

Curriculum Planning: A Needs Assessment for Complementary and Alternative Medicine Education in Residency

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Background and Objectives: *The curricular needs in complementary and alternative medicine (CAM) of family medicine residents are unknown. Our objective was to assess perceptions of knowledge, attitudes, practice behaviors, and interest toward CAM by family medicine residents. Methods: A questionnaire was administered to family medicine residents (n=153) throughout one state. Results: The response rate was 77% (118/153), with an equal distribution of first-, second-, and third-year residents. Respondents reported minimal knowledge of CAM and low awareness of CAM resources. Many do not routinely ask patients about their CAM usage. Most respondents reported discomfort advising their patients of the risks and benefits of CAM therapies, and most were interested in learning about CAM. While prior training made a difference in responses, gender and training level did not. Whites were more likely to have had prior training in CAM than non-whites. Conclusions: Family medicine residents in Arkansas may not have enough training in CAM. Given the growing popularity of these modalities among the general public, residents might benefit from training and education in CAM.*

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The American public's use of complementary and alternative medicine (CAM) has gained increasing attention over the past several years. Results from the 2002 National Health Information Survey (NHIS) showed that 36% of adults use CAM and if prayer is included, that figure jumps to 62%.¹ Unfortunately, studies have shown that health care providers lack knowledge in CAM and are often unaware of their patients' use of CAM therapies.²⁻⁴ Therefore, CAM education for providers is essential to address patient safety,³ to communicate effectively with patients,⁵ and to allow for the opportunity to improve patient care.⁶

Educational initiatives have been promoted, and surveys of institutions indicate an increasing presence of CAM education in medical schools and residency programs.^{3,4} The National Center for Complementary and Alternative Medicine (NCCAM) awarded grants to various institutions to promote curriculum development,⁷ and a group of 23 academic health centers throughout the United States joined to form the Con-

sortium of Academic Health Centers for Integrative Medicine (CAHCIM). This consortium has published a set of competencies for integrative medicine, which combines appropriate aspects of CAM and conventional medicine for medical schools.⁷ The Society of Teachers of Family Medicine (STFM) has published curricular guidelines for the inclusion of CAM in family medicine residency training.⁵

While there is a small but growing body of literature specifically examining attitudes, beliefs, and practices regarding CAM among individuals at varying levels of medical training and in different types of practice settings,^{4,8-12} there is little information pertaining to family medicine residents. Two surveys and other studies show attitudes toward CAM education are favorable, and respondents report that knowledge of these practices may be helpful as part of patient care.^{4,8-12} The Integrative Medicine Attitude Questionnaire (IMAQ) was used specifically to assess provider attitudes toward integrative medicine.¹⁰ The CAM Health Belief Questionnaire (CHBQ) incorporated the IMAQ and was used to assess attitudes among medical students only.¹¹ However, neither the IMAQ nor the CHBQ include items that address knowledge perceptions and self-reported practice behaviors, and neither study included residents.

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At least one family medicine residency in Arkansas is planning to incorporate CAM as a curriculum element for family medicine residents. The survey described in this study was designed as a needs assessment tool for the CAM curriculum in this program and to determine residents' interest in a CAM curriculum. The objectives were to assess family medicine residents' perceptions of their own knowledge, self-reported practice behaviors, and attitudes toward CAM.

Methods

Drafts of the questionnaire were prepared and then reviewed by faculty at the University of Arkansas for Medical Sciences (UAMS) in the Department of Family and Preventive Medicine, the Department of Health Behavior, and in the Office of Educational Development. The final version of the questionnaire and the plan for its dissemination were reviewed and approved for exempt status by the UAMS Institutional Review Board prior to initiating the study.

Instrument

The questionnaire contained items from seven categories as listed below.

Attitudes. Respondents were asked how much incorporating CAM would help them care for their patients (4-point scale, from "It would help a lot" to "It wouldn't help at all") and their comfort level in advising a patient about the harms and benefits of a CAM therapy (4-point scale, from comfortable to uncomfortable).

Prior Training and Future Learning Preferences.

Questions on previous training asked whether respondents had any prior CAM training and, if so, when and in what formats. Possible responses for time of training included undergraduate, medical school, previous postgraduate experience, and self-learning. Possible formats included didactics, online resources, journals articles, books, or hands-on/shadowing experiences. If they were interested in learning about CAM, respondents were asked what learning methods they preferred and whether they wanted a block rotation or a longitudinal learning experience.

Awareness of Resources. Respondents rated their awareness of four types of resources on a 5-point scale from poor to excellent: journal articles, Web sites, books, and local CAM providers.

Knowledge. Respondents were asked to rate their overall knowledge of CAM and their knowledge in seven fields of CAM (alternative systems, bioelectromagnetics, special diets and nutrition, herbal remedies, manual healing methods, mind/body interventions, and non-mainstream pharmacologic/biological treatments).

Response choices were on a 5-point scale ranging from poor to excellent.

Practice Habits. Respondents were asked how frequently they asked clinic patients about CAM use and the frequency of their referrals for CAM (both on a 5-point scale, from never to always).

