

Perception of Health Care Access in Rural Georgia: Findings From a Community Health Needs Assessment Survey

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ABSTRACT

Background: Limited access to health care services has been cited as a barrier to care for individuals who live in rural areas, contributing to significant health disparities in this population. While perception of services has been cited as a determinant of utilization of health services, it is unknown how perception of services influences health care access in rural areas. The paucity of studies specific to areas in the United States that are medically underserved, necessitated this study and its quantification of the issues that are relevant to individuals living in rural Georgia.

Methods: This study examined the perception of health care access of rural Georgians by analyzing results from a Community Health Needs Assessment survey. Multiple linear regression was performed to examine associations between perception of health care access and several environmental and sociocultural factors.

Results: Two hundred and fourteen surveys were completed over a 6-week period by a largely Caucasian (85%) and female (78%) sample. Perception of health care quality was significantly related to perception of local health care access.

Conclusions: Interventions and protocols that are implemented to increase health care access in rural areas should include how perception of health care quality might influence a person's understanding and consequent decision to access local health care services. Because of the ambiguous nature of how "health care quality" is defined, future research is warranted to better understand how the term is operationalized and what relationship there is between the perception of "health care quality" and health care access in a rural area.

Keywords: rural, health care, health care access, health care utilization, health disparities, Georgia, Georgians, health care quality, health care access, health care utilization

INTRODUCTION

Rural America is facing a health crisis. In comparison to urban areas, the rural United States experiences profound health disparities in cancer, obesity, cardiovascular disease, high blood pressure, hypertension, high cholesterol, stroke, and chronic lower respiratory disease (Rural Health Information Hub, 2019a). Individuals who live in rural areas are more likely to die from largely preventable causes, such as heart disease, respiratory disease, and unintentional injury (Centers for Disease Control, 2017). Additionally, rurality is one of the strongest predictors of mortality, with residents dying on average two and a half to five years earlier than urban residents (Singh & Siahpush, 2014; Cosby et al., 2019; Robert Wood Johnson Foundation, 2019). This "rural mortality penalty," a term reflecting the widening health divide between urban and rural areas, occurs not because of increased mortality in rural areas, but as a result of urban mortality declining at a faster rate (Cosby et al., 2019). One reason for the substantial health disparities experienced by rural populations is the limited access to health care (Rural Health Information Hub, 2019b).

According to a 1993 National Academies report, the definition of "health care access," which continues to be used by the Rural Information Hub as its definition, is explained as being "the timely use of personal health services to achieve the best possible health outcomes" (p. 4). Limited availability of health care providers is the most apparent barrier that individuals face when they live in a rural area. Nearly 80% of rural America is considered medically underserved by the Health Resources and Services Administration (HRSA) (Saslow, 2019). The low number of rural physicians contributes to several issues, including a delayed response to seeking health care, driving longer distances to receive care, increased health care costs, worse health outcomes, reduced continuity of care, and poorer adherence to medical care plans (Sukel, 2019).

Several reasons explain the limited number of health providers in rural areas, including fewer professional and diagnostic resources, higher patient caseload, longer workdays, and fewer employment opportunities for spouses

(Weeks & Wallace, 2008). Furthermore, more medical school graduates are electing to work in urban areas than in rural areas, while rural physicians are steadily approaching retirement (Saslow, 2019). If the current trajectory continues, health officials estimate that over the next ten years, the number of rural physicians will decrease by 23% whereas the number of urban physicians will remain steady (Saslow, 2019).

Over the past 15 years, a wave of rural hospital closures has further reduced health care accessibility across the U.S. (Sheps Center, 2020). Since 2008, 170 rural hospitals have closed, and most of the closures were concentrated in the south (Sheps Center, 2020). In fact, 2020 is on pace to see the most hospital closures yet, with eight hospitals shut down by May (Sheps Center, 2020). Limited financial resources also mean that more rural hospitals are at risk of closing. In the U.S., 25% of rural hospitals are at high risk of closing, with 81% of these hospitals considered essential to their community (Mosley & Debehne, 2020). The closure of a rural hospital not only causes an area to experience an overall shorter life expectancy (Gujral & Basu, 2019), but can also negatively impact a town's economy as a health care system may be one of the town's largest employers (Mosley & Debehne, 2020). Because rural hospital closures are so devastating to an area, Weber and Miller (2017) declare emphatically, "If you want to watch a rural community die, kill its hospital."

