

## Demographics and Nutrition-Related Patient Care Encounters: A Survey of Physician Assistants in Nebraska

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**Purpose:** To collect information regarding demographics, nutrition-related patient care encounters, and comfort levels in addressing nutrition-related problems in a population of physician assistants (PA) currently practicing in Nebraska. **Methods:** A survey was developed by faculty members in the Medical Nutrition Education and Physician Assistant Education programs, School of Allied Health Professions, College of Medicine, University of Nebraska Medical Center. Data were analyzed using descriptive statistics and Fisher's exact test. A *P*-value of  $< .05$  was considered statistically significant. **Results:** The return rate of the survey was 70% ( $N = 266$ ). A high percentage of PAs (86%) reported they often or occasionally encounter nutrition-related issues with patients. In contrast, only 27% of survey respondents felt "very comfortable" in addressing nutrition-related issues. Encountering nutrition issues often and having patients that ask questions about nutrition were significantly associated with a PA's comfort in addressing nutrition issues ( $P < .001$  for both). **Conclusion:** PAs are very likely to encounter nutrition-related issues in their practice. Attention to nutrition-related topics in the PA curriculum and continuing education may be beneficial in increasing the comfort of PAs in addressing these issues.

### INTRODUCTION

Many of the chronic diseases that are increasing in incidence, such as diabetes, heart disease, cancer, and obesity, include nutrition therapy as part of the disease management.<sup>1</sup> As front-line health care providers, physician assistants (PA) may be confronted with an increasing number of patients who require nutrition intervention as part of their disease management. This increased attention to the need for nutrition intervention is being emphasized in the development of public policy. For example, Healthy People 2020 outlines three objectives related to increasing the proportion of physician office visits that include counseling or education related to nutrition or weight, specifically:

1. Increase the proportion of physician office visits of adult patients with a diagnosis of cardiovascular disease, dia-

betes, or hyperlipidemia that include counseling or education related to diet and nutrition.

2. Increase the proportion of physician office visits made by adult patients who are obese that include counseling or education related to weight reduction, nutrition, or physical activity.

3. Increase the proportion of physician visits made by all child or adult patients that include counseling about nutrition or diet.<sup>2</sup>

Despite this emphasis on nutrition counseling of patients, no standards for nutrition education are specified in the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) Standards.<sup>3</sup>

The purpose of this study was to collect data regarding demographic information from graduates of the University of Nebraska Medical Center PA program and to obtain information

regarding nutrition-related problems and questions they encounter in practice. Additionally, data concerning comfort levels in addressing nutrition-related problems with their patients were gathered.

**METHODS**

In a collaborative endeavor between the medical nutrition education faculty and the PA faculty at the University of Nebraska Medical Center, a survey was developed to gather information regarding the nutrition issues encountered by PAs practicing in Nebraska. After obtaining Institutional Review Board approval, survey participants were identified through a database of graduates maintained by the PA program. PAs were eligible to take the survey if they were former graduates of the University of Nebraska Medical Center PA program and currently reside in Nebraska.

The initial survey was sent by email to 382 subjects; 92 surveys were returned due to an invalid email address. In this case, paper surveys were mailed to these subjects, and the results were manually added to the electronic database. A weekly reminder email was sent to subjects who had not yet responded to the survey. Data collection continued for 1 month. A total of 276 surveys were included in the final database. Of these, 10 respondents identified themselves as “no longer practicing” and were excluded from the final analysis. All data were de-identified in the final database.

Participants who responded to the survey were asked to answer demographic questions related to practice setting, specialization, and years of practice. To assess the nutrition issues encountered by PAs, multiple-choice questions were asked with regard to who initiates nutrition conversations, comfort in addressing these nutrition questions, and factors affecting comfort level. To identify the areas of nutrition

issues most often encountered by PAs, participants who responded to the survey were asked to identify the most frequent nutrition questions/issues/problems they encounter with their patients. Each respondent was asked to select up to three choices from a list of 26 topics. A blank for “other-please specify” was included. Data analysis included descriptive statistics, and categorical variables were analyzed using the Fisher’s exact test. A *P*-value < .05 was considered statistically significant.

