



Nutrition in Medicine: Needs Analysis, Improvement, and Delivery of Nutrition Education in Medical School

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Background

- Chronic diseases such as diabetes, heart disease, and obesity impose substantial public health and economic burdens, yet many are preventable or manageable through proper dietary interventions. Despite this, education on nutrition remains alarmingly deficient across all levels of American education, including medical training, leaving many future physicians ill-prepared to provide evidence-based dietary advice to their patients. This educational gap perpetuates reliance on unreliable sources for nutritional guidance, limiting the potential for effective patient care and preventive healthcare.
- In medical school, students receive, on average, a mere 11 hours of instruction in nutrition.
- What nutrition knowledge is commonplace is often incorrect. As there has been great debate in recent decades on low-fat vs. low-carbohydrate diets being the healthy diet of choice, with the majority of diet trends siding with either of these two camps, USDA food availability data from 1970 to 2010 has shown that total fat, sugar, and calories Americans consume have only increased, along with obesity rates.
- Americans are seemingly unaware of the truth that the health effects of our diet depend largely on the types of food we eat, not single nutrients.
- From prevention of disease states to less frequent hospitalizations for heart failure, the costs of health, time, money, wellbeing, and more are subject to monumental improvements with more education and implementation of nutrition in medical practice.
- We believe that by delivering more education in nutrition, we will prepare future providers to be more successful at providing optimal patient care, preventing and/or minimizing the morbidity and mortality of chronic disease, minimizing healthcare expenditures, and ultimately promoting a happier and healthier world.