Patient Usage. Respondents were asked what percentage of their patients they thought used some type of CAM therapy.

Demographics. Items included gender, age, ethnicity, and postgraduate year (PGY) level.

Procedures

Packets of questionnaires were sent to all family medicine residency programs in the state. The questionnaires were self-administered by all residents (n=153) during noon conferences, and participation was completely voluntary. All responses were anonymous, and no identifiers were used.

Data Analysis

Once completed, questionnaires were collected, and responses were coded and entered into SPSS, version 13.0. Frequency data were obtained. Chi-square analyses were performed to look for differences in response patterns by gender, PGY level, ethnicity, and prior training. Ordinal regression was used to determine if ethnicity was independently associated with a difference in responses. Cronbach's alpha was calculated for items on knowledge and awareness of resources.

Results

The overall response rate was 77% (118/153). Of those who answered the various demographic questions, two thirds (79/110) were male, and one third (41/110) were female. Two thirds (52/79) were white, and the remaining one third (26/79) described themselves as Black, Hispanic, Asian, or Indian. Respondents were evenly distributed over PGY levels 1 (38/109), 2 (37/109), and 3 (34/109). Cronbach's alpha was .90 for the items on knowledge and .86 for the items on awareness of resources.

In categories addressing perceptions of CAM knowledge, approximately 83% (86/103) of respondents rated their overall knowledge as fair or poor. Perceptions of knowledge were highest for mind/body interventions and manual therapies and lowest for bioelectromagnetics and non-mainstream pharmacological therapies (Table 1).

Most respondents reported that they do not routinely ask their patients about use of CAM therapies. Almost half (54/118) never or rarely ask patients about CAM, 36.4% (43/118) sometimes ask, 16.9% (20/118) often

Table 1
Resident Knowledge Perception Responses by CAM Category (%)

Category	Responses					Total # (%)
	Poor # (%)	Fair # (%)	Good # (%)	Very Good # (%)	Excellent # (%)	
Alternative systems	61 (51.7)	42 (35.6)	13 (11)	1 (0.8)	1 (0.8)	118 (100)
Bioelectromagnetics	77 (66.4)	30 (25.9)	9 (7.8)	0 (0)	0 (0)	116 (100)
Special diets and nutrition	48 (40.7)	53 (44.9)	14 (11.9)	3 (2.5)	0 (0)	118 (100)
Herbal remedies	41 (34.7)	51 (43.2)	23 (19.5)	2 (1.7)	1 (0.8)	118 (100)
Manual healing methods	40 (33.9)	50 (42.4)	20 (16.9)	5 (4.2)	3 (2.5)	118 (100)
Mind/body interventions	38 (32.5)	48 (41.0)	24 (20.5)	6 (5.1)	1 (0.9)	117 (100)
Non-mainstream pharmacological/biological treatments	77 (65.3)	31 (26.3)	9 (7.6)	0 (0)	1 (0.8)	118 (100)
Overall knowledge	43 (41.7)	43 (41.7)	14 (13.6)	2 (1.9)	1 (1.0)	103 (100)

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ask, and less than 1% (1/118) always ask. In addition, most respondents reported that less than one third of their patients used some type of CAM (Table 2).

More than 92% of respondents rated their awareness of CAM resources as poor or fair in all four categories: journal articles (108/117), Web sites (109/117), books (109/117), and local CAM providers (108/117). When asked how much incorporation of elements of CAM into practice would help them take care of their patients, 70.1% (82/117) reported it would help a lot or somewhat, and nearly 30% (35/117) reported it would not help much or at all.

When asked about comfort level in advising patients regarding the harms and benefits of a particular CAM therapy, only 5% reported being comfortable (Table 3). Seventy-nine percent (92/116) of respondents never or rarely made a referral for or recommended a CAM therapy to a patient.

Seventy-four percent of respondents (87/117) reported that they had no prior CAM training. Of those who did have some prior training, 86% (26/30) of them had it during medical school. The most common format was didactics. Eighty-four percent (96/114) of respondents reported an interest in learning about CAM, and the two most preferred methods were didactics and working with a CAM provider. Fifty-one percent (58/113) of respondents preferred a block rotation in CAM, and 46% (52/113) preferred a longitudinal experience.

Responses were not statistically different when compared by gender for overall knowledge, asking patients about usage, perceptions of patient usage, awareness of resources, helpfulness of incorporation of CAM into patient care, comfort level in advising patients about CAM, frequency of CAM referrals, prior training, or interest.

Table 2

Resident Perceptions of Percentage of Their Patients Who Use CAM

Response Option	Number of Respondents (%)
< 10%	38 (32.5)
11%–30%	44 (37.6)
31%–50%	23 (19.7)
51%–75%	10 (8.5)
>75%	2 (1.7)

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Table 3

Resident Self-reported Comfort Levels

Response Option	Number of Respondents (%)
Uncomfortable	28 (23.9)
Somewhat uncomfortable	44 (37.6)
Somewhat comfortable	39 (33.3)
Comfortable	6 (5.1)

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PGY-3 respondents were more likely to report a better awareness of books as a CAM resource than PGY-1 or PGY-2 respondents. Other responses were not significantly different when compared by PGY level.