**RESULTS**

Two hundred and seventy-six surveys were returned. Of these, 16 did not complete the entire survey, and 10 indicated they were no longer practicing and were not included in the analysis. Incomplete surveys were included in the analysis for the questions answered. A total of 266 surveys were included in the final analysis, for a final response rate of 70%.

**Demographics**

Demographic information for the respondents is summarized in Table 1. The mean number of years in practice was 12.41 (+ 8.6), the minimum number of years was less than 1, and the maximum was 35. The majority of respondents practices full-time and are most likely to be employed in outpatient clinic or physician office settings.

**Area of Specialization**

Family medicine was the most common area of specialty (36%), followed by orthopedics (27%) and internal medicine (9%). A complete breakdown of areas of specialization of the respondents is given in Table 2.

**How Often Do You Encounter Nutrition Issues with Your Patients?**

Over half (55.6%) of the PAs in the survey reported encountering nutrition issues with their patients often, while

**Table 1. Demographic Information of PA Survey Respondents**

Question	Answer Options	Response Percent (%)	Response Count (n)
Do you currently practice?	Full time	84.7	222
	Part time	15.3	40
What is your current primary practice setting?	Outpatient	69.4	179
	Rural Clinic	12.8	33
	Hospital/Inpatient	17.8	46
What is the population of the community in which you practice?	100,000–500,000	59.0	151
	5,000–99,999	23.8	61
	Less than 5,000	17.2	44
How many years have you practiced as a PA?	1 or less	6.1	16
	2–5	15.3	40
	6–10	22.9	60
	11–20	42.0	110
	20+	13.7	36

The survey instrument used for this study is available at:  
<http://www.paeonline.org/index.php?ht=a/GetDocumentAction/i/152007>.

**Table 2. Area of PA Specialization**

Area of Specialization	Respondents (%)	Respondents (n)
Family practice/primary care	36.3	93
Orthopedics	10.2	26
Internal medicine	9.0	23
Emergency medicine/urgent care	7.8	20
Surgery	6.6	17
Oncology	5.9	15
Pediatrics	5.5	14
Cardiology	2.7	7
OB/GYN	2.7	7
Transplant	1.2	3
Other	12.1	31

29.7% reported occasionally encountering nutrition issues. Only 14.7% of respondents reported encountering nutrition issues seldom or never (see Figure 1).

PAs who work in the areas of cardiology, internal medicine, and hematology-oncology are the most likely to receive nutrition questions from their patients. One hundred percent of PAs in these areas of specialization responded

that their patients ask them nutrition-related questions, followed by family medicine (95%), pediatrics (93%), and emergency medicine (63%). The majority of PAs (71%) responded that they provide nutrition education either daily or weekly, with 29% reporting they provide nutrition information “occasionally.”

Even more PAs report initiating nutrition conversations with their

patients themselves. Eighty-one percent of PAs responded that they initiate nutrition-related discussions with their patients; 19% reported they do not. Of the PAs who work in the areas of cardiology, internal medicine, family medicine, hematology/oncology, and pediatrics, 100% of respondents indicated they initiate nutrition-related discussions with their patients. This was followed by emergency medicine, with 63% of PAs who practice in this area stating they initiate nutrition discussions.

**Topics Most Likely to Be Encountered**

The most common areas of concern identified by PAs in the survey were diabetes, weight loss diets, and lipid/cholesterol issues, with 53% of all respondents identifying these as the most frequent nutrition-related issues they encounter. Nutrition topics encountered by PAs in their practice are shown in Figure 2.

**Comfort Levels in Addressing Nutrition-Related Issues**

Comfort levels in addressing nutrition-related issues were categorized as very comfortable, somewhat comfortable, and not comfortable. Approximately half of the PAs (48%) felt “somewhat comfortable” in addressing nutrition issues with their patients. Twenty-five percent of PAs feel “very comfortable,” while 27% are “not comfortable” in addressing nutrition-related issues with their clients. There was a significant difference in comfort levels by area of practice: 24% of family practice PAs feel “very comfortable,” compared to 22% of internal medicine PAs, 15% of emergency medicine PAs, and only 4% of orthopedic PAs ( $P = .03$ ).

