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Family Medicine

BRIEF REPORT

Enhancing Medical Students' Understanding of Team-Based Care to Address Social Determinants of Health: A Case-Based Experience

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ABSTRACT

Background and Objectives: Social and structural factors play a critical role in driving inequitable health outcomes, resulting in the need for undergraduate medical education to include important care components such as team-based care to address social determinants of health. Research shows that learning strategies such as case-based initiatives are valuable opportunities to impact knowledge of population health, health disparities, and social determinants that impact care. The purpose of this study was to assess the impact of a clinical case-based experience on medical students' self-efficacy and future intent to use the team-based care necessary to address social determinants of health.

Methods: We used a retrospective analysis of program data from 640 third-year medical students who engaged in a case-based experience and small-group debriefing around the impact of team-based care and social determinants of health on patient care during their family medicine clerkship between July 2020 and April 2022.

Results: We found a statistically significant improvement in students' reported self-efficacy and intent to collaborate with other health care workers (team-based care) to address patient care needs in rural and urban underserved community settings.

Conclusions: Our students reported that a case-based experience coupled with a small-group debriefing was an effective method for teaching them how to use a team-based approach to address social determinants of health.

INTRODUCTION

Social and structural factors play a critical role in driving inequitable health outcomes, resulting in the need for undergraduate medical education to include important care components such as using team-based care to address social determinants of health (SDOH).[1] Health care teams have faced challenges mitigating health disparities while providing clinical care.[2,3] In response, advancing curricula inclusive of SDOH and team-based care is critical to ensure that students understand the unique needs of historically underserved populations.[4–8] However, little research is available around teaching medical students how to engage with patients about stigmatizing concerns including food insecurity, homelessness, poverty, and other social issues.[9] Research has shown that active learning strategies such as case-based experiences are valuable for improving student understanding of population health disparities.[8,10] Additionally, research has identified the importance of building learner confidence to address challenges faced by patients in low-resourced communities.[11]

Medical schools have integrated learning and strategies around SDOH into health system science curricula including small-group work, peer teaching, and case-based instruction.[3,12,13] Combining experiential learning, such as direct interactions with patients and their families, with traditional instruction activities is considered a positive approach.[3,14] Our study sought to assess the impact of a case-based experience on medical students' self-efficacy and future intentions to use team-based strategies to address SDOH within a clinical setting.

METHODS

During their third-year family medicine clerkship, students participated in a case-based experience designed to teach students to better understand the role of SDOH in patient care. Students were tasked to create a social needs action plan for a fictitious 28-year-old Black woman presenting with a chief concern of cough and shortness of breath. Students were provided with the history of present illness, laboratory results, medication list, and social and family history. The

case outlined SDOH faced by the patient, including economic instability, no transportation, intimate partner violence, and limited social supports. Students used the American Academy of Family Physicians EveryONE Project Toolkit,[15,16] clinical team members (including nurses, social workers, and medical assistants) and local community-based resources (eg, food pantries, transportation services, and nonprofit organization initiatives) to help create a social needs plan for the fictitious patient's short-term and long-term needs.

At the conclusion of the clerkship, students presented their social needs plan, including suggested short-term and long-term plans for the patient, to their clinical preceptor for feedback and attended a virtual small-group session with other medical students. During the small-group discussion, a trained facilitator guided the students to think critically about their experience and their role within a care team to address SDOH. During the session, students shared real-world patient experiences they encountered involving SDOH and the strategies they observed their physician preceptors using to communicate with patients. Students discussed tools and resources that may be beneficial in their future practice.

After the small-group discussion, students voluntarily completed an online program survey where they self-reported their name and clerkship site, demographic information (eg, race and ethnicity), geographic background (from a rural or urban community), and whether they had an economically or educationally underprivileged background. The survey included retrospective pre–post evaluation questions asking students to assess their self-efficacy and their intent to use team-based care and SDOH in their future practices. The retrospective survey design allowed students to rate their experience twice during the same posttest survey using two specific frames of reference: before their experience and after. The retrospective design is a valid tool that allows participants to assess the degree of change they experience with greater awareness and precision than a traditional pre–posttest approach.[17] We conducted a paired t test to assess program results using SPSS version 28 (IBM) with two-sided P values less than .05 considered to be statistically significant. Students who completed the clerkship experience but did not attend the small-group discussion or complete the evaluation were not included in the study. This study received exempt approval (#16601) by the Indiana University Institutional Review Board.

