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ORIGINAL ARTICLE

Social Determinants of Health in Family Medicine Residency: A National Survey of Program Directors

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ABSTRACT

Background and Objectives: Social factors account for most health outcomes, underscoring the need to address social determinants of health (SDH) to eliminate health disparities. Our objectives are (1) to describe the scope of formal SDH curricula in family medicine residency, (2) to identify residency program characteristics associated with integrated core curriculum components to teach SDH, and (3) to identify barriers to addressing SDH in residency.

Methods: We distributed a cross-sectional survey to all family medicine residency program directors (PDs) accredited by the Accreditation Council for Graduate Medical Education as identified by the Association of Family Medicine Residency Directors.

Results: Of 624 eligible program directors, 279 completed the survey (45% response rate). Overall, 41.2% of respondents reported significant formal SDH training in their program. Though a majority (93.9%) agreed that screening for social needs should be a standard of care, most (58.9%) did not use standardized screening tools. The most common barriers to addressing SDH were lack of clinical resources (eg, social workers, legal advocates), lack of community resources (eg, food banks, substance use disorder treatment), and inadequate screening instruments or integration into the electronic medical record system. Availability of referral resources was associated with PDs' increased perception of resident SDH competency.

Conclusions: Nearly all respondents agreed that screening for social needs should be a standard part of care; however, this vision is not yet realized. To better train the next generation of physicians to identify and meaningfully address social needs, additional research is needed. This research might include mixed-methods approaches that incorporate qualitative assessments to define best practices and patient-centered outcomes related to identifying and responding to SDH.

BACKGROUND

Excellent clinical care includes serious consideration of each patient's life experience and the impact of the patient's psychological state and social surroundings on health care. Social and environmental factors account for more than 50% of all health outcomes, underscoring the need to address social determinants of health (SDH) to eliminate health disparities.[1,2]

Considerations of family, neighborhood, community, and social factors are fundamental to the specialty of family medicine.[3] Education of family physicians requires a curriculum that supports early, robust continuity experience across a diverse spectrum of patient populations.[3] Additionally, training primary care physicians to screen for barriers to healthy living can shape counseling options and care plan discussions.

To achieve the quadruple aim of improving population health, improving the patient experience, improving care team wellness, and reducing health care costs, undergraduate medical education and graduate medical education curricula must integrate information about both the prevention and treatment of disease and the impact of the community of the patient on health care.[4] Recent studies have indicated that longitudinal patient care experiences in medical school, over the course of years rather than weeks, result in improved performance, greater learner satisfaction, and a strong sense of patient-centeredness in learners.[5,6] Limited parallel work

has been done in graduate medical education, with principal examples being the impact of single determinants on specific outcomes (eg, impact of food insecurity on nutrition outcomes). Additionally, data show that greater capacity to address SDH may be associated with lower rates of burnout.[7]

Relevant knowledge and skills for training in family medicine residencies include awareness of social needs and their impact on health, development of approaches to identifying the presence of social needs among primary care patients, and operationalization of the connection between patients and the available resources that exist within the service landscape of the communities they serve. The challenge for programs is to prepare residents to function effectively while in their training setting as well as their future practice settings, which may have a different prevalence of social needs, screening tools, and available resources. Recent Accreditation Council for Graduate Medical Education (ACGME) Common Program Requirements emphasize the importance of SDH training: for example, section IV.B.1f states:

> Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, including the social determinants of health, as well as the ability to call effectively on other resources to provide optimal health care.[8]

However, the extent to which these competencies are fully implemented is not clear. Barriers and facilitators to implementation have not been adequately studied. The purpose of this study is (1) to describe the scope of SDH screening and education in family medicine residency, (2) to identify residency program characteristics associated with robust SDH curricula, and (3) to identify barriers to addressing SDH in residency.

METHODS

Survey Instrument

We conducted a cross-sectional survey of family medicine residency program directors (PDs). Survey items were included as one component of a larger national survey conducted by the 2020 Council of Academic Family Medicine Educational Research Alliance (CERA). For the purposes of this survey, social determinants of health were defined as the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies, and political systems.

The methodology of the CERA Program Director Survey has been described previously in detail.[9] The CERA steering committee evaluated questions for consistency with the overall subproject aim, readability, and existing evidence of reliability and validity. Pretesting was conducted with family medicine educators who were not part of the target population. Following pretesting, questions were modified for flow, timing, and readability. The project was approved by the American Academy of Family Physicians Institutional Review Board in September 2020. Data were collected from September 23 to October 16, 2020.

