WHAT DO INDIVIDUALS EXPERIENCING HOMELESSNESS WANT FOR THEIR

CARE?: A NEEDS ASSESSMENT SURVEY

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Abstract

The homeless population is growing across the United States, particularly in urban areas. Homelessness has a detrimental impact on health and quality of life, especially among the unsheltered homeless population. Oftentimes, there is a disconnect between existing community services and actual needs of individuals experiencing homelessness. The purpose of this study was to identify prioritized needs in an urban unsheltered homeless population and measure associations with self-reported health. We conducted a needs assessment from April-June 2018 of 144 unsheltered homeless individuals in metro Phoenix, Arizona. The 16-question survey investigated perceptions of priority needs, sources of medical care, health literacy, and health status. Survey results were analyzed using Wilcoxon Rank Sum Test, Chi-squared analysis, and multivariable logistic regression. Most respondents (91.6%) identified food as a top need. The majority (64.1%) utilized emergency departments (EDs) as their primary source of care, and 40.1% reported suboptimal health. Suboptimal health was more likely to be reported in those who expressed transportation (OR 3.03, 95% CI: 1.30-7.07) or medical care (OR 2.47, 95% CI: 0.99-6.14) as a top priority need. Health illiteracy (OR 3.68, 95% CI: 0.76-17.9) was associated with suboptimal health, as was obtaining care at an ED (OR 2.05, 95% CI: 0.81-5.25). The data demonstrate that food security was the top priority need of this urban unsheltered population. Interventions improving accessibility to transportation, high-quality medical care, and health education should be implemented to improve the health of this population. Such interventions may also decrease care sought in ED settings. These conclusions are likely generalizable to other unsheltered homeless populations in large urban cities; however, regional and cultural differences exist. Our needs assessment may serve as a template for future needs assessments of other urban unsheltered homeless populations.

What is known about this topic:

- Few needs assessments from the perspectives of the homeless population have been conducted; most have yielded shelter as a top priority need.

- Access to quality health care, food security, and reliable transportation are consistently identified social needs of the homeless population.

- Individuals experiencing homelessness have worse health outcomes than the general population.

What this paper adds:

- A top priority need of urban unsheltered individuals is food. Connecting with individuals via food services may be an effective way to meet prioritized needs while addressing other social needs.

- Unreliable transportation, obtaining medical care at an Emergency Department, and health illiteracy are associated with suboptimal subjective health in the urban unsheltered population.

Introduction

Homelessness is defined as the state of not having permanent housing. Individuals experiencing homelessness may live on the streets; stay in a shelter, transitional housing, mission, single room occupancy facilities, abandoned building or vehicle; or in any other unstable or non-permanent situation (Salhi et al., 2017). A total of 567,715 people were experiencing homelessness on a single night in the United States in 2019 (Department of Housing and Urban Development, 2019). According to the Point-in-Time (PIT) Count conducted by the Maricopa Association of Governments, on the night of January 21, 2019, there were 6,614 people experiencing homelessness in Maricopa County. Of these, 3,188 individuals were living in unsheltered situations (i.e., living on the streets). This represents a 5% increase in the total number of individuals experiencing homelessness from 2018 to 2019 (from 6,298 to 6,614) and a 22% increase in the unsheltered homeless population (from 2,618 to 3,188) (Maricopa Association of Governments, 2019).

These levels of homelessness are concerning because homelessness has a detrimental effect on health-related quality of life (Sun et al., 2012). Needs assessments in urban areas, such as Alameda County in California, have found that homeless persons (sheltered or unsheltered) experience rates of morbidity and mortality much higher than that of the general population (Baggett et al., 2011; Bandura, 2004). For unsheltered homeless persons in particular, there is an increased risk of premature mortality along with poor access to care (Roncarati et al., 2018; Montgomery, Szymkowiak, & Culhane, 2017). Many individuals experiencing homelessness utilize Emergency Departments (ED) for their medical care due to accessibility and the requirement that everyone must be treated, regardless of ability to pay (Montgomery, Szymkowiak, & Culhane, 2017). Individuals experiencing homelessness utilize EDs for many

non-emergent medical issues and accordingly, cost the health care system an excessive amount of tax-paying dollars (American Hospital Association, 2017; Kushel et al., 2002).