Factors that were significantly associated with a PA’s comfort level in discussing nutrition information with their patients included how often nutri-

**Figure 1. Frequency of Nutrition Issues Encountered by PAs**

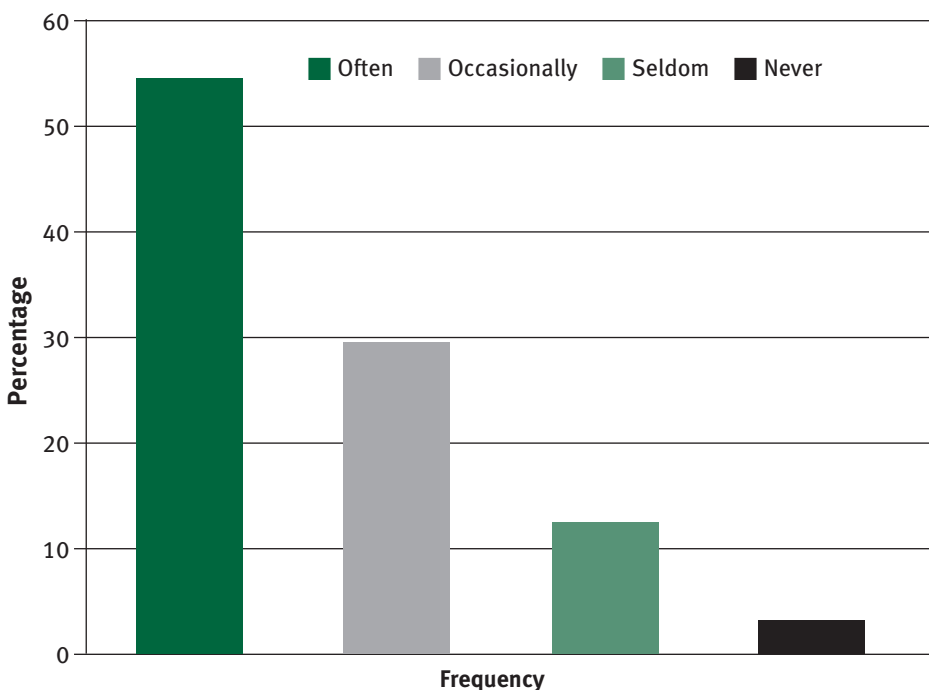
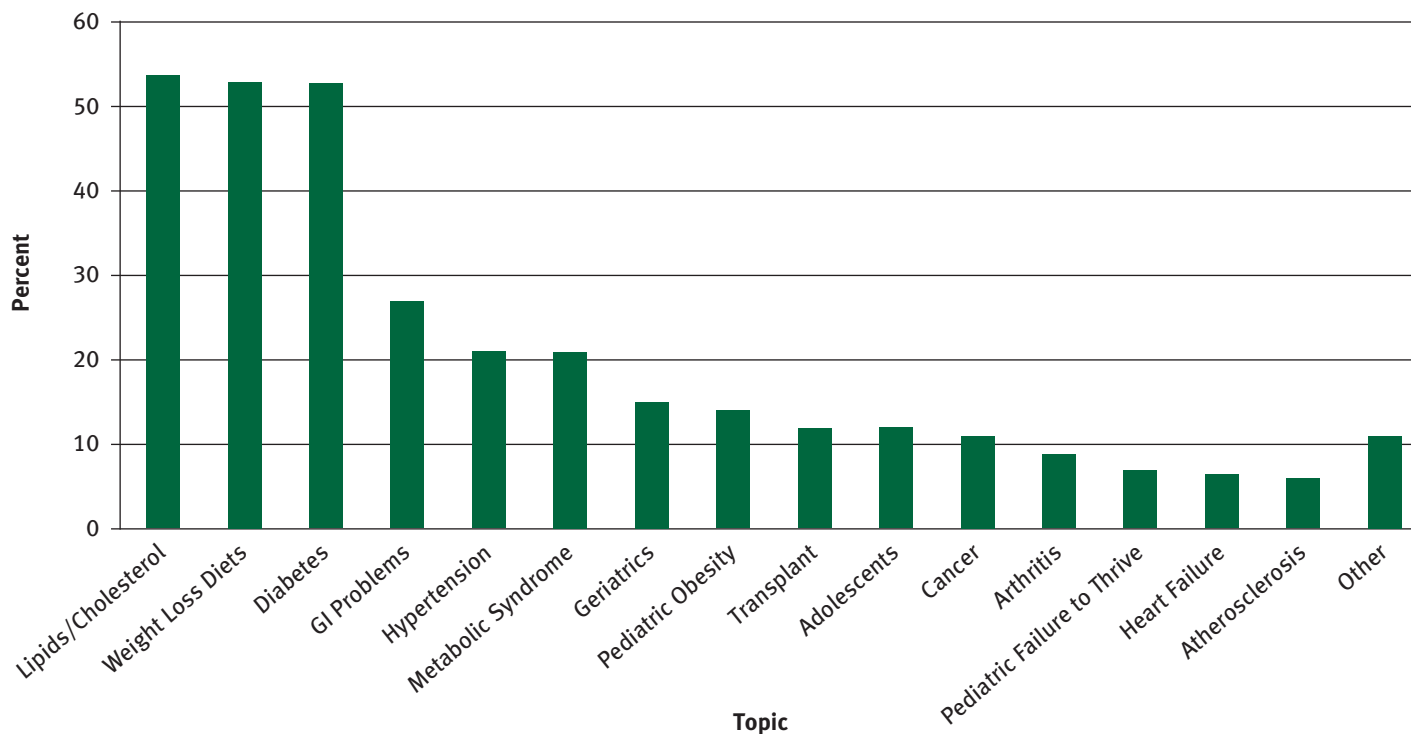