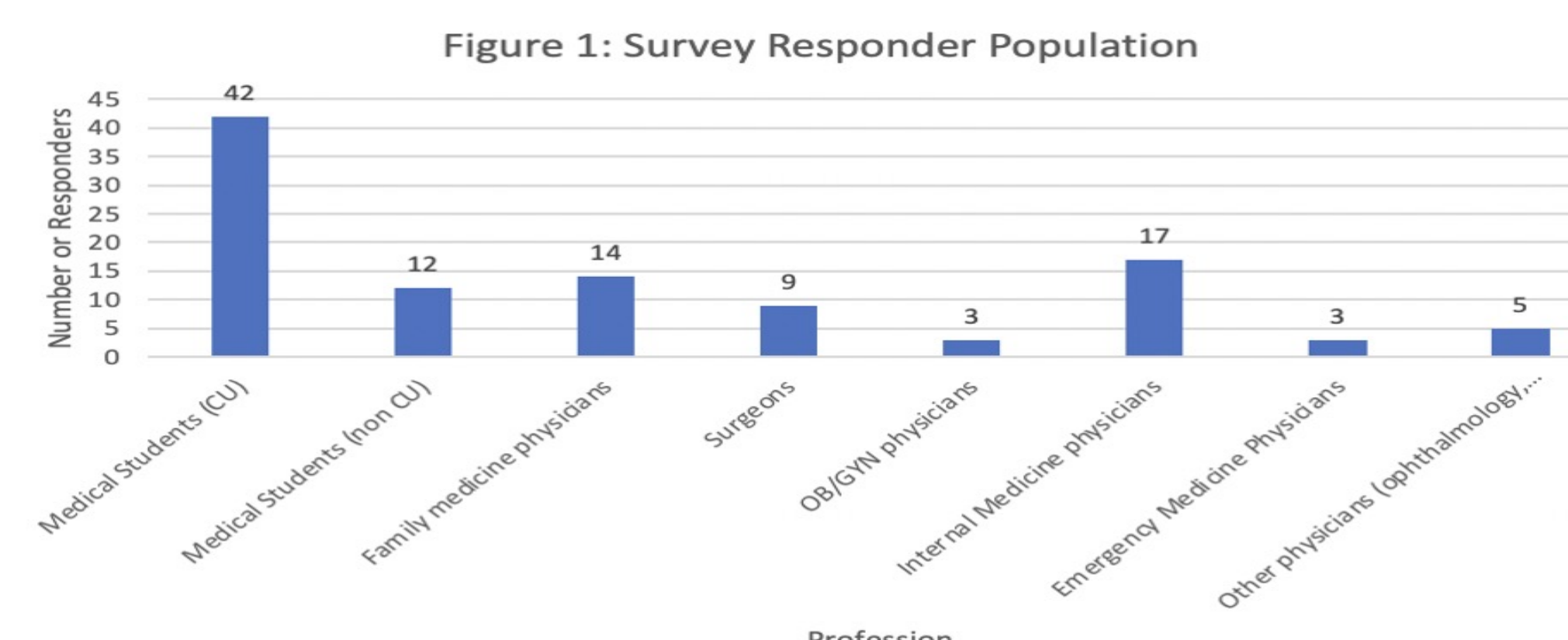
Project Objective

We aimed to assess the quality and quantity of nutrition education received by medical students and physicians during their undergraduate and graduate medical training.

Methods

After literature review, we administered a survey to a diverse group of medical students and physicians, obtaining data on hours of nutrition education received, quality and content of instruction, and participants' confidence in answering patient questions regarding nutrition.

Results



Survey Questions:

- 1.Amount of education received (estimated hours)
- 2.Has education received sufficient/excessive/insufficient in time?
- 3.Has education received sufficient/excessive/insufficient in quality?
- 4.Do you feel comfortable answering nutrition related questions?
- 5.Do you apply nutrition/diet/supplement education and/or recommendations in your practice?
- 6.Do you think greater time and quality of nutritional education for providers would improve patient outcomes?