Health Care Access in Georgia

These issues are alarming and illuminate the significant public health issues exacerbated by limited health care access in rural areas. Predominantly rural states with the least access to health care are of greatest concern. Georgia, the state examined in this paper, is over 75% rural and has been dubbed "Ground Zero for the rural hospital closure crisis," due to six hospital closures between 2012 and 2017 (Weber & Miller, 2017). Tied at third for most hospital closures in the nation (Ellison, 2019), Georgia is also rated eighth for most Health Professional Shortage Areas (HPSA) in a state and second for most essential hospitals at risk of closing (Bean, 2019). These factors might contribute to the fact that 94% of Georgia is considered medically underserved by HRSA (State Office of Rural Health, 2018) and why Georgia is ranked 46 of the 50 states in terms of access to quality health care (Harker, 2019).

The stark health disparities and the paucity of medical services available in rural Georgia create an urgent need for us to better understand the health care barriers these rural communities face. A Community Health Needs Assessment (CHNA) was conducted in rural east central Georgia to examine not only health care needs but also what barriers might exist specifically for this population because of the dearth of health care professionals. Because a CHNA seeks to identify and understand the needs of a community (Wright et al., 1998), the primary researcher determined a

CHNA to be the most appropriate measure for examining present health care needs and barriers to access. The CHNA instrument was designed to identify the health needs of three rural Georgia counties, however, this manuscript only describes a portion of the results. Specifically, this manuscript examines the data with regards to variables that might influence an individual's perception of health care access in a small rural town. While perception of services has been cited as a determinant of utilization of health services (Roberts et al., 2009), what is unknown is how perception influences health care access in a rural area. The limited number of studies that are specific to Georgia, given the state's availability of health care, necessitated the need for this study and its focus on the issues relevant to rural Georgians. Therefore, an examination of variables that relate to the perception of health care access for residents of rural areas was warranted.

METHODS

Participants

Inclusion criteria for the CHNA were that participants had to reside in one of three rural counties within the U.S. state of Georgia and be at least 18 years old. No other inclusion parameter was set.

Setting

Collectively, the three examined rural counties comprise a population of 19,399 individuals (United States Census Bureau, 2017). These counties were chosen for several reasons. Firstly, all three counties are HPSAs and Medically Underserved Areas (MUAs) as determined by HRSA (Health Resources and Services Administration, 2018). According to HRSA (2018), this designation means that these counties lack health care, mental health, and dental providers.

Secondly, these counties have an average older adult demographic of over 20%, which reflects the projected population of Americans 65 and older in the next ten years (United States Department of Commerce, 2014). Per the U.S. Census Bureau (2017), the percentage of older adults in these three counties collectively accounted for 23.6% of the population. This percentage of older adults who live in these counties was an essential consideration as rural areas experience a larger population of individuals who are 65 and older (Rogers, 2010). Finally, the three counties averaged a minority population of around 50%, which is representative of the U.S. state of Georgia as a whole, whose minority makeup accounts for 48.2% of the population (U.S. Census Bureau, 2017).

Survey Design

A 45-question survey was developed with components from four instruments: the "Community Themes and Strengths

Assessment,” the “Community Health Survey,” the “Community Input Survey,” and Boyas and Valera’s (2011) “Determinants of Trust in Medical Personnel” survey. Portions of each survey, with modifications described below, comprised the instrument for assessing the health and health care needs of rural east central Georgia. Since not all of the aforementioned measures have psychometric properties, this health needs assessment was developed using instruments recommended by the Centers for Disease Control (CDC) and National Association of County and City Health Officials (NACCHO) in an attempt to increase rigor.