Despite increases in aid to individuals experiencing homelessness and a plethora of homeless service agencies, these services remain underutilized and poorly understood. This was evidenced by a needs assessment in Seattle, Washington in which only 10% of individuals experiencing homelessness reported learning of services from an agency or program (City of Seattle, 2009). Many argue that there is a discrepancy between the services provided by agencies and the actual services desired by individuals experiencing homelessness. Many agencies traditionally provide assistance to individuals experiencing homelessness based on traditional perceptions of basic needs. Studies demonstrate that individuals experiencing homelessness require mental health services, addiction rehabilitation services or domestic violence support (based on the high rates of mental disorders, substance use, and violence among this population). However, few studies have directly asked individuals experiencing homelessness to identify their needs and what types of assistance would provide them with the most benefit (Acosta & Toro, 2000).

In addition, many services fail to address the social factors that influence health-related behaviors and health status. Social determinants of health, such as working and living conditions, educational attainment, and income, play a crucial role in shaping health outcomes (Braveman & Gottleib, 2014). Homelessness in itself is caused by a multitude of these complex socioeconomic factors, along with structural inequities and policy gaps. However, despite the acknowledgement and general understanding of social factors, the heterogeneity of homeless populations and complexity surrounding the causes of homelessness lead to inadequate service delivery (Braveman & Gottleib, 2014).

Based on a desire to match services provided, utilization and needs, a needs assessment survey was designed for the unsheltered homeless population in metro Phoenix, Arizona. The unsheltered homeless population was selected because mortality rates for this population are higher than those for the sheltered homeless population (Roncarati et al., 2018). A better understanding of the needs of this population could inform initiatives to improve clinical outcomes. Specific objectives of the needs assessment were to identify prioritized needs, assess patterns of utilization of homeless services, characterize the homeless population's perception of their health status, and delineate the demographics of people experiencing homelessness in metro Phoenix.

Methods

We conducted a needs assessment of the unsheltered homeless population in metro Phoenix, Arizona from April-June 2018. Metro Phoenix was defined as the cities of Phoenix, Mesa, Scottsdale, and Tempe. Inclusion criteria limited the study population to unsheltered homeless individuals who were living on the streets or in public spaces (e.g., parks and alleys). Exclusion criteria included residing in a shelter or other transitional/temporary housing, age < 18 years, and inability to speak English. This study was reviewed by the Institutional Review Board and given exempt status.

Potential adult subjects were identified by walking in public spaces (e.g., parks and alleys) and along the streets of metro Phoenix to find individuals who appeared to be living in these areas. Recruitment was conducted on varying days of the week, typically during the late morning or early afternoon. The interviewers were a public health professional and medical student. Potential subjects were offered a water bottle and asked if they would like to participate in a survey about their health and their needs using a recruitment script. For potential subjects that

indicated interest, the first housing status question was asked to screen out individuals who were not experiencing homelessness nor were unsheltered.

The needs assessment instrument consisted of 16 questions soliciting information about current housing status, primary needs, usage of community resources, source of health care, health literacy level, self-reported health, drug and alcohol use, health concerns, and demographic information (see Appendix A). Ten questions were adopted from previously validated surveys (see Table 1) and six were uniquely created for this study population. Questions #1-4, 6, and 11 were created, using validated Likert Scale methods, to align with specific aims of the study, as such questions were not found in existing literature (Matell & Jacoby, 1971). Specifically, questions #1-3, 6, and 11 were designed to yield less time-intensive, more generalizable data in our population than previously published options. Question #4 was designed to provide information unique to metro Phoenix's homeless population. In order to avoid literacy limits from preventing participants to complete the survey, each question from the needs assessment was read aloud to participants by medical student research team members, along with answer options. For free-response questions, participants were invited to respond in an open-ended fashion. Response data was entered into Qualtrics® during the interview. Non-monetary compensation provided at survey completion included a care kit (snack bars, a reusable water bottle, socks, and personal hygiene items).

Table 1. Validated survey sources of needs assessment survey for unsheltered homeless population in metro Phoenix, Arizona.

Question #	Validated Survey Source
5, 8, 10, 14	Rand Health's homelessness survey (The RAND Corporation, 1990)
7	Single Item Literacy screener (Morris et al., 2006)
9	Substance Abuse and Mental Health Services Administration (SAMHSA) 2015

	National Survey on Drug Use and Health (SAMHSA, 2017)
10	National Institute on Drug Abuse (NIDA) Quick Screen (NIDA, 2012)
12, 13	Williams Institute at the UCLA College of Law (The GenIUSS Group, 2009; Sexual Minority Assessment Research Team (SMART), 2014)
16	Department of Veteran Affairs National Survey of Veterans (Department of Veteran Affairs, 2010)

Appendix A. Needs assessment survey instrument for unsheltered homeless population in metro Phoenix, Arizona.

