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Awareness of racial disparities in diabetes among primary care residents and preparedness to discuss disparities with patients

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Abstract

Many healthcare providers lack the awareness of health disparities among their patients that precedes action to improve outcomes. Limited health disparities training is a probable contributor. We assessed primary care residents' awareness of racial and ethnic disparities in diabetes, their perceived preparedness to discuss health disparities with patients and their preferences for training and resources to improve their preparedness. Primary care residents (n=98) affiliated with two teaching hospitals in North Carolina were invited to complete a 20-question health disparities survey. Fifty-two residents completed the survey (response rate=53%). Most were non-Hispanic White (54%) and had 50% African American patients in their panel (65%). Although 83% were aware of higher diabetes prevalence among African Americans, only 31% felt prepared to discuss diabetes health disparities with patients. Their primary concerns included not having information for the discussion (58%) and being unsure how to share information in a way that is easy for patients to understand (48%). Perceived preparedness to discuss health disparities did not differ significantly by primary care resident race or percent of African American patients in their panel. Residents indicated that having information regarding how to discuss and address health disparities would make them feel more prepared. Cultural competency training and experiential learning were the most preferred methods to learn how to identify and address health disparities. Future health disparities training should focus on improving residents' preparedness to address health disparities in their clinical practice using culturally relevant communication tools and experiential learning opportunities.

Keywords

diabetes; health care disparities; clinician-patient communication/relationship; graduate medical education; instructional design

Introduction

Diabetes is an epidemic associated with significant racial and ethnic disparities in quality of care and outcomes [1–3]. It affects over 30 million people in the United States and is more prevalent among American Indians/Alaska Natives (15.1%), non-Hispanic Blacks (12.7%), and Hispanics (12.1%) than among non-Hispanic Whites (7.4%) [3]. Non-Hispanic Blacks with diabetes are less likely to receive preventive care for their diabetes and both non-Hispanic Blacks and Hispanics are less likely to achieve targets for diabetes control. Racial and ethnic minorities are also at higher risk of diabetes complications including lower extremity amputations, retinopathy and end stage renal disease [2]. The causes of these disparities are multifactorial and include social, biological and lifestyle factors as well as access to care and healthcare delivery [4–7].

Primary care clinicians can play an important role in addressing racial/ethnic disparities in diabetes outcomes. However, studies suggest that many healthcare providers are unaware of health disparities that exist among their own patients and their role in addressing these disparities [8–10]. To address this issue, major medical associations, including the National Academy of Medicine (formerly the Institute of Medicine) and the Accreditation Council for Graduate Medical Education (ACGME), recommend that healthcare professionals receive training in cultural competency and methods to identify and reduce differences in treatment and outcomes that do not reflect patients' health status or their preferences [11–13]. Despite these calls, efforts to design effective curricula and training strategies are lacking [12, 14, 15]. Understanding the gaps that exist in provider awareness of health disparities and preparedness to address health disparities can help inform the development of more effective training resources and programs.

As part of a multiphase research project aimed at improving awareness of diabetes health disparities and communication between providers and African American patients with diabetes, the current study assessed the following outcomes among primary care residents: (i) awareness of health disparities that affect African Americans; (ii) perceptions of their preparedness to discuss health disparities with patients; and (iii) preferences for instructional methods to improve their ability to communicate information about health disparities. A prior study of perceptions of racial disparities in diabetes care among primary care clinicians found that physicians had low awareness of disparities in diabetes care that existed among their patients and limited understanding of how they could address those disparities [16]. The current study adds to existing literature by assessing awareness of diabetes health disparities among primary care residents and their perceived preparedness to discuss health disparities with patients, with the goal of informing the development of strategies to improve their health disparities training.

Methods

Setting, Data Collection & Participants

Two teaching hospitals within Atrium Health, a large integrated health care system headquartered in North Carolina, participated in this study. One hospital was located in an urban setting and the other hospital was located in a suburban/rural setting. The urban hospital had residency programs in internal medicine, family medicine and pharmacy, while the suburban hospital had programs in family medicine and pharmacy only. Eligible primary care residents were aged 18 or older, provided care for patients with diabetes in the outpatient setting and specialized in family medicine, internal medicine or pharmacy. Residents were invited to complete an online survey via an email from a member of their faculty or the residency program coordinator at their site between October 2016 and May 2017. Invited residents also had the option of completing the survey on paper during two in person data collection opportunities in November 2016. Ninety-eight residents in family medicine (n=51), internal medicine (n=45) and pharmacy (n=2) were invited to participate. Fifty-two residents responded and completed the survey resulting in an overall response rate of 53% (family medicine: 78%; internal medicine: 16%; pharmacy: 100%). All responses were anonymous. Respondents were offered an incentive valued at \$10 for their participation. Data were collected and managed online using REDCap electronic data capture tools hosted at Atrium Health.[17] The Atrium Health Institutional Review Board approved this study and granted a waiver of signed consent. The survey included a statement regarding the details of the research and voluntary participation that was available to all participants.