Sample and Data Collection

The sampling frame for the survey was all ACGME-accredited US family medicine residency program directors as identified by the Association of Family Medicine Residency Directors. Email invitations to participate were delivered with the survey using the online program SurveyMonkey (Momentive). Two follow-up emails, to encourage nonrespondents to participate, were sent weekly after the initial email invitation, and a third reminder was sent 2 days before the survey closed. There were 693 program directors at the time of the survey; one had no email address indicated. Twenty-eight previously opted out of SurveyMonkey surveys or their emails were undeliverable. Therefore, the survey was emailed to 664 individuals. The survey contained a qualifying question to remove programs that had not had three resident classes. Forty program directors indicated that they did not meet that criterion. Those responses were removed from the sample, reducing the potential sample size to 624.

Analysis

We summarized all items using descriptive statistics, including frequencies and means. We examined differences between group-level findings using χ^2 tests and logistic regression. We conducted multivariate analyses to refine our understanding of univariate associations. We used ordinal logistic regression to identify program characteristics associated with PDs' greater perception of resident SDH competency upon graduation from residency. Results were considered statistically significant at $P<.05$. Data were analyzed using R version 3.5 (R Foundation for Statistical Computing) and SPSS version 26 for Windows (IBM).

RESULTS

A total of 312 respondents completed the omnibus survey, and 279 went on to answer questions related to SDH curricula, for a response rate of 45%. Most respondents (60%, 166/279; Table 1) led community-based, university-affiliated residency programs. A plurality (46%, 128/279) had between 19 and 31 residents in their total complement. The composition of residents and faculty that identified as underrepresented minorities in medicine (URiM) is included in Table 1 .

A majority of respondents (59.1%, 165/279) strongly agreed that screening for social needs should be a standard part of care, though a minority (41.1%, 115/280) used standardized screening tools to identify SDH in clinical settings with trainees (Table 2). Among those that used standardized screening tools, a majority (76.5%, 88/115) indicated that those tools were incorporated into the electronic health record as opposed to being a stand-alone or paper-based system. Thirteen percent (37/279) indicated that their residents were not formally trained in SDH, 45.5% (127/279) reported some formal training, and 41.2% (115/279) reported significant training

TABLE 1. Respondent Characteristics

	n (%)
Please describe the type of residency program you direct:	
University-based	44 (15.8)
Community-based, university-affiliated	166 (59.5)
Community-based, nonaffiliated	61 (21.9)
Military	5 (1.8)
Other	3 (1.1)
What is the approximate size of the community in which your program is located?	
Less than 30,000	29 (10.4)
30,000 to 74,999	50 (18.0)
75,000 to 149,999	55 (19.8)
150,000 to 499,999	68 (24.5)
500,000 to 1 million	35 (12.6)
More than 1 million	41 (14.7)
Missing	1 (0.4)
How many residents (total complement) were in your program as of July 2020?	
<19	107 (38.5)
19–31	128 (46.0)
>31	42 (15.5)
Missing	1 (0.4)
What percentage of the current residents in your program are graduates of non-US medical schools?	
0-24%	176 (63.8)
25-49%	43 (15.6)
50-74%	33 (12.0)
75-100%	24 (8.7)
What percentage of your current residents identify as underrepresented minorities in medicine (URiM)—Black, Latinx (Mexican-American, mainland Puerto Rican), and/or Native American (American Indian, Alaska Native, and Native Hawaiian)?	
0%	31 (11.2)
<5%	35 (12.6)
6-10%	61 (21.9)
11-20%	60 (21.6)
21-30%	43 (15.5)
31-50%	31 (11.2)
>50%	17 (6.1)
Missing	1 (0.4)
What percentage of your current faculty identify as underrepresented minorities in medicine (URiM)—Black, Latinx (Mexican-American, mainland Puerto Rican), and/or Native American (American Indian, Alaska Native, and Native Hawaiian)?	
0%	105 (37.6)
<5%	37 (13.3)
6%-10%	37 (13.3)
11%-20%	45 (16.1)
21%-30%	24 (8.6)
31%-50%	22 (7.9)
>50%	9 (3.2)

(Table 2). Approximately 47% of respondents (129/277) reported that their residents graduated with "none" or "basic" competency in addressing SDH.

