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Original Study

Emergency Department Use and Barriers to Healthcare Among Homeless and Uninsured Patients at a Student-Run Free Clinic

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Abstract

Background: Free clinics often provide healthcare to homeless individuals who face barriers to accessing primary care and other healthcare services. This study aimed to assess: (1) barriers to healthcare experienced by uninsured and homeless patients at a student-run free clinic; (2) patient perceptions of helpfulness of social service resources; and (3) relationships between barriers and emergency department (ED) use and health status.
Methods: In 2017, patient interviews were conducted at a student-run free clinic in central Texas. A structured questionnaire was used to collect demographics, perceived health status, ED usage, and ratings of barriers to healthcare and helpfulness of social service resources. Data analysis included descriptive and bivariate analyses, used to examine the relationship between barriers to healthcare services and ED use, and between barriers to healthcare services and health status.
Results: In total, 48 patients participated. The highest-rated barrier to receiving medical care was cost of healthcare, followed by lack of transportation and lack of insurance. Of the top 5 most utilized resources, Medicaid was rated as most helpful, followed by a medical assistance program and caseworkers. Reported ED use was significantly associated with higher ratings of lack of transportation as a barrier (p=0.03), use of a local mental health services program (p=0.01), and having insurance coverage through a local medical assistance program, Medicaid, or Medicare (p=0.01). No significant relationship was found between any healthcare barrier and health status.
Conclusions: This study found that the highest barrier to medical care was cost of healthcare and that lack of transportation was significantly related to ED usage. In the future, this clinic might consider introducing a resource that addresses the barrier of transportation for its patients.

Introduction

Texas currently has the highest percentage of uninsured residents in the nation, with 15%, or three million residents, with no health insurance.[1] In Travis County, an estimated 16.2% of those under age 65 were uninsured in 2017.[2] Limited access to affordable insurance leads to other barriers to healthcare access; this holds especially true for people experiencing homelessness. Even if an individual has health insurance, several bureaucratic, programmatic, and personal barriers may prevent access to care. Though local healthcare programs serve uninsured and homeless patients, patients may spend months on waiting lists before securing an appointment.[3,4] For these reasons, those who are homeless may either be forced to ignore their healthcare needs or turn to emergency departments (EDs) for care.

Not only is unnecessary ED use a suboptimal option due to factors such as overcrowding and lack of continuity of care, it is also costly. In 2016, the top 250 highest-costing homeless patients in Travis County spent an average of $222,000

annually per person due to emergency medical systems transports and hospital and ED visits.[5] Enhancing primary care access may prevent high-cost utilizers from turning to the ED for care. In order to design new resources and improve existing resources that help homeless and low-income individuals gain healthcare access in Travis County, a first step is to identify which barriers to healthcare most affect this city's homeless and which resources are most helpful.

A student-run free clinic in Travis County provides services to all individuals regardless of identification, insurance, or residency status. The clinic operates on most Sundays for two hours in a church basement. It is staffed by volunteer physicians, medical students, nurse practitioners, and nursing and pre-health undergraduate volunteers. Because of its proximity to a homeless shelter, most of this clinic's population is homeless. For many of these patients, who often lack health insurance, this clinic is their primary source of healthcare. However, the clinic is not comprehensive and is equipped primarily for wound care, minor acute care, and medical advice. The clinic also has psychiatric nurse practitioner students, and a social services team which helps connect patients to healthcare resources.

The objectives of this study were to: (1) identify barriers to healthcare experienced by uninsured and homeless patients at a student-run free clinic; (2) assess patient perceptions of helpfulness of social service resources; and (3) examine the relationship between barriers and ED use and health status.

Methods

A cross-sectional survey was administered to patients at a student-run free clinic in Travis County between February and November 2017. All clinic patients ≥18 years of age and English-speaking who consented were eligible. Those who did not complete the survey were excluded. The University of Texas at Austin Institutional Review Board approved the study.

The surveys were administered during clinic hours by one of the authors (SB) on Sundays from 2:00PM to 4:00PM in a semi-private area. SB volunteered with social services within the clinic the year prior to the research but did not volunteer during the research period. Participants could stop the survey or decline answering a question at any time without any impact on the access and delivery of clinical services. The survey, which included six sections with a total of 40 questions that were based on questions in the RAND Homelessness Questionnaire ("Health and Well Being" section) and Survey of Fragile Families ("Health and Health Behavior" section), was administered verbally to each participant.[6,7] The six sections of the survey included demographic information, current means of accessing healthcare, reported hospital and ED usage, self-rated health status, perceived barriers to healthcare, and resources (Online Appendix). The survey read at a Flesh-Kincaid Grade-Level of 6.9, and completion took about 15 minutes.