The first two surveys are components of the “Mobilizing for Action through Planning and Partnerships” (MAPP) model. MAPP, developed by the CDC and NACCHO, is a “community-driven strategic planning process for improving community health... [and] helps communities apply strategic thinking to prioritize public health issues and identify resources to address them” (National Association of County and City Health Officials, 2018). These two surveys included multiple-choice questions that assessed several aspects of the community’s health needs, as well as the individual respondent’s needs, hence their inclusion in the survey for this study. Additionally, the “Community Input Survey” included a 2-part Likert scale that rated an individual’s perception of ‘quality of health care’ and ‘access to health care’ through choices that included *poor, fair, adequate, good, and excellent*.

Modifications to the “Community Themes and Strengths Assessment” and the “Community Health Survey” included additional questions that assessed the specific needs of the community, as suggested by NACCHO. Examples of such questions assessed a person’s living arrangements, distance to the closest hospital, access to transportation, and the use of a medical alert device. Finally, a person’s level of trust in health care professionals was examined through portions of Boyas and Valera’s “Determinants of Trust in Medical Personnel” survey which is a standardized data collection instrument developed largely from validated assessments and reflects a Cronbach’s alpha of .95 (Boyas & Valera, 2011). Assessing the trust level in health care professionals was critical since studies have shown that a lack of trust in health care providers impedes motivation to seek care (Musa et al., 2008). Together, these questions were incorporated to better capture the health care and social environments of rural Georgians.

Participants completed two screening questions to determine eligibility (“Are you at least 18 years or older?” and “Do you currently reside in one of the three examined counties?”). A consent form was provided with the survey explaining the purpose of the study to potential respondents. Participants were notified of any known risks associated with taking part in the survey (no known risk) and that the online survey was configured so responses were collected anonymously by excluding IP addresses. The online survey

was configured such that participants could not take the survey more than once. For the survey, respondents provided passive consent and agreed that by completing the survey they were giving consent to participate in the study.

At the beginning of the survey, respondents were asked standard demographic questions, such as age, sex, race, and income level, in addition to multiple-choice questions that inquired specifically about unmet health care needs and barriers to health care each respondent had experienced. Participants also responded to questions about their county’s health care resources in the form of single-item questions, such as what services were difficult to obtain. The survey presented questions about participant’s own health, for instance, whether they have been diagnosed with a health condition (for example, high cholesterol, depression, or cancer) or delayed seeking medical care or filling a prescription, how they have perceived health care needs of the community, and what health system is typically utilized when medical care is needed. Furthermore, participants answered questions about the level of trust they had in their health care provider(s) and whether that level of trust has affected their decision to use health services. Finally, distance from a primary care physician (PCP) and emergency room were measured, as well as participants’ access to transportation, so additional barriers could be assessed in the event that they should impact health care access.

Sampling

Over a six-week period, information on the survey was disseminated in three rural Georgia counties, and were solicited from adults aged 18 years and older using multiple advertising techniques. The advertisements predominantly featured the online survey offered through SurveyMonkey; however, a telephone number was also listed, so willing participants could call in and complete the survey over the phone. Advertising methods included flyers with both a phone number and website where the survey could be taken. With permission, these flyers were displayed at local libraries, county health departments, post offices, the Department of Family and Children Services, the Office of Veterans Affairs, and several other county offices. Additionally, numerous local businesses, including restaurants and hardware stores agreed to advertise the health needs assessment by displaying flyers in their windows. Approximately fifty emails were sent to local officials including the counties’ mayors, sheriffs, fire chiefs, judges, district attorneys, and members of several boards (Board of Health, library boards, etc.) with a link to the online survey. Finally, the local Critical Access Hospital (CAH) forwarded the survey via email to local partners, including the Board of Education and employees of the only local hospital. Once initial emails were distributed, a snowball sampling method was utilized.

