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Brief Report

Social Determinants of Health in a Kansas Community Health Center

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ABSTRACT

Introduction. This study explored the connection between social determinants and patient self-rated health at Health Ministries Clinic (HMC) in a rural Kansas community. Community health centers, like HMC, strive to deliver comprehensive care that addresses patients' social needs.

Methods. The authors employed a convenience sampling method to survey HMC patients with appointments from September to December 2018. The authors analyzed the data using Chi-square tests and descriptive statistics in RStudio, considering $p < 0.05$ as significant.

Results. Among 200 patient responses, education, income, employment, and insurance status were negatively correlated with self-rated health. Notably, 86.2% of college or graduate school graduates reported positive health ratings, compared to 40% of those who did not finish high school ($\chi^2(12, N = 185) = 25.75$, $p = 0.012$). Lower income individuals (income <$34,000 per year) consistently rated their health poorer than their higher income counterparts ($\chi^2(12, N = 174) = 23.96$, $p = 0.021$). Patients without insurance or with public insurance (Medicaid/CHIP) perceived their health as worse than those on private health insurance and Medicare ($\chi^2(12, N = 137) = 35.67$, $p < 0.001$).

Conclusions. Our findings suggest that low educational attainment, income, and lack of health insurance are associated with barriers to healthcare, resulting in poor health outcomes and chronic disease among those with lower socioeconomic status. This underscores the strong association between social determinants and self-rated health among HMC patients. These results can be used by other clinics to assess the needs of their patient population and enhance community health initiatives. ***Kans J Med 2024;17:61-63***

INTRODUCTION

In 2010, the World Health Organization (WHO) emphasized health equity in their report *Closing the Gap*, urging global action on social determinants of health.[1] In the U.S., literature confirms a link between low-income and impoverished communities and a higher risk of chronic disease, mental illness, high mortality, and low life expectancy.[2,3] Studies by Mode et al.[3] and Braveman et al.[2] found a negative correlation between economic status and mortality rates, as well as with chronic conditions such as coronary heart disease and diabetes. Braveman et al.[2] attributed this to a dose-response relationship, where poorer socioeconomic status is associated with poorer health outcomes. Cockerham et al.[4] suggested that the higher rates of chronic diseases among lower socioeconomic status individuals are not only due to poor access to care but also limited financial resources that hinder healthy lifestyles.

Alongside income, educational attainment also plays a crucial role in health outcomes. Krueger et al.[5] found that males without a high school diploma faced a 23% higher risk of death compared to those with diplomas. Additionally, Vaughn et al.[6] reported that individuals without high school diplomas had higher odds of chronic diseases, including diabetes (OR = 1.32), heart disease (OR = 1.18), and stroke (OR = 1.55). Hahn and Truman have documented that individuals with no high school diploma often rate their health lower than those with higher educational attainment.[7] Self-rated health has been shown to be a reliable indicator of overall health and a strong predictor of mortality.[8,9]

In Kansas, numerous populations, both urban and rural, face challenges in accessing quality healthcare. Historically, Harvey County, located approximately 25 miles north of Wichita, has been one such area. HMC was established with the mission of providing healthcare to vulnerable populations in Harvey County, aiming to improve healthcare access and equity in the community.[10] In 2007, it officially became a Community Health Center (CHC). After Ascension Via Christi Clinic left Harvey County due to financial reasons, HMC took over the remaining patient population on October 27, 2017, becoming the largest primary care provider in the county.[10] This study examined how social determinants of health relate to the self-rated health of patients at HMC, a CHC in central Kansas. Understanding these local health influences is vital for effective community health initiatives. The goal was to gain a deeper understanding of how social determinants of health impact the patient population in Harvey County, KS.