Data Analysis

Descriptive statistics were used to describe demographics, patient ratings of healthcare barriers, and resource usage and helpfulness. To examine the relationship between barriers and ED use and between barriers and health status, bivariate analyses (Chi squared and Kruskal-Wallis tests) were conducted using the statistical program R with an alpha of 0.05.

Results

Patients were recruited from the waiting area of the clinic by asking if they would like to participate in an optional survey while they waited for their appointment. Forty-eight interviews were completed, and two interviews were terminated early (and therefore not included in analysis) as these patients had to leave for their appointment. Of the 48 participants, 79.2% were men and the mean age was 45.8±12.8 years. About one-third were black, one-third white, and one-fifth Hispanic. The majority were single (68.8%, N=33) and earned ≤$10,000/year (57.4%, N=27). Highest education was most commonly a high school degree or general education development certificate (GED) (43.8%, N=21). Participants most commonly stayed most of their nights over the last 30 days at a shelter or transitional living facility (45.8%, N=22), followed by the street or an outdoor location (31.2%, N=15) (Table 1).

The most common health insurance was a

local medical assistance program (50%, N=24), followed by no coverage (29.2%, N=14), and Medicaid (12.5%, N=6). Participants reported receiving healthcare in the past 6 months most frequently at walk-in clinics (39.6%, N=19), followed by EDs or hospitals (27.1%, N=13), and no healthcare (20.8%, N=10). The majority reported the quality of healthcare they received as very good or excellent. Of all participants, 47.9% (N=23) reported at least one ED visit within the last 6 months, and 37.5% (N=18) reported at least one hospitalization within the last 6 months. Of those reporting at least one ED visit, patients had on average 3.3 ED visits, with a median of 2 visits in the last 6 months. Nearly half of these reported visiting the ED for a nonemergency (47.8%, N=11). Participants rated their health status as good overall and felt that it was moderately easy to access healthcare. Nearly half reported ever having avoided seeking healthcare even though they were sick (45.8%, N=22) (Table 2).

Table 3 lists ratings of healthcare barriers in terms of the extent to which the factor was a barrier, where 0 indicates "not at all" and 3 indicates "to a high extent." The highest-rated barrier was cost of healthcare (mean 1.5±1.3), followed by lack of transportation (mean 1.4±1.3) and lack of insurance (mean 1.4±1.3).

Resources with the highest usage were shelters or transitional living facilities (used by 79.2%, N=38), followed by caseworkers (72.9%, N=35) and a local medical assistance program (64.6%, N=31) (Figure 1). Figure 2 shows the top 5 most utilized resources and their rated helpfulness, where 1 indicates "not helpful" and 4 indicates "very helpful." Medicaid was rated as most helpful (mean 3.4±0.9), followed by the medical assistance program (mean 3.3±1.0) and caseworkers (mean 2.8±1.3).

Chi-squared testing showed a significant relationship between lack of transportation and ED use (p=0.03), type of insurance and ED use (p=0.01), and usage of a local mental health services program and ED use (p=0.01). Significantly greater proportions of those who felt that lack of transportation was a high barrier (60%) or moderate barrier (80%) had at least 1 ED visit in the last 6 months compared to those who felt that it was not a barrier (19%). Significantly greater proportions of those covered by a local medical

Table 1. Demographic Information

Variable	N (%)
Gender	
Men	38 (79.2)
Women	10 (20.8)
Age, mean years ± SD	45.8±12.8
Race/ethnicity	
White	15 (31.2)
Black	15 (31.2)
Hispanic	10 (20.8)
Other	8 (16.7)
Have children	21 (43.8)
Number of children, mean ± SD	0.9±1.5
Marital status	
Single	33 (68.8)
Divorced	5 (10.4)
Separated	4 (8.3)
Married	4 (8.3)
Widowed	2 (4.2)
Paid employment status*	
Not in paid employment	35 (72.9)
Full-time	7 (14.6)
Part-time	4 (8.3)
Self-employed	2 (4.2)
Other	9 (25.7)
Income brackets†	
$0-$10,000/year	27 (57.4)
$10,001-$20,000/year	11 (23.4)
$20,001-$30,000/year	4 (8.5)
$30,001-$60,000/year	4 (8.5)
>$60,000/year	1 (2.1)
Highest education	
Some high school or less	10 (20.8)
High school graduate or GED	21 (43.8)
Vocational training	1 (2.1)
Some college	8 (16.7)
College degree	8 (16.7)
Housing over past 30 days	
Shelter	22 (45.8)
Street/outdoors	15 (31.2)
Own house/apartment	3 (6.2)
Family/friend's house/apartment	3 (6.2)
Other	5 (10.4)

