

Prevalence of Social Determinants of Health Among Health System Employees

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Abstract

Introduction/Objectives: Many health systems screen patients for social determinants of health and refer patients with social needs to community service organizations for assistance. However, little is known about social determinants of health among health system employees. We sought to examine the prevalence of social determinants among employees of The MetroHealth System, a large safety-net health system in Cleveland, Ohio. **Methods:** We invited participants in an employee wellness program to answer the same screening questions that patients answer about 9 social determinants of health, including food insecurity, financial strain, transportation difficulty, inability to pay for housing or utilities, intimate partner violence, social isolation, infrequent physical activity, daily stress, and lack of internet access. We then determined the percentage of employees who met pre-defined criteria for being at risk for each social determinant. We also examined how these percentages varied across employee job categories. **Results:** Of 4191 full-time employees, 1932 (46%) completed the survey. The percentage of employees at risk for each social determinant were: food insecurity (11%), financial strain (12%), transportation difficulty (4%), inability to pay for housing or utilities (10%), intimate partner violence (4%), social isolation (48%), infrequent physical activity (10%), daily stress (58%), and lack of internet access (3%). Being at risk for specific social determinants was more common among support staff compared to staff physicians and nurses. For example, the survey participants included 436 administrative support staff, a job category that includes secretaries and patient service representatives. Among this group, 20% reported food insecurity, 20% financial strain, and 17% inability to pay for housing or utilities. **Conclusions:** Social determinants of health are common among health system employees, especially among workers in lower paid job categories. Health systems should routinely screen employees for social determinants and adjust salaries, benefits, and assistance programs to address their social needs.

Keywords

social determinants of health, health systems, employees

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Introduction

Because social determinants influence healthcare cost, quality, and outcomes, many health systems are screening patients for social needs and referring them to community service organizations for assistance.¹ Examples of topics addressed in screening include food, housing, transportation, utilities, and exposure to interpersonal violence. Numerous research studies have been published describing these efforts.^{2–4}

By contrast, little is known about social determinants of health among health system employees. We therefore sought to examine the prevalence of social determinants

among employees of The MetroHealth System, a large safety-net health system in Cleveland, Ohio. We also examined how these determinants vary across employee job categories. We focused on full-time employees (working at least 30 h per week) to better understand the link between job category and social needs.

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Methods

In 2019, the MetroHealth System Institute for Health, Opportunity, Partnership, and Empowerment initiated a program to systematically screen patients for social determinants of health and refer patients with social needs to a network of over 140 community service organizations for assistance. A patient survey was developed based on items from previously validated questionnaires and asked about 9 social determinants of health, including food insecurity, financial strain, transportation limitations, inability to pay for housing or utilities, intimate partner violence, social isolation, infrequent physical activity, daily stress, and lack of internet access. The survey items and patient screening results have been published.⁴ From June to October 2021, all participants in MetroHealthy, an employee wellness program, were invited to complete the same social determinants survey as part of an annual online health assessment. Employees were also asked about their work location. Employee responses were linked to pre-existing MetroHealthy data on age, gender, race/ethnicity, and job category. Employee responses were confidential and were not shared with their supervisors or health care providers. The survey included information on a regional online referral platform that individuals can use to connect with community-based organizations if they want help with specific social needs. The MetroHealthy program provides resources and information to help employees make healthier choices about exercise, nutrition, and stress management. Employees receive points for completing various activities (including the annual health assessment) and discounts on health insurance premiums depending on the number of points accrued. About 95% of wellness program participants utilize employer-provided health insurance. This study was approved by the Institutional Review Board of the MetroHealth System.

We determined the percentage of employees who met pre-defined criteria for being at risk for each social determinant. We also examined how these percentages varied across employee job categories. All analyses were conducted with SAS 9.4, SAS Institute, Cary, North Carolina.

Results

Of 4191 full-time employees enrolled in MetroHealthy, 1932 (46%) completed the survey. Compared to participants, non-participants were more likely to work at the Cleveland main campus (76% vs 56%, $P < .001$) but did not differ in age, gender, race/ethnicity, or job category. As indicated in Table 1, the mean age of participants was 44.0 years, and a majority of participants were female and white. The most common job categories were nurses and administrative support.

As indicated in Table 2, the percentage of employees at risk for each social determinant were: food insecurity (11%), financial strain (12%), transportation difficulty

Table 1. Characteristics of Screened Full-Time Employees (n = 1932).*

	N (%)
Age, mean (SD)	44.0 (11.8)
Gender	
Female	1546 (80%)
Male	384 (20%)
Missing	2 (0.1%)
Race/ethnicity	
White	1415 (73%)
Black	214 (11%)
Asian	105 (5%)
Hispanic	95 (5%)
Other	103 (5%)
Work location	
Cleveland main campus	1089 (56%)
Brooklyn Heights	91 (5%)
Old Brooklyn	144 (7%)
Parma	127 (7%)
Other	402 (21%)
Missing	79 (4%)
Job category**	
Staff physicians	124 (6%)
Residents/fellows	130 (7%)
Nurses	490 (25%)
Clinical specialists	179 (9%)
Non-clinical managers	246 (13%)
Skilled support	197 (10%)
Administrative support	436 (23%)
Clinical support	103 (5%)
Other support	27 (1%)

*Results are number (percentage) for categorical variables and mean (standard deviation) for continuous variables.

