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Primary Care Resident Training for Obesity, Nutrition, and Physical Activity Counseling: A Mixed-Methods Study

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Abstract

National guidelines have been established to support the role of primary care physicians in addressing obesity. Preparing primary care residents to recognize and treat overweight/obesity has been identified as an essential component of postgraduate medical training that is currently lacking. This study aims to identify how primary care residency programs are preparing physicians to counsel about obesity, nutrition, and physical activity (ONPA) and to examine program members' perspectives regarding the place of ONPA counseling in the curriculum, and its relevance in primary care training. Using mixed methods, we collected and analyzed data on 25 family medicine, internal medicine, and obstetrics/gynecology residency programs across Ohio. Programs averaged 2.8 hours of ONPA-related didactics per year. Ten programs (42%) taught techniques for health behavior counseling. Having any ONPA-related didactics was associated with greater counseling knowledge ($p = .01$) among residents but poorer attitudes ($p < .001$) and poorer perceived professional norms ($p = .004$) toward ONPA counseling. Findings from interview data highlighted similar perceived barriers to ONPA counseling across all three specialties but variation in perception of responsibility to provide ONPA counseling. While widespread expectations that primary care physicians counsel their overweight and obese patients prevail, few residency programs provide training to support such counseling.

Keywords

primary care; obesity; health promotion; medical education

INTRODUCTION

Nearly 70% of adults in the United States are overweight or obese, and the clinical and public health consequences are staggering (Jensen et al., 2014; Ogden, Carroll, Kit, & Flegal, 2014; Wang, McPherson, Marsh, Gortmaker, & Brown, 2011). A growing body of evidence suggests that brief counseling by primary care physicians is associated with

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positive behavioral and weight loss outcomes (Dansinger, Tatsioni, Wong, Chung, & Balk, 2007; Huang et al., 2004; Leblanc, O'Conner, Whitlock, Patnode, & Kapka, 2011; Rose, Poynter, Anderson, Noar, & Conigliaro, 2013). Several evidence-based guidelines and recommendations have been established to support the role of primary care physicians in addressing obesity (Jensen et al., 2014; National Heart Lung and Blood Institute, 2000; U.S. Department of Health & Human Services, 2001; U.S. Preventive Services Task Force, 2014). These guidelines are specific about providing individualized brief counseling based on the patients' readiness and preferences for losing and maintaining weight loss, making efficacious dietary changes, and being physically active (Calfas et al., 2002). Nevertheless, weight-related counseling during patient visits occurs infrequently (Antognoli et al., 2014; Ma, Xiao, & Stafford, 2009; McAlpine & Wilson, 2007; Rose et al., 2013), and rates of counseling in primary care have declined in recent years (Kraschnewski et al., 2013).

In light of this situation, preparing primary care residents to recognize and treat overweight/obesity has been identified as an essential component of postgraduate medical training that is currently lacking (Colbert & Jangi, 2013; Lenders et al., 2014; Vetter, Herring, Sood, Shah, & Kalet, 2008). Numerous studies have found residents to demonstrate a lack of familiarity with guidelines (Fluker et al., 2010), a poor grasp of the tools necessary to diagnose obesity (Block, DeSalvo, & Fisher, 2003; Ruser et al., 2005), and a lack of competency to provide counseling for obesity, nutrition, and physical activity (ONPA; Blumenthal, Gokhale, Campbell, & Weissman, 2001; Jay et al., 2008; Park, Wolfe, Gokhale, Winickoff, & Rigotti, 2005; Ruser et al., 2005; Vetter et al., 2008). In addition to these knowledge deficits, residents often report a lack of self-efficacy for ONPA counseling (Fluker et al., 2010; Vetter et al., 2008) and negative attitudes toward ONPA counseling (Block et al., 2003; Davis, Shishodia, Taqui, Dumfeh, & Wylie-Rosett, 2007). Identifying these deficits is an important precursor to understanding how resident training can better prepare residents for ONPA counseling. Equally important and, to our knowledge, missing from the literature is evidence about the specific curricular elements currently in place for training residents to counsel for ONPA, and an assessment of the degree to which these elements are improving resident preparedness for providing ONPA counseling. Furthermore, an examination of multiple subspecialties of adult primary care trainees is needed since prior work has largely focused on internal medicine (IM) trainees (Block et al., 2003; Davis et al., 2007; Fluker et al., 2010; Ruser et al., 2005; Vetter et al., 2008).