Prior training was found to significantly differentiate responses (Table 4). Those who reported having prior training were more likely to report higher overall

knowledge than those who did not report prior training ($P<.05$). They were also more likely to ask patients about their use of CAM ($P<.05$), to report that a higher percentage of their patients used CAM ($P<.005$), to report higher comfort levels when advising patients about CAM ($P<.005$), and to recommend or refer a patient for a CAM therapy ($P<.005$). Prior training did not make a difference in responses to questions

regarding helpfulness of incorporating CAM into patient care and interest in learning about CAM.

Compared to non-whites, whites were more likely to report that they had prior training. An ordinal regression, using prior training as a covariate, found that ethnicity was not independently associated with a difference in other responses.

Discussion

Overall, respondents reported minimal knowledge of CAM and low awareness of CAM resources. Moreover, respondents reported that they are not asking patients about their use of CAM, thereby potentially underestimating the percentage of patients who utilize such therapies. While more than half of respondents thought that incorporating CAM could help patient care, most felt uncomfortable advising patients of the risks and benefits. Most reported no prior training and were interested in learning about CAM. Only prior training was associated with significant differences in responses.

The findings of this study are important for several reasons. A search of PubMed (including MEDLINE), SciSearch, and EBSCO databases from 1975 to the present revealed that it is the only survey specifically on family medicine residents' attitudes, percep-

Table 4
Responses by Prior Training

Question*	Response Options	Prior Training	
		No Number (%)	Yes Number (%)
Perception of overall knowledge (n=102)	Poor	39 (51.3)	4 (15.4)
	Fair	27 (35.5)	16 (61.5)
	Good	9 (11.8)	5 (19.2)
	Very Good	1 (1.3)	0 (0)
	Excellent	0 (0)	1 (3.8)
	Total	76 (100)	26 (100)
Asking patients about CAM usage (n=117)	Never	18 (20.7)	1 (3.3)
	Rarely	29 (33.3)	6 (20.0)
	Sometimes	27 (31.0)	15 (50.0)
	Often	13 (14.9)	7 (23.3)
	Always	0 (0)	1 (3.3)
	Total	87 (100)	30 (100)
Perceptions of percentage of patients who use CAM (n=116)	<10%	36 (41.9)	2 (6.7)
	11%–30%	34 (39.5)	9 (30.0)
	31%–50%	10 (11.6)	13 (4.3)
	51%–75%	6 (7.0)	4 (13.3)
	>75%	0 (0)	2 (6.7)
	Total	86 (100)	30 (100)
Self-reported comfort levels (n=117)	Uncomfortable	27 (31.0)	1 (3.3)
	Somewhat uncomfortable	32 (36.8)	12 (40.0)
	Somewhat comfortable	26 (29.9)	13 (32.5)
	Comfortable	2 (2.3)	4 (13.3)
	Total	87 (100)	30 (100)
Recommending/referring a patient for CAM therapy (n=116)	Never	54 (62.8)	1 (3.3)
	Rarely	23 (26.7)	14 (46.7)
	Sometimes	9 (10.5)	12 (40.0)
	Often	0 (0)	3 (10.0)
	Total	86 (100)	30 (100)

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* Responses to all questions indicated significant differences by presence of prior training.

tions of knowledge, and self-reported practice behaviors in CAM. Such information is important in planning a CAM curriculum for family medicine residents. Further, this study confirms that residents perceive that their knowledge in CAM is inadequate and that practice behaviors should be addressed. Perhaps because rates of prior CAM training are low, residents are not routinely asking patients about their CAM usage. Such resident behavior is concerning, given that Eisenberg and associates reported that more than 60% of patients who said they used a CAM therapy did not tell their providers.¹³ When discussions about CAM do arise, residents are not comfortable addressing the risks and benefits with their patients. Consistent with previous studies, the majority of respondents in the current survey are interested in learning more about CAM.

Limitations

Several limitations were present in this study. This questionnaire was completed only by family medicine residents in one state in the southern United States, where residency training in CAM does not currently exist. Residents in other states may have different perceptions of CAM knowledge, awareness of resources, practice behaviors, and interest levels, thereby limiting our ability to generalize the results. In addition, this instrument evaluated perceptions of knowledge and self-reported practice behaviors, rather than actual CAM knowledge and practice behaviors. Also, while items on resource awareness and knowledge perceptions were internally consistent, the remaining items covered multiple constructs and could not be tested for reliability. Nonetheless, the high response rate and equal distribution of respondents across PGY levels increase the usefulness of the information gained from this study.

Conclusions

This questionnaire was designed to perform a needs assessment for a CAM curriculum for family medicine residents. The respondents felt their knowledge was poor and expressed significant interest in learning about CAM. Further, possible underestimation of patient use of CAM and inadequate CAM history-taking behaviors clearly need to be addressed. The findings from this survey should be helpful in the design of new CAM curricula.

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