Study Design and Measures

We conducted a cross-sectional survey of primary care residents. Our research team developed a survey that assessed the following key concepts: awareness of health disparities, awareness of diabetes health disparities, sources of information regarding health disparities, perceptions of preparedness to discuss health disparities with patients and preferences regarding methods for learning how to identify and address health disparities. The survey included standardized questions from prior studies regarding awareness of health disparities [18, 19], as well as questions developed specifically for this study based on a literature review (see Appendix).

To measure awareness of racial disparities in diabetes and diabetes-related conditions that impact African Americans, we asked respondents to indicate: (i) if they think the average African American is more likely, just as likely, or less likely than the average Caucasian American to be diagnosed with diabetes and hypertension (awareness= “more likely”); and (ii) if they had heard of health disparities in the following conditions that disproportionately impact African Americans: end stage renal disease, early stage kidney disease and diabetic retinopathy (awareness= “yes”) [19]. We also asked respondents if they think the average African American is better off, just as well off, or worse off than the average Caucasian American person in access to healthcare (getting needed healthcare, getting routine care, getting specialty care, getting preventive care and being able to afford medication) and in

health status (infant mortality, life expectancy and general health) (awareness= “worse off”) [19].

We measured residents’ perceptions of their preparedness to discuss health disparities with patients with survey questions that examined their: prior experience discussing diabetes health disparities with patients, preparedness to communicate with patients from various socioeconomic backgrounds and concerns about discussing health disparities with patients. Residents were also asked to rate their preference for the following types of instructional methods and resources that may help them feel more prepared to discuss health disparities with patients: cultural competency training, experiential learning opportunities, race-stratified reports for their clinical site and patient panel, national data on health disparities and learning specific interventions that improve disparities.

Statistical Analysis

Data were summarized using means or frequencies as appropriate. We created an awareness index that summarized residents’ awareness of disparities in health status and healthcare between African Americans and Caucasian Americans [18]. The health status index was a binary variable that indicated awareness of disparities in all three health status measures, while the healthcare access index was a binary variable that indicated awareness of disparities in all five healthcare access measures. Fisher’s exact tests were used to examine differences in awareness of health disparities and preparedness to discuss health disparities with patients by resident characteristics.

Results

Most respondents were in their first or second year of residency (64%), non-Hispanic White (54%), specialized in family medicine (77%) and had a patient panel comprised of 50% or fewer African American patients (65%) (Table 1). Most respondents (73%) had heard or read about health disparities in the past year and a little over half (56%) had heard about the Healthy People 2020 initiative to address health disparities (Figure 1). Less than 20% of residents had ever read the National Academy of Medicine’s 2003 report on Unequal Treatment or the Agency for Health Care Research and Quality’s National Healthcare Disparities Report.

Awareness of Disparities in Health Status, Healthcare Access and Diabetes

Most respondents (>80%) were aware that African Americans were more likely than Caucasians to be diagnosed with diabetes, hypertension and end stage renal disease; fewer were aware of disparities in rates of diabetic retinopathy (62%) (Figure 2). More than half of respondents (60%) were aware of disparities between African Americans and Caucasians in all three health status measures and in all five measures of access to healthcare between African Americans and Caucasians. Asian American residents had the lowest awareness of disparities in healthcare access between African Americans and Caucasians, while non-Hispanic Black residents had the highest awareness (Table 2). Awareness of disparities in health status and specific diagnoses did not differ significantly by resident race or the percent of African American patients in their panel (Table 2).

Preparedness to Discuss Diabetes Disparities with Patients

While most residents (83%) felt prepared to communicate with patients from various cultural, ethnic and economic backgrounds, only 31% felt prepared to discuss diabetes health disparities with their patients (Table 3). Residents were most concerned about not having the information they need to discuss health disparities with patients (58%) and being unsure of how to share information in a way that is easy for patients to understand (48%) (data not shown). Few residents expressed concerns about being uncomfortable discussing the topic (29%) and being unsure why the topic should be discussed with patients (12%) (data not shown).

Methods to Increase Residents' Preparedness to Discuss and Address Disparities

Most residents reported that knowing what interventions help to improve the disparity (96%) and knowing how to change their practice to help close gaps in care (90%) would help them feel more prepared to discuss diabetes health disparities with patients (Table 3). A large percentage of residents also reported that the following resources and training methods would help them to feel more prepared to discuss diabetes health disparities: easy access to health disparities information (89%); formal didactic training on how to address disparities (87%); training about how to discuss health disparities (87%); and improving awareness of diabetes health disparities (83%). Residents ranked cultural competency training as their most preferred method for learning how to identify and address health disparities, followed by experiential learning opportunities (Figure 3). There were no significant differences in residents' reported preparedness and methods that would help increase preparedness by resident race or percent of African American patients in their panel (Table 3).

