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Care of the Underserved: Faculty Development Needs Assessment

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Abstract

Introduction—Because role models are crucial to training physicians to care for the underserved, we examined pediatric faculty's knowledge, attitudes, self efficacy, skills, and precepting behaviors regarding care for this population.

Methods—Faculty knowledge, attitudes, self efficacy, and skills/precepting behaviors were surveyed.

Results—Fifty-five (65%) of 85 faculty responded. The mean(SD) knowledge score was 5.9(1.3) of 8 possible. Over one-third of faculty did not recognize the eligibility criteria, services, and outcomes associated with common resources serving the underserved. Overall attitudes toward underserved families were positive (mean=3.3(0.3)), as was mean self efficacy (3.0(0.7)). Self efficacy was lowest for accessing community resources for underserved families (2.4(0.7)). Although most faculty performed the surveyed skills, less than 50% reported precepting of these same skills with students. Precepting was lowest for accessing public and community resources.

Conclusions—Low rates of student precepting as well as specific knowledge and self efficacy deficits highlight potential targets for faculty development.

Keywords

underserved populations; pediatrics; faculty development; preceptors

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INTRODUCTION

The designation “underserved” applies to many vulnerable population segments, including individuals who are uninsured, poor, elderly, homeless, newly immigrated, socially isolated, poorly educated, incarcerated or substance addicted.¹ 2 Of 299 million US residents, 46 million (15%) have no health insurance.³ Thirty-seven million (>12%) live below the federal poverty level and more than one-third of these are children.³ Despite the large numbers of underserved, nearly one-third of US physicians do not provide care to this population.⁴ 5 Both the Accreditation Council on Graduate Medical Education⁶ and the Council on Medical Student Education in Pediatrics⁷ recognize the need for curricula that teach trainees the skills necessary to effectively care for the underserved. Beyond the financial disincentives in caring for the underserved, identified barriers to provision of this care include 1) lack of knowledge about the health concerns of the underserved or resources available to address those concerns, 2) negative attitudes toward caring for the underserved, 3) lack of skills to identify barriers to health among the underserved, and 4) inexperience in providing care to people of diverse backgrounds.^{4, 8–15}

Institutional commitment to training experiences that focus on this unique population as well as the availability of faculty role models improve trainee outcomes and influence career choices around caring for the underserved.^{16–23} Although the role of faculty is critical and the need to provide targeted education to these faculty has been underscored,²⁴ to our knowledge, no studies have assessed the needs of pediatric faculty with regard to teaching or precepting students in caring for the underserved. In our previous evaluation of a curriculum to promote medical students’ skills to care for underserved families in the clinical years, many students lacked key skills necessary to care for this population, even at the conclusion of their pediatric clerkship.²⁵ For example, over 90% of students had never facilitated a referral to common resources designed especially for underserved families (e.g., Women, Infants and Children (WIC) or State Children’s Health Insurance Program (SCHIP, also known as Badger Care in Wisconsin)) and this did not improve over the clerkship experience. As a result, our group wondered whether we could identify areas for faculty development that would strengthen the effectiveness of our educational efforts.

To facilitate tailoring of faculty development activities, we surveyed our pediatric faculty’s knowledge, attitudes, self efficacy, clinical skills, and precepting behaviors around care for underserved families.

METHODS

Setting, participants, and design

In 2004, faculty knowledge, attitudes, self efficacy, clinical skills, and precepting behaviors were assessed during four waves of a mailed or online confidential survey to 85 pediatric faculty, after piloting with four faculty and six trainees whose responses were excluded from analysis. Physicians were all University faculty, practicing either within the medical school’s academic clinics or affiliated community practice sites and providing either primary or specialty care in the inpatient and outpatient settings. These faculty provide primary care for a large, Midwestern community whose population is 5% Latino, 5% African American, and 5% Asian and also provide tertiary care services for the surrounding region which includes 7% of families below the federal poverty level and 6% uninsured.^{26, 27} The study was exempted from review by the University of Wisconsin Health Sciences Institutional Review Board.

Measures

Faculty characteristics—Faculty characteristics included gender, race (White, non-Hispanic versus other), disadvantaged family of origin (i.e., comes from a low-income family; yes/no), age (<30 years, 30-<40 years, 40-<50 years, ≥50 years), and practice type (primary care versus specialty care).

Knowledge—Knowledge items were drawn from the literature and from information about community and public agencies that serve the underserved^{4, 8–15, 28–30} and consisted of eight 1-point multiple choice questions selected to represent key underserved topics including WIC or SCHIP eligibility, services and impact, as well as crosscultural communication (sample items in Box 1). Total knowledge scores were calculated as the sum of the number of correct items (maximum score=8).