In this study, we compared residency programs in family medicine (FM), IM, and obstetrics/gynecology (OB/GYN) to (1) examine the scope and modalities of training currently in place in primary care residency programs to facilitate preparedness to counsel for ONPA, (2) assess the association between the presence of ONPA-related curricula and resident preparedness to provide ONPA counseling, and (3) explore program leaders' perspectives and attitudes toward ONPA counseling, its presence in the curriculum, and its relevance in primary care training.

METHOD

Study Design

This mixed-methods study involved document review and audit, a cross-sectional survey, and indepth interviews. We used mixed methods to help (1) identify and verify the content of the curriculum, (2) explain and interpret our quantitative analysis, and (3) explore the issues in greater depth. The study was conducted from April 2013 to October 2014. The study protocol was approved by the Institutional Review Board of University Hospitals Case Medical Center.

Site Selection and Recruitment

All primary care residency programs in the state of Ohio were identified, and 30 of the 54 FM, IM, and OB/GYN programs were selected for recruitment based on diversity by specialty, program size, location, and hospital affiliation status. We invited each sampled program to participate via a letter mailed to the program director describing the purpose and scope of the study, followed by a phone call. Program participation was incentivized by offering an educational presentation about ONPA counseling evidence and strategies.

Data Collection and Measures

Program Document Review.—To gain program-level demographic and curricular information, the study coordinator collected the Program Information Form; schedules of didactic lectures, grand rounds, and seminars; and rotation schedules from each enrolled program. Analysts reviewed all documents provided and logged specific program characteristics and ONPA training opportunities using a standardized form. Program websites and online directories were also reviewed to supplement program documentation. Program characteristics recorded included year established, number of first year positions available annually, number of current residents, number of current international medical graduates, number of core faculty, and number and type of clinical care blocks.

Assessment of ONPA training in the curricula included the following: total hours of didactics and ONPA-related didactics taught per year; whether allied health professionals provided instruction; whether specific ONPA guidelines and/or health behavior change counseling techniques were taught; whether ONPA-related tracks, fellowships, and/or electives were offered; and time spent in continuity clinic. Didactic sessions were classified as “ONPA-related” if content relating to the prevention, management, or treatment of overweight/obesity, diet/nutrition, and/or physical activity would likely be included based on the session’s title. A study team consensus approach was used, erring on the side of inclusiveness. The number of hours of all didactics classified as “ONPA-related” were then totaled for each program. A similar process was used to determine ONPA-related tracks, fellowships, and electives. As an added measure of validity, we asked program directors to review a one-page text summary reporting these key variables to verify accuracy and were asked to provide corrections or clarifications, if warranted.

Resident Survey.—A study team member administered a paper survey to senior residents in each program during a scheduled didactic session at each site. Specifically, we surveyed

postgraduate Year 3 residents for IM and FM and postgraduate Year 3/4 for OB/GYN regarding their knowledge, attitudes, self-efficacy, and perceived professional norms to counsel for ONPA. Measure information including items, development, and scoring have been reported previously (Smith et al., 2015). In brief, the knowledge measure included 15 items assessing knowledge of obesity risks, assessment, and treatment. We assessed attitudes with 12 items measuring residents' feelings about providing ONPA counseling. The self-efficacy measure included 9 items assessing residents' confidence in their ability to effectively counsel about ONPA. The professional norms measure included 10 items assessing residents' perceived role/expectations as a primary care physician in providing ONPA counseling. For all four measures, residents' scores were transformed to 0 to 100 scales for the analyses, with higher scores representing more positive responses (e.g., more positive attitudes toward ONPA counseling) and greater knowledge.

