



Journal of Regional Medical Campuses

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DOI: <https://doi.org/10.24926/jrmc.v5i1.4384>

Journal of Regional Medical Campuses, Vol. 5, Issue 1 (2022)

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Perceptions of Social Determinants of Health in a Student-Led Free Clinic: Do Students See Things Differently From Their Patients?

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Abstract

Understanding a patient's social determinants of health (SDOH) needs is an important component of medical care. To better understand how well future physicians are aware of these needs, student primary care providers (PCPs) at a student-led free clinic in the upper southeastern United States surveyed 15 patients via telemedicine between October 2020 and January 2021 concerning their SDOH needs. They addressed 17 SDOH items using a 10-point Likert scale. Prior to administering the survey to patients, student PCPs were asked to complete the survey to predict each individual patient's responses. The average difference between student and patient responses ranged from 1.3 to 3.8 for each SDOH item, and patients expressed a higher need than the student PCPs did for health services navigation, health insurance limitations, and education options and affordability. We conclude that even this group of motivated medical students providing continuity care could benefit from a more formal curriculum addressing SDOH.

INTRODUCTION

There is mounting evidence that supports the need to screen and manage so-called social diagnoses in primary care.¹ Patients who struggle to address social determinants of health (SDOH) needs (eg, financial, food, or housing insecurity; lack of transportation; interpersonal violence) have worse health outcomes, including higher rates of developing chronic diseases such as diabetes and hypertension.^{2,3} One solution to overcome these barriers is the use of patient navigators. A patient navigator is a member of the health care team whose purpose is to make social diagnoses and connect patients to appropriate resources to meet their needs. The use of patient navigators first grew out of the need for timely care and follow-up for cancer patients, and patient navigators have since been used to manage chronic diseases. Patient navigation programs are effective in increasing rates of preventative screening and completions of scheduled medical care.^{4,5} Though medical students are trained to assess the impact of medical diseases on patients' lives, little is taught about how to uncover and act on SDOH needs.

There is little evidence available about how well doctors know their patients' social situations, and much of the evidence that is available shows that doctors are not very good at predicting many aspects of a patient's social needs.⁶ This study focused on how well medical students can predict their free clinic patients' SDOH needs, with the goal of providing the background for a program for students to act as patient navigators themselves. The research question here is the following: Despite previous typical medical visits with students in the PCP role, are the students' perceptions of patients' SDOH needs different from the needs expressed by the patients in a survey? If so, in which topic areas are the perceptions farthest apart? Since so little is known about this topic, this can be considered a descriptive, or hypothesis-generating, study.

METHODS

The community's free clinic is directed and staffed by third-year medical students and supervised by the dean at a regional rural medical school campus in the upper southeastern United States.^{7,8} Established in

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2004, the clinic serves the local county population of approximately 45,000 (with a host town population of 20,000) and provides free care for patients who are uninsured or underinsured. Due to the COVID-19 pandemic, all clinic services transitioned to telemedicine in September 2020, and each student was assigned a cohort of patients to care for throughout the school year as the patients' primary care provider (PCP). All 7 third-year medical students participating in patient care for that academic year agreed to participate. The patient-student doctor relationships provided an excellent opportunity to assess patients for SDOH needs.

A 10-point Likert-scale survey was developed for 17 different areas of SDOH need and interactions with the medical system. This research came out of a community improvement project with the American Academy of Family Physicians (AAFP); one goal of this project was to better understand how medical students could act as patient navigators. Rather than use previously validated but narrow instruments, we developed a broader instrument that included issues such as interactions with the medical system, the free clinic's role within this system, and an understanding of a patient's insurance history.⁹⁻¹¹ An initial small field study showed that the survey accomplished its goals. A 10-point Likert scale was used because the answers tended to be clustered at one end of a narrower scale on the small field test.