METHODS

From September to December 2018, we invited a convenience sample of HMC clinic patients to participate in the study. Informed consent and paper surveys were provided by front office staff during check-in. Participation was optional, and it did not affect the care received. Completed surveys were placed in a locked drop-box, which was collected weekly by the research team. The inclusion criteria were adult patients (18 years and older) with clinic appointments during the specified months, excluding children and those who had previously participated. Additional survey details are available in the online Appendix A (appendix is only available online at journals.ku.edu/kjm).

We concluded data collection after receiving 200 completed surveys. Each participant was assigned a unique identification number, which was linked to their responses. The data were entered into Google Sheets and then exported to RStudio for analysis. We utilized Pearson's Chi-square tests for independence, with a significance level of $\alpha = 0.05$.

RESULTS

Data from 200 patients were included in data analysis. The majority of respondents identified as female (67.5%), white (78%), and middle-income (41.5%). Full demographic data is available in Appendix B (appendix is only available online at journals.ku.edu/kjm).

Education. Higher levels of educational attainment are associated with higher self-rated health scores ($\chi^2(12, N = 185) = 25.75$, $p = 0.012$). Among the patient population, 86.2% (n = 50) of college or graduate school graduates rated their health as good, very good, or excellent,

whereas only 40% (n = 4) of individuals who did not finish high school gave positive ratings. Similar trends were observed for fair health ratings, represented in Table 1.

Table 1. Respondents' education level and self-rated health.[a]

	Finished College or Graduate School	Some College or Vocational Training	High School Diploma or GED	Did Not Finish High School
Excellent, no. (%)	10 (17.2)	5 (7.6)	5 (9.8)	0 (0)
Very good, no. (%)	21(36.2)	12 (18.2)	11 (21.6)	1 (10)
Good, no. (%)	19 (32.8)	34 (51.5)	15 (29.4)	3 (30)
Fair, no. (%)	6 (10.3)	12 (18.2)	15 (29.4)	5 (50)
Poor, no. (%)	2 (3.4)	3 (4.5)	5 (9.8)	1 (10)
Total	**58**	**66**	**51**	**10**

[a]$\chi^2(12, N = 185) = 25.75, p = 0.012$

Income Level. Lower income status patients rated their health poorer compared to middle- and high-income patients ($\chi^2(12, N = 174) = 23.96, p = 0.021$). Analysis showed that 42.6% (n = 29) of low-income patients viewed their health as fair or poor, while only 14.5% (n = 12) and 9.1% (n = 1) of middle- and high-income patients viewed their health as poorly, respectively. Table 2 represents this trend and shows middle- and high-income groups consistently rating their health as very good or excellent at higher rates.

Table 2. Respondents' income levels and self-rated health.[a]

	Prefer Not to Answer	Low	Middle	High
Excellent, no. (%)	1 (8.3)	5 (7.4)	9 (10.8)	1 (9.1)
Very good, no. (%)	3 (25)	11 (16.2)	27 (32.5)	5 (45.5)
Good, no. (%)	4 (33.3)	23 (33.8)	35 (42.2)	4 (36.4)
Fair, no. (%)	4 (33.3)	20 (29.4)	11 (13.3)	1 (9.1)
Poor, no. (%)	0 (0)	9 (13.2)	1 (1.2)	0 (0)
Total	**12**	**68**	**83**	**11**

[a]$\chi^2(12, N = 174) = 23.96, p = 0.021$

Insurance Status. Table 3 shows those who lack insurance or are publically insured view their health as worse than those on private health insurance and Medicare ($\chi^2(12, N = 137) = 35.67, p < 0.001$). Notably, 83.3% (n = 10) of individuals on Medicaid or other public insurance and 46.2% (n = 6) of the uninsured population rated their health as fair or poor. In contrast, 14.7% (n = 11) of privately insured and 21.6% (n = 8) of Medicare patients rated their health as fair or poor.