In-Depth Interviews With Program Members.—We conducted semistructured interviews in person or over the telephone with program personnel identified as most knowledgeable about the curriculum to (1) verify and expand our understanding of program and curricular characteristics assessed via document review (e.g., how and when health behavior change counseling was taught) and (2) explore program members' perceptions about the presence, feasibility, and relevance of ONPA counseling in primary care residency education. Participants for each program included the Program Director or Associate Program Director, other core faculty identified by the director, and one or more chief or senior resident.

The interview guide included open-ended questions assessing program members' perceptions of how their curriculum prepares residents to counsel for ONPA, thoughts on the relevance of ONPA counseling training during residency, and the opportunities and challenges for teaching or learning about ONPA counseling. We modified questions and added prompts throughout data collection as new knowledge was gained, particularly with respect to different specialties. In this way, qualitative data collection and analyses occurred concurrently in a cyclical, iterative process.

Analyses

Quantitative.—Descriptive statistics were computed to summarize program characteristics and opportunities for ONPA training in program curricula. Overall and specialty-stratified data are reported. Residents' ONPA counseling preparedness scores were calculated and found to be approximately normally distributed. The association of program and curriculum characteristics with residents' ONPA counseling scores was examined using *t* tests and analysis of variance and was evaluated with $p < .05$ as statistically significant.

Qualitative.—Analysis of each narrative interview consisted of repeated listening and jotting of salient themes to create a detailed one- to three-page summary. These summaries contextualized and expanded on the data retrieved from the document review and summarized the participants' responses to the interview guide topics. The full collection of summaries was then analyzed through the process of immersion/crystallization (Borkan, 1999), in which researchers cycle through reading, summarizing, and rereading, permitting

themes to emerge from the data that are described and refined through a process of revisiting the data to search for confirming (or disconfirming) evidence.

RESULTS

Quantitative Findings

Twenty-five of the 30 residency programs invited to participate (83%) enrolled and participated in data collection (9 FM, 10 IM, and 6 OB/GYN). All programs except one provided program documents. A total of 84 interviews were conducted with program faculty and residents (38 FM, 30 IM, and 16 OB/GYN). Survey data were collected from 219 senior residents, representing an overall response rate of 62% (68% for FM, 55% for IM, and 84% for OB/GYN).

Table 1 shows the demographic characteristics of participating programs. As expected, program size varied by specialty, with IM programs being the largest. The majority of participating programs were in urban settings (88%) at community-based, university-affiliated hospitals (68%). Programs' location within the state and payor mix were diverse.

Table 2 shows the opportunities for ONPA training in program curricula based on the document review and interview data. While programs averaged 255 hours of didactics annually, less than 3 hours per year were spent on ONPA-related topics, with FM programs having the most ONPA-related didactic hours and IM having the least, on average. Only four programs (17%) provided specific instruction about the use and implementation of ONPA-specific guidelines, while 10 programs (42%) taught techniques for health behavior counseling. No participating program offered ONPA-related tracks; about one quarter (24%) offered ONPA-related fellowships. Many participating programs permitted residents to create their own electives, rather than offering established electives, so ONPA-related elective offerings could be evaluated only for a subsample of seven programs. Among those programs, offering one or more ONPA-related electives was common, except among OB/GYN programs. Training time in continuity clinic was highest for FM programs (2.6 half-days/week) and lowest in OB/GYN (1.0 half-day/week).