We included questions regarding how these patients ended up at the free clinic: What interactions in the medical world led them to the clinic, and how were they doing under the clinic's care? How had insurance costs or costs accrued due to not having insurance affected them previously? We included questions related to the affordability of medications and access to phone and internet services to understand how patients rated the clinic's ability to find affordable medications for them and reach them remotely during the pandemic via telephone or webcam. Because there is a local community college, we also wanted to understand how patients understood their options for furthering their education and if finances played a role in their decision. Finally, given the increased amount of political polarization across the United States and the effect on medical mistrust—which has been increasingly more apparent throughout the COVID-19 pandemic and due to racial

unrest—we wanted to understand how our patients perceive local government and law enforcement. Each student had at least 2 interactions with their patient population prior to surveying, with the initial "new patient" interactions taking place in person in late July through August 2020. Surveying occurred in October through December 2020. The clinic is entirely student run, so it is likely most students had multiple other interactions with patients via telephone or video call, such as scheduling appointments, communicating lab results, ensuring that prescriptions could be filled, and discussing any paperwork needs to fulfill requirements for prescription drug-sponsored payment assistance programs. In reviewing the literature about how well physicians understand their patients' SDOH needs, the few studies we found made it clear that there are often gaps in physicians' understanding, which we wanted to investigate.¹²⁻¹⁵ Furthermore, we thought it would be an educational experience for understanding the needs of our own patient group in a formal manner.

From October 2020 through January 2021, student PCPs completed the surveys, which asked them to answer the questions as if they were one of their assigned patients. Next, each student administered the same survey to each of their assigned patients via a telephone call or video visit. Comments were allowed for each item. The 15 patients were surveyed by 7 students, with an average of 2 patient responses per student; each student had at least 1 patient response, with a maximum of 4 patient responses per student. The students were 85% White. One student was from South Asia, 71% of students were female, the average student age was 26, and all of the students had attended high schools in the same state as the campus where the study took place. Data from the patient and student survey responses were de-identified, matched as individuals, and ranked in areas of SDOH needed most by patients and perceived by students. The difference between patients' responses and the students' perceived needs for each individual patient was calculated for each patient-student response and averaged overall for each SDOH topic. No statistical testing was done, as this was a descriptive study. The project was approved by the host hospital Institutional Review Board as exempt.

RESULTS

Patient Responses

Individual patient responses varied widely. Table 1 shows the numbers and percentages of patients in each age range and with specific chronic diseases. Figure 1 shows patients' responses to SDOH needs, with statements with the highest need scored as a Likert score of 10 and those with the least need assigned a score of 1. Based on overall averages, we found the following areas to be the ones with the most need:

1. Navigation, in response to the statement "I worry about finding my way around the health system outside of HCCC (eg, other doctor appointments, dentist offices, health insurance coverage, the hospital)."
2. Health insurance, in response to the statement "The health insurance I have (or lack of health insurance) prevents me from getting affordable medical care."
3. Education options and affordability, in response to the statement "I feel that I have affordable options to continue my education if I want (for myself and my family)."

Common Themes in Comments

Many patients feared the surprise medical bills they might get if they needed urgent or emergent care. Some were upset that needed subspecialist visits were not covered by their insurance. Several did not regularly get dental care or preventative services outside the clinic (eg, colonoscopy, mammogram, Pap smear), even if free sources of these services were intermittently available. Patients were also concerned about out-of-pocket costs. Many had no insurance; some had insurance, but deductibles were so large that the insurance was of little value to them (eg, 1 patient had a deductible of \$5,000). Some patients reported that they would see subspecialists if they had insurance coverage. Most were not interested in continuing their education, and at least 3 felt that continuing their education would be too expensive. Overall, there was at least 1 individual patient who identified each of the categories of food insecurity, financial stress, job security, or housing as significant stresses, even though community resources were available.

Student Responses

As shown in Figure 2, the areas of need perceived to be the greatest were the following:

1. Education options, in response to the statement "I feel that [my patients] have affordable options to continue [their] education if [they] want."
2. Phone/internet access, in response to the statement "[My patients] have trouble with phone service and/or internet services."
3. Insurance limitations, in response to the statement "The health insurance [my patients] have (or lack of health insurance) prevents [them] from getting affordable medical care." There was also wide variability among the students' perceptions of their patients' needs.

