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Family Medicine

BRIEF REPORT

Implementation of Formal Curriculum on Health Care Disparities in Military Family Medicine Residency

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ABSTRACT

Background and Objectives: The Accreditation Council for Graduate Medical Education (ACGME) requires education on health care disparities (HCD), but research assessing formal curricula is limited. To improve knowledge and confidence in HCD, the family medicine residency program at Darnall Army Medical Center implemented a formal HCD curriculum.

Methods: During the 2021-2022 academic year, starting July 2021, a formal HCD curriculum was implemented for family medicine residents and faculty. Ten lectures on HCDs and implicit bias were given over the course of the year. Residents and faculty were asked to incorporate HCD into their regular continuing medical education lectures. ACGME survey data as well as a pre- and postcurriculum survey were used to assess HCD knowledge and confidence. Descriptive statistics and a paired-sample *t* tests were calculated to compare pre- to postcurriculum changes.

Results: The percentage of residents who reported that they had received HCD education increased from 72% on the 2021 ACGME survey to 100% in 2022 (N=18). We found a significant ($P<.05$) improvement in knowledge and confidence across 11 of 12 questions on the pre- and postcurriculum survey.

Conclusions: A formal curriculum in a military family medicine residency setting was effective for improving self-reported HCD knowledge and confidence.

INTRODUCTION

Health care disparities (HCD) are inequitable differences in disease burden and access to resources to achieve ideal health that are a result of social, political, and economic policies.[1] Additionally, evidence has shown that physicians contribute to HCD through implicit bias.[2–5] The Accreditation Council for Graduate Medical Education (ACGME) has recognized the importance of addressing HCD and requires all graduate medical education (GME) programs to have education in place on HCD. Moreover, engagement in initiatives and process improvement projects to help eliminate HCD is important.[6,7]

Despite this guidance, in 2016 the ACGME found "in general, residents, fellows, and faculty members appeared to have a narrow understanding of the concept of HCD."[7] In 2021, ACGME reported that most trainees receive education on cultural competency; however, trainees reported that the education was often informal, generic, and not specific to diverse populations. In addition, only 9% of residents and fellows reported involvement in projects aimed at reducing HCD.[8] One of the identified barriers to achieving the ACGME's goal was a lack of formal curricula on HCD, which is supported by the limited number of published curricula available related to HCD.[7,9–16]

In 2021, the family medicine residency at Darnall Army Medical Center implemented a formal required curriculum addressing HCD. The aim of this project was to assess whether the curriculum was effective for improving resident and faculty awareness, understanding, and engagement in HCD.

METHODS

All Darnall Army Medical Center family medicine residents (n=18: 6 third years, 5 second years, 7 first years) and faculty (n=10) were invited to participate in the pre- and postcurriculum survey. Personal identifiable information was not collected from those who chose to participate. The curriculum was instituted over the course of the 2021-2022 academic year. Regardless of survey participation, attendance was required at lectures if schedules permitted; however, attendance was not tracked. The Darnall Army Medical Center human research protections program determined that these procedures constituted an exempt study.

Curriculum

The curriculum consisted of 10 lectures, which are summarized in Table 1. Five lectures were based on the documentary series *Unnatural Causes: Is Inequality Making Us Sick?*[17] Each episode of the documentary focused on a specific community in the United States and described how public policy in the community impacted health outcomes. During these lectures, residents and faculty viewed the selected episode; immediately following, a guided discussion on key topics took place. Topics included, but were not limited to, social determinants of health, health policy, and applicability to the military patient population. The remaining five lectures focused on implicit bias and used the American Academy of Family Physicians (AAFP) toolkit on implicit bias.[18] The toolkit provided premade lectures and activities on components of implicit bias, which were individually tailored to fit the needs of the program. Lectures consisted of a short didactic, a group or individual activity, and guided discussion. Didactics and discussions on implicit bias focused on defining what implicit bias entails, understanding that all individuals have implicit bias and how to recognize it, and learning mitigation strategies applicable to the clinical setting.

In addition to these lectures, residents and faculty were required to incorporate a discussion on HCD into their continuing medical education lectures. Individuals conducted an evaluation of the literature on specific diseases and patient populations to determine their relationships with HCD. This component of the curriculum required residents to apply what they had learned in the didactics to medical situations they may encounter in clinical practice.