SD: standard deviation; GED: general education development certificate
*Patients could choose multiple options
†*N=47 due to missing data*

Table 2. Health-Related Information Among Homeless and Uninsured Patients

Variable	N (%)
Insurance type	
Local medical assistance program	24 (50.0)
Medicaid	6 (12.5)
Medicare	3 (6.2)
Private	1 (2.1)
None	14 (29.2)
Most frequented healthcare location in past 6 months*	
Walk-in clinic	19 (39.6)
ED or hospital	13 (27.1)
Private practice	6 (12.5)
None	10 (20.8)
Other	4 (8.3)
Perceived quality of healthcare (0-5)	
(0) No care	7 (14.6)
(1) Poor	4 (8.3)
(2) Fair	3 (6.2)
(3) Good	4 (8.3)
(4) Very good	13 (27.1)
(5) Excellent	17 (35.4)
Mean ± SD [median]	3.9±1.3 [4]
Hospitalized in the past 6 months?	
Yes	18 (37.5)
Any ED visits in the past 6 months?	
Yes	23 (47.9)
Number of ED visits in the past 6 months for those with ≥1 ED visit, mean ± SD, median	3.3±2.0 [2]
Of those, any non-emergent ED visits in the past 6 months?	
Yes	11 (47.8)
Perceived health status (1-5)	
(1) Poor	7 (14.6)
(2) Fair	8 (16.7)
(3) Good	15 (31.2)
(4) Very good	11 (22.9)
(5) Excellent	7 (14.6)
Mean ± SD [median]	3.1±1.3 [3]
Ease of accessing healthcare (1-4)	
(1) Very difficult	6 (12.5)
(2) Moderately difficult	13 (27.1)
(3) Moderately easy	12 (25.0)
(4) Very easy	17 (35.4)
Mean ± SD [median]	2.8±1.1 [3]
Healthcare avoidance when sick?	
Yes	22 (45.8)

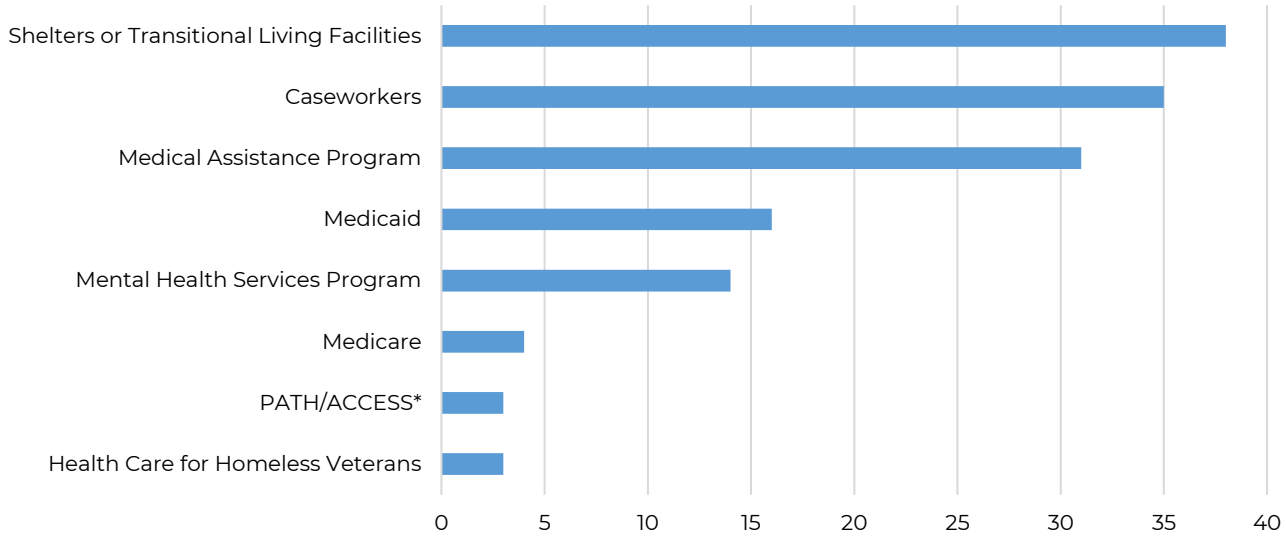
ED: emergency department; SD: standard deviation
**Patients could choose multiple options*