Paper copies of the survey were printed and distributed at the local Farmers Market for one weekend and were left with the volunteer fire department, post office, about 30 local businesses, and the local pharmacy. Two consent forms, one for the participant to keep for their records and one to be returned with the completed survey, accompanied the hard copy of the survey as well as a self-addressed stamped envelope. In addition to advertising by flyers and emails, paid social media advertising was also utilized in a 40-mile radius of the central county, including Facebook, Instagram, and LinkedIn.

Statistical Analysis

Descriptive statistics were generated, and a multiple linear regression (MLR) analysis was performed to examine associations between perception of health care access and several environmental and sociocultural factors. By conducting a MLR, this research question was considered: What are some factors that might influence a person's perception of local health care accessibility? In consideration of which factors may impact the perceived accessibility of health care, the dependent variable used was a person's rating of access to health care in their county (either *poor*, *fair*, *adequate*, *good*, or *excellent*). This decision was made because, as Ryvicker (2018) reports, several reasons can influence access to health care, including *social* and *built* environments. In an attempt to capture these influences, variables were chosen that might assist not just in understanding what factors might affect health care access but possibly engender an understanding of a person's perception of health care access.

Using StataSE15 (StataCorp, 2017), the independent variables measured against the perceived rating of access to health care were: *age*, *race*, *rating of overall quality of local health care*, *approximate combined household income*, *the trust level in local doctors*, and *distance to primary care physician*. The literature supports the use of these variables for MLR analysis because they mirror factors which contribute to a person's decision to choose not to access health care (Boyas & Valero, 2011; Fortney et al., 1999; Syed et al., 2013; Bulatao & Anderson, 2004). Again, these variables were: rating of local health care quality, trust level in the local health care providers, distance to PCP, and sociocultural elements.

Trust level in health care providers was measured by asking whether respondents trusted the doctors who worked in local hospitals and clinics on a Likert-type scale ranging from *not at all* to *a lot*. In the analysis, trust in medical personnel was dichotomized and coded as the following: *no trust* and *trust in them only a little bit* was recoded as 1 and *trust in them some to trust in them a lot* was recoded as 2. Additionally, distances to medical services were measured by asking whether a person lived *less than 10 minutes from*

their PCP, between 11 and 20 minutes, between 21 and 30 minutes, between 31 and 40 minutes, between 41 and 50 minutes, between 51 and 60 minutes, longer than an hour, I do not have a primary care physician, and I have a doctor who comes to my home. This variable was also dichotomized and categorized by a person living either *less than 30 minutes from their provider* or *more than 30 minutes from their provider*.

Institutional Review Board Approval

This study was approved by the University of Georgia's Institutional Review Board.

RESULTS

Within six weeks, the survey was filled out by 313 participants. Only eight participants completed the paper version of the survey, no one completed the survey over the telephone, and the remaining 305 surveys were completed online via the SurveyMonkey platform. Of the 313 surveys taken, 214 were fully completed, however, for the remaining 99 surveys (thirty-two percent), the participants stopped at some point during the survey. These 99 surveys have been excluded from the analysis based on attrition; the minimum sample was satisfied. Of the 214 completed responses, seventy-eight percent of the respondents identified as *female*, and twenty-two percent identified as *male*. Furthermore, eighty-five percent identified as *Caucasian*, and fifteen percent identified as *Non-Caucasian* (African American, Hispanic, or Another Race). Twenty-six percent reported as 65 or older, which is reflective of the three counties' older adult population. When asked to rate the overall quality of care in the three counties, forty-four percent rated the quality as either *poor* or *fair*, with twenty-two percent rating the quality as *adequate*. Regarding the access to care in these counties, sixty-seven percent rated the accessibility of health care as *poor* or *fair*. The survey's results indicate approximately twenty-five percent of respondents living over 30 minutes from their PCP, sixty-seven percent living over 30 minutes from their health care specialist, if they, in fact, had one; and thirteen percent living over 30 minutes from the closest hospital emergency room.