Measures

We assessed the effectiveness of the curriculum using data from the ACGME annual resident survey and the responses to a 12-question pre- and postcurriculum survey.

ACGME Survey

The ACGME survey is an annual requirement for all GME programs. All residents are expected to complete the survey, which includes questions on work environment and education quality. Specifically, we evaluated the question pertaining to whether residents were taught about HCD.

Pre- and Postcurriculum Survey

To assess knowledge and confidence changes pre- and postcurriculum implementation, we developed the 12-question survey summarized in Table 2. We asked faculty and residents to self-report their knowledge and confidence using a 5-point Likert scale (1=strongly agree to 5=strongly disagree). The survey had not been used before but was considered face valid. The written survey was given prior to the first lecture and at the conclusion of the last lecture.

Analysis

We described the percentage of residents that reported receiving an HCD education in 2021 and 2022 on the ACGME survey. We completed an item analysis using paired-sample *t* tests on the pre- and postsurvey data. Because we did not collect personal identifiable information, we could not determine who (ie, faculty or residents) completed the pre- and postcurriculum survey. Analyses were completed using SPSS version 28.0.0.0 (IBM; 190); *P* values less than .05 were considered statistically significant.

RESULTS

Of the 18 residents, 100% completed the ACGME survey in 2021 and 2022. The percentage of residents reporting receiving HCD education increased from 72% on the 2021 ACGME survey to 100% in 2022. Of the 28 family medicine residents and faculty, 16 completed both pre- and postsurvey questions. As shown in Table 2, participant mean ratings significantly improved between pre- and postcurriculum implementation for all questions except question 7 (ie, "I understand what implicit bias means").

DISCUSSION AND CONCLUSIONS

Our data demonstrated that a formal curriculum in a military family medicine residency setting was effective for improving self-reported HCD knowledge and confidence. Given the increased need for more resources on HCD education in GME, this program-improvement project provides a framework for others to use, implement, and improve upon. To our knowledge, this is the first formal curriculum on HCD to incorporate the AAFP implicit bias training in GME.[19] Following curriculum implementation, responses to all survey questions demonstrated statistically significant improvement except for question 7, which asked whether the respondent understood what implicit bias means. Residents and faculty likely already had a good understanding of the definition of implicit bias prior to curriculum implementation (precurriculum mean=2.25; postcurriculum mean=1.56; *P*=.077). Of note, respondents indicated that their understanding of how implicit bias may influence HCD (question 8) significantly improved.

Our project was limited by a small sample size at a single military institution, and further research would be needed to examine whether results are replicable in other residency settings. A second limitation was that the pre- and postsurvey was created by our program. The use of a validated survey would have provided more confidence regarding curriculum effectiveness. Because we did not collect identifiers, a third limitation was that we were not able to determine whether faculty, residents, or both demonstrated improvements. A fourth limitation was that our survey provided self-reported knowledge and confidence improvements; we do not know whether these improvements contribute to improvements in practice and reductions in HCD.

The results of our project are promising and highlight that an HCD curriculum can improve self-reported knowledge and confidence. Future research should assess whether such changes have an impact on HCD patient care and outcomes. Specifically, does an HCD curriculum in a residency setting help reduce disparity in the clinical practice environment? If we are

TABLE 1. Components of Health Care Disparities Curriculum, Academic Year 2021-2022

