

Measuring the Nutrition Knowledge of Residents at Hurley Medical Center

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Introduction

While residents undergo intense training to practice as a medical professional, they often receive minimal education of nutrition concepts. This presents a problem because nutrition is an important aspect of the care process and can lead to improved patient outcomes. Residents have the support of a clinical nutrition team when working at a hospital, however knowledge of nutrition is still needed to make referrals and carry out important decisions regarding patient care. This study will determine the amount of nutrition knowledge the residents have, and also their attitudes regarding nutrition practices in a clinical setting.

If Hurley Medical Center has a better understanding of the residents basic nutrition knowledge this could potentially create an opportunity for nutrition classes for the residents. If there is found to be a lack of basic nutrition knowledge with medical residents this can allow Hurley Medical Center and other medical facilities to initiate nutrition workshops led by Registered Dietitians or Dietetic Interns. By increasing medical residents knowledge of nutrition, it can lead to more well-rounded future physicians who can properly counsel and care for all populations on the importance of nutrition

Methods

This study was conducted at Hurley Medical Center in Flint, Michigan. Hurley Medical Center is a 443 bed, safety-net, teaching hospital affiliated with Michigan State University College of Human Medicine. This research study consisted of a web-based survey sent to resident physicians via email through the survey vendor SurveyMonkey. Three randomly selected participants will be awarded \$10 Amazon gift cards to achieve a higher response rate among the resident physicians. This research study occurred during September of 2017.

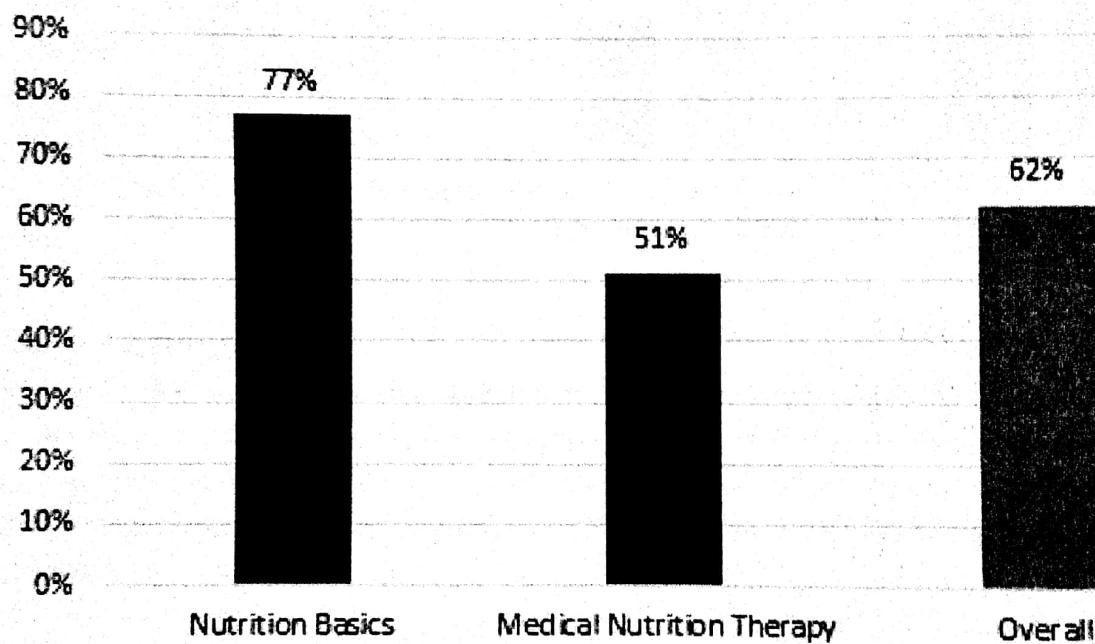
The subjects were residents of the medical center, all of whom have received higher education and completed medical school. Ages of residents are approximately 23-30 years old, however age will not be considered in inclusion/exclusion criteria. Of the 92 residents at Hurley Medical Center, 38 residents (41%) completed the study. To be eligible to complete study, the subject

needed to be a current resident in one of Hurley's five MSU CHM affiliated programs at the time of survey administration.