Common Themes in Student Comments

Most student PCPs expressed that continuing education was not a manageable option for most of their patients due to disinterest, inability to afford to pursue an education, or feasibility within work schedule. Comments pertaining to phone and internet access noted that while most patients had access to a cell phone (though not all), some had no internet service or the internet connection was often poor during telemedicine visits that took place during the COVID-19 year. Students reported that not all patients had smartphones with the capability to have video connections.

Most student PCPs expressed that a lack of insurance or, if they had insurance, high deductibles kept their patients from getting affordable care outside of the capabilities of the clinic, such as screening colonoscopies and mammograms. Other student PCPs reported that because their patients had no insurance, the community clinic was the only option in terms of medical care. Overall, students expressed that the clinic was not enough to meet patients' full medical needs.

Patient-Student Response Difference

As shown in Table 2, the areas of greatest difference between student PCPs' perceptions' of needs and patients' reported needs concerned food access, activity options, and insurance limitations. As this was a descriptive study, no statistical testing was done. Students were more concerned than their patients about patients' access to affordable food and physical

activity. Patients felt that insurance limitations were a more restricting factor than did their student PCPs.

DISCUSSION

The goal of this project was to understand how well medical students understand the SDOH needs of their free clinic patients. Our findings show that the student PCPs' perceptions of patient needs often do not match the patients' perceptions. In our case, prior to this study, students at the rural health campus learned about SDOH through student-led community cardiovascular screenings. Each class of medical students was tasked with designing and implementing these screenings as an attempt to uncover populations within the community in need of chronic disease management.

In addition, as part of the case-based medical teaching, students were often directed to think about how medical costs and lifestyle factors play a role in medical management. In most standard medical student curriculum and clinical experiences, students are evaluated on their ability to express empathy and understanding of a patient's social limitations. On almost all standardized patient exams, students are expected to ask something along the lines of, "How does your illness affect your life?" Although students are expected to include a "review of systems" in all patient encounters, this provides a limited view of a patient's social well-being. By teaching students a systematic approach to asking about social determinants, medical schools can ensure student physicians are better prepared to build stronger doctor-patient relationships in the future. If they can lay the framework for discussing social issues, students may be more prepared to identify and potentially build resource networks for their patients. Understanding what community resources can address individual patient needs is an evolving process, and by incorporating an SDOH interview format into patient interactions, students can become more knowledgeable about the context of the medical care they provide.

As a result of this project, we attempted to incorporate the "student as patient navigator" role at the local family medicine residency clinic. Students would screen patients who frequently missed appointments, as identified by the clinic's licensed clinical social worker. Logistically, this approach was not feasible because of communication barriers with

these patients. As a second attempt at incorporating a patient navigator, the students have incorporated the SDOH screening into the cardiovascular screening at a local Salvation Army shelter. Through this process, students will learn SDOH experientially while managing patients who may have insurance and even a PCP but cannot access care because they are homeless. In the future, after this experiential learning, a similar study could be done to evaluate if students' awareness of their patients' SDOH needs has changed.

LIMITATIONS AND STRENGTHS

As with any small study, generalizability must be limited to similar students, patients, and environments. By necessity, our surveys were not conducted in person, and we did not use a patient-written survey. In addition, for matching patient and student answers, our surveys had to be non-anonymous. For the sake of reproducibility and clinical use, it would be easier to use a validated survey such as the AAFP Social Needs Screening Tool, but for the purposes of education in survey creation and patient-physician relationship building, we wanted to include a more extensive list of issues.

Although student PCPs were encouraged to frame the questions with language that was unassuming about patient needs, our patients may have given more socially acceptable answers. Our study was also limited to third-year medical students, and it is possible that those with more clinical experience would better predict their patients' SDOH responses. Given the small sample size of students, we did not try to find whether any student groups predicted patients' responses more closely than others. A key strength of our study was the complete matching of student PCP and patient responses. We did not find another published study with that design.