1. Which of the following best describes your current housing status?
☐Staying with someone who owns/rents   ☐Homeless
☐Community shelter

How long has this been your housing situation? _____

2. How important are the following items to you?

	Very Important	Importan t	Moderately Important	Slightly Important	Not Important
Shelter or housing					
Food					
Medical care					
Transportation					
Other:					
Other:					

3. What resources or services in the community have you used/do you currently use? Please include the name of the organization if you know it.

4. Have you heard of or used cooling/hydration stations? If so, where were the cooling/hydration stations and how many times did you use them?

5. Are you now covered by any health insurance plan or program? If so, which plan or program?
☐Private: _____   ☐Veteran's insurance
☐Medicaid (AHCCCS): _____   ☐Other: _____
☐Medicare   ☐None

6. Where do you go to receive health care (check all that apply and indicate where)?
☐Hospital/Emergency department _____   ☐Doctor's office _____
☐Urgent care _____   ☐Community clinic _____
☐Other _____   ☐None (describe reason): _____

7. How often do you need to have someone help you when you read instructions, pamphlets, or other written material from your doctor or pharmacy?

      1 (never)   2 (rarely)   3 (sometimes)   4 (often)   5 (always)

8. In general, would you say your health is:
Excellent   Very Good   Good   Fair   Poor

9. How many days have you had 4 (female)/5 (male) or more alcoholic drinks in the past 30 days?

10.

In the past year, how often have you used the following?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
Tobacco Products Which products:					
Prescription Drugs for Medical Reasons Which drugs:					
Prescription Drugs for Non-Medical Reasons Which drugs:					
Street Drugs Which drugs:					

11. Do you have any health concerns?

12. What is your gender?
☐Female   ☐Male   ☐Non-binary / third gender
☐Prefer to self-describe as:_____

13. Do you consider yourself to be:
☐Heterosexual or straight
☐Gay or lesbian
☐Bisexual

14. How old are you?

☐18-24 years of age   ☐35-44 years of age   ☐55-64 years of age
☐25-34 years of age   ☐45-54 years of age   ☐65+ years of age

15. Which of these best describes your racial background?
☐Asian   ☐Hispanic   ☐White (not Hispanic)   ☐Mixed/Multiple
☐Black/African American   ☐Native American   ☐Other:_____

16. Have you ever served on active duty in the U.S. Armed Forces? *Active duty includes serving in the U.S. Armed Forces as well as activation from the Reserves or National Guard.*
☐ Yes, on active duty in the past, but not now
☐ Yes, now on active duty
☐ No, never on active duty except for initial/basic training
☐ No, never served in the U.S. Armed Forces

Interviewer Notes (note presence of pets):

The sample size was determined by calculating 5% of the unsheltered homeless population in metro Phoenix in 2018 (the time at which the survey was conducted). This number, in addition to a small buffer of participants, enabled power calculations to be done. Data were analyzed using the SAS statistical software package. Participants' demographic and survey characteristics data were reported as means, standard deviations for continuous variables and frequencies, and percentages for categorical variables. The Wilcoxon Rank Sum Test was used to determine differences in continuous variables relative to self-reported health status. Chi-squared analysis / Fisher's Exact Test was selected to compare categorical variables. Odds ratios and 95% confidence intervals were calculated via multivariable logistic regression, adjusting for age, sex, race and insurance status, to analyze associations between primary needs and self-reported health. Prioritized needs were defined as items that respondents marked as "Very Important" or "Important." Suboptimal self-reported health was defined as either a "Fair" or "Poor" response to the self-reported health question. All p-values were two-sided and $p < .05$ was considered statistically significant.

Additional comparisons were made using the Wilcoxon Rank Sum for continuous variables and Chi-squared analysis / Fisher's Exact Test for categorical variables. Two secondary analyses were also conducted. Odds ratios and 95% confidence intervals were calculated via multivariable logistic regression, adjusting for age, sex, race and insurance status, to define the association between 1) self-reported health and health literacy and 2) prioritized needs and source of medical care.

Results

A total of 175 individuals agreed to participate in the needs assessment; however, 15 were excluded due to currently residing in a shelter. Of the 160 individuals who met inclusion criteria, 144 completed the survey. Length of homelessness ranged from two days to 29 years. The average length of homelessness was 30.6 months. Demographic information is listed in Table 2. Priority needs and other key findings from the needs assessment are in Table 3. Alcohol and drug use data is listed in Table 4.