RESULTS

Between July 2020 and April 2022, 640 third-year medicine students completed the case experience, small-group discussion, and program evaluation survey. The majority self-reported their race as White or Caucasian (454, 70.9%), from an urban background (387, 60.5%; Table 1). A paired sample *t* test (Table 2) demonstrated a statistically positive change in students' self-reported understanding of SDOH (χ^2[4, N=620]=−17.984, *P*<.05) and working in team-based care (χ^2[4, N=627]=−14.869, *P*<.05) as well as the confidence and intent to engage in team-based care to address social impediments that impact patient care (χ^2[4, N=618]=−11.970, *P*<.05).

TABLE 1. Medical Students' Demographics

Demographics	N=640 n (%)
Male	328 (51.7)
Female	305 (48.0)
Nonbinary	2 (0.3)
Not reported	5
American Indian or Alaska Native	2 (0.3)
Asian	105 (16.4)
Black or African American	32 (5.0)
More than one race	39 (6.1)
Other	8 (1.3)
White	454 (70.9)
Hispanic or Latinx	71 (11.1)
Grew up in a rural area	253 (39.5)
Grew up in an urban area	387 (60.5)
Have an economically or educationally underprivileged background	201 (31.4)
Clinical placement in a medically underserved community	292 (47.8)
Clinical placement in a rural community	186 (30.6)

We used the US Health Resources and Services Administration Data Warehouse to identify medically underserved communities as those within a federally designated Health Professional Shortage Area and the US Census designation for rural areas as those communities not within an urban area.

DISCUSSION

We found a significant positive change in students' self-reported understanding and intent to engage in team-based care to address social impediments that impact patient care. A growing body of literature outlines the impact of SDOH, such as substandard housing, food insecurity, and lack of access to care, all of which contribute to poor health outcomes.[18] Interprofessional teams that integrate medical, behavioral health, and social services in patient care are effective in addressing health disparities using a multilevel and interdisciplinary approach.[19,20] During the small-group discussion, students reflected on the role and contributions all health care team members have when addressing a patient's social needs.

The study had several limitations. The self-reported nature of the program evaluation can result in a response shift bias when students overexaggerate their pre-experience self-efficacy. A second limitation was that while students were taught from the same curriculum, their clerkships occurred at

TABLE 2. Retrospective Pretest–Posttest Responses Regarding Self-Efficacy and Future Intentions*

	Pretest mean	Posttest mean	Change	Standard deviation	*P* value
I can recognize how social determinants (housing, income, work, food access) can affect patient care.	3.21	3.68	0.47	.656	<.01
I understand how working collaboratively with other health care workers (team-based care) both in a clinic and community can impact patient care.	3.28	3.64	0.36	.607	<.01
I feel confident that I can collaborate/work with other health professions (both in a clinic and community) in a rural or underserved setting.	2.87	3.46	0.59	.815	<.01
I plan to collaborate with other health care workers (team-based care) to improve health outcomes.	3.42	3.67	0.25	.534	<.01
I plan to practice in an underserved community.	2.46	2.55	0.09	.369	<.01
I plan to practice in a primary care setting.	1.87	1.92	0.05	.441	<.01

* Paired sample *t* test, including mean (where 0 is strongly disagree and 4 is strongly agree), and standard deviation between the pretest and posttest.

different clinics across the state. We recognize that the diversity of real-world clinical experiences may have contributed to their self-reported changes in self-efficacy and future intent to use team-based care. A third limitation is a potential social desirability bias in the students' responses. Additionally, our survey design did not assess objective change in knowledge, behavior change, or practice impact in the clinical setting.

A strength of the experience was the integration of community-based resources. Students were encouraged to work with community-based entities such as food pantries, transportation services, childcare services, vouchers, and nonprofit organization initiatives that addressed SDOH. The academic-community model for the case-based experience was valuable as we encouraged students to collaborate within their health care teams as well as with community-based organizations that provided social support programs. We found that using the same trained facilitator was a benefit for the initiative as well as for the students because the facilitator often shared student experiences and resources across student groups and rotation cycles. Ideally, future research would include observation by the preceptor to assess how the student interacts with vulnerable patients facing SDOH issues.