Multiple Linear Regression Results

MLR was calculated to predict a person's perception of health care access based on their age, race, annual combined household income, rating of local health care quality, distance to a PCP, and their trust level of local doctors (Table 1). The results of the MLR analysis indicated a significant relationship between a person's perception of local health care access and their perceived quality of local health care ($F(6, 24) = 54.348, p < .000$), with an R^2 of .615. The results of MLR showed no other significant association.

Table 1. *Predictors of Perceived Access to Local Health Care*

N = 214	<i>B</i>	<i>SE</i>	β	<i>p</i>	95% CI (<i>B</i>)
Constant	0.891	0.284		0.002	[0.331, 1.450]
Age	-0.038	0.028	-0.060	0.177	[-0.094, 0.017]
Race	-0.033	0.107	-0.014	0.756	[-0.244, 0.177]
Annual combined household income	-0.023	0.017	-0.063	0.169	[-0.056, 0.010]
Distance from PCP	-0.104	0.07	-0.069	0.137	[-0.242, 0.034]
Trust level in local doctors	-0.035	0.096	-0.017	0.718	[-0.224, 0.154]
Perceived quality of local health care	0.785	0.048	0.786	0.000	[0.690, 0.880]

Note. SE = standard error; CI = confidence interval.

Table 2. *Bivariate Associations with Perceived Access to Local Health Care*

N = 214	<i>M (SD)</i>	<i>F(df) / t(df)</i>	<i>p</i>
Age		0.66 (5, 205)	.658
18–24	1.60 (0.89)		
25–34	1.91 (0.81)		
35–44	1.97 (.93)		
45–54	1.96 (0.89)		
55–64	1.70 (0.86)		
65+	1.87 (0.88)		
Race		.82 (141)	.413
Caucasian	1.19 (.39)		
Non-Caucasian	1.13 (.34)		
Annual combined household income		1.40 (7, 203)	.207
< \$20,000	1.50 (.73)		
\$20,000–\$29,999	1.47 (.80)		
\$30,000–\$39,999	1.68 (.89)		
\$40,000–\$49,999	1.96 (.88)		
\$50,000–\$59,999	2.04 (.89)		
\$60,000–\$69,999	2.00 (.89)		
\$70,000–\$79,999	1.90 (.91)		
> \$80,000	1.96 (.88)		
Distance from PCP		.27 (141)	.787
Less than 30 minutes	1.44 (.58)		
Greater than 30 minutes	1.41 (.72)		
Trust level in local doctors		-4.02 (128)	< .001
Not at all or a little	1.62 (.49)		
Some or a lot	1.89 (.32)		
Perceived quality of local health care		159.91 (2, 208)	< .001
Poor or fair	1.16 (.48)		
Adequate	1.90 (.66)		
Good or excellent	2.72 (.56)		

Note. Perceived quality of local health care, age, and annual combined household income were analyzed using a one-way analysis of variance (ANOVA). Race, distance from PCP, and trust level in local doctors were analyzed using a dependent sample t-test.

Bivariate Association Results

ANOVA results revealed a statistically significant difference in perception of access to local health care by perception of local health care quality (Table 2). Post-hoc application of the Bonferroni test revealed statistically significant differences between people who rated local health care quality as *good* or *excellent* and people who rated local health care quality as *poor* or *fair*. Those persons who

perceived the quality of local health care as *good* or *excellent* on average felt greater access than those who perceived local quality as *poor* or *fair*. T-test results also demonstrated a statistically significant difference in perceived access to local health care by trust.

DISCUSSION

Respondents to the survey were likely to have a negative perception of access to health care services available in their county. Services that were most needed were reported as a lack of specialty providers and mental health services, despite having a 25-bed CAH in the area. In terms of the perception of health care access, all branches of health care must be examined as the mere presence of a hospital in town might not be enough to influence a person's positive perception of access to services as suggested by the analysis.