Box 1

Sample multiple choice knowledge items with correct answers italicized

1. Which of the following is true (choose one answer)
 - A. Uninsured and insured children do not differ on timely vaccination rates.
 - B. WIC provides transportation assistance for families to attend health care appointments.
 - C. *Uninsured children receive less non-emergency care than insured kids.*
 - D. Both WIC and Badgercare (SCHIP) programs are funded solely through state resources.
2. Eligible people participating in the WIC program
 - A. *can receive nutrition education, social service referrals, breastfeeding support and nutritious foods.*
 - B. have increased rates of lead poisoning compared to non-participating eligible people.
 - C. cannot receive health care services such as screening for anemia by WIC.
 - D. are limited to urban areas.
3. WIC provides services
 - A. only for children under 5 years of age.
 - B. only for people living below the federal poverty level.
 - C. *regardless of US citizenship.*
 - D. only in some states.
4. Badger Care provides healthcare services
 - A. to US citizens and to aliens whether legal or illegal.
 - B. only to those living below the federal poverty level.
 - C. *to working parents and their children.*
 - D. but does not cover medications.

Attitudes—Attitudinal assessment consisted of 20 items with responses on a 4-point Likert scale (1 = “Strongly disagree,” 2 = “Disagree,” 3 = “Agree,” and 4 = “Strongly agree”) drawn from previously published, validated surveys to represent both general attitudes (e.g., “Underserved patients should expect to receive quality health care”) and personal attitudes (e.g., “I feel empathetic toward underserved families”) toward the underserved.^{8, 12, 25, 31} Attitudes were summarized as an overall mean of the ratings (1.0 = “most negative” to 4.0 = “most positive”) with negatively-worded items reverse scored.

Self efficacy—Faculty reported beliefs about their ability to provide care to underserved families including assessments of their knowledge base, experience, and skills on six items drawn from previous research.^{8, 12, 25, 31} Responses were on a 4-point Likert scale as described for attitudes. Negatively-worded items were reverse scored. Self efficacy was assessed as the mean(SD) of each item.

Clinical skills—Clinical skills were assessed with nine self-reported items (see Figure 1 for items) relevant to the care for underserved families, drawn from literature and clinical experience.^{4, 8–15, 28–30} Faculty reported ever having performed the skill (yes/no). Using a family member to interpret was reverse-scored so that the desired behavior of not using a family member to interpret was coded as performed. Clinical skills were examined as the percentage of faculty who reported performing each individual skill and as the mean(SD) of the total number of skills performed.

Precepting behaviors—Faculty reported their precepting behaviors across an inventory of the same nine clinical skills relevant to caring for the underserved, with four response options (observed student perform the skill, performed skill with student, student performed skill unobserved, and have no information about precepting students in this skill). As with the clinical skills, the item reflecting the use of family members as interpreters was reverse scored. Precepting behaviors were examined as the percentage of faculty who precepted a student performing the skill (reported either performing the skill with the student or observing the student perform the skill) and as mean(SD) of the total number of skills precepted.

Analyses

Descriptive statistics were calculated for faculty characteristics, individual knowledge items, attitudes, self efficacy, clinical skills, and precepting behaviors using means and standard deviations or proportions. We also compared results by faculty characteristics, using Fisher’s exact test or Wilcoxon rank-sum test. For all tests, a two-sided 5%-level result was regarded as statistically significant. Statistical analyses were performed in R.³²

RESULTS

Baseline characteristics

Fifty-five (65%) of the 85 faculty responded. Most respondents were White, non-Hispanic (Table 1). Only 5 (11%) came from disadvantaged families. A wide age range was represented with 1 physician (2%) being 20–<30 years, 14 (25%) being 30–<40 years, 23 (42%) being 40–<50 years, and 17 (31%) being ≥50 years. The respondents were nearly equally primary care (n=28) and specialty pediatricians (n=26). Non-responders did not differ significantly from responders on available characteristics of gender and practice type (generalist or specialist).

Knowledge

On average, faculty answered 5.9(SD=1.3) of the 8 knowledge items correctly. The item most often answered incorrectly pertained to awareness of the health consequences of being underserved. Specifically, only 38% identified the statement that “uninsured children receive less non-emergency care than insured kids” as correct (Box 1, item 1). Faculty also had difficulty with questions about WIC and SCHIP. While 100% of faculty accurately identified WIC services (Box 1, item 2), only 52% correctly identified basic WIC eligibility criteria (Box 1, item 3). Only 61% of faculty correctly identified services and eligibility requirements for non-emergency SCHIP (Badger Care) enrollment (Box 1, item 4).