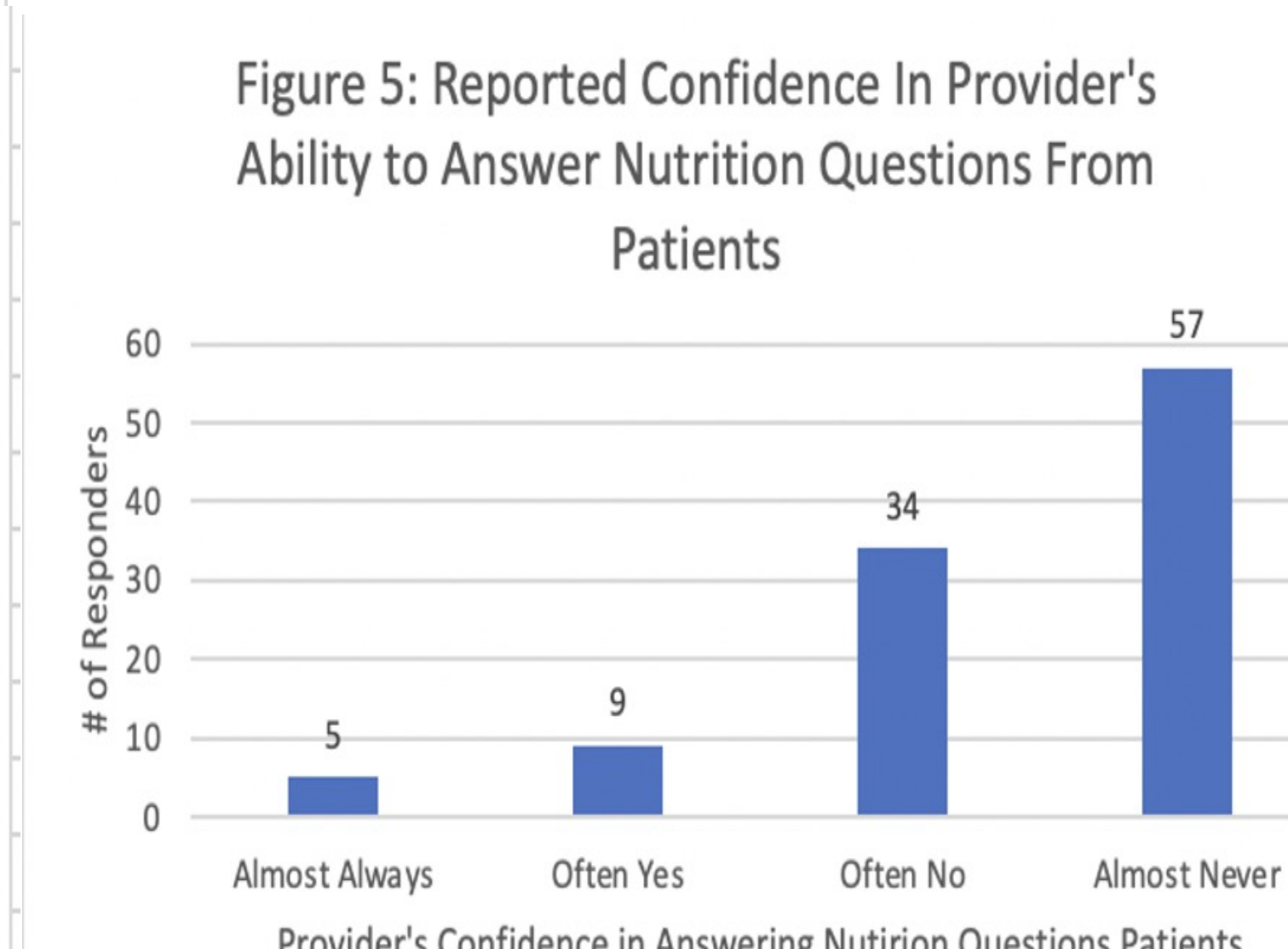
