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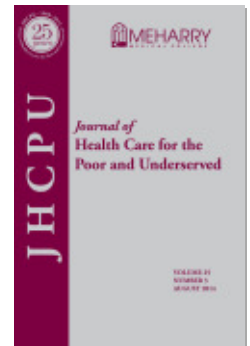
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Trust in Health Care Providers: Factors Predicting Trust among Homeless Veterans over Time

Carissa van den Berk-Clark, PhD
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Abstract. We examined whether a combination of predisposing, enabling, need, and primary care experience variables would predict trust in medical health care providers for homeless veterans over 18 months. Linear mixed model analysis indicated that, among these variables, race, social support, service-connected disability status, and satisfaction and continuity with providers predicted trust in provider over time. Trust in providers improved during the initial stages of the relationship between patient and provider and then declined to slightly below baseline levels over time. Further research is needed to determine generalizability and effects of provider trust on patient health care status over longer periods of time.

Key words: Trust in primary care provider, homelessness, substance abuse, mental illness.

Homeless people have higher rates of serious medical problems than the general population.¹⁻³ These commonly include mental health and substance-related problems, hypertension, diabetes mellitus, upper respiratory infections, gastrointestinal and podiatry problems.⁴⁻⁶ In spite of higher illness burden, homeless use of health care services is very low.^{5,7-9} When homeless people—especially homeless veterans—access care, the care is more likely to be emergency services than it is for the overall U.S. population.¹⁰

Studies of general health care user populations have shown that trust in health care providers is important to how care is used: People with higher levels of trust in health care providers use their providers more frequently, are more likely to seek care when in need, and more likely to adhere to and return for follow-up treatment.¹¹ Trust is important in health care utilization because it gives the provider-patient relationship meaning, offering a motivational underpinning to patients' willingness to seek out care, to reveal private information, and to comply and continue with treatment.^{11,12} Provider trust is built on patient expectations regarding provider technical competence, openness, concern, and reliability.¹³ When trust is low, research in primary care has found that lower rates of primary care use correlate with higher rates of emergency room use.¹⁴

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To understand what predicts provider trust, researchers have examined the same predisposing (e.g., sociodemographic), enabling (e.g., income), and need (e.g., illness) factors in health care utilization predictor studies.^{12,15} Studies that include predisposing characteristics identified in health care use predictor studies^{16,17,inter alia} have shown mixed results for age and education but not for race. In fact, they have found that African Americans are significantly more likely than others to report mistrust of physicians and health care systems.^{18–20} Research that has included what service use studies would term *enabling characteristics* indicates that patients' ability to choose providers (often through more generous insurance plans) predicted higher trust in physicians and primary care providers.^{21–23} Further, health care need variables such as health status included in provider trust studies found either weak or inconsistent predictors.¹² Importantly, many provider trust studies have found that elements of the primary care experience, continuity with the same provider over time, and satisfaction with that provider, are strong predictors of provider trust.^{12,24}

Experts on homeless populations and their health care behavior have determined that a broader set of issues are required to understand the homeless patient-provider interface.^{9,25} Chronicity of medical problems and race differences between patients and providers—both of which are common in the homeless health care world—can and do influence the development of a trusting patient-provider relationship, arguably even more so between homeless patients and their providers.^{18,23,26} Further, Wen and his colleagues²⁷ postulated that homeless patient trust is not only engendered by a health care provider's technical competence and interpersonal ability, but also importantly by the degree of *welcomeness* and *unwelcomeness* projected by the provider, which is likely influenced by a number of characteristics that a given homeless patient may bring to the health care encounter. These characteristics include lack of clean clothing, inadequate grooming, bringing survival belongings to appointments, and having advanced and unsightly medical conditions.^{1,4,25} Homeless patients may also be intoxicated or drugged, which can lead health care providers to conclude that these homeless are engaging in drug-seeking behavior.²⁸