Figure 2. Nutrition Topics Encountered by PAs



tion issues were encountered ( $P < .001$ ), and if their patients asked questions about nutrition ( $P < .001$ ). Comfort level in addressing nutrition issues was also significantly associated with whether or not the PA initiated nutrition discussions with their patients ( $P < .001$ ) and how often nutrition information was provided (daily, weekly, or occasionally,  $P < .001$ ).

Factors not associated with level of comfort and confidence in addressing nutrition issues in this survey included full- or part-time practice or years of practicing as a PA. Method of obtaining information about nutrition, including high school course, college course, and PA school curriculum, speakers at conferences, continuing education courses, and reading books/articles about nutrition, were also not associated with a PA's level of confidence in addressing nutrition issues. More details regarding the association between PA practice and education

with comfort level in addressing nutrition concerns are given in Table 3.

## DISCUSSION

The University of Nebraska Medical Center Physician Assistant Program is a division of the School of Allied Health Professions in the College of Medicine. The program is a 28-month program that was expanded in 1993 to a Master of Physician Assistant Studies (MPAS) degree. The program is accredited through the Accreditation Review Commission on Education for the Physician Assistant and the Higher Learning Commission of the North Central Association of Colleges and Schools. Nutrition education is offered to these students through a collaborative effort with the School of Allied Health Professions Medical Nutrition Education Division. Classes in nutrition support, nutrition assessment, diabetes, and nutrition in the elderly are taught by registered dieti-

tians as part of a summer lecture series instituted in 2006.

Our study confirms that nutrition is relevant to PA practice in Nebraska and that PAs are very likely to encounter nutrition-related issues in their practice. The high frequency with which PAs encounter nutrition issues (86% reporting often or occasionally), coupled with the fact that a high percentage of PAs feel only "somewhat comfortable" (48%), with more than a quarter of PAs feeling "not comfortable" (27%), reinforces the need for PAs to have training in relevant nutrition topics and access to evidence-based nutrition education and resources. A survey published in 2007 of physicians, nurse practitioners, and PAs indicated that 84% of respondents were interested in a referral program that could offer comprehensive nutrition assessment and advice to their patients, with 80% interested in a referral source for obesity.<sup>4</sup> In comparison to our study,