The most reported barrier to addressing SDH in residency was lack of clinical resources to address SDH (eg, social workers, legal advocates), followed by lack of community resources (Table 3). Respondents' agreement that screening for social needs should be a standard part of care was associated with PDs' greater perception of resident SDH competency (OR=5.88, *P*=.01). Percentage of URiM faculty was not associated with perceived SDH competency (OR=1.10, *P*=.17). Similarly, the percentage of URiM residents was not associated with perceived SDH competency (OR=1.04, *P*=.57). Availability of SDH tools was associated with greater independent-level perceived SDH competency (OR=5.24, *P*<.01). Team collaboration for SDH response (referring patients to individuals, such as social workers or community health workers who can link the patient with appropriate resources) was associated with PDs' greater perception of independent-level resident competency (OR=2.11, *P*=.03).

DISCUSSION

The immense impact of SDH on health outcomes has been described for decades. Social barriers leave patients vulnerable, and many physicians feel inadequately prepared to identify or meaningfully address these issues.[5] With this in mind, our findings are not surprising: Viewing SDH as a priority, providing significant training, and having tools available to address SDH were associated with PDs' increased perception of resident SDH competency. As with any clinical topic, teaching learners to value the impact of SDH on the patients they serve is imperative.

Our survey showed that having available referral resources to address SDH was associated with PDs' increased perception of resident SDH competency. This finding begs the question of whether having a team-based approach to SDH increases learner skills or merely results in overestimation of competency. Team-based care is increasingly being implemented to distribute the immense work of helping patients with complex biopsychosocial needs.[10] Learning when and how to refer to social workers or community health workers is a necessary skill, but perhaps insufficient. This approach can be expanded into a discussion of the overall goals for SDH education in graduate medical education. Does the provider need to develop the skill set required to personally help patients overcome SDH barriers? Or should the emphasis remain on identification and effectively using an interprofessional, team-based approach? Most likely, given the variations among both the barriers themselves and the available resources from community to community, a combination of skills should be fostered during training.

In this study, we identified lack of resident knowledge or training as a barrier to addressing SDH. The ACGME common program requirements[8] now include training on identifying and addressing SDH for all residency programs. As with any learner skill, expertise is not expected at the onset of training. Just as residents progress in their knowledge of disease processes and treatment interventions, identifying and addressing SDH with patients within the context of their communities is a vital skill that needs to be nurtured. Instilling SDH as a longitudinal thread throughout training allows learners to continually assess and build on their knowledge and skills. We identified lack of faculty expertise as another program-level barrier. Published SDH curricula are widely available, including didactic teaching, community-based training, and clinical experiences that have been successfully implemented in graduate medical education.[5] A variety of approaches may allow for increased repetition and further reinforcement of SDH as an institutional priority.

Barriers related to screening and lack of clinical or community resources have been identified and cited as common roadblocks to addressing social determinants of health. With several tools already developed and disseminated,[11,12] providers are increasingly using tools to identify and address SDH in clinical practice. Screening for SDH has been shown to increase both identification of barriers and referral to available resources,[13] though best practices for how to incorporate screening into the clinical encounter have not yet been determined.[14] Though most providers understand the impact of SDH on the lives and health of their patients, routine screening is still not standard practice. Physicians routinely cite both time constraints and lack of necessary skills or resources to address SDH as barriers for screening implementation.[15] Though screening may add time, knowing the far-reaching impact SDH can have on health outcomes, that time is undoubtedly well spent.

Routine screening without adequate resources to act on the results may lead to unintended negative outcomes, in addition to ethical issues.[16] However, tools are available for addressing SDH barriers once they have been identified. Geographic information system (GIS) programs allow care teams to identify community-based resources and referral sites for a range of SDH domains. GIS offers the potential to overcome both the perceived lack of clinical and community resources. As with screening, further study to determine the best use of these promising technologies is underway.

Limitations

Our study had several limitations. First, our response rate was 45%, and we do not have information on nonresponders. To meet criteria for inclusion in CERA's omnibus survey, we were limited in the number of questions we could ask. Therefore, our findings may not capture other important aspects of SDH curricula. Responses are self-reported by the program director and could be subject to social desirability bias. Program director-reported competency may be less accurate than resident-reported competency. Future studies designed to measure resident perception and outcomes may complement our study of program directors' perception of competency. These limitations notwithstanding, we feel this study can aid program directors and faculty in advancing SDH curricula.