Attitudes

Overall, faculty attitudes toward the underserved were quite positive with the mean=3.3(0.3) of 4 points. Volunteering to work with the underserved (2.8(0.8)) and how well underserved patients follow medical advice (2.7(0.6)) were among the most negatively viewed items.

Self efficacy

Self efficacy around caring for the underserved was generally high for 5 of the 6 items (Table 2). Pediatricians' confidence in knowledge of community resources that serve the needs of underserved families was the lowest of these scores, averaging 2.4(0.7) of 4 points.

Clinical skills

On average, faculty reported performing 7.0(0.7) of the nine clinical skills with 70% or more of faculty reported performing eight of the nine clinical skills in their practice (Figure 1). Faculty were least likely to have used the phone book or internet to locate community resources for underserved families or to have facilitated referrals to SCHIP or WIC. Although 100% of faculty reported working with an interpreter, only 11% reported not having used a family member to interpret.

Precepting of skills

Of the 55 responding faculty, 40 (73%) reported precepting students. On average, faculty reported precepting only 2.4(2.3) of the 9 skills relevant to caring for the underserved (Figure 1). Precepting of students was least likely for facilitating referrals to resources such as WIC and SCHIP. Also, many faculty acknowledged precepting medical students who were using family members as interpreters.

Association of results with faculty characteristics

There were no significant differences on any of the measures by faculty gender, race/ethnicity, age, or disadvantaged family of origin. However, primary care pediatricians averaged 6.4(1.1) correct knowledge responses while specialists averaged 5.4(1.3) correct answers ($p<0.01$). Compared to specialists, primary care pediatricians were more likely to correctly identify eligibility criteria for SCHIP (48% versus 77%, $p=0.05$). Primary care and specialist pediatricians displayed no significant differences in attitudes, self efficacy, clinical skills, or precepting behaviors.

DISCUSSION

Our results demonstrate that our faculty are knowledgeable and feel positively about providing care to underserved families. Regardless of sociodemographic backgrounds and differing practice types, faculty reported performing many key clinical skills that address the needs of this population in their practices. Although faculty performed many skills necessary to care for underserved families, they reported low rates for precepting students around these

skills during the clinical years. Our analysis identified target areas in which faculty development could enhance the training provided to learners and perhaps enhance the care provided to underserved families.

With regard to specific targets for faculty development, three general areas emerged from our findings. The first of these areas reflected knowledge about the health consequences of being underserved. Specifically, faculty did not recognize the lower rates of non-emergency care for uninsured children compared to insured children. This has implications for reducing missed opportunities to provide services such as immunizations, counseling, and risk assessment when underserved children are seen for urgent concerns.^{33–37} Knowledge of the critical link between health disparities and being underserved could help faculty educate students about the need to offer convenient and timely access to healthcare services for underserved children.

A second area for faculty development centered on locating public and community resources to meet the needs of underserved families. Specifically, many faculty did not recognize basic eligibility requirements for WIC or SCHIP. Knowledge gaps and uncertainty around eligibility criteria might also explain why some faculty had never referred a family to these resources. Faculty also acknowledged limited self efficacy in accessing community resources designed to meet the needs of underserved families. The challenge of accessing community resources was also seen in both clinical skills and precepting behaviors with few faculty using common sources such as the phone book or internet to locate these resources or precepting students in this practice. Our previous work has demonstrated that a web-based curriculum can improve third year medical student awareness and self efficacy with regard to locating resources to assist underserved families.^{25, 31} Such an intervention could be effective with faculty as well. However, given faculty time constraints, modeling interdisciplinary care with students and encouraging both students and faculty to partner with other team members such as social workers may be more efficient and acceptable than encouraging each individual to locate resources or stay abreast of changing family eligibility and federal/state policies.^{5, 38} However, the availability of these interdisciplinary team members may be limited, especially in rural areas.

Last, faculty reported using family members as interpreters and precepting students in this practice. Awareness of the unintended consequences of ad hoc interpreters³⁹ as well as recent legislation mandating provision of interpreter services⁴⁰ might serve to reduce this behavior both when practicing alone and when precepting students. However, this survey item did not specify a time frame, so these observations might be in the remote past, before awareness was raised about the consequences of ad hoc interpreters³⁹ and before legislative reform in this area.⁴⁰

Our results suggest that while faculty performed many clinical skills relevant to care for the underserved, students do not often receive precepting on these skills. Some of the lowest rates of precepting were around facilitating referrals to WIC and to SCHIP as well as use of internet or phone book to locate community resources. These findings complement our study of medical students' clinical skills in caring for the underserved.²⁵ In that study, the majority of medical students reported never having facilitated such referrals prior to their pediatric clerkship and this did not change over the course of the clerkship. Our study does point out a possible reason for the limited precepting of these skills, specifically limited faculty knowledge and self efficacy around public and community resources for the underserved. However, several other possibilities exist including limited teaching time in clinic, need to meet multiple curricular objectives which may not include teaching skills specific to underserved families, faculty comfort with relevant public policy, or varying perceptions of the role of medical students.