**Nurse category includes advanced practice nurses and physician assistants. Clinical specialists include psychologists, physical therapists, and registered dietitians. Skilled support includes maintenance technicians and information system specialists. Administrative support includes secretaries and patient service representatives. Clinical support includes clinical technicians and medical assistants. Other support includes food service and environmental service workers.

(4%), inability to pay for housing or utilities (10%), intimate partner violence (4%), social isolation (48%), infrequent physical activity (10%), daily stress (58%), and lack of internet access (3%). Being at risk for specific social determinants was more common among support staff compared to staff physicians and nurses. For example, the survey participants included 436 administrative support staff, a job category that includes secretaries and patient service representatives. Among this group, 20% reported food insecurity, 20% financial strain, and 17% inability to pay for housing or utilities. Compared to staff physicians, residents and fellows had higher rates of financial strain (12% vs 0%, $P < .001$), inability to pay for housing or utilities (14% vs 3%, $P = .003$), and social isolation (60% vs 37%, $P < .001$).

Table 2. Prevalence of 9 Social Determinants of Health Among Employees (n = 1932) and Patients (n = 5741).*

Category	Food insecurity	Financial strain	Transportation limitations	Inability to pay for housing or utilities	Intimate partner violence	Social isolation	Infrequent physical activity	Daily stress	Lack of internet access
All employees (n = 1932)	220 (11%) [10-13%]	240 (12%) [11-14%]	84 (4%) [3-5%]	197 (10%) [9-12%]	76 (4%) [3-5%]	930 (48%) [46-50%]	198 (10%) [9-12%]	1128 (58%) [56-61%]	49 (3%) [2-3%]
Staff physicians (n = 124)	1 (1%) [0-4%]	0 (0%) [0-3%]	5 (4%) [1-9%]	4 (3%) [1-8%]	1 (1%) [0-4%]	46 (37%) [29-46%]	8 (6%) [3-12%]	70 (56%) [47-65%]	2 (2%) [0-6%]
Residents/fellows (n = 130)	8 (6%) [3-12%]	16 (12%) [7-19%]	5 (4%) [1-9%]	18 (14%) [8-21%]	4 (3%) [1-8%]	78 (60%) [51-68%]	12 (9%) [5-16%]	92 (71%) [62-78%]	1 (1%) [0-4%]
Nurses (n = 490)	26 (5%) [3-8%]	41 (8%) [6-11%]	15 (3%) [2-5%]	29 (6%) [4-8%]	20 (4%) [3-6%]	238 (49%) [44-53%]	52 (11%) [8-14%]	291 (59%) [55-64%]	10 (2%) [1-4%]
Clinical specialists (n = 179)	9 (5%) [2-9%]	7 (4%) [2-8%]	11 (6%) [3-11%]	6 (3%) [1-7%]	2 (1%) [0-4%]	78 (44%) [36-51%]	18 (10%) [6-15%]	110 (61%) [54-69%]	6 (3%) [1-7%]
Non-clinical managers (n = 246)	17 (7%) [4-11%]	17 (7%) [4-11%]	12 (5%) [3-8%]	14 (6%) [3-9%]	10 (4%) [2-7%]	92 (37%) [31-44%]	23 (9%) [6-14%]	149 (61%) [54-67%]	6 (2%) [1-5%]
Skilled support (n = 197)	25 (13%) [8-18%]	28 (14%) [10-20%]	7 (4%) [1-7%]	20 (10%) [6-15%]	9 (5%) [2-8%]	107 (54%) [47-61%]	17 (9%) [5-13%]	100 (51%) [44-58%]	7 (4%) [1-7%]
Administrative support (n = 436)	87 (20%) [16-24%]	89 (20%) [17-25%]	21 (5%) [3-7%]	76 (17%) [14-21%]	21 (5%) [3-7%]	219 (50%) [45-55%]	53 (12%) [9-16%]	246 (56%) [52-61%]	11 (3%) [1-4%]
Clinical support (n = 103)	39 (38%) [28-48%]	33 (32%) [23-42%]	6 (6%) [2-12%]	26 (25%) [17-35%]	4 (4%) [1-10%]	56 (54%) [44-64%]	12 (12%) [6-19%]	61 (59%) [49-69%]	3 (3%) [1-8%]
Other support (n = 27)	8 (30%) [1-4-50%]	9 (33%) [17-54%]	2 (7%) [1-24%]	4 (15%) [4-34%]	5 (19%) [6-38%]	16 (59%) [39-78%]	3 (11%) [2-29%]	9 (33%) [17-54%]	3 (11%) [2-29%]
Patients** (n = 5741)	988 (17%) [16-18%]	1275 (22%) [21-23%]	299 (5%) [5-6%]	1264 (22%) [21-23%]	71 (1%) [1-2%]	2587 (45%) [44-46%]	1195 (21%) [20-22%]	829 (14%) [14-15%]	245 (4%) [4-5%]

*Results are number with social determinant (percentage) [95% confidence interval].