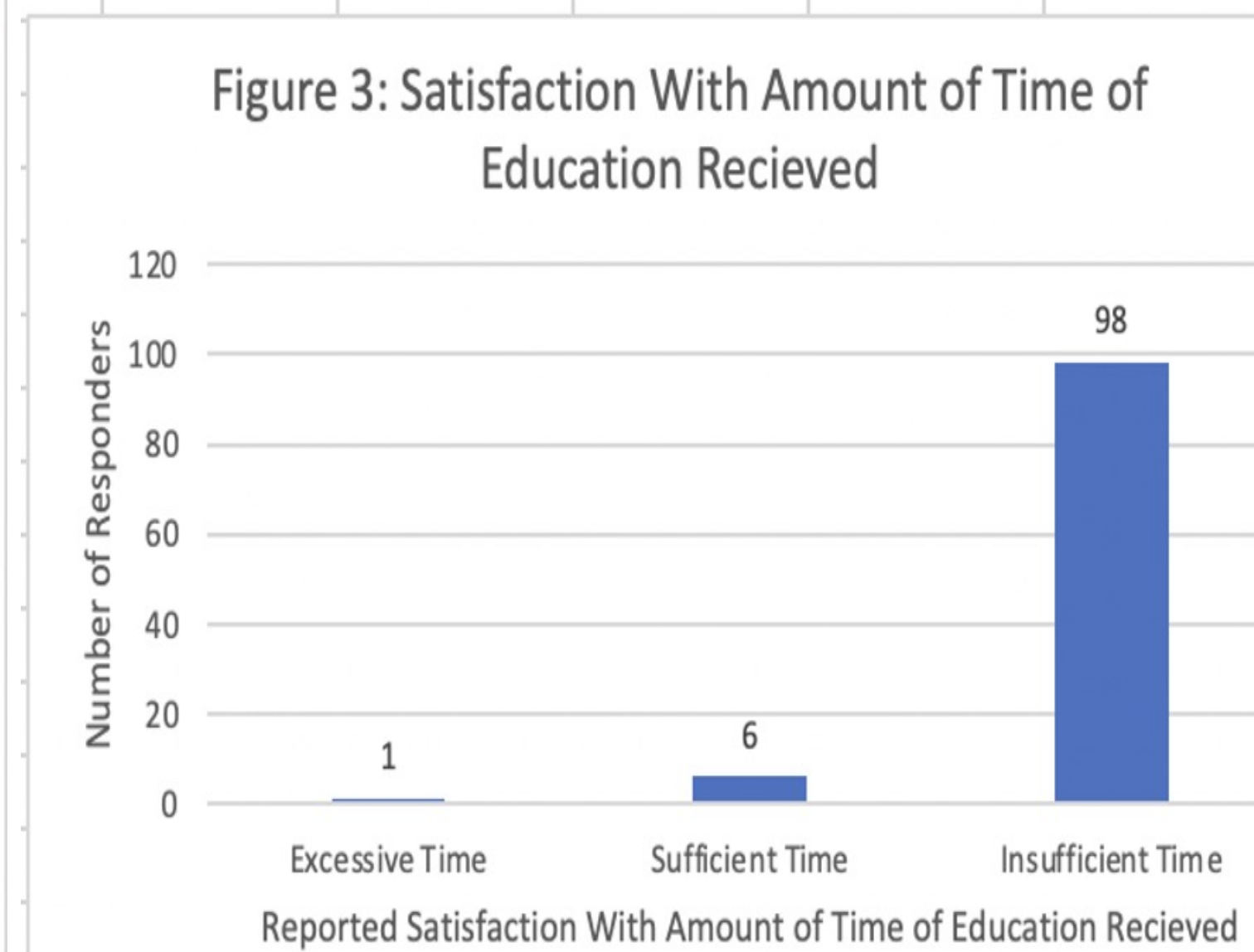
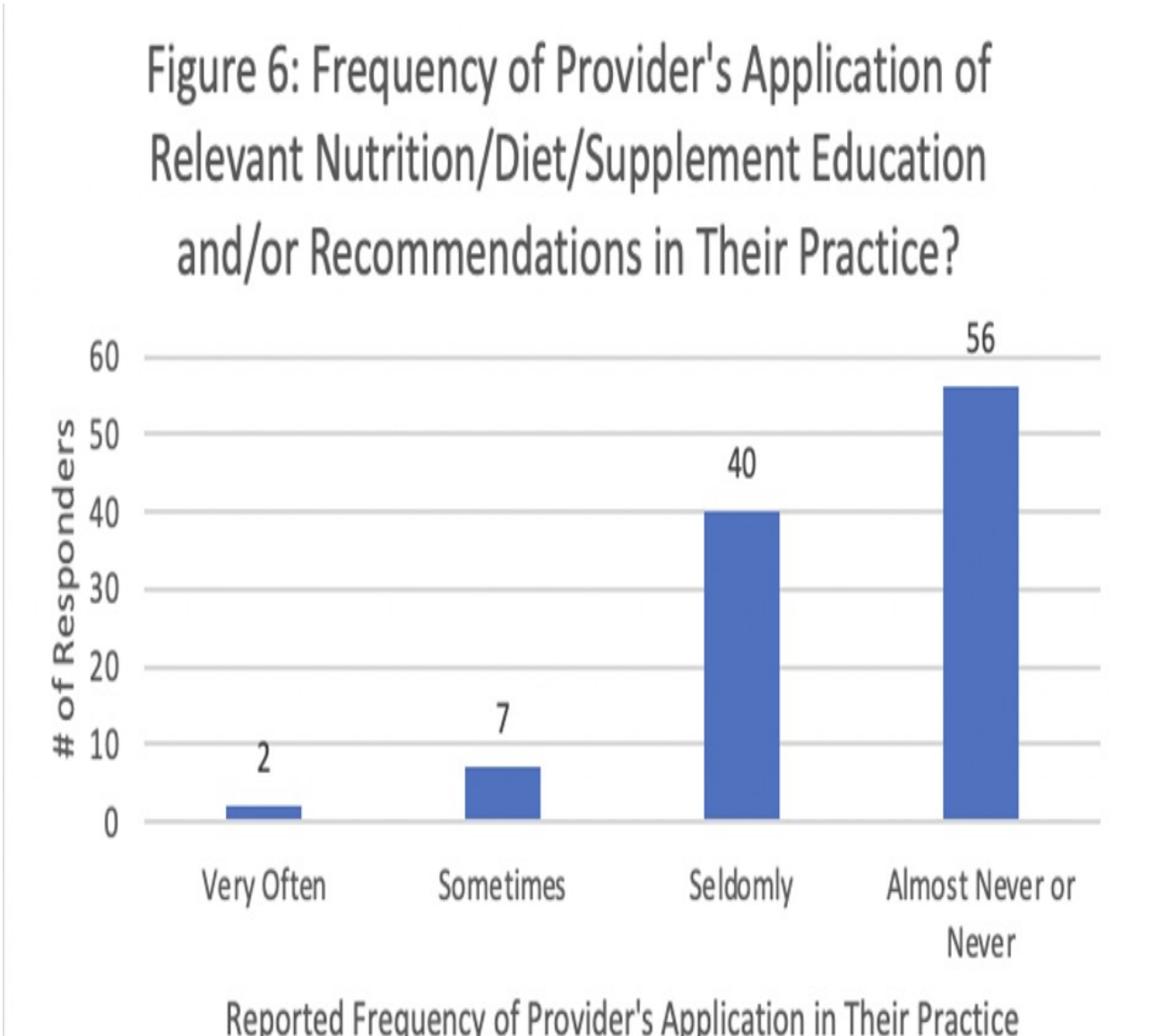