The associations of opportunities for ONPA-related training in programs' curricula with residents' ONPA counseling preparedness scores are shown in Table 3. Since the overall presence of ONPA-related training opportunities was low, most variables were dichotomized to represent any versus none. Having any ONPA-related didactics was associated with greater resident ONPA counseling knowledge ($p = .01$) but poorer attitudes ($p < .001$) and perceived professional norms ($p = .004$) toward ONPA counseling. Formal curriculum on ONPA guidelines was associated with greater ONPA knowledge ($p = .03$) but poorer perceived norms toward ONPA counseling ($p = .01$). Teaching health behavior counseling techniques was associated with both greater ONPA knowledge ($p = .02$) and greater ONPA counseling self-efficacy ($p = .02$). Having two or more blocks designated for electives, compared to none or one, was significantly associated with greater self-efficacy and more positive perceived norms regarding ONPA counseling. Having more than one half-day of continuity clinic time weekly, compared to having only one half-day, was also associated with greater ONPA counseling self-efficacy ($p = .04$). Finally, offering any ONPA-related

fellowships was associated with more positive perceived professional norms toward ONPA counseling among residents ($p = .001$). While hypothesized to be associated with resident knowledge, attitudes, self-efficacy and perceived professional norms, analyses of ONPA-related tracks could not be conducted because no participating programs offered any.

Qualitative Findings

Participants across the three specialties discussed several common themes regarding the limited opportunities for teaching, learning, and practicing ONPA counseling in their programs. First, many program directors stated that with the finite amount of space in the curriculum, their focus had to be on those topics that were required for passing board examinations. Also, several directors noted that including an ONPA curriculum would require a “faculty champion” with the knowledge, interest, and time to develop and implement such a curriculum. With most teaching faculty already time-constrained, this presented a significant barrier cited by numerous programs.

In the same vein, many residents reported frustration with the inconsistencies in ONPA information received in the ambulatory precepting setting due to variable knowledge, expertise, and emphasis placed on those subjects. Residents also reported a lack of knowledge about strategies for offering brief and effective advice to their patients, and a lack of familiarity with community resources that could be helpful to patients. Moreover, many stated that the patient population with which residents primarily interact tended to have multiple acute issues requiring prioritization, making counseling impractical within time-limited visits.

Many of our open-ended questions about the role of ONPA counseling in the curriculum and in primary care in general elicited responses regarding professional norms and roles. Among FM faculty and residents, health behavior change counseling was seen as an integral part of their role as primary care clinicians. Furthermore, a keen awareness of the extent of the obesity problem and the need to address it was apparent. However, this did not often translate into curricula that supported training for ONPA counseling, although several program directors expressed openness toward curricular improvements in this area. While most FM programs did have a health behavior change curriculum, the format and intensity of the training, the use of direct observation and feedback on counseling skill development, and the extent to which ONPA topics were integrated into the curriculum varied a great deal. Most residents reported limited opportunities to practice ONPA counseling, and many expressed frustration with the inconsistency between their training and their professional role expectations.

Perspectives were more variable within the larger and more heterogeneous IM programs. However, the consensus was that since only a small proportion of residents were interested in pursuing primary care practice as their career goal, training in ONPA counseling was not essential for all IM residents. Some programs provided separate tracks for those interested in primary care, although these did not include ONPA-related curricula either. Overall, ONPA topics were thought to be most appropriate in the context of the management of diabetes, hypertension, or other chronic diseases for which obesity is a risk factor, with little emphasis on primary prevention of overweight/obesity. Interviewees perceived ONPA counseling as a

task best performed by a dietician or other health professional. Discomfort with the topic of obesity, worries about offending the patient, and a tendency to blame the patient were pervasive attitudes among IM residents.

Like IM, OB/GYN incorporates a variety of subspecialties, and residents are trained to provide care in many different contexts. Perhaps because of this, some faculty did not consider themselves primary care physicians; likewise many residents felt that the majority of their clinical activities would not be considered primary care. Although there was widespread agreement that overweight/obesity was an important contributing factor to their patients' health, ONPA-related curricular content in OB/GYN programs tended to be restricted to obstetrics, where ONPA counseling was often encouraged to ensure appropriate pregnancy weight gain and the avoidance of gestational diabetes. Interviewees differed in their feelings toward pregnancy being an opportunity to address ONPA, with some reporting that it was not an adequate opportunity to help women with long-term ONPA issues and others noting that they had a professional responsibility to use prenatal visits as a turning point for women with regard to obesity and associated illnesses. Outside the context of pregnancy, many OB/GYN residents felt that obesity was a very sensitive issue, and several expressed concern that such conversations may result in damage to the physician-patient relationship.