TABLE 2. Family Medicine Residency Program Directors' Responses Regarding SDH Education

	n (%)
To what extent do you agree or disagree with the following statement: Screening for social needs should be a standard part of care.	
Strongly disagree	3 (1.1)
Disagree	2 (0.7)
Neither agree nor disagree	12 (4.3)
Agree	97 (34.8)
Strongly agree	165 (59.1)
Do you use standardized screening tools, such as the AAFP Social Needs Screening Tool, PRAPARE, or Health Leads, to identify SDH affecting patients in any clinical setting where you have trainees?	
Yes	115 (41.1)
No	165 (58.9)
Is SDH screening incorporated into the electronic health record (as opposed to being a stand-alone or paper-based system)?	
Yes	88 (76.5)
No	27 (23.5)
N/A (skip pattern)	165 (-)
What is your primary approach to mitigating negative SDH in patient populations managed by your trainees?	
We rely on clinicians to provide patients with their knowledge of SDH resources	45 (16.1)
Refer patients to individuals, such as social workers or community health workers, who can link the patient with appropriate resources	216 (77.4)
Use electronic tools, such as NowPow, Neighborhood Navigator, HealthLandscape, or PHATE, to identify community resources to provide to patients	10 (3.6)
None of the above	8 (2.9)
To what extent are your residents trained in SDH?	
No formal training	37 (13.3)
Some formal training (eg, as part of a lecture/didactic)	127 (45.5)
Significant formal training (eg, a lecture with routine reinforcement in clinical settings)	115 (41.2)
What level of competency will your current residents graduate with in identifying and addressing SDH?	
None (assumes SDH assessments are done elsewhere)	7 (2.5)
Basic (able to screen for some elements of SDH)	122 (44.0)
Independent (able to screen for a broad range of SDH and facilitate engagement with appropriate resources)	107 (38.6)
Advanced (able to screen for a broad range of SDH, facilitate engagement with appropriate resources, and effectively teach others how to properly identify and respond to SDH)	41 (14.8)

Abbreviations: SDH, social determinants of health; AAFP, American Academy of Family Physicians
Software: Social Needs Screening tool (AAFP); PRAPARE (National Association of Community Health Centers), protocol for responding to and assessing patients' assets, risks, and experiences; Health Leads (Salesforce, Inc); NowPow (CareIT Health, LLC); Neighborhood Navigator (AAFP); HealthLandscape (AAFP); PHATE (Robert Graham Center and HealthLandscape), population health assessment engine

CONCLUSIONS

In our survey of program directors of family medicine residency programs, nearly all agreed that screening for social needs should be a standard part of care. This vision, however, is not yet realized. Factors associated with PDs' greater perception of resident SDH competency were team-collaboration for addressing SDH, availability of SDH tools, and program director buy-in (respondent agreement that social needs should be a standard part of care). To better train the next generation of physicians to identify and meaningfully address social needs, additional research is needed, including mixed-methods approaches incorporating qualitative assessments to define best practices and patient-centered outcomes related to identifying and responding to SDH.

Presentations

Preliminary findings were presented at the 2021 North American Primary Care Research Group (NAPCRG) Annual Meeting, held virtually due to COVID-19, as well as Beyond Flexner 2022 in Phoenix, AZ.

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TABLE 3. Barriers to Addressing SDH in Residency

	Ranked first	Ranked second
	n (%)	n (%)
Lack of clinical resources to address SDH in our setting (eg, social workers, legal advocates)	111 (39.6)	54 (16.5)
Lack of community resources to address SDH in our setting (eg, food banks, rental assistance programs, SUD treatment)	42 (15.0)	61 (22.1)
Inadequate SDH screening instruments or integration into the EMR	42 (15.0)	46 (16.7)
Inadequate SDH screening by providers/practice	20 (7.1)	39 (14.1)
Lack of faculty expertise in SDH	29 (10.4)	22 (8.0)
Patients are uncomfortable or uninterested in inquiry about SDH	14 (5.0)	18 (6.5)
Lack of resident knowledge or training around SDH	13 (4.6)	13 (4.7)
Provider resistance to identifying and responding to SDH	8 (2.9)	18 (6.5)
Not enough social need among our patients served	1 (0.4)	5 (1.8)
Total	**280 (100)**	**276 (100)**

Abbreviations: SDH, social determinants of health; SUD, substance use disorder; EMR, electronic medical record

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