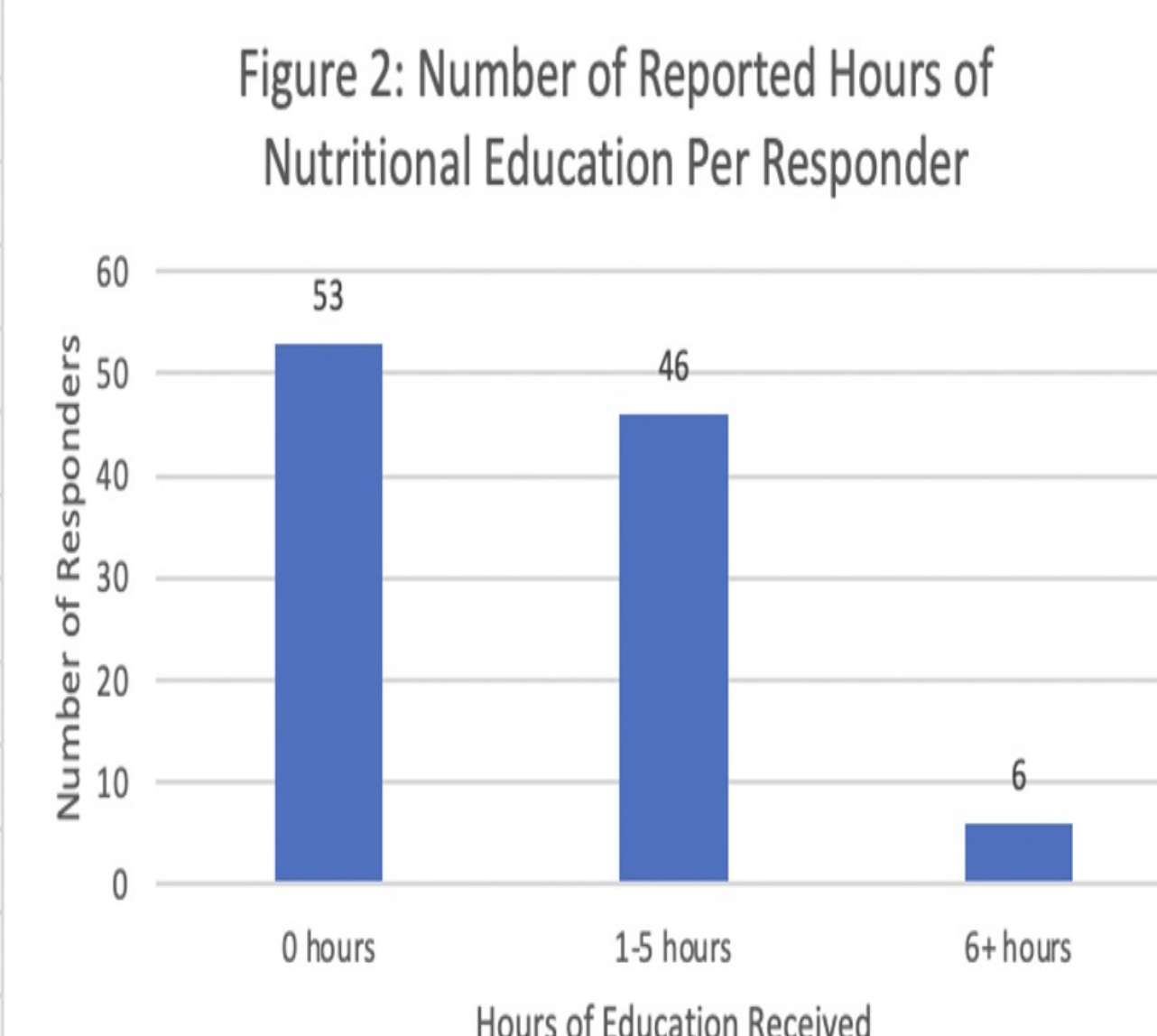