In spite of the challenges to ONPA counseling during residency, and the mixed opinions about its relevance, some program members from each specialty believed that having a formalized curriculum for ONPA would guide efforts to improve the delivery of ONPA counseling. Many residents expressed a desire for brief and effective communication strategies and for a synthesis of ONPA recommendations and resources that could be easily provided to patients. Training in counseling techniques combined with opportunities for observation, role-playing, and feedback were suggested as potentially helpful training enhancements. Increasing allied health professional engagement as educators in interprofessional team-based care was also noted as an approach to improve ONPA counseling training. For example, a shared medical appointment approach, including emphasis on ONPA topics for diabetes management, was one strategy implemented by a few programs.

DISCUSSION

Primary care physicians are expected to provide brief counseling to their overweight/obese patients in order to address this growing clinical and public health concern. Consistent with other reports of ONPA skill and knowledge deficits among primary care residents (Blumenthal et al., 2001; Park et al., 2005; Ruser et al., 2005) and, more widely, among practicing primary care physicians (Block et al., 2003; Hébert, Caughy, & Shuval, 2012; Huang et al., 2004; Jay et al., 2008), this research demonstrates that overall, there is very little instructional time spent on ONPA counseling topics across FM, IM, and OB/GYN residency programs. Specifically, instruction on ONPA guidelines and recommendations and training in ONPA counseling techniques are limited. Furthermore, this research provides some insight into the effects of specific curricular elements on resident preparedness to counsel for ONPA and the attitudes toward ONPA counseling by program participants.

We found that while teaching ONPA-specific content through didactics is associated with improved ONPA knowledge, it is also negatively associated with both attitudes and perceived professional norms. It could be that such didactics highlight the complexity of the issue and create a sense of frustration with the task of ONPA counseling. It could also be that ONPA didactics reinforce a pervasive negativity toward ONPA counseling that already exists within the department, as is supported by our interview data. Influences that function at the level of organizational culture could be significant in shaping residents' perspectives toward ONPA counseling, and a pervasive stigma associated with obesity has been well documented in health care settings (Budd, Mariotti, Graff, & Falkenstein, 2011; Foster et al., 2003; Mold & Forbes, 2013; Puhl & Heuer, 2009). The notion that residency programs may play a role in reinforcing these negative attitudes is supported by a study that found ONPA attitudes to be worse among third-year residents than first-year residents (Davis et al., 2007). Additional research is needed to better understand why this would be the case, and how widespread this tendency is. However, given this context, it seems clear that improving ONPA curricula during residency must address issues of attitude and role responsibility (Block et al., 2003; Davis et al., 2007; Gillespie & Jay, 2010).

Low self-efficacy is reported as a common barrier to physicians engaging in weight management counseling (Hébert et al., 2012; Perrin, Flower, Garrett, & Ammerman, 2005). Our finding that resident self-efficacy is associated with being taught health behavior change counseling, participating in ONPA elective blocks, and spending more time in continuity clinic has important implications for graduate medical education. Curricula that emphasize building skills in behavior change counseling techniques, with the opportunity to practice, engage patients, and receive feedback to hone counseling skills, are likely to improve clinician confidence in counseling and thus increase the likelihood of providing counseling on a routine basis. Future research could also investigate whether increasing resident confidence in their ability to perform a range of ONPA counseling tasks could help improve attitudes and norms regarding overweight and obesity counseling.