Lecture date	Lecture topic	Teaching technique	Lecture objective(s)	Lecture duration	Facilitator
July 2021	*Unnatural Causes: Is Inequality Making Us Sick?* Episode #1	Group activity, guided discussion	Understand definitions of HCD, health equity and inequity, social determinants of health	90 min	Kathryn Oppenlander, MD
August 2021	Implicit bias	Didactic	Understand definition of implicit bias, develop basic strategies for bias mitigation	30 min	Richard Long, PsyD
September 2021	*Unnatural Causes: Is Inequality Making Us Sick?* Episode #2	Guided discussion	Recognize how race and HCD are interconnected, recognize maternal HCD in United States	60 min	Kathryn Oppenlander, MD
November 2021	Implicit bias—AAFP toolkit: Understanding Our Social Identities and Intersectionality of Care	Didactic, creating personal social identity profile, small group discussion on identity profile results, large group discussion on applicability to patient care	Recognize the multiple facets that make up an individual, understand categories that are socially constructed, recognize that identities are fluid to the situation	30 min	Kathryn Oppenlander, MD
January 2022	Implicit bias—AAFP toolkit: Science and Health Effects of Implicit Bias	Didactic, Individual Implicit Bias Association Test, small group discussion on implicit association test results	Identify personal biases that may exist, understand that everyone has bias	30 min	Kathryn Oppenlander, MD
February 2022	*Unnatural Causes: Is Inequality Making Us Sick?* Episode #3	Guided discussion	Understand how social determines of heath are related to HCD	60 min	Kathryn Oppenlander, MD
February 2022	Implicit bias—AAFP toolkit: Mitigating Implicit Bias in Clinical Practice	Didactic, "Denmark, kangaroo, orange" activity, individual privilege survey for empathy, small group discussion on survey results	Recognize that implicit bias is unconscious, identify ways to recognize and mitigate personal bias, define and explore empathy as a mitigation strategy	30 min	Kathryn Oppenlander, MD
March 2022	*Unnatural Causes: Is Inequality Making Us Sick?* Episode #4	Guided discussion	Understand how historical government policy can affect health outcomes, recognize unique HCD related to the Native American population	60 min	Kathryn Oppenlander, MD
April 2022	*Unnatural Causes: Is Inequality Making Us Sick?* Episode #5	Guided discussion	Understand how government policy affects social determinants of health, understand unique HCD related to an immigrant population	60 min	Kathryn Oppenlander, MD
June 2022	Implicit bias—AAFP toolkit: Case Studies	Group work on case studies highlighting bias in medical care, large group discussion on how bias affected patient outcomes and mitigation strategies	Identify how implicit bias can impact patient care, identify ways that bias may be mitigated to improve patient outcomes	30 min	Kathryn Oppenlander, MD

Abbreviations: AAFP, American Academy of Family Physicians; HCD, health care disparities

TABLE 2. Paired-Samples *t* Test Results

	Pretraining		Posttraining				
Question #	**M**	**SD**	**M**	**SD**	***t*(df)**	***P***	**d**
Q1: I understand the definition of health care disparities.	2.06	0.57	1.31	0.48	3.87(15)	.002	0.78
Q2: I know the difference between health care disparity and health inequity.	3.31	0.60	1.63	0.62	6.65(15)	<.001	1.01
Q3: I understand how social determinants of health can influence disparity.	2.06	0.68	1.25	0.45	3.90(15)	.001	0.83
Q4: I am able to identify health care disparities in my practice.	2.63	0.81	1.44	0.51	4.54(15)	<.001	1.05
Q5: I feel confident in my ability to evaluate disparity in my community.	3.13	0.89	1.69	0.48	5.58(15)	<.001	1.03
Q6: I feel confident in assessing the needs of my community.	3.06	0.57	1.94	0.57	6.26(15)	<.001	0.72
Q7: I understand what implicit bias means.	2.25	1.07	1.56	0.51	1.90(15)	.077	1.45
Q8: I understand that implicit bias may influence health care disparities.	2.13	0.89	1.19	0.40	3.76(15)	.002	1.00
Q9: I know strategies to help me recognize my own implicit bias.	2.69	1.18	1.38	0.51	3.77(12)	.003	1.25
Q10: I know strategies to help me mitigate implicit bias.	3.00	1.08	1.62	0.51	3.77(12)	.003	1.33
Q11: I understand that policy changes are sometimes needed to help address disparities.	2.00	0.41	1.23	0.44	3.83(12)	.002	0.73
Q12: I feel confident about incorporating disparity into my lectures/presentations.	2.77	0.93	1.69	0.63	2.94(12)	.012	1.32

Note: Responses on the survey were 1=strongly agree to 5=strongly disagree. Lower scores represent higher levels of agreement.

going to achieve the ACGME's goal to eliminate HCD, then we need effective methods for training residents and faculty to put their knowledge and confidence into practice.

PRESENTATIONS

Presentation at the Uniformed Services Academy of Family Physicians Annual Meeting, April 2023, Orlando, FL

DISCLAIMER

The views expressed in this manuscript are those of the authors and do not necessarily reflect the official policy or position of the Department of the Army, Department of Defense, or US Government.

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