Gelberg⁴ has found that competing survival needs (such as needs for food, shelter, and safety) are barriers to utilization among homeless people, which may make follow-through with medical treatments problematic. These findings compelled her to expand on Andersen's model of health care utilization¹⁵ in order to address predisposing, enabling, and need predictors of health care utilization among more vulnerable patient populations, particularly those enduring homelessness. As part of the expanded model, Gelberg identified lack of social support in assisting with access to health care as a factor that enables health care use.²⁵ In sum, because of social, physical, and behavioral adaptations to life on the streets, homeless patients seeking health care may feel unable, unsupported, and unwelcome in the health care setting, with likely effects upon their trust in the medical providers who staff those settings.

Wen and others^{25,27} argue that the outcomes of poor patient-provider dynamics include use of episodic emergency room medical care or failure to obtain medical care until inpatient care is required, both of which result in poor health care outcomes and significant public health care system costs. Population-based studies^{29–31} have found that homeless people use emergency room services at triple the rate of the general health

care user population, and repeatedly, which underscores the importance of understanding factors that are associated with establishing and maintaining a relationship of trust between homeless patients and their providers.

The U.S. Departments of Health and Human Services and of Veterans Affairs have both implemented initiatives to address the health care needs of homeless people and veterans. These initiatives have engaged very large numbers of homeless people, yet to our knowledge trust in health care providers has not been examined for homeless patients. In order to gain a better understanding of provider trust in this population, we examined longitudinal data that included measures of provider trust, continuity and satisfaction with care, and other characteristics relevant to provider trust that were collected during a U.S. Department of Veterans Affairs (VA) demonstration project designed to integrate care for homeless veterans that was conducted from 2001–2006. Data from this project allowed testing of two hypotheses regarding homeless veteran trust in their VA medical providers:

- 1) Factors that predict general health care users' provider trust also predict homeless patients' provider trust over time.
- 2) There are additional homeless-specific predictors of provider trust over time.

Methods

In 2001, the VA West Los Angeles Health Care Center was awarded funding from VA's Central Office to establish a demonstration primary care clinic to be co-located and integrated in a newly renovated building along with offices of both the homeless social services programs and mental health programs. A longitudinal quasi-experimental outcome study evaluating the effectiveness of the integrated services followed two groups of homeless veterans with serious mental illness or substance abuse, one group (pre-integration) receiving access to usual care primary care services prior to the opening of the co-located services, and a second group (post-integration group) which had access to the co-located services once opened.^{32,33} Providers in the co-located primary care clinic consisted of a lead primary care physician and three nurse practitioners, the same primary care model available in the Medical Center's general outpatient primary care medical clinic prior to and during the operation of the co-located clinic. Primary care providers in the demonstration clinic received consultation and training regarding health care for the homeless; standards for engaging and treating homeless populations, including training on infectious disease screening and treatment; and chronic pain and hypertension management.^{32,33} Results at the end of the study indicated that the co-located care clinic veterans were enrolled more rapidly in primary care (0.3 vs. 53 days, $p<.001$), received 30% more prevention services over a year following enrollment ($p<.01$), and during an 18-month follow-up, were seen for 53% more primary care visits ($p<.01$), and 60% fewer emergency department visits ($p<.001$).^{32,33}

Study sample and data collection. Overall, 260 veteran patients were included in the study, 130 from the pre-integration clinic and 130 from the post-integration clinic. Subjects were recruited from the Medical Center's homeless drop-in center

between May 2001–March 2002 and February 2003–April 2004. All veterans seen by the homeless program during this time who were homeless, had either a mental illness or substance abuse diagnosis documented in their computerized electronic medical record, reported not having seen a primary care provider during the year prior to screening, and responded positively to an offer of access to a primary care provider were eligible for study recruitment and were screened for study involvement. Veterans were considered homeless if they had spent the night prior to study enrollment in an outdoor location (street, car, abandoned building), in an emergency homeless shelter, in a hotel or motel, in a jail or prison, in a homeless residential care program that they had entered within the prior 30 days, or if they were temporarily doubled up with a friend or family member. Three veterans refused participation in the study.