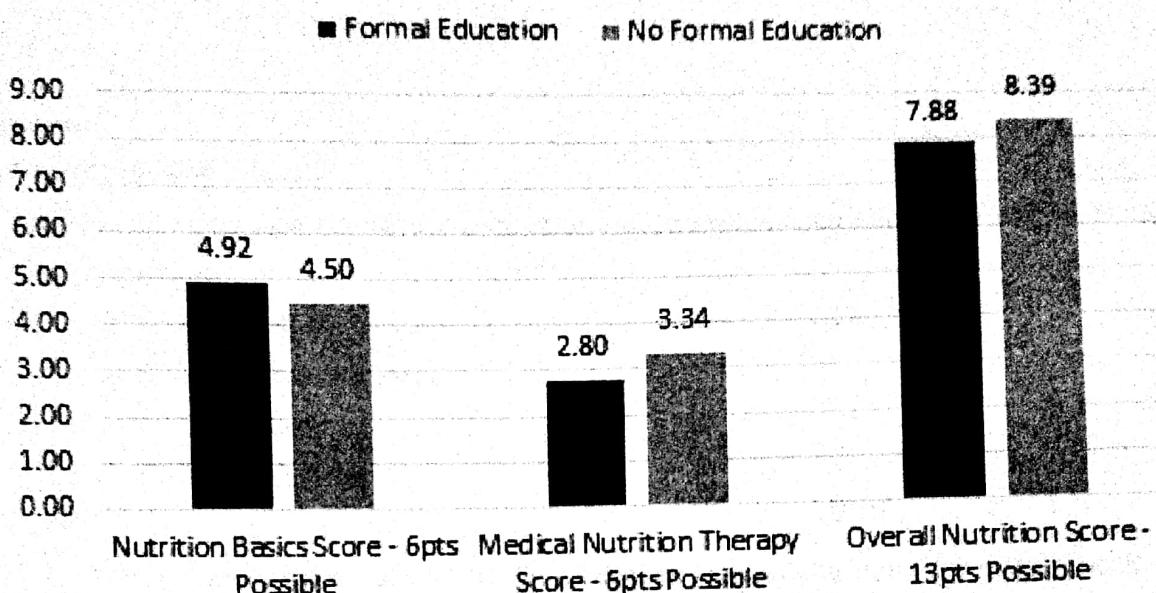
Results

The total number of survey respondents was 38 resident physicians. Out of the total population of 92 residents and fellows, this represents a 41% response rate. The comparison of formal education and no formal education groups showed no statistically significant difference between the two groups (p -value >0.05).

Nutrition Knowledge Score



Formal vs No Formal Education



Conclusion/Discussion

We used a mixture of previously validated questionnaires and multiple choice questions designed by the research team to examine the nutrition knowledge, and also the residents' self-perception of their nutrition knowledge. These results show that the resident physicians answered 77% nutrition knowledge questions correctly and 51% of medical nutrition therapy questions correctly.

Of the 38 participants, only 26% of the resident physicians felt confident in their ability to offer nutrition counseling or nutrition based recommendations to their patients. More research with a larger sample size will need to be completed to show if the self-perceived proficiency of resident physicians nutrition knowledge is linked to a more positive belief of nutrition as medical therapy and further belief of a dietitian as a crucial role in the multidisciplinary team.

Our study has several limitations. While our survey was sent to all 92 resident physicians and fellows at Hurley Medical Center, only 38 responded. Our small sample size shows that there could be a selection bias. Another limitation of this study is that the aim of the research being nutrition is too broad. For example, nutrition knowledge of a specific disease state was used and results need to be more specific. For the sake of our study, testing residents on their basic nutrition knowledge allows surveyors to determine if nutrition education would be beneficial.

The collected research may not be generalizable to residents in other hospitals around the country.