CONCLUSION

Most medical students choose their career with the goal of relieving the burden of disease. The complex reality of coordinating medical care is that often the most difficult problems are those that stem from social determinants of health issues. Coordination with a team of health professionals is required to take care of one patient, and a rich system of services outside the office is needed to care for a whole

community. Our study shows that without a structured experience, even motivated medical students providing continuity care are unlikely to predict what is most important to their patients. As innovations in medical education are planned, acting as a patient navigator for patients seen in continuity could be a valuable addition to a medical student's education.

Acknowledgments

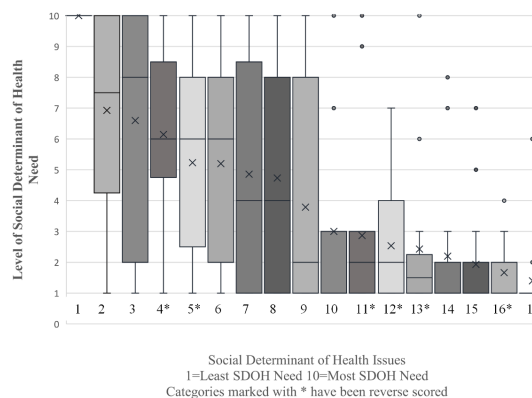
We appreciate the active participation of the entire student SDOH Working Group: Matthew Barber, Toni S. Carter, VD Clark, Allison B. Engelbrecht, Talitha H. Jones, and Sravya Veligandla. We also thank Kendall Denny and Steve Fricker for data management.

This project was completed as a part of the American Academy of Family Physicians Family Medicine Leads Emerging Leader Institute.

Table 1. Study Population (N = 15)

Age		Patients with hypertension (%)	Patients with diabetes mellitus	Patients with hyperlipidemia
Age range	Patients in age range (%)			
40-50	4 (27)	10 (66.7)	9 (60)	10 (66.7)
51-60	5 (33)			
61-65	6 (40)			

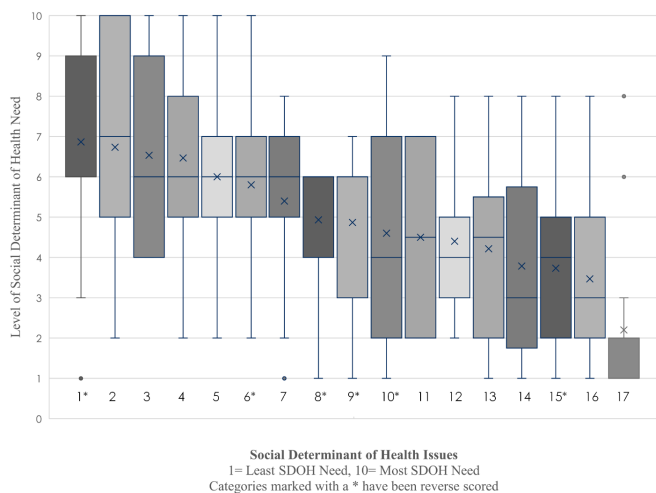
The proportion of patients with hypertension, diabetes mellitus, and hyperlipidemia is included to describe the population. It is clear from the literature that high SDOH need is associated with increases in population prevalence of chronic diseases.¹⁻²