After written informed consent approved by the Medical Center's Institutional Review Board (PCC # 2012-070993) was obtained and the participant agreed to be enrolled in the study, a two-hour structured baseline interview was administered by the research assistants enrolled in masters programs in social work or public health. Interviews were repeated at six, 12, and 18 months after enrollment. Study veterans were compensated \$20 for each research interview.

Measures. *Outcome variable: Trust in health care provider.* The Trust in Physician Scale was used to measure the level of confidence study patients had in their provider at all four interviews. Anderson and Dedrick³⁴ developed this 11-item questionnaire in which respondents are asked questions on a five-point scale about provider's caring and consideration; truthfulness, honesty, judgments, and opinions regarding medical care; expertise in, and prioritization of, patient medical needs, and ability to instill confidence in following his/her advice; placement of patient's medical needs above all other considerations; and, keeping information completely private. Thom and colleagues²⁶ assessed validity and reliability of the measure and found high internal consistency (Cronbach's alpha = .89), good one-month test-retest reliability (intraclass correlation coefficient = .77), and that the measure significantly predicted continuity in care, adherence to medication, and satisfaction with provider. Using methodology employed by Thom and colleagues, scores were transformed to a 0 to 100 scale, with the lowest scores reflecting strong agreement with statements of distrust (e.g., "I doubt that my doctor really cares about me as a person") and highest scores reflecting strong agreement with statements of trust (e.g., "I trust my doctor to tell me if a mistake was made about my treatment"). Use of the scale has been reported for non-homeless samples, and for trust in physician providers.

Predictor variables. Predictor variables that were selected represented the range of predictors employed in other studies of trust among general health care users, and predictors potentially specific to homeless patients and provider relationships from the homeless literature.

Predisposing characteristics included the following socio-demographic characteristics: age, race, and years of education.

Need measures addressed physical and psychiatric health, and substance abuse at the baseline interview. Physical health included measures of serious physical health problems, assessed by asking whether the study participant had ever been told by a

doctor or nurse practitioner that he or she had any of 22 chronic health problems (see Table 1).³⁵ Positive responses to these questions were summed to construct a summary measure of number of medical problems. Veterans were also asked to report whether a doctor had ever given them any of four psychiatric (schizophrenia, PTSD, depression, or bipolar/manic depressive disorders) or two substance abuse (alcohol or drug) diagnoses, and a sum score was similarly calculated to indicate the number of mental health disorders and substance abuse.

Enabling characteristics included VA service-connected disability status, social support, and competing needs. In the phrase, VA service-connected disability status, *service-connected* means disability by injury or disease that was incurred or aggravated during active military service; veterans with service-connected conditions (physical or psychiatric) are entitled to receive priority in scheduling of hospital or outpatient appointments.³⁶ Social support and competing needs were measured at all four time points. Social support for obtaining health care was assessed through four questions (scale scores ranging from 0–4, dichotomous no/yes responses) that addressed whether friends or professionals had encouraged the veteran to seek medical services for either infectious diseases or medical care in general. Competing needs during the past 30 days were measured using a five-item scale (item scores ranging from 0–4, “usually a problem” to “never a problem”) developed by Koegel and colleagues,⁴ based on the theory that homeless people who have other more pressing basic needs may be less likely to utilize a regular source of medical care, and to maintain consistency in their treatment. The scale measures difficulty finding shelter, getting enough food and clothing, and finding adequate bathroom facilities in the past 30 days; scores ranged from 0–15.

Measures of *primary care experience* include continuity of, and satisfaction with, health care. At all four time points, continuity with primary care provider and patient satisfaction with provider were measured as part of the Primary Care Assessment Tool (PCAT), a structured validated assessment of primary care developed to measure five domains of the extent and quality of primary care services.³⁷ Continuity of care was measured with four-point scale response (“definitely” to “definitely not”) to the question, “When you go to your primary care provider, are you taken care of by the same doctor or nurse each time?” Provider satisfaction was measured on a four-point scale “very satisfied” to “very dissatisfied” in response to the question: “How satisfied are you with your regular source of care?”