Despite our inability to definitively explain the gap between the performance of clinical skills and faculty precepting behaviors, our work demonstrates the need to consider how lack of precepting may affect student self efficacy when working with underserved families and may ultimately affect students' decisions to provide care to underserved families. We have previously noted that pediatric clerkship students who did not receive any curriculum focused on caring for the underserved demonstrated a significant decline in self efficacy around their ability to make a difference in these patients' lives.²⁵ Further, several previous publications have identified declines in medical student attitudes toward the underserved over the course of medical training.^{41–43} Collectively, such findings could be explained by learners encountering underserved families during their training, but lacking the necessary curricular content or precepting experiences to interact effectively with these families.

Finally, given the large portion of medical student education provided by specialty pediatricians, our finding of few significant differences in knowledge, attitudes, or skills between specialty and primary care pediatricians is reassuring. We did find that specialists were less likely to correctly identify SCHIP services and eligibility criteria. This is concerning because these pediatricians are likely to see children with chronic disease or disability whose families could potentially benefit from SCHIP enrollment. However, perhaps the team-based care delivery that is popular in specialty practice makes it likely that a social worker or other team member is responsible for such referrals.

As this study was conducted at one institution with a relatively homogeneous faculty, generalizability to other academic programs or to faculty who see adult patients is not demonstrated. Also, superior knowledge and skills might be expected at institutions with more diversity in faculty ethnicity, as the practices of minority physicians often include more underserved families.⁴⁴ Further study is needed to understand the care provided by medical school faculty for the underserved as well as their mentoring of future physicians who will care for this population. The study could also be undertaken in various disciplines (e.g., nursing or social work) to enhance our understanding of the value of interdisciplinary teams in caring for the underserved. Despite our response rate, the sample size may lack power to detect some significant associations, particularly in our comparison of findings by physician characteristics. In addition, our evaluations are based upon self-report which may overestimate desirable behaviors. However, the focus of this work was identifying potential gaps in knowledge, attitudes, self efficacy, clinical skills, or precepting behaviors. Therefore, this limitation would likely underestimate such gaps. Lastly, although the survey included many items identified from the literature as relevant to care for the underserved,^{8, 9, 12, 39, 41, 45} the topics surveyed were carefully selected to represent only the most salient items in an effort to ensure the feasibility of survey completion by busy clinicians. Thus, there are undoubtedly additional topics neglected in our assessment (e.g., a more exhaustive assessment of the participant's own educational experiences with regard to caring for the underserved).

In summary, results suggest that overall our pediatric faculty are knowledgeable, have positive attitudes and self efficacy, and are performing many skills relevant to the care of underserved families. Findings also highlight the faculty's limited precepting of students' skills relevant to caring for the underserved. The results for faculty attitudes suggest positive views about caring for the underserved that could lead to success for faculty development efforts around care for this population. Our knowledge and self efficacy findings also suggest well-defined targets for faculty development that could address the faculty's precepting deficits. Specifically, faculty need assistance with helping students access appropriate community resources for underserved families, either through an educational program or a centralized resource accessible to faculty and students. Ultimately, this faculty

development could not only support the education of students, but has the potential to improve care provided to underserved families.

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Figure 1.
Percent of Faculty Performing or Precepting Skills for Caring for Undeserved Families

Table 1**Pediatric Faculty Characteristics (n=54)***

Male	55%
White, non-Hispanic	89%
From disadvantaged families	11%
Age group	
20-<30 years	2%
30-<40 years	25%
40-<50 years	42%
≥50 years	31%
Primary care pediatricians	52%
Specialty care pediatricians	48%

* one participant did not provide this data

Table 2Mean and standard deviation (SD) for faculty self efficacy^a (n=55)

Item	Mean(SD)
Had enough exposure to underserved care in my medical training	2.7(1.0)
Can make a difference in underserved patients' lives	3.2(0.6)
Comfortable working with an interpreter	3.5(0.5)
Confident in my knowledge of community resources for underserved patients	2.4(0.7)
Comfortable caring for underserved families	3.2(0.6)
Able to establish achievable goals with underserved families	3.0(0.5)

^a 4-point scale, with 4 indicating highest self efficacy