See corresponding number on figure

- 1 If English is your second language, it is often difficult for me to understand and use medical services
- 2 I worry about finding my way around the health system outside of HCCC. (e.g. other doctor appointments, dentist offices, health insurance coverage, the hospital)
- 3 The health insurance I have (or lack of health insurance) prevents me from getting affordable medical care
- *4 I feel that I have affordable options to continue my education if I want. (For myself and my family)
- *5 I feel supported by the local government
- 6 I worry about my finances often (i.e. electricity and water, grocery, medical bills)
- 7 I have trouble with phone service and/or internet services
- 8 My medications are often too expensive
- 9 I worry about losing my current job or finding a job
- 10 I often worry about getting from place to place
- *11 I have options to be physically active if I want to be
- *12 I feel safe where I live. (i.e. the people I live with and neighbors will not harm me, the physical environment is safe and clean)
- *13 I feel supported by the local police
- 14 I am often worried whether my/our food would run out before I/we get money to buy more
- 15 I feel that I spend too much of my income on alcohol, tobacco, and/or recreational drugs
- *16 I feel that my health needs are currently being met by the community clinic
- 17 I am worried about losing my current housing

The box-and-whisker plot represents the degree of patient-reported SDOH needs on a Likert scale of 1 to 10 on the y-axis. Each numbered SDOH statement is shown on the x-axis and written in full below the plot. For example, Statement 2 is represented by the box-and-whisker plot with an average Likert scale response of 6.9 (indicated by the x), a median of 7.5, a minimum of 1, and a maximum of 10.



See corresponding number on figure

- *1 I feel that I have affordable options to continue my education if I want (for myself and my family)
- 2 I have trouble with phone service and/or internet services
- 3 The health insurance I have (or lack there of) prevents me from getting affordable medical care.
- 4 My medications are often too expensive
- 5 I worry about finding my way around the health system outside of HCCC (e.g. other doctor appointments, dentist offices, health insurance coverage, the hospital)
- *6 I have options to be physically active if I want to be
- 7 I worry about my finances (i.e. electricity, water, grocery, and medical bills)
- *8 I feel supported by the local government
- *9 I feel supported by the local police
- *10 I feel safe where I live (i.e. the people I live with and neighbors will not harm me, the physical environment is safe and clean)
- 11 If English is your second language, it is often difficult for me to understand and use medical services
- 12 I am often worried whether my/our food would run out before I/we get money to buy more
- 13 I worry about losing my current job or finding a job
- 14 I often worry about getting from place to place
- *15 I feel that my health needs are currently being met by the community clinic
- 16 I am worried about losing my current housing
- 17 I feel that I spend too much of my income on alcohol, tobacco, and/or recreational drugs

The box-and-whisker plot represents the degrees of student-predicted SDOH needs of their patients on a Likert scale of 1 to 10 on the y-axis. Each numbered SDOH statement is shown on the x-axis and written in full below the plot. For example, Statement 2 is represented by the box-and-whisker plot with an average Likert-scale response of 7 (indicated by the x), a median of 6.9, a minimum of 2, and a maximum of 10.

Table 2. Average Difference Between Student and Patient Responses

SDOH question	Average difference
I am often worried whether my/our food would run out before I/we get money to buy more.	3.8
I have options to be physically active if I want to be.	3.6
The health insurance I have (or lack of health insurance) prevents me from getting affordable medical care.	3.5*
I feel supported by the local police.	3.5
I feel supported by the local government.	3.2*
If English is your second language: It is often difficult for me to understand and use medical services.	3
I worry about my finances often (eg, electricity and water, grocery, medical bills).	3
I have trouble with phone service and/or internet services.	3
I feel safe where I live (eg, the people I live with and neighbors will not harm me; the physical environment is safe and clean).	2.9
My medications are often too expensive.	2.7
I am worried about losing my current housing.	2.5
I worry about finding my way around the health system outside of the Hopkins County Community Clinic (HCCC) (eg, other doctor appointments, dentist offices, health insurance coverage, the hospital).	2.3*
I feel that I have affordable options to continue my education if I want. (For myself and my family)	2.1
I often worry about getting from place to place.	2.1
I feel that my health needs are currently being met by the community clinic.	2.1
I feel that I spend too much of my income on alcohol, tobacco, and/or recreational drugs.	1.4
I worry about losing my current job or finding a job.	1.3
OVERALL AVERAGE	2.4

*Patient ranked SDOH item higher than student. SDOH = social determinant of health.

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