Data analyses. The analysis model testing the two hypotheses used the linear mixed models analysis procedure in SPSS statistical software version 14.0, which adjusts standard errors for the correlatedness of outcomes from the same individual at different time points.³⁸ The linear mixed-effect model sums fixed and random effects of participant responses. Predictor variables (such as age or race) affect the population mean, and were therefore fixed. The time variable (treated as a four-level categorical variable) is affected by sampling procedure and is therefore random. Several variables varied over time and these included trust, social support, competing needs, and continuity and satisfaction with care. Because it is necessary to adjust for covariance in the structure to properly interpret fixed effects, a mixed-effect model was necessary.³⁹ Data from the two clinic groups was pooled for the analyses. The significance for the analysis was set at .05.

Results

Characteristics of the overall sample reported below in Table 1 can be briefly summarized. Veterans in the study were middle-aged, almost all were male, and half were African American. Both groups were literally homeless about one-half of the month prior to study enrollment and more than one-third had reported being homeless for more than two years. Both groups reported an average of two serious physical health problems, which included high rates of back and neck problems (34%), high blood pressure/heart problems (24%), liver problems (21%), and arthritis/rheumatism (20%). Both groups also reported an average of two psychiatric problems including depression (42%), bipolar disorder (20%), PTSD (17%), and schizophrenia (13%). Forty-five percent of respondents had an alcohol use disorder, and 48% had a drug abuse disorder. The follow-up rate for interviews was 72% (no significant difference for the two clinic groups), and the characteristics of the two groups interviewed at 18 months did not differ significantly from those interviewed at baseline.

Outcome: Primary care provider trust. Table 2 reports the results of the mixed model regression analysis. With respect to time, level of provider trust was significantly higher both at baseline ($\beta=4.56$, $p=.01$) and at 6 months ($\beta=5.64$, $p=.001$) than at 18 months, with no significant difference between 12 and 18-month trust scores. Adjusted provider trust scores (not shown in Table 2) produced by the model were 63 (baseline), 64 (six months), 57 (12 months), and 59 (18 months).

For the first hypothesis regarding inclusiveness of general health care users' predictors of trust among this homeless sample, only race as a predisposing variable was significant as a predictor of trust over time: African American patients' trust increased ($\beta=4.02$, $p=.008$). Age and education did not significantly predict provider trust nor did the three clinical need variables significantly predict trust. Both of the primary care experience variables, continuity with same provider ($\beta=3.48$, $p<.001$) and satisfaction with provider ($\beta=9.92$, $p=.001$), were positively predictive of provider trust over time.

Examining the second hypothesis regarding presence of homeless-specific enabling variables, the regression model indicated that social support for health care significantly predicted provider trust ($\beta=1.29$, $p=.02$), while patients' competing needs did not. While not homeless-specific, the enabling variable of service connection negatively predicted provider trust over time ($\beta=-3.78$, $p=.05$).

Discussion

This study examined provider trust in this medically burdened homeless sample over time using probable predictors from the medical and homeless literature. Over an 18-month period of time, patients' trust in their health care providers declined slightly (7%) from beginning to end of the study period. Patients' medical needs and substance use did not predict trust. Similar to findings with general health care users, continuity and satisfaction with provider, as provider care experience factors, were significant positive predictors of trust. Only race was significant as a predisposing factor. Two enabling factors, social support and service-connected status, were significant but in positive and negative directions, respectively. Homeless veterans' trust in medical providers