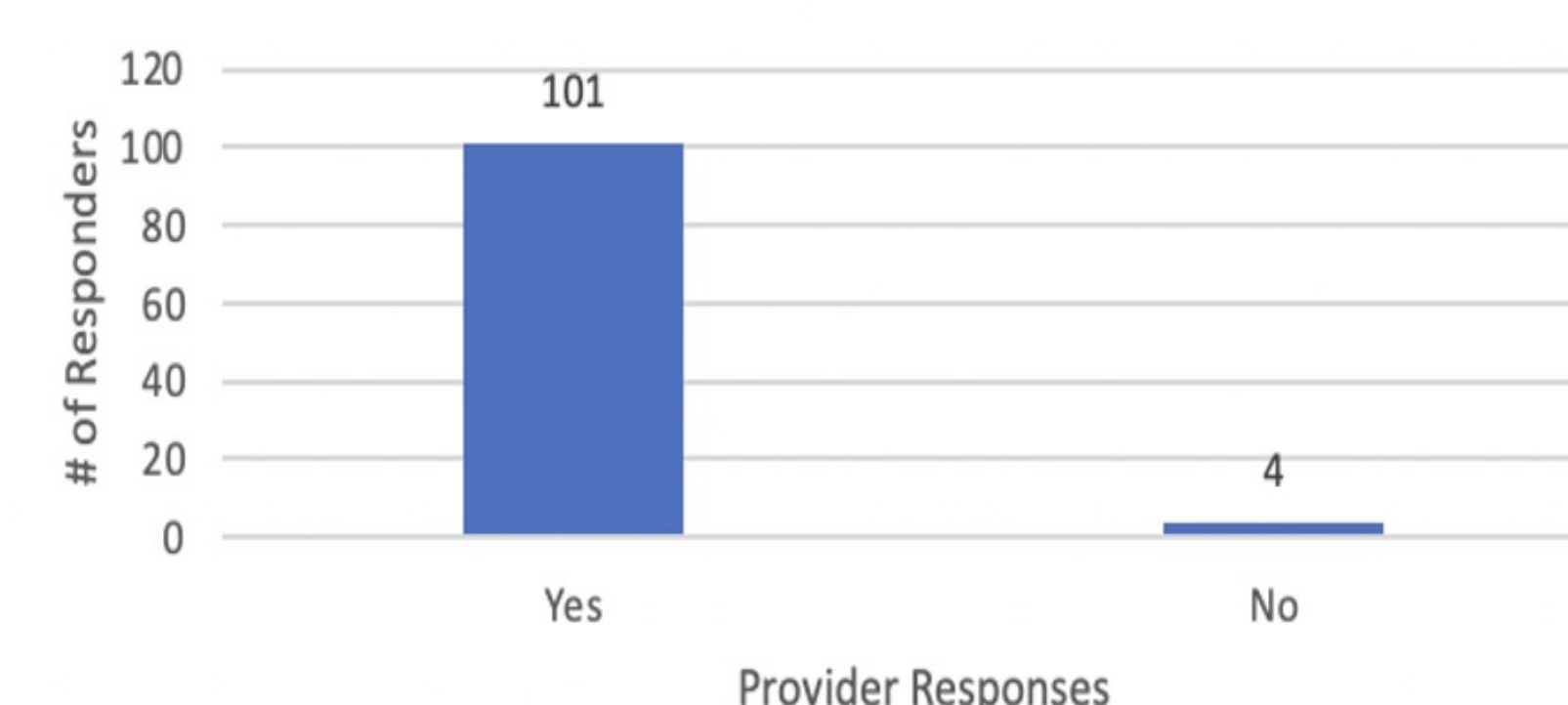