Table 2. Demographics of unsheltered homeless individuals in metro Phoenix, Arizona who participated in the needs assessment.

Gender	
Male	71.5% (n = 103)
Female	28.4% (n = 41)
Age	
18 - 24	8.3% (n = 12)
25 - 34	13.8% (n = 20)
35 - 44	22.9% (n = 33)
45 - 54	31.9% (n = 46)
55 - 64	20.1% (n = 29)
65+	2.7% (n = 4)

Sexual Orientation	
Heterosexual	96.5% (n = 139)
Homosexual	2.0% (n = 3)
Bisexual	1.3% (n = 2)
Race	
Hispanic	14.5% (n = 21)
White (non-Hispanic)	41.6% (n = 60)
African American	34.7% (n = 50)
Native American	4.1% (n = 6)
Mixed/Multiple	2.0% (n = 3)
Other: Middle Eastern	2.7% (n = 4)
Veteran Status	
Veteran	11.8% (n = 17)
Non-Veteran	88.1% (n = 127)

Table 3. Priority needs and other primary results from needs assessment of unsheltered homeless population in metro Phoenix, Arizona.

Priority Needs*	
Food	91.6% (n = 132)
Medical Care	83.3% (n = 120)
Housing/Shelter	79.8% (n = 115)
Transportation	65.2% (n = 94)
Cooling Station Awareness	
No Awareness	63.1% (n = 91)
Awareness without Past Use	20.1% (n = 29)
Awareness with Past Use	16.6% (n = 24)

Health Insurance Status**	
Medicaid	73.6% (n = 106)
Uninsured	16.6% (n = 24)
Primary Source of Medical Care	
Emergency Department	64.1% (n = 102)
Community Clinic	20.7% (n = 33)
No Medical Care	4.4% (n = 7)
Self-Reported Health Literacy	
Health Literate (never or rarely need assistance with reading material from the doctor or pharmacy)	88.9% (n = 121)
Not Completely Health Literate (sometimes, often, or always need assistance with reading material from the doctor or pharmacy)	11.1% (n = 16)
Self Reported State of Health	
Excellent	14.0% (n = 20)
Very Good	17.6% (n = 25)
Good	28.1% (n = 40)
Fair	30.2% (n = 43)
Poor	9.8% (n = 12)
Top Self Reported Health Concerns**	
High Blood Pressure	13.7% (n = 17)
Visual Impairment	12.9% (n = 16)
Depression	12.1% (n = 15)
No Concerns	9.6% (n = 12)

*Some participants identified more than one priority need
**Only top responses included

Table 4. Alcohol and drug use of unsheltered homeless individuals in metro Phoenix, Arizona.

Alcohol Use in Past 30 Days	
Excessive (5+ drinks in men, 4+ drinks in women in single night)	4.8% (n = 7)
Some	38.8% (n = 56)
None	56.2% (n = 81)
Tobacco Use in Past 30 Days*	
Daily or Almost Daily	74.3% (n = 107)
Weekly or Less Frequently	8.3% (n = 12)
Never	17.3% (n = 25)
Prescription Drug Use for Medical Reasons	
Daily or Almost Daily	14.8% (n = 21)
Weekly or Less Frequently	20.5% (n = 29)
Never	64.5% (n = 91)
Common Prescription Drugs Used**	
Antipsychotics	17.0% (n = 24)
Antidepressants	15.6% (n = 22)
Angiotensin-Converting Enzyme Inhibitors (a type of anti-hypertensives)	14.8% (n = 21)
Prescription Drug Use for Non-Medical Reasons	
Daily or Almost Daily	16.6% (n = 23)
Weekly or Less Frequently	21.7% (n = 30)
Never	61.5% (n = 85)
Street Drug Use	
Daily or Almost Daily	7.1% (n = 10)
Weekly or Less Frequently	19.2% (n = 27)
Never	73.5% (n = 103)

Common Street Drugs Used**	
Marijuana	42.3% (n = 61)
Methamphetamines	20.8% (n = 30)

*Most tobacco use consisted of cigarette smoking
**Only top responses included

The relationship between self-reported health and primary needs was studied to delineate the influence of social determinants on self-perceived health. Individuals who expressed transportation as a primary need were more likely to describe their health as "Fair" or "Poor" (OR 3.03, 95% CI: 1.30-7.07) and this relationship was statistically significant. Respondents that expressed medical care (OR 2.47, 95% CI: 0.99-6.14) or food (OR 1.34, 95% CI: 0.53-3.42) as a primary need were also more likely to describe their health as "Fair" or "Poor;" however, neither relationship was statistically significant. Shelter or housing as a primary need was associated with lower odds of perceiving one's health as fair or poor (OR 0.81, 95% CI: 0.34-1.93) but this relationship was not significant.