The study findings must be interpreted in the context of a few limitations. First, the study is limited to a sample of residency programs in Ohio. Ohio was selected as the site for this intensive data collection effort because of the number and variety of primary care training programs, but additional research is needed to determine the degree to which these programs are similar to other regions across the country. Second, the number of program didactics and electives that were "ONPA-related" is based on information that was documented. Classification was limited to review of program documents, which largely consisted of lists of titles, rather than detail on the specific content or focus of the session or rotation. However, we sought clarification on program content during our interviews with program members, and program directors had an opportunity to review and correct our summary of how ONPA topics were addressed in current curricula. This study excluded pediatric residency programs. Although this is another important setting in which to examine ONPA counseling training, we excluded pediatric programs due to the differences between adult and pediatric counseling recommendations and limitations of the scope of funding.

CONCLUSIONS

In conclusion, training to support ONPA counseling strategies is limited for FM, IM, and OB/GYN residency training specialties in Ohio. While the context of residency training poses many challenges, integrating an ONPA-focused curriculum that includes practice-based learning and addresses issues such as stigma and professional roles and responsibilities could increase resident preparedness and ultimately the routine practice of ONPA counseling in ambulatory primary care. Given the prevalence of overweight/obesity, even marginal improvements in behavioral and weight loss outcomes have widespread implications for the health of the population.

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TABLE 1

Characteristics of Participating Programs

<i>Program Characteristics</i>	<i>Total (n = 25)</i>		<i>Family Medicine (n = 9)</i>		<i>Internal Medicine (n = 10)</i>		<i>OB/GYN (n = 6)</i>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Year program established	1,970	13.7	1,975	3.9	1,970	17.5	1,962	15.3
First-year positions available annually	13	12.3	7	1.5	24	14.1	5	0.8
Current residents	41	36.6	21	4.5	71	42.6	19	3.8
Current foreign medical graduates	11	13.2	9	6.8	21	17.6	1	1.2
Core faculty	11	6.2	9	2.6	11	6.3	15	8.4
Clinical care blocks per year	12.1	0.9	12.3	0.5	12.5	0.5	11.2	1.3
Hospital (inpatient)	5.7	1.0	5.1	0.7	6.1	1.1	6.2	0.6
Specialty/elective rotations	3.2	1.4	3.4	0.9	3.5	2.0	2.7	0.9
Ambulatory (outpatient)	2.3	1.2	3.1	0.7	1.4	1.3	2.3	0.5
Emergency department	0.4	0.3	0.7	0.2	0.3	0.3	0.1	0.1
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Context								
University-based hospital	6	24	1	11	4	40	1	17
Community-based, university affiliated hospital	17	68	8	89	4	40	5	83
Community-based hospital	2	8	0	0	2	20	0	0
Location								
North Coast	9	36	3	33	4	40	2	33
Northeast	7	28	4	44	1	10	2	33
Northwest	3	12	0	0	2	20	1	17
Central/Southwest	6	24	2	22	3	30	1	17
Setting								
Urban	22	88	7	78	10	100	5	83
Suburban	3	12	2	22	0	0	1	17
	<i>M %</i>	<i>SD</i>	<i>M %</i>	<i>SD</i>	<i>M %</i>	<i>SD</i>	<i>M %</i>	<i>SD</i>

<i>Program Characteristics</i>	<i>Total</i> (n = 25)		<i>Family Medicine</i> (n = 9)		<i>Internal Medicine</i> (n = 10)		<i>OB/GYN</i> (n = 6)	
	M	SD	M	SD	M	SD	M	SD
Payor mix								
Commercial	22.3	18.4	27.9	14.9	27.5	22.1	8.3	14.7
Medicaid	39.2	20.0	41.2	15.7	27.2	22.2	48.2	22.0
Medicare	23.9	14.8	20.8	11.6	34.4	1.9	18.3	22.2
Self-pay/uninsured	13.5	12.3	8.5	9.6	9.7	3.9	25.2	15.1
Other	1.1	2.2	1.7	2.8	1.3	2.0	0	0

NOTE: OB/GYN = obstetrics/gynecology.