Table 1.**BASELINE CHARACTERISTICS OF HOMELESS VETERANS
ENROLLED IN PRIMARY CARE (N=260)**

	Mean \pm sd	%
Demographic:		
Age	45.8 \pm 7.0	
Sex (male)		99
African American (Race/Ethnicity)		50
Married		9
Education (years)	13.0 \pm 1.8	
Community Functioning:		
Income, past 30 days	\$651 \pm 1111	
Unemployed		22
Housing		
Days homeless, past 30 days	13.2 \pm 11.4	
Length of homelessness at intake (two or more years)		38
Social support for infectious disease testing or medical care, past year ^a	1.1 \pm 1.2	
Competing needs, past month ^b :	5.3 \pm 4.5	
Clinical:		
VA service-connected disability status		19
Physical Health:		
Number of serious physical health problems, past year (0–22) [was told by physician or nurse practitioner, ever	2.0 \pm 1.8	
High blood pressure or hypertension		24
Lung trouble or breathing problem		9
Asthma		10
Tuberculosis		3
Chronic obstructive pulmonary disease		2
Hearing condition or problem of ear, nose and throat condition		17
Eye or vision problem or problem seeing except for needing glasses		10
Cancer		1
Heart trouble or heart problem that might include coronary artery disease, heart attack, congestive heart failure		7
Stroke		2
Kidney or bladder trouble		4
Arthritis or rheumatism		20
HIV positive test or AIDS		1
Problem with liver or hepatitis A, hepatitis B or hepatitis C		21
Diabetes		3
Stomach or digestive disorder		11
Anemia		4
Pancreatitis		3
Thyroid disease		.4
Skin disorder		10

(Continued on p. 1285)

Table 1. (continued)

	Mean \pm sd	%
Seizure		5
Back or neck problem		34
Mental Health:		
Total serious psychiatric problems (0–6) [was told by physician, ever]	1.9 \pm 1.5	
Serious mental illness:		
Schizophrenia		13
Bipolar disorder		20
Depression		42
PTSD		17
Substance use disorder:		
Alcohol abuse		45
Drug abuse		48
Dual diagnosis (serious mental illness and substance use disorder)		36

^aSocial support for health care: Possible scores range from 0 to 4, with higher scores indicating more social support.

^bCompeting needs (Gelberg et al, 1997): Possible scores range from 0 to 15, with higher scores indicating higher levels of competing needs.

was predicted by factors differently than general populations with regard to race, social support, and access to better “insurance” through service-connected disability status.

The finding that trust was higher at baseline and six months suggests that the initial period of care was a phase of increasing trust, when patient assessment of provider behavior—welcomeness, care, consideration toward patients, competence, respect—did rise substantially. This represents positive movement for a patient group who has low levels of trust in their providers to begin with.

However, levels declined back to below baseline levels at 12 and 18 months. Absent other empirical work on trust over time, one possible interpretation might be that this is the normal course of events in health care relationships over this time period. The over time decline could also suggest that a population with serious medical problems and disability experiences inherently strains the patient provider relationship after an initial period of medical stabilization and hope, to then be followed by the longer-term and more difficult management of chronic disease and psychiatric disorder.¹² Evaluation findings reported elsewhere indicated that patient health status did not improve over the 18 months of study involvement.³³ A third possibility is that access to providers—too much or too little—might account for changes in trust over time.²² However, insertion of the number of primary care visits over time into the regression model did not show contact to be significant or otherwise change the results of the analysis. Finally, given repetition of the survey questions over the four time points, still another possibility is that respondent annoyance might have biased results. Study researchers and interviewers took steps to prevent such bias by notifying veterans that the same questions/domains would be covered at each interview to detect any change over time,