Discussion

Current projections indicate that the prevalence of diabetes will continue to increase through 2050 and that the higher disease burden experienced by minority populations will persist [1]. Healthcare providers play an important role in diabetes management [20]. However, their preparedness to address health disparities remains unclear. Our study found that although most primary care residents were aware of healthcare access, health status and diabetes-specific health disparities impacting African Americans, few felt prepared to discuss diabetes health disparities with their patients. This finding has implications for residents' ability to effectively identify and address health disparities in their clinical practice after graduation from post graduate training. The findings also suggest that opportunities exist to design training and resources to better prepare them to do so.

Our finding that primary care residents had a high level of awareness of health disparities impacting African Americans is an encouraging one. We found that 83% of residents were aware that African Americans were more likely to have diabetes compared to Whites. Comparatively, a 2010 survey of 700 physicians found that 64% were aware of this disparity. [19] Increasing awareness of the significant impact of health disparities and of the actions needed to improve health outcomes for racial minorities and underserved populations is the first goal of the National Stakeholder Strategy for Achieving Health Equity, an overarching roadmap for achieving health equity through multi-level interventions.[21] This awareness

can serve as a foundation for other strategies to improve equity such as community engagement, improved health communication and support for workforce diversity. Research on disparities in surgical care and outcomes is suggestive of a positive relationship between awareness of disparities in access to quality surgical care and meaningful actions to address disparities.[22] While additional research is needed to confirm these associations, our findings provide support for further engaging primary care residents in activities to build their understanding of the actions that they can take to help reduce the health disparities that may exist among their patients.[8, 9, 11, 12] Attention to sources of health disparities information may also be warranted given that only 37% of respondents indicated that they knew where to go to find evidence-based information about health disparities.

Consistent with prior research, we found that residents have a low level of perceived preparedness to discuss health disparities, despite a high level of awareness of health disparities. Prior studies have reported that although most resident physicians recognize the importance of addressing cultural issues when providing care, many do not feel prepared to treat patients with specific characteristics, such as new immigrants and families with health beliefs at odds with Western medicine [23, 24]. These studies cite limited clinical time to address cultural issues, limited formal training and evaluation regarding how to provide cross-cultural care and a lack of role modeling as reasons for this dichotomy [23, 24]. A large survey of internal medicine clerkship directors in the U.S. and Canada in 2005 also found that less than half of clerkships cover racial/ethnic disparities and that having limited time in the curriculum was a primary reason for not including health disparities content [15]. Researchers conducting a similar survey in 2013 found that only 50% of internal medicine programs provided training on how to address health disparities and that lack of time and lack of faculty expertise were barriers reported by 67% of respondents [25].

Methods for improving health disparities training for healthcare providers include building their knowledge of health disparities and effective interventions, improving their communication skills and increasing their understanding of how attitudes and unconscious biases may impact clinical encounters [8, 26]. These methods align with our findings that more than 90% of residents reported that knowing what interventions help to improve the disparity and knowing how to change their practice to help close gaps in care would help them feel more prepared to discuss health disparities with patients. In our sample, perceived preparedness to discuss disparities was low and did not differ across groups defined by resident race or the racial makeup of their patient panel, suggesting that most primary care residents may benefit from such training.

Our study findings also help us understand residents' preferences for instructional methods that may help them to identify and address health disparities. Residents in our study reported a preference for cultural competency training and experiential learning to help them identify and address health disparities. While evidence regarding the effectiveness of cultural competency training for improving patient outcomes is mixed [27], research suggests that when combined with experiential learning, cultural competency training can help increase clinicians' awareness of their own biases and the needs of underserved and minority patients [28, 29]. Academic medical centers can incorporate disparities-focused experiential learning using methods such as community-based teaching [30], simulations and community tours

[31]. Role modeling by medical faculty of ways to address health disparities is another useful strategy that educational settings can begin to implement more consistently [8, 23]. Finally, increasing the diversity of faculty in primary care can help to improve the ability of academic medical centers to train and cultivate a more culturally competent workforce [32, 33].

Our study had limitations. Participants were from a single healthcare system in the southeastern United States and their experiences may not reflect those of residents in other geographic settings. We also did not examine the country of birth or country of medical training for the participating residents. Examining these factors may be useful in future studies. The small sample size limited the power for statistical tests comparing results by resident characteristics. In addition, while all eligible residents were invited to participate, non-response bias may have resulted if those who responded differ from those who did not respond in a meaningful way, such as their interest in or level of comfort with the topic. Finally, our sample included mostly family medicine residents, which may limit generalizability to other primary care specialties.