TABLE 2

Opportunities for ONPA Training in Program Curricula

ONPA Training Opportunities	Total (n = 25)	Family Medicine (n = 9)	Internal Medicine (n = 10)	OB/GYN (n = 6)
Hours of didactics per year, <i>M(SD)</i>	254.7 (96.0)	217.4 (47.8)	305.5 (127.7)	243 (84.9)
Hours of ONPA-related didactics per year, <i>M(SD)</i>	2.8 (4.9)	4.9 (7.5)	1.2 (1.6)	2.0 (1.4)
Allied health professional(s) provide didactics, <i>n</i> (%)	9 (39)	3 (38)	6 (67)	0 (0)
ONPA guidelines formally taught, <i>n</i> (%)	4 (17)	1 (11)	1 (11)	2 (33)
HB change counseling techniques taught, <i>n</i> (%)	10 (42)	8 (89)	2 (22)	0 (0)
Offers ONPA-related track(s), <i>n</i> (%)	0 (0)	0 (0)	0 (0)	0 (0)
Blocks designated for electives, <i>M(SD)</i>	5.1 (3.6)	4.2 (0.8)	8.6 (3.3)	1.2 (1.0)
Offers ONPA-related elective(s) ^a , <i>n</i> (%)	6 (86)	1 (100)	5 (100)	0 (0)
Half days per week in continuity clinic, <i>M(SD)</i>	1.7 (0.9)	2.6 (0.3)	1.4 (0.9)	1.0 (0.0)
Offers ONPA-related fellowship(s), <i>n</i> (%)	6 (24)	3 (33)	3 (30)	0 (0)

NOTE: ONPA = obesity, nutrition, and physical activity; OB/GYN = obstetrics/gynecology; HB = health behavior.

^aBased on the 50% of programs that offered predefined electives.

TABLE 3
 Association of Opportunities for ONPA Training in Programs' Curricula With Residents' ONPA Counseling Scores

ONPA Training Opportunities	Knowledge			Attitudes			Self-Efficacy			Perceived Professional Norms		
	n	M	SD	p	n	M	SD	p	n	M	SD	p
ONPA-related didactics												
No	50	45.7	17.0	.01	61	61.3	13.1	<.001	59	53.3	18.6	.43
Yes	141	52.8	14.8		148	52.2	13.1		147	51.3	15.8	
Allied health professional(s) provide didactics												
No	106	50.7	14.1	.95	117	53.1	11.9	.10	117	50.3	15.9	.21
Yes	83	50.8	17.5		90	56.5	15.9		88	53.3	17.4	
ONPA guidelines formally taught												
No	153	49.5	15.1	.03	169	55.3	13.4	.09	167	52	16.5	.58
Yes	38	55.6	16.5		41	51.3	14.9		40	50.4	17	
HB change counseling techniques taught												
No	124	48.8	15.2	.02	139	55.2	13.9	.30	138	49.8	16.3	.02
Yes	67	54.3	15.6		71	53.1	13.4		69	55.6	16.6	
Blocks designated for electives												
0-1	37	50.3	16.1	.44	40	49.9	13.1	.06	40	42.9	15.2	<.001 ^a
2-6	65	52.7	13.8		70	55.4	11.6		69	55.2	15.9	
>6	89	49.5	16.5		100	55.8	15.1		98	52.9	16.5	
Half-days per week in continuity clinic												
1	97	49.9	17.4	.30	109	56.7	15.3	.10	107	50	17.9	.04
>1	63	52.5	13.7		69	53.4	11.1		68	55	13.8	
ONPA-related fellowship(s)												
No	131	51.6	15.9	.42	146	54.2	13.7	.42	144	50.2	16.9	.06
Yes	65	49.6	15		69	55.9	14.3		68	54.9	15.4	

NOTE: ONPA = obesity, nutrition, and physical activity; HB = health behavior.

^aTukey's honest significant difference post hoc tests revealed that resident self-efficacy and perceived professional norms scores were significantly higher for programs with 2 blocks designated for electives compared to those with 0 to 1 block. There were no significant differences between having 2 to 6 blocks and >6 blocks.