Table 3. Respondents' insurance status and self-rated health.[a]

	None/ Uninsured	Medicaid/ CHIP/Other Public	Medicare	Private
Excellent, no. (%)	1 (7.7)	0 (0)	3 (8.1)	9 (12)
Very good, no. (%)	1 (7.7)	0 (0)	9 (24.3)	22 (29.3)
Good, no. (%)	5 (38.5)	2 (16.7)	17 (45.9)	33 (44)
Fair, no. (%)	4 (30.8)	7 (58.3)	8 (21.6)	9 (12)
Poor, no. (%)	2 (15.4)	3 (25)	0 (0)	2 (2.7)
Total	**13**	**12**	**37**	**75**

[a]$\chi^2(12, N = 137) = 35.67, p < 0.001$

DISCUSSION

Our findings show that the social determinants of health surveyed correlated significantly with participants' self-rated health, with the strongest relationships being on insurance status. Overall, there is a connection that exists between self-rated health, chronic disease, continuity of healthcare, and barriers to care with those on the margins of society reporting poorer health. This is consistent with the observations from prior studies suggesting that individuals with low education and income experienced both lower health ratings and higher rates of chronic disease.[2,3,7]

The findings suggest a system of low educational attainment, income, and lack of health insurance influencing the formation of barriers to healthcare, further cascading to poor health outcomes and chronic disease for those with lower socioeconomic status. Khullar and Chokshi[11] suggested that poor health limits a person's ability to work and reduces economic opportunities, limiting further educational attainment and an increased risk of taking on medical debt. Bor and Galea[12] called this a cycle, noting the reciprocal impact health and poverty have on each other. This cycle continues due to rising healthcare costs in the U.S., disadvantaging those who do not have incomes to support their health. The cost of living a healthy life is also increasing in the U.S., with expensive fruits and vegetables, gym memberships, and the like becoming a necessity.[12] For those with less income, the cheaper options are to pick unhealthier lifestyles.[13]

The association between poor self-rated health and lower income status in this study was also demonstrated by Hamel et al.[14] who identified that 4 in 10 people making under $50,000 a year struggled to pay for their medical bills. This trend extended based on insurance status, with 53% of uninsured people reporting to struggle to pay their medical bills, and only 20% of the insured population describing the struggle to pay for services.[14] This underscores the impact of lower socioeconomic status, specifically uninsured individuals, avoiding health services due to fear of cost.[15]

Limitations. The authors acknowledge the major limitation of this study is the age of the data presented. Due to pressures of the COVID-19 pandemic, public dissemination of these data were delayed. Despite being five years old, the authors argue these data offer lasting insight on the impact of social determinants of health in a specific Kansas community. According to the WHO, local data "is an integral part of the overall health equity surveillance process," and can be used to improve local change, and lead to health empowerment.[1(p.183)] This research, conducted with HMC, aimed to identify gaps in their care.

Another limitation is the use of a convenience sample, potentially not fully representative of HMC's patient population. Of this sample, the majority of survey completions were by women. This gender disparity may result from women's higher healthcare service utilization.[16] Another limitation included the reliance on clinic staff for survey distribution. Throughout the study, the research team needed to regularly communicate with staff to remind them of the study's importance and

the need to distribute it to all patients who met inclusion criteria. Survey data, by nature, provides insight that is limited to a single period in time. Additionally, it is difficult to establish direct cause-and-effect relationships between variables in survey data, as correlation does not imply causation. These factors should be considered when recognizing constraints of survey-based research.

Furthermore, these data were intended to gain a better understanding of the social determinants of health affecting a single clinic's population in rural Kansas. This was not intended to be representative of the U.S. population as a whole, but rather provide a snapshot of the patient population at HMC. The authors relayed these results back to leadership at HMC to guide quality improvement at the clinic.

CONCLUSIONS

This study highlights correlations between low income, limited education, and poor insurance coverage with lower self-rated health in the Newton, KS community. Integrating this into existing literature, the authors demonstrate the specific social determinants of health that affect the patients at HMC. This study identified areas of improvement at HMC, and further use of this survey can prompt additional quality improvement studies at healthcare facilities.

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