Conclusion

Despite being aware that disparities exist, primary care residents appear to lack the training and communication tools that they feel will help them identify and address diabetes health disparities among their patients. Given the significant and growing impact of diabetes on health care quality and outcomes these findings suggest that systematic efforts to equip new primary care physicians to engage in actions to reduce diabetes disparities are a useful next step. Additional research on the impact of cultural competency training that incorporates experiential learning is recommended. We also recommend the development of communication tools to facilitate conversations about diabetes disparities between patients and their providers and that these tools be evaluated for their effectiveness in engaging minority patients as partners in their care.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Compliance with Ethical Standards

The authors have no conflicts of interest to report. This research involved human participants and received ethical approval from the Atrium Health Institutional Review Board. All participants received a written statement regarding the details of the research. Preliminary study results were presented at the 2017 International Conference on Communication in Healthcare in Baltimore, Maryland.

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Figure 1.
Primary care residents' exposure to information about health disparities (n=52)

Figure 2.
Awareness of health disparities impacting African Americans in comparison to Caucasian Americans among primary care residents (n=52)

Figure 3.
Primary care residents' ranking of preferred methods to help them identify and address disparities (range 1–6; n=52)

Table 1.

Select demographics characteristics of primary care residents responding to health disparities survey (n=52)

	N	%
Female	32	62
Age <30 years old	35	67
Race/Ethnicity		
Non-Hispanic White	28	54
Non-Hispanic Black	9	17
Non-Hispanic Asian	9	17
Other *	6	12
Specialty		
Family Medicine	40	77
Internal Medicine	7	14
Pharmacy	2	4
Missing	3	6
Residency Year		
Year 1 or 2	33	64
Year 3 or 4	16	31
Missing/Unknown	3	6
Percent African American Patients in Panel		
50% or less	34	65
Over 50%	13	25
Missing/Unknown	5	10

* Other race/ethnicity includes Hispanics, East Indians, those with more than one race and those with unknown race/ethnicity.

Table 2.

Primary care residents' awareness of health disparities impacting African Americans by select characteristics

	% of primary care residents					
	Resident Race/Ethnicity				% African American Patients	
	NH White n=28	NH Black n=9	NH Asian n=9	Other n=6	50% n=34	>50% n=13
Awareness of diabetes-related disparities for African Americans vs. Caucasians						
More likely to have diabetes ^{†‡}	86	100	56	83	77	100
Higher rates of diabetic retinopathy	54	78	67	67	59	77
Higher rates of early stage kidney disease	75	67	67	83	71	85
Higher rates of end stage renal disease	82	89	89	83	88	85
More likely to have hypertension [†]	93	100	67	100	85	100
Aware of disparities in healthcare access for African Americans vs. Caucasians [*]	57	100	22	67	47	77
Worse off in getting preventive care	79	100	67	83	77	85
Worse off in being able to afford medication	82	100	78	100	85	85
Worse off in getting specialty care [*]	75	100	33	83	65	85
Worse off in getting routine care	79	100	67	100	79	85
Worse off in getting needed healthcare	89	100	78	83	85	92
Aware of disparities in health status for African Americans vs. Caucasians	64	56	33	83	50	69
Worse off in general health	89	89	78	83	85	85
Worse off in life expectancy	89	67	67	100	82	77
Worse off in infant mortality	68	78	78	83	68	77

* P-value<0.05 for difference in awareness by race

[†] P-value<0.10 for difference in awareness by race[‡] P-value<0.10 for difference in awareness by percent African American patients

NH, non-Hispanic

Table 3.

Primary care residents' preparedness to discuss diabetes health disparities and methods to increase their preparedness by select characteristics

	% of primary care residents						
	All	Resident Race/Ethnicity				% African American Patients ^a	
		NH White	NH Black	NH Asian	Other	50%	>50%
	n=52	n=28	n=9	n=9	n=6	n=34	n=13
Prior discussions with patients about racial/ethnic diabetes disparities	31	14	56	44	50	24	46
Feels prepared to							
Communicate with patients from various cultural and ethnic backgrounds	83	79	89	100	67	82	92
Communicate with patients from a broad range of economic backgrounds	83	82	78	100	67	82	92
Discuss diabetes health disparities with patients	31	29	33	33	33	27	39
Residents would feel more prepared to discuss diabetes health disparities by							
Knowing what interventions help to improve the disparity	96	96	100	100	83	97	100
Knowing how to change practice to help to close the gaps in care	90	93	100	78	83	91	100
Easy access to diabetes health disparities information	89	82	100	100	83	88	92
Formal didactic on the facts of health disparities and how to appropriately address them	87	89	100	78	67	85	100
Information in medical training about how to discuss health disparities	87	86	100	89	67	91	85
Improving awareness of diabetes health disparities	83	79	100	89	67	85	92

^aResults reported for 47 respondents who indicated the percent of African American patients in their panel.

NH, non-Hispanic