**Table 3. Associations of PA Practice and Education with Comfort Level in Addressing Nutrition Concerns**

Question	Comfort Level n (%)			P-Value
	Very	Somewhat	Not	
<b>Current practice</b>				.27
Full time	52 (80)	105 (84.7)	63 (90)	
Part time	13 (20)	19 (15.3)	7 (10)	
<b>How often do you encounter nutrition issues/problems with your patients?</b>				.001
Often	54 (83.0)	66 (53.2)	24 (34.2)	
Occasionally	8 (12.4)	46 (37.1)	23 (32.9)	
Seldom	3 (4.6)	12 (9.7)	16 (22.9)	
Never	0	0	7 (10.0)	
<b>Do your patients ask you nutrition questions?</b>				.001
Yes	62 (95.4)	103 (83.1)	35 (51.5)	
No	3 (4.6)	21 (16.9)	33 (48.5)	
<b>Do you initiate discussion with your patients regarding nutrition?</b>				.001
Yes	62 (96.9)	105 (86.1)	39 (56.5)	
No	3 (3.1)	17 (13.9)	30 (43.5)	
<b>If you provide nutrition information, how often do you do so?</b>				.001
Daily	41 (63.1)	48 (39.0)	10 (14.3)	
Weekly	17 (26.1)	48 (39.0)	19 (27.1)	
Occasionally	7 (10.8)	27 (22.0)	41 (58.6)	

Table 3 continues on next page

the 2007 survey was conducted at a major medical center and did not involve PAs who practice in rural settings, but it did demonstrate a strong desire in the profession to provide nutrition services to patients who would benefit.

Suggested guidelines on the content of nutrition curriculum for PAs have been published. In 1997, Topics in Clinical Nutrition outlined the five basic entry-level PA functions related

to nutrition: (1) screen individuals for nutrition risk, (2) reinforce preventative nutrition messages, (3) provide basic/brief counseling, (4) initiate/monitor enteral and parenteral regimens, and (5) refer to registered dietitians (RDs) when a consult is needed.<sup>5</sup> The results of our survey indicate PAs may be more likely to encounter nutrition problems such as obesity and diabetes, as opposed to nutrition risk and enteral and parental nutrition regimens.

The results from this study improve upon a 1999 survey that indicated that PAs may not feel comfortable with the level of training provided in their professional program. The 1999 survey showed 73% of PAs indicated that they were not satisfied with the nutrition education they received, and 75% felt that PAs were not adequately trained to provide nutrition counseling to their patients. This same survey reported that only 6.2% of PAs stated their PA pro-



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Question		Comfort Level n (%)			P-Value
		Very	Somewhat	Not	
If you are comfortable addressing nutrition issues, to what do you attribute your comfort level?	<b>High school course</b>				.73
	Yes	3 (4.6)	10 (8.1)	4 (5.6)	
	No	62 (95.4)	114 (91.9)	66 (94.4)	
	<b>College course</b>				.89
	Yes	16 (24.6)	35 (28.2)	19 (27.1)	
	No	49 (75.4)	89 (71.8)	51 (72.9)	
	<b>PA course</b>				.48
	Yes	26 (40.0)	57 (46.0)	44 (50)	
	No	39 (60.0)	67 (54.0)	44 (50)	
	<b>Speakers at professional mtgs/confs</b>				1.0
	Yes	18 (27.7)	35 (28.2)	19 (27.1)	
	No	47 (72.3)	89 (71.8)	51 (72.9)	
	<b>Continuing education</b>				.59
	Yes	26 (40)	42 (33.9)	28 (40)	
	No	39 (60)	82 (66.1)	42 (60)	
<b>Books/articles</b>				.33	
Yes	31 (47.7)	54 (43.6)	40 (57.1)		
No	34 (52.3)	70 (56.4)	30 (42.9)		
<b>What is your area of specialty?</b>				.02	
Family practice	22 (23.7)	52 (55.9)	19 (20.4)		
Internal medicine	5 (21.7)	14 (60.9)	4 (17.4)		
Emergency medicine	3 (15.0)	12 (60.0)	5 (25.0)		
Orthopedics	1 (3.8)	11 (42.3)	14 (53.9)		
<b>Question</b>	<b>Mean</b>			<b>P-Value</b>	
<b>How many years have you practiced as a PA?</b>	13.6	11.6	12.7	.28	

gram was the source of their nutrition education.<sup>6</sup> Our results improve on that, with 42% of PAs attributing their comfort in addressing nutrition-related issues to their PA school curriculum. The 1999 survey also showed that although 90% of PAs felt it was the responsibility of the PA to provide nutrition counseling, only 40% felt comfortable providing nutrition counseling.<sup>6</sup> This information, coupled

with the high frequency at which they will encounter these issues, speaks to the need for intensive nutrition training both in PA programs and offered as follow-up continuing education. This trend appears to be consistent across other health care disciplines as well. A survey of medical students in their senior year showed that < 25% of medical students feel they receive extensive training in nutrition,

and < 50% were highly confident in their ability to provide nutrition counseling.<sup>7</sup>