Figure 7: Will greater time and quality nutritional education for providers would improve patient outcomes?



Discussion

- In light of the lack of data assessing the current climate and attitudes of medical students and physicians regarding nutrition, our project sought to answer a novel question and serve as a **"needs assessment"** for future research, quality improvement, activism/promotion, and curriculum development.
- In addition to the survey results, many respondents wanted to **discuss reasoning for their answers**. For example, many providers cited lack of time to address nutrition. Some of those comments were followed by a wish for more time allotted for patient visits and various statements about how insurance and different institutions impacted this. Many providers and students cited referrals to a nutritionist, RD, and/or diabetes educator in response to several of the survey components. For example, 2 of 4 respondents who answered "No" to question 6 (greater time and quality nutritional education improving patient outcomes?) essentially said this wouldn't make a difference as these other specialists had the time and training to address questions and care/preventative care with patients. 7 respondents also noted that the use of popular pharmaceuticals such as GLP-1 agonists has made nutrition more important to discuss with patients but has potentially altered patient's investment in making dietary and lifestyle changes as such pharmaceuticals have shown benefit without nutritional advice or discussions.

Limitations

- Relatively small sample size (N=105).**
- Limited diversity** (primarily CU students and physicians) which may have not been representative of the country's summative population of medical students and physicians. For example, providers and patients in Colorado may be more interested and invested in nutrition than states with higher obesity rates.
- Survey was not particularly representative of certain specialties and providers** in other regions of the country or the percentiles of students and providers based on specialty. We also could have grouped the respondents such as DO/MD and/or yes/no experience with nutrition in previous careers (i.e. former work as a diabetes educator, RD, etc.).
- Questions may have been leading in nature.** We introduced the survey as pertaining to our "Nutrition in Medicine" MSA project. Survey respondents may have felt pressured to respond in ways that they would not under different circumstances or blinding methods in survey delivery. Many of the survey respondents knew that Gabe and Dan are passionate about promotion of nutrition and exercise in medicine.
- Underserved populations** such as the patients Gabe has worked with at DAWN Clinic and RSVP clinic lack the resources, security, transportation, etc. needed to obtain unprocessed foods. These populations often lack the means to attend appointments pertaining to preventative care, education, or follow-up. Many of these patients tend to seek care exclusively in urgent or emergent situations. These factors add confounding variables to the type of education and care needed in these underserved populations.

Conclusions and Future Directions

According to a survey of medical students and physicians, **nutrition curricula in undergraduate and graduate medical education is severely lacking**, contributing to a well-established lack of confidence in advising patients toward healthy dietary habits and to the perpetuation of the preexistent epidemic of chronic disease due to poor diet nationwide. Our survey data will inform nutrition curriculum rollout in CUSOM and beyond as we further our mission of promoting nutritional education in our future careers.

- The results from our background research and survey highlight the need for effective, and lasting changes to medical curricula, CME, K-12 curricula/policy, public health campaigns, preventative care, management of chronic disease, and more. We strive to eventually scale our promotion of nutrition education to all of these realms, starting with CUSOM. We have discussed our plans with CU physicians listed in acknowledgments.
- Our curriculum will be dispersed into a series of 4-6 one-hour lectures delivered in units most relevant to the subject matter during the MS1 CUSOM curriculum. As the subject matter will be relevant and easily applicable to patient care in clinical rotations and beyond, we also wish to expand our curriculum into the LIC year through TBL format. We plan on beta testing the curriculum with a small number of students to further tailor it before incorporating it into mandatory class curricula.
- We strive to make the change of nutrition education in medicine one of our paramount career legacies. As healthcare and economic burdens due to this issue continue to grow, we are empowering as many people as possible with knowledge and passion to catalyze permanent changes to our healthcare system and society. The culture we are creating has the power to benefit the health and wellbeing of our country and beyond.

Acknowledgements/Conflicts

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