Survey

Level of Nutrition Education

1. Please select your confidence level of offering nutrition counseling or recommendations to patients
 - a. Not confident
 - b. Somewhat confident
 - c. Confident
 - d. Very confident

2. Which options below best describes your level of nutrition education? Check all that apply.
 - a. Degree in dietetics or nutritional sciences
 - b. Some college level courses
 - c. Some high school level courses
 - d. Informal nutrition research
 - e. No nutrition education

3. To uphold the integrity of this study, please refrain from internet searching, asking peers, etc. to find answers to the remaining survey questions.
 - a. Okay

Nutrition Basics

1. Which of the following is not a water-soluble vitamin?
 - a. Thiamine
 - b. Folate
 - c. **Vitamin K**
 - d. Niacin

2. Which of the following is not a source of energy

- a. Fat/lipids
- b. Alcohol
- c. Vitamins
- d. Carbohydrate
- e. Protein

3. A 45-year old female presents with blood pressure of 140/90. What action should be taken first?

- a. Life-style modification
- b. Prescribe blood pressure lowering medication
- c. Schedule appointment for follow-up in three months
- d. **A & C**
- e. B & C

4. At what Hemoglobin A1c level is a patient diagnosed with diabetes?

- a. 7.0
- b. 6.8
- c. **6.5**
- d. 6.3

5. Which type of fat has been shown to raise LDL cholesterol levels?

- a. **Saturated fat**
- b. Monounsaturated fat
- c. Polyunsaturated fat
- d. Omega 3

6. A box of cereal states that 1 serving is a “good source” of calcium. Without looking at the nutrition label, you know that 1 serving contains _____% of the daily value for calcium.

- a. 0-9%
- b. **10-19%**
- c. 20-29%
- d. 30-39%

Medical Nutritional Therapy

1. A patient who has recently had a resection of the jejunum is least likely to develop a deficiency of which nutrient?
 - a. Vitamin C
 - b. Folic acid
 - c. **Calcium**
 - d. Thiamin
2. A patient has recently been prescribed Coumadin (warfarin). What nutrition education should the patient receive?
 - a. Decreased intake of vitamin K foods
 - b. **Consistent intake of vitamin K foods**
 - c. Increase intake of vitamin D and calcium rich foods
 - d. Maintain consistent vitamin D intake
3. Which of the following are considered to be a part of the top 8 food allergies?
 - a. Milk, Peanuts, Wheat, Peas
 - b. Shellfish, Eggs, Soy, Apples
 - c. **Peanuts, Hazelnuts, Wheat, Milk**
 - d. Fish, Egg, Safflower Oil, Milk
4. Which of the following is most likely an indication for TPN?
 - a. **Short bowel syndrome**
 - b. Severe dysphagia
 - c. Tube feed with gastric residue of 250 mL
 - d. Tube fed with celiac disease
5. In patients with chronic kidney disease, it is recommended for protein intake to be _____ in stage 3-4, and then _____ in stage 5.
 - a. Increased, reduced
 - b. **Reduced, increased**
 - c. Protein intake should remain consistent in stages 3-5
6. When a patient receives roux-en-y surgery, _____ should be monitored for deficiency.

- a. Magnesium
- b. Vitamin D
- c. Vitamin B12
- d. Folic acid

Registered Dietitian Referral

1. For which of the following patients is a RD referral most appropriate?
 - a. 57 y/o female who has dysphagia and has questions about what foods she can eat
 - b. 42 y/o male who recently had a heart attack and needs to limit sodium
 - c. 68 y/o female who has Parkinson's and has difficulty feeding herself
 - d. 80 y/o male who has a difficult time reading lunch menu
2. Which of the following services are available for patients outside of Hurley Medical Center?
 - a. Pediatric Endocrinology Clinic at Flint Farmer's Market
 - b. Outpatient Diabetes Clinic
 - c. Bariatric Outpatient Counseling
 - d. Hurley Genesis Cancer Institute
 - e. All of the Above