The relationship between self-reported health and health literacy was examined as well to determine what effect, if any, health literacy has on subjective health. Health illiteracy was associated with suboptimal self-reported health (OR 3.68, 95% CI: 0.76-17.9); however, this relationship was not statistically significant.

Lastly, the relationship between primary needs and source of medical care was analyzed. Medical care as a primary need was strongly associated with utilizing an ED as the main source of medical care (OR 2.05, 95% CI: 0.81-5.25) but this relationship was not statistically significant. Individuals who designated food, shelter/housing, or transportation as a primary need were more likely to utilize locations other than the ED (e.g., community clinics) as their main source of medical care.

Discussion

The purpose of this needs assessment was to gain an understanding of the unsheltered homeless population in metro Phoenix, particularly their prioritized needs, utilization of community resources, subjective health status, and demographic composition. The results showed a significant association between transportation as a primary need and suboptimal health. Lack of transportation is known to affect a person's access to health care services, eventually leading to poorer health outcomes (Bibbins-Domingo et al., 2019). However, this relationship has principally been studied in housed populations, not homeless populations. Of note, many insurance companies, such as Medicaid (Department of Health & Human Services, 2016), provide non-emergency medical transportation which may help alleviate the transportation issues expressed by this population. Conversely, poor health may affect an individual's transportation options. Individuals in wheelchairs or who have medical conditions that lead to difficulty walking may not be able to access or utilize available public transportation.

Understanding an individual's social context (e.g., transportation needs) is a vital component of providing comprehensive health care. Patient-centered care models should incorporate social care to ensure health disparities and health-related social needs are adequately addressed (Bibbins-Domingo et al., 2019). This finding is particularly vital for policymakers, health care organizations, and homeless service agencies who have the capacity to develop solutions to increase access to transportation, ultimately improving the subjective health of the homeless population. As studies show, improvements in subjective health correlate with improvements in objective health (Pinquart, 2001).

In our study, an association also existed between ranking medical care as a primary need and self-perceived suboptimal health. This association shows that many individuals experiencing homelessness are aware of their health problems and accordingly, recognize that they need

medical care. A national study of homeless adults found the majority reported at least one unmet health need; significant predictors of unmet health needs included food insufficiency and lack of health insurance (Baggett et al., 2010). With that being said, the lack of significance of this association shows the complexity of health care. Despite struggling with poor health, many individuals experiencing homelessness forgo seeking care. Reasons include perceived discrimination by the medical community (Rask, 1994), lack of health insurance (Cheung et al., 2012), lack of transportation (Cheung et al., 2012), and poor access to primary care (Wen, Hudak, & Hwang, 2007). For some, they may view their health as a lower priority than other items, such as food, as evidenced by our results. Health is influenced by a multitude of factors, including spirituality, emotional well-being, relationships with others, safety, and purpose in life (Bandura, 2004; Schaefer et al., 2013). It is important that health care professionals and those providing services to homeless populations recognize this variability in the definition of health and understand how each individual defines their health. This may partially explain why participants in our needs assessment rated their health higher than what has previously been described in the literature (Baggett et al., 2013). Participants may have also been hesitant to accurately disclose their health status outside of a health care setting, or may have lacked insight due to a variety of reasons. On the contrary, both food and shelter/housing as primary needs were not significantly associated with reported poorer health. Interestingly, those that designated shelter/housing as a primary need were more likely to report better health. This relationship may be a result of the small sample size, which is discussed below.

Health illiteracy was also associated with suboptimal self-reported health. Self-efficacy with navigating health information correlates with better self-reported health, but factors influencing self-perception may be multifactorial, and may include a lack of exposure to the complexities of

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the health system. Any level of health illiteracy impedes an individual's ability to access health care services and understand how to manage their health. In homeless populations, health literacy rates are significantly lower than those of the general population, which results in inadequate management of health conditions and worse health outcomes (Buck et al., 2012). Interestingly, in our needs assessment, the majority of participants indicated no deficiency in health literacy skills. This may have been due to lack of awareness of their health literacy limitations or they may have felt embarrassed/ashamed to disclose this problem. It should be noted that the Single Item Literacy screener used was found to perform only "moderately well at ruling out limited reading ability in adults…" (Morris et al., 2006). In any case, homeless service agencies should be encouraged to be aware of low health literacy rates in the homeless population and support the development of health education/literacy classes, ultimately improving the health outcomes of this population.