Eighty-one percent (81%) of PAs in our survey responded that they initiate nutrition-related discussions with their patients often, which is higher than the 43% of female physicians that reported counseling their patients regarding nutrition.<sup>8</sup> In this study, the specialists most likely to provide nutrition counseling to

their patients included primary care physicians, obstetricians/gynecologists, and pediatricians.<sup>8</sup> The previously mentioned survey of medical students reported that medical students intending to practice primary care were much more likely to find nutrition counseling highly relevant and were more likely to provide nutrition counseling than those intending to subspecialize.<sup>7</sup> Factors associated with a higher level of comfort in addressing nutrition issues in our survey included a high frequency of encountering nutrition-related issues, a patient population that asks nutrition-related questions, initiating nutrition discussions with patients, and providing nutrition information on a frequent basis. This may indicate that clinicians are developing comfort in addressing nutrition-related issues “on the job,” as opposed to during their training or continuing education, as neither of these factors were significantly associated with comfort level. Number of years practicing as a PA also was not associated with comfort levels, again reinforcing that it may be the area of practice, as opposed to length of practice, that develops comfort in addressing nutrition issues.

Changes in the demographics of the population may be affecting the comfort levels of PAs in addressing nutrition issues in their practice. For instance, with the rise in the incidence of pediatric obesity, it is likely PAs practicing in pediatric locations could be encountering a higher number of obese children or children with early metabolic syndrome. It is possible PA programs' curricula have not adjusted to provide adequate training in this area. Almost 15% of PAs reported that pediatric obesity is one of the most frequent nutrition issues they encounter, while a commonly addressed topic in pediatric nutrition, failure to thrive, was encountered by only 7% of respondents. Additionally, a high percentage (63%)

of PAs practicing in emergency medicine tend to encounter nutrition-related issues with their patients, yet appear to have a lower comfort level in handling these nutrition issues, with only 15% reporting that they feel “very comfortable.” More specific information regarding types of questions and issues this group of PAs encounters may be beneficial in providing specific, point-of-care tools for these practitioners.

The demographics of the survey are representative of the state of Nebraska. The two largest cities have major medical centers that employ a large number of PAs. However, almost half of the respondents (45.5%) practice in communities with populations less than 99,999, which is consistent with the rural nature of much of the state. As these rural settings may be unlikely to offer access to nutrition professionals to whom the PA could refer cases, these data strengthen the need for a strong nutrition curriculum during PA training and access to nutrition-related continuing education opportunities. Additionally, new changes to Medicare reimbursement exclude health care professionals other than “a qualified primary care physician or other primary care practitioner”<sup>9</sup> from providing intensive behavioral therapy for the treatment of obesity. As this definition would include PAs as primary care providers, it further underscores the need for PAs to become confident and competent in nutrition counseling.

### Limitations

Several limitations can be identified in this study. Subjects who responded to the survey may have had different experiences than those who did not respond; however, our high response rate gives us confidence that our results are representative of the majority of PAs practicing in Nebraska. Analysis of subspecialties was limited by sample size. Generalizability of this study is

limited by the fact that this study population included only PAs who graduated from the University of Nebraska Medical Center program and who currently practice in Nebraska. Therefore, the results of this study may not generalize to PAs practicing across the nation. Future research should be conducted to determine if these results can be replicated in other geographical locations and if targeted nutrition education, either during PA training or as continuing education, is beneficial to PAs comfort level when addressing nutrition issues.

### CONCLUSION

Based on the results of this survey, PAs who graduated from the University of Nebraska Medical Center and practice in Nebraska are highly likely to encounter patients who require nutrition therapy as part of their practice. The majority of PAs feel only somewhat comfortable discussing the nutrition issues that arise in their practice. Integrating nutrition coursework into PA programs and targeted continuing education opportunities may increase the confidence of PAs in addressing nutrition-related issues in their practice.

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