Table 3. Healthcare Barriers Reported by Homeless and Uninsured Patients

	Response N (%)				
Barrier	**Not at All**	**To a Low Extent**	**To a Moderate Extent**	**To a High Extent**	**Mean ± SD [Median]**
Cost of healthcare	18 (37.5)	4 (8.3)	9 (18.8)	17 (35.4)	1.5±1.3 [2]
Lack of transportation	16 (33.3)	12 (25.0)	5 (10.4)	15 (31.2)	1.4±1.3 [1]
Lack of insurance	19 (39.6)	6 (12.5)	9 (18.8)	14 (29.2)	1.4±1.3 [1]
Not knowing where to find a provider that accepts my coverage	20 (41.7)	11 (22.9)	9 (18.8)	8 (16.7)	1.1±1.1 [1]
Not having necessary identification	25 (52.1)	7 (14.6)	6 (12.5)	10 (20.8)	1.0±1.2 [0]
Nervousness about filling out forms	25 (52.1)	8 (16.7)	5 (10.4)	10 (20.8)	1.0±1.2 [0]
Not knowing where to get treated	25 (52.1)	6 (12.5)	10 (20.8)	7 (14.6)	1.0±1.2 [0]
Self-consciousness about appearance	28 (58.3)	5 (10.4)	7 (14.6)	8 (16.7)	0.9±1.2 [0]
Poor treatment at a healthcare facility in the past	29 (60.4)	7 (14.6)	8 (16.7)	4 (8.3)	0.7±1.0 [0]

SD: standard deviation

Figure 1. Number of Users of Each Resource



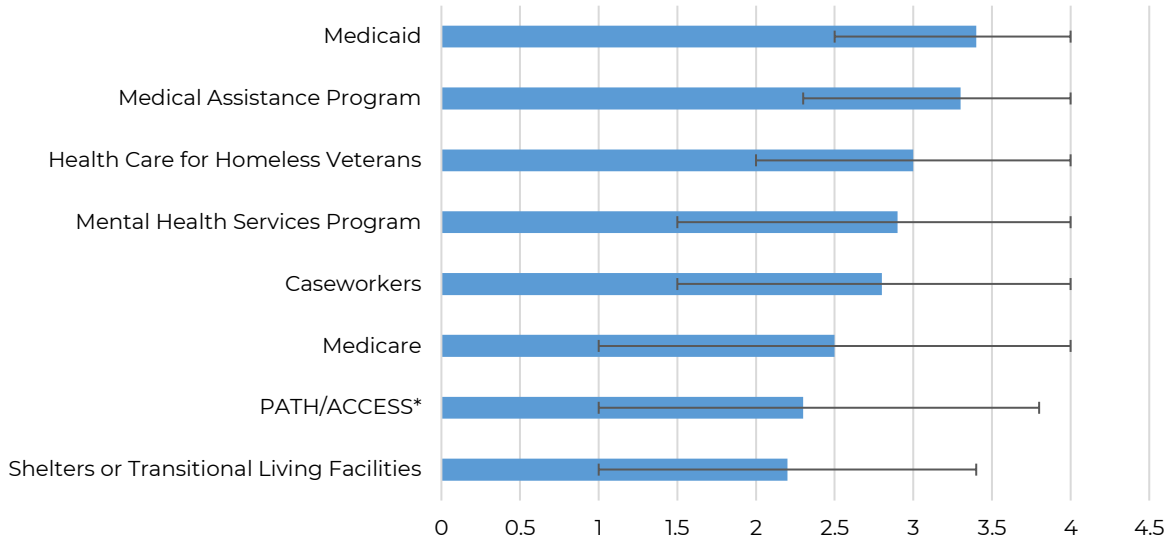
**The PATH/ACCESS service is a program that helps adults experiencing homelessness, living with a mental illness, and/or using alcohol or drugs find housing.*

assistance program (58%) or Medicaid/Medicare coverage (78%) had at least 1 ED visit in the last 6months compared to those with no coverage (14%). Significantly greater proportions of those who currently use a local mental health services program (90%) had at least 1 ED visit in the last 6 months compared to those who had either never used this program (38%) or had only used the program in the past (25%). No significant relationships were found between any healthcare barriers and health status.

