (2019), found that most college students consumed considerable amounts of fast food, sugary snacks, sweets, soft drinks, alcoholic beverages, and low amounts of fruits, vegetables, fish, whole grains, and legumes. When choosing foods, students typically focus on convenience, enjoyment, and taste, rather than health (Sogari et al., 2018). It was also found that most college students ignore food group recommendations (Choi, 2021). In a study by Sogari et al. (2018), participants reported not following USDA dietary guidelines due to increased availability of unhealthy foods. Also, one might think that medical students should have better knowledge and awareness of healthy eating due to their educational background, but evidence to support this is limited (Alghamdi et al., 2021). A recent cross-sectional study of medical students' lifestyles and diet by Alghamdi (2021) reported that the majority of medical students consumed large amounts of fast food and soft drinks.

Understanding what a healthy diet means is very important in making healthy choices. Health literacy is a multifaceted concept and recognized as a major health issue (Rababah et al., 2019). A widely used definition of health literacy is the extent to which an individual receives, processes, and understands basic information and makes appropriate health decisions (CDC, 2021). Based on the National Assessment of Adult Literacy (NCES, 2022), 36% of the US population have basic or below health literacy. Xue et al. (2021), noted that college students know very little about obesity. Most self-paced survey respondents had a poorly defined definition of body mass index (BMI), possibly due to a lack of general medical knowledge. Although the concept of obesity was unfamiliar to most of the respondents, most of them recognized obesity as a disease.

Nutrition awareness is a key factor in promoting a healthy diet and maintaining an optimal BMI (Sogari et al., 2018). One of the ways that students can assess their nutrition awareness is with the REAPS tool, developed by the Nutrition

Academic Award (NAA). REAPS was designed to assess nutrition in relation to the Food Pyramid and the 2000 U.S. Dietary Guidelines (Segal-Isaacson et al., 2022). According to Gans et al. (2006) REAPS has received various recognition, including feasibility studies by medical students and practitioners, validation studies by medical students, and consumer perception assessment studies. REAPS has since been modified to improve its appearance, usability, and effectiveness. Pilot testing of REAPS with doctors and medical students yielded very good results on parameters such as usability, simplicity, and practicality. A validation study with medical students and consumers also showed that REAPS had a high reliability score ( $r=0.860$ ) and correlated well with healthy individuals.

Nutrition education programs are designed to raise nutrition awareness with the aim of promoting healthy eating (Rababah et al., 2019). Coleman et al. (2021) found that students experienced significant improvements in nutrition awareness through nutrition education in college. Improvements in eating behavior and intentions were also seen, but more promisingly, improvements led to decreases in BMI and waist circumference. A study by Sogari et al. (2018) also showed that increased nutrition awareness has a positive impact on dietary choices among college students.

For the development of programs and strategies to enhance students' overall lifestyles and lessen diet-related illnesses, it is crucial to have a better understanding of the relationship between diet and health in college students (Sogari et al. 2018). Results from the American College Health Association-National College Health Assessment (ACHA-NCHA, 2022) revealed that a sizable portion of students do not receive information about particular health issues from their college. At the same time, students indicated they needed more information to make healthy choices. Rababah et al. (2019) found that universities are seen as the ideal environment for initiating health promotion programs. The university's uniqueness lies in its ability to harness human and material resources to promote the adoption of healthy lifestyles. A study conducted by Rababah et al. (2019) found that 76.9% of students reported receiving no information on nutrition awareness and most students (67.5%) expressed an interest in learning about health. The results of this study addressed the need for health literacy and health awareness in colleges and universities and highlighted the physical, psychological, psychiatric, social, and reproductive health issues that plague college students (Coleman et al., 2021). It is important for college health centers to provide healthy food education for students, which could be accomplished with the REAPS tool used in conjunction with toolkits such as MyPlate (Segal-Isaacson et al., 2022; USDA, 2022).

The aim of this study was to provide insight into undergraduate healthcare students' dietary habits and their willingness to change. Despite a limited sample size, the majority of students showed that they had poor dietary habits but had a willingness to change their habits to lead a healthier lifestyle. Based on the results of the survey, 96.29% of students are willing to change their poor dietary habits in order to become healthier. The college health clinic could help promote a healthy lifestyle and decrease obesity related illnesses for students. There are numerous opportunities for colleges to promote nutritional awareness among their student body. Students may benefit from obtaining information regarding healthy dietary habits through seminars and lectures held by the college health clinic. The clinics and seminars could focus on nutritional knowledge, cooking classes, budgeting for groceries, and time management. Social groups could also be created to promote healthier lifestyles. The health clinic staff could encourage students to use toolkits, such as MyPlate. MyPlate offers numerous options to promote healthy eating habits, such as quizzes, photo galleries in relation to portion size, printable resources, and recipes (MyPlate, 2022). The college health clinic and staff could reach out to local grocery stores to set up a discount for college students to increase shopping for food instead of going to restaurants or ordering in.

This analysis had significant limitations because of the small sample size and all of the respondents were female. The survey was sent via school email during the summer and again at the beginning of the fall semester, which may have attributed to the low response rate. The survey was sent to students at one university. For a better outcome, a larger population of students from various universities should be considered.

## CONCLUSION

This study showed that 62.43% of the responses from undergraduate nursing students that were surveyed had poor dietary habits. 96.29% of the students that were surveyed did have a willingness to change in order to have a healthier lifestyle. It would be beneficial for universities to offer programs to increase nutritional awareness and provide healthier food options for students on a budget and with limited time through the college health clinic. Various methods could be used to increase nutritional awareness such as nutrition seminars and workshops. Also, the Food Guide Pyramid with graphics and pictures could be displayed on the walls by vending machines and in the cafeteria to promote adequate nutrition. Increasing nutritional awareness among college students can help them to become more self-sufficient in following a healthy lifestyle.

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