The most significant finding from this study was the relationship between an individual's perception of health care access and their perception of quality. While perception has previously been cited as a determinant of health care utilization (Roberts et al., 2009), the findings from the current study offer insight into how perceived health care quality might impact the incidence of health care access in rural communities. To better understand this relationship, further exploration into how health care quality is conceptualized in rural communities is needed. "Health care access" and "health care quality" cannot be clearly defined and, as a result, can hold different meanings for different people. While the analysis shows that a person's perception of health care access is affected by their perception of quality, what does that mean? In order to gain a better understanding of how health care quality is defined and its relationship to perception of access, a more in-depth qualitative approach should be taken. The primary researcher of this study is presently preparing a manuscript of interview findings that explores this relationship further.

A review of the literature has revealed a limited number of articles written about the relationship between health care quality and health care access. However, Beal (2011) has explained that "quality improvement efforts have been clearly demonstrated to be an effective strategy for addressing health and health care disparities," and that "basic quality improvement can provide a mechanism for promoting health care equity" (Beal, 2011, para. 15). Cognizant of the impact of perception of health care quality on perceived local health care access suggests that addressing the quality of smaller, rural hospitals might increase access and decrease health disparities in rural populations. While additional research is needed, policymakers who address rural issues and health care access should consider how a person's perception of local health care quality relates to their perception of health care access.

There were limitations of this study, including disproportionate completion of the survey by women (78%) and Caucasians (85%) despite the gender and racial makeup of the three counties. This might be attributed to the local CAH's involvement distributing the survey among health care workers, which could contribute to a more

predominantly female sample given the higher number of women who work in health care (HRSA, 2017). The CAH's participation could also contribute to a less diverse sample, as Caucasians represent over half of the health care workforce (HRSA, 2017). If duplicating this study, further effort would be needed to ensure that a proportionate number of men, as well as racial and ethnic minorities, complete the health needs survey. Forming relationships with the gatekeepers of the Latinx and African American communities might attenuate this issue and help create a more diverse sample.

Additionally, an increased number of paper surveys should be distributed as some individuals might not have access to the Internet or be familiar with online surveys. The large number of responses that were completed through the online platform might also mean these individuals have access to more resources, such as access to either a cellphone or laptop and the Internet, which could reflect their perception of health care access. These matters might have been better addressed if the data collection period had been extended. Other examples of how sampling limitations could be addressed are to recruit participants at more in-person events that cater to large and diverse audiences and also utilize nearby colleges to advertise the CHNA. Furthermore, if needed, address and phone lists could be purchased to recruit participants that may be homebound or do not travel often and thus, might not come across the survey organically.

CONCLUSIONS

This study examined the perception of health care access in rural east central Georgia by analyzing the results from a 45-question CHNA survey. The CHNA survey was developed using portions of the "Community Themes and Strengths Assessment," the "Community Health Survey," the "Community Input Survey," and Boyas and Valera's (2011) "Determinants of Trust in Medical Personnel" survey. The survey examined respondents' personal and health care environments and was modified to include scales that assessed additional variables that pertain to rural residents. Examples of added questions include "How far do you live from your primary care physician?" and "When you or someone in your family is sick, where do you go for health care?" Distributed over February and March of 2019, the survey was completed by 214 individuals after being advertised through flyers, newspaper advertisements, social media, in-person campaigning, and the help of local businesses and organizations.

When examining several variables, such as trust level in the local health care providers, distance to a PCP, and sociocultural elements, only perception of local health care quality was significantly related to a person's perception of local health care access. While past studies have indicated the influence that perception has on health care utilization, findings from this analysis suggest that perception of quality

has a similar impact on the perception of health care access in rural Georgia. These findings may also hold true in other similarly sized rural towns; further duplication of the study would be needed. Interventions and protocols that are implemented in rural areas should consider the perception of health care quality and how this perception might influence a person's understanding of health care accessibility. Due to the ambiguous nature of "health care quality," future research is warranted to better understand how the term is operationalized and what relationship there is between perceived quality and health care access in a rural area.

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