Discussion

In this study, the most common barriers to healthcare were cost, lack of transportation, and lack of insurance. A significant relationship between lack of transportation and reported ED

Figure 2. Mean Ratings of Resources (with Standard Deviations)



1=Not helpful, 2=Somewhat helpful, 3=Helpful, 4=Very helpful
For Medicare and PATH/ACCESS, the error bars were truncated at 1 because 1 was the lowest possible response. For Medicaid, Mental Health Services Program, Caseworkers, and Medicare, the error bars were truncated at 4 because 4 was the highest possible response.
**The PATH/ACCESS service is a program that helps adults experiencing homelessness, living with a mental illness, and/or using alcohol or drugs find housing.*

usage was found. Reliable transportation is critical for patients to attend healthcare and social services appointments.[8] It is possible those facing a transportation barrier may have relied on ambulance transport to EDs as a source of primary care.[9] Alternatively, those without adequate transport may neglect health conditions that are primary care treatable or be forced to turn to EDs once their condition becomes exacerbated.[10]

While social services volunteers at this clinic can direct patients to various health services, they do not offer a resource for transportation. One potential solution could be to offer free bus passes to patients who demonstrate a need for transport for healthcare or social services purposes. This may be accomplished by partnering with the Transit Empowerment Fund which distributes transit passes to local non-profits who serve low-income individuals in the Capital Metro service area.[11] With such a partnership, social service volunteers would be allocated bus passes each month which they could distribute to eligible patients. However, determining which patients are eligible to receive a free bus pass may prove complicated if the demand exceeds the supply. Furthermore, the use of bus passes may not be generalizable to areas lacking public transport or to those with disabilities. Other programs that have sought to lower transportation barriers for low-income patients, such as a partnership between Denver Health and Lyft, have decreased the number of missed healthcare appointments.[12]

Previous studies indicate that lack of insurance is a barrier to healthcare amongst homeless individuals in the United States.[13,14] Our study findings were similar, with nearly one-third of survey participants reporting that they had no insurance. While these patients may not qualify for Medicaid or Medicare and cannot afford private insurance, they may meet criteria for a local medical assistance program.[15] This program, which covers primary care, prescriptions, specialty care, and hospital care, is not health insurance. It is a local program provided through a public entity which is offered to individuals (1) who reside within the county, (2) whose income is ≤200% of the federal poverty level, and (3) who are not eligible for another insurance. Currently, a limited number of clinic volunteers are certified to enroll those who qualify into the medical assistance program. To address this, more clinic volunteers could

become certified. Other free clinics should also examine how certifying volunteers could increase access to similar services.

A significant association between utilization of a local mental health services program and reported ED usage was found. This result reflects a nationwide trend, as a large proportion of annual ED visits in the United States involve mental and substance use disorders.[16] One strategy of reducing ED visits shown to be effective through previous research is to provide targeted services to high-frequency ED users.[17,18] Community paramedicine, a relatively new model of healthcare, expands the role of paramedics to allow them to offer preventative services and assist with public health initiatives for underserved populations.[19] Over the past decade, Travis County has launched a community paramedicine program that provides patient navigation services to low-income, high-frequency ED users. These services include prescription access, mental healthcare, and enrollment in the county's medical assistance program.[20] While other community paramedicine programs do exist across the United States, they have largely been limited to rural communities.[21] Expanding such programs to urban settings may increase access to care for homeless individuals.

Small sample size, subjectivity of patient reported data, and lack of generalizability are study limitations. Health status was based on patient perception rather than objective health data such as documented chronic illness. Also, this study predominantly involved men, likely because the clinic was across the street from a shelter that serves only men. Furthermore, as the target population included only patients at one clinic in an urban area, generalizability is limited. It may be useful to conduct a city or county-wide study to provide a more holistic view of the issues impacting uninsured, homeless individuals.

Despite these limitations, this study allowed us to better understand barriers to healthcare in our patient population and plan to address them.

Disclosures

The authors have no conflicts of interest to disclose.

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