Table 2.**MIXED MODEL REGRESSION COEFFICIENTS: TRUST IN PROVIDER (N=247)**

Characteristics	Coefficient	SE	p
Time (ref: Time 3):			
Time 0	4.56	1.85	.01**
Time 1	5.64	1.79	.002**
Time 2	-1.81	1.62	.27
Predisposing:			
Age	.10	.11	.36
Race (African American)	4.02	1.50	.008**
Education years	.02	.41	.97
Need:			
Number of serious medical problems	-.76	.46	.10
Number of serious psychiatric diagnoses	-.39	.72	.58
Number of substance use disorders	1.39	.92	.13
Enabling:			
Service connected (physical or psychiatric)	-3.78	1.88	.05*
Social support	1.29	.56	.02*
Competing needs	-.30	.17	.07
Health care experience:			
Continuity with physician/provider	3.48	.52	.001***
Satisfaction with provider	9.92	.77	.001***

*p<=.05

**p<=.01

***p<=.001

reminding them of repetition and of the importance of their responses for improving the quality of health care for veterans, and providing compensation for veteran time. If there was respondent annoyance, it was likely minimal. In light of these potential issues, evolution of patient trust in provider over time as currently addressed in the literature would appear to be an area in need of future research.

Other study findings support the importance of contextual relationship factors in understanding trust in providers. Ongoing social support from friends and other health professionals to obtain needed tests and treatment was found to be positively associated with provider trust. Overall satisfaction with providers (a summary of provider ability to explain medical problems and treatments and conduct mutual decision-making with patients) as well as the provider's continuing presence over time, were both significant and independent factors related to trust.

Unexpectedly, African American race positively predicted trust: La Veist and colleagues¹⁸ cite a general sense of mistrust of the medical system and of providers by African Americans. Hankin and colleagues⁴⁰ suggests that this could be because Afri-

can Americans believe they will receive fairer treatment from the federal government. According to Rosenheck and Fontana,⁴¹ unlike utilization of behavioral health services by the general population, utilization of VA behavioral health care services by African American veterans was similar to that of White veterans. It also could be that African Americans are also more satisfied with VA services; as subsequent studies of African American patients indicate, increased satisfaction for this population was significantly associated with trust in their providers.²⁴

Also unexpectedly, factors that might correlate with unwelcomeness—serious medical and psychiatric need, substance abuse and attention to competing survival needs over health care participation—were not significant predictors in this model. It is possible that service-connected disability served as a proxy for severe clinical need in this population: Through a comprehensive examination process, veterans who are service-connected are certified as having serious, chronic, and complex medical and psychiatric conditions. While a number of factors may explain these findings on need and service connection, it is possible that these veterans had been patients in the VA health care system prior to their study involvement; such health care provides services based upon entitlement, in particular, prioritizing services to veterans with a service-connected disability. Hall *et al.*¹² speculated that general populations with complex and serious medical problems and disability (including those with a service-connected disability) have more experience with different physicians, which can affect how they regard health care providers in general. Such experiences may produce trust that is lower but more resilient to disappointment.

While this study is an important first step in examining provider trust among homeless veterans over time, there are important differences between this homeless veteran sample and other homeless populations. First, the system context for this provider trust study is a health care clinic population at a large west coast VA medical center. In addition, veterans are on average older than non-veteran homeless people, have military backgrounds, and combat experiences that non-veterans do not, and are served by a system that provides a comprehensive health care service package to all eligible veterans, something their non-veteran counterparts are unlikely to share.

Despite these limitations, this study provides a first empirical look at the trust interface between homeless patients and their medical providers as patients attempt to stabilize in the community. Although there has been no follow-up on this longitudinal study nor any other known study on homeless people's trust in the medical providers, current trends in 2014 in the U.S. health care system, even as it evolves through the Affordable Healthcare Act, continue to emphasize provider satisfaction and trust and increasingly advocate for patient-centeredness in care.⁴² Such trends confirm that patient's reactions, including those of homeless patients, remain both relevant and important in the calculus of medical care access and engagement. The findings from this study should encourage further research that examines trust across a wider range of clinics and assesses the impact on patient medical care over longer periods of time. Initiatives that integrate care for homeless veterans such as VHA's 32 Clinic Homeless-PACT implementation⁴³ could provide an ideal laboratory for further development of knowledge of this important element of health care.

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