Our data showed a connection between medical care as a top priority and utilizing an ED as the main source of medical care. These results highlight future opportunities to provide outreach in EDs where individuals experiencing homelessness are seeking care to connect them with a primary care provider or other primary care medical home. In addition, since medical care as a top priority need is shown to be associated with both ED utilization and worse reported health (Wang et al., 2015), future studies could explore whether individuals experiencing homelessness experience worse long-term health outcomes receiving care from an ED versus a primary care provider. The other priority needs (housing/shelter, transportation, and food) were not associated with utilizing an ED as the main source of medical care. However, previous studies found that barriers to primary care access, such as lack of transportation and food insufficiency, were strongly associated with ED utilization (Kushel, 2001; Gelberg et al., 1997; Baggett et al., 2011).

This needs assessment also revealed the homeless population in metro Phoenix is aging. Over half of the study population was 45 years of age or older, mirroring the PIT Count results (Maricopa Association of Governments, 2019). This is an important consideration when developing services because aging adults and the elderly have unique needs and health concerns compared to younger adults. Interventions developed to meet the unmet needs of individuals experiencing homelessness in metro Phoenix should anticipate and be prepared for the change in needs, particularly health needs, as this population ages. Interestingly, the rates of chronic disease, such as diabetes and hypertension, were lower than anticipated. This may reflect a lack of access to screening/health care, a lack of awareness on the part of the participants regarding their diagnosed conditions, or potentially, discomfort with disclosure of this information to the interviewers.

Homelessness is a growing crisis across the United States, particularly in urban areas such as Phoenix. Very few needs assessments have been conducted to combat this crisis and even fewer have focused on unsheltered homeless individuals. This is especially true in Phoenix. The results of this needs assessment provide valuable details about this population and help inform the development of solutions for the homelessness crisis. For example, low rates of awareness of available resources, such as cooling stations, can contribute to higher burden of heat-related illnesses, such as heat stroke, and complications of dehydration in chronic illnesses. Future interventions include those addressing education to increase awareness of available resources for preventive health measures. Moreover, this needs assessment provides a template for future needs assessments of homeless populations across the country.

Although these results relate solely to the unsheltered homeless population in metro Phoenix, this data can be utilized by homeless service agencies nationwide as a starting point in the

implementation of new services or assessment of existing services. The results indicate that

pairing services, such as health care, with meals may increase service utilization. Our street

medicine model incorporated these results by connecting with patients at churches and soup

kitchens where they receive meals. Future studies could compare utilization of services between

different types of settings (locations providing meals vs. other locations, such as parks).

The results of this needs assessment should be considered in the context of several limitations.

First, the needs assessment consisted of several unvalidated questions. This may have affected

the significance of the associations observed in the needs assessment results. A future validation

study of our questionnaire would provide important information regarding future directions.

Second, this needs assessment was conducted in several parks across metro Phoenix and the

results reflect this limited survey area. The needs, health concerns, and demographics of

unsheltered homeless individuals in other regions of the United States may differ significantly

from those represented in this study, making it difficult to formulate generalizable conclusions.

In addition, only unsheltered homeless individuals were surveyed, limiting the generalizability to

sheltered homeless individuals, who may have more services and support available. Third, this

needs assessment consisted entirely of information self-reported by the participants. Recall bias,

along with factors such as misunderstanding intended question meaning and lack of rapport/trust,

could have influenced the participants' responses and possibly skewed the results. Moreover, the

lack of rapport/trust likely resulted in reporting bias with participants underreporting sensitive

information, such as drug use and health status. Fourth, the interviewers selected participants that

appeared approachable and capable of completing the needs assessment, which may have

introduced selection bias. Sixth, although the sample size was originally calculated to yield

results with sufficient power, the unsheltered homeless population has increased significantly since data collection, rendering the sample size inadequately small.

These results demonstrate the interdependence of health on social determinants such as transportation and access to quality health care. For patients experiencing homelessness, providing access to free clinics and arranging for transportation can improve health outcomes. Although these results relate solely to individuals experiencing homelessness in metro Phoenix, this data can be utilized by homeless service agencies nationwide as a starting point in the implementation of new services or assessment of existing services. Moreover, this needs assessment provides a template for future needs assessments of homeless populations across the United States.

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