CONCLUSION

We found evidence that a case study based on a fictional patient and corresponding small-group discussion improved students' self-reported self-efficacy and future intent to practice team-based care and address SDOH faced by patients. Our study demonstrated that a case-based experience with corresponding small-group discussion was an effective method for educating medical students on team-based strategies to address social determinants of health.

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REFERENCES

1. Whitman A, Lew D, Chappel N, et al. Addressing Social Determinants of Health: Examples of Successful Evidence-Based Strategies and Current Federal Efforts. *Office of Health Policy, US Department of Health and Human Services.* 2022. https://aspe.hhs.gov/sites/default/files/documents/e2b650cd64cf84aae8ff0fae7474af82/SDOH-Evidence-Review.pdf.
2. Baecher-Lind L, Fleming AC, Bhargava R. Enhancing interprofessional collaboration and interprofessional education in women's health. *Med Educ Online.* 2022;27(1):2107419.
3. Doobay-Persaud A, Adler MD, Bartell TR. Teaching the social determinants of health in undergraduate medical education: a scoping review. *J Gen Intern Med.* 2019;34(5).
4. Smithson S, Dallaghan GB, Crowner J. Peak performance: a communications-based leadership and teamwork simulation for fourth-year medical students. *J Med Educ Curric Dev.* 2020;7:2382120520929990.
5. Arnold L, Cuddy PG, Hathaway SB, Quaintance JL, Kanter SL. Medical school factors that prepare students to become leaders in medicine. *Acad Med.* 2018;93(2):274-282.
6. Gonzalo JD, Dekhtyar M, Starr SR. Health systems science curricula in undergraduate medical education: identifying and defining a potential curricular framework. *Acad Med.* 2017;92(1):123-131.
7. *A Framework for Educating Health Professionals to Address the Social Determinants of Health.* National Academies Press; 2016. .

8. Kiles T, Jasmin H, Nichols B, Haddad R, Renfro CP. A scoping review of active-learning strategies for teaching social determinants of health in pharmacy. *Am J Pharm Educ.* 2020;84(11):8241.
9. Schoenthaler A, Hassan I, Fiscella K. The time is now: fostering relationship-centered discussions about patients' social determinants of health. *Patient Educ Couns.* 2019;102(4):810-814.
10. Poirier TI. Is lecturing obsolete? advocating for high value transformative lecturing. *Am J Pharm Educ.* 2017;81(5):83-83.
11. Longenecker RL, Wendling A, Hollander-Rodriguez J, Bowling J, Schmitz D. Competence revisited in a rural context. *Fam Med.* 2018;50(1):28-36.
12. Campbell M, Liveris M, Brown C, E A. Assessment and evaluation in social determinants of health education: a national survey of US medical schools and physician assistant programs. *J Gen Intern Med.* 2022;37(9):180-182.
13. Lewis JH, Lage OG, Grant BK. Addressing the social determinants of health in undergraduate medical education curricula: a survey report. *Adv Med Educ Pract.* 2020;11:369-377.
14. Asgary R, Naderi R, Gaughran M, Sckell B. A collaborative clinical and population-based curriculum for medical students to address primary care needs of the homeless in New York City shelters: teaching homeless healthcare to medical students. *Perspect Med Educ.* 2016;5(3):154-162.
15. The EveryONE Project. *American Academy of Family Physicians.* 2022. https://www.aafp.org/family-physician/patient-care/the-everyone-project.html.
16. Address your patients' social determinants of health. *American Academy of Family Physicians.* 2022. https://www.aafp.org/family-physician/patient-care/the-everyone-project/toolkit/assessment.html.
17. Little TD, Chang R, Gorrall BK. The retrospective pretest-posttest design redux: on its validity as an alternative to traditional pretest-posttest measurement. *Int J Behav Dev.* 2019;44(2):175-183.
18. Gottlieb L, Fichtenberg C, Alderwick H, Adler N. Social determinants of health: what's a healthcare system to do?. *J Healthc Manag.* 2019;64(4):243-257.
19. Mantel J, Sampson M, Buck DS, Liaw W, Woodard L, Singh J. Developing a health care workforce that supports team-based care models that integrate health and social services. *J Health Law Policy.* 2009;15(2).
20. Mannoh I, Hussien M, Commodore-Mensah Y, Michos ED. Impact of social determinants of health on cardiovascular disease prevention. *Curr Opin Cardiol.* 2021;36(5):572-579.