**#From previous study.

Table 2 also includes the percentage of MetroHealth System patients at risk for each social determinant from a previously published study.⁴ Two social determinants were present more frequently among 1932 employees compared to 5741 patients: intimate partner violence (4% vs 1%, $P < .001$) and daily stress (58% vs 14%, $P < .001$). Compared to patients, the 436 administrative support employees had higher rates of intimate partner violence (5% vs 1%, $P < .001$), social isolation (50% vs 45%, $P = .04$), and daily stress (56% vs 14%, $P < .001$) and lower rates of inability to pay for housing or utilities (17% vs 22%, $P = .03$) and infrequent physical activity (12% vs 21%, $P < .001$).

Discussion

Our cross-sectional study found that social determinants of health are common among health system employees, especially among workers in lower paid job categories. For example, many social determinants are as prevalent or more prevalent among administrative support employees compared to patients. Our findings are consistent with a previous study that found a 20% prevalence of food insecurity among health care support workers.⁶ The high rate of social isolation and daily stress among employees was especially striking. We also found that financial strain, inability to pay for housing or utilities, and social isolation are more common among residents and fellows compared to staff physicians. Strengths of our study include a large sample size, inclusion of employees from multiple job categories, and use of standardized questions addressing 9 different social determinants.

There are several reasons for health systems to understand and address social determinants of health among their employees. Unmet social needs may adversely impact worker productivity, healthcare utilization, and quality of life as well as employer business performance and profitability. Chronic medical conditions caused or worsened by social determinants of health may further compromise employee functioning.⁵ These employee factors can also influence patient care, health outcomes, and satisfaction with care.⁶ Our findings point to 4 actions that health systems can take to assist employees. First, they should screen employees for social determinants using the same questionnaires administered to patients. Employee screening should be voluntary and anonymous and used only to understand aggregate needs among all employees and among pre-specified subgroups (eg, by age, gender, and job category) that may be at higher risk.

Second, health systems should develop methods to assist employees with social determinants. This may involve developing internal programs such as an employee food pantry, on-site child care, transportation assistance, or pay advances to overcome unpredictable financial challenges. Alternatively, health systems may form external

partnerships with community-based organizations that allow employees to confidentially self-refer themselves for assistance from those organizations. Supervisors should also be educated about social determinants and about resources they can discuss with employees. The MetroHealth system recently hired a social worker to help employees connect with community resources related to food assistance, financial literacy, transportation, and childcare. Two health system locations also share space with community-based organizations to facilitate social assistance for patients, community residents, and employees. These approaches are different from what most employee wellness programs do. Such programs generally focus on more narrow health and behavioral issues such as diet, exercise, smoking, and screening for diabetes and hypertension.⁵

Third, health systems should assess, in partnership with employee groups, whether salaries and benefits are sufficient for the cost of living in their region, especially among support staff. This assessment should include costs of housing, utilities, transportation, food, child care, and health care based on family size and number of adults working in a household.⁷ It is worth noting that the MetroHealth System has had a minimum wage of \$15 per h since February 2019, and about one-fourth of workers are unionized.

Fourth, health systems should work with other businesses, non-profit organizations, and government leaders to improve community-level determinants of health. While assisting individual patients or employees with social needs is necessary, praiseworthy, and probably effective, doing so does not address broader community structural factors which contribute to individual social needs. These factors include poverty, limited educational opportunities, racism, unaffordable housing, and segregated neighborhoods. To address upstream problems, health systems should advocate for measures such as higher minimum wages, adequate funding of public education, early childhood programs, earned income tax credits, public transportation expansion, affordable housing, and safer alcohol sales.

Several limitations must be considered in interpreting our findings. We focused on a single health system. Approximately half of eligible individuals participated, so the results may not be applicable to all employees. However, even if all non-participants had no social needs (which is unlikely), there would still be many health system employees with social needs, i.e. more than 900 employees with social isolation and daily stress and more than 150 employees with food insecurity, financial strain, inability to pay for housing or utilities, and infrequent physical activity. The small number of employees in some job categories limited our ability to find differences across occupations. We did not have information on employee salaries, household size, or whether other household members worked. The COVID-19 pandemic likely influenced some employee social determinants such as social isolation and daily stress.

In conclusion, we recommend that health systems routinely screen employees for social determinants and adjust salaries, benefits, and assistance programs to address their social needs.

Declaration of Conflicting Interests

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