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Rural Patients' Perceived Importance of Racial and Ethnic Concordance With Providers and Receipt of Annual Routine Visits

Bobbie L Johannes, PhD, MPH[1], Arch G Mainous III, PhD[2], Tyler Prochnow, PhD[3,4], Xuewei Chen, PhD, MCHES[5], Selena E Ortiz, , PhD, MPH[6], and Matthew Lee Smith, PhD, MPH, CHES[3,4]

Abstract

The role that racial and ethnic concordance between rural patients and their providers may play in improving health-related behaviors and access to care may be associated with a lack of trust. Therefore, our study identifies the patient characteristics associated with: (1) perceived importance of having racial and ethnic concordance; and (2) not having a routine provider visit in the past year among rural patients living throughout the United States. Data were collected through an online survey using Qualtrics, incorporating validated questionnaire items to assess health beliefs, healthcare practices, access to care, and patient–provider distrust. Sample ($N = 166$) characteristics were compared using bivariate analyses. Two binary logistic regression models with backward entry were fitted to assess variables associated with perceived importance of concordance and a routine visit in the past year, controlling for distrust in providers, healthcare access, health literacy, and demographics. High distrust in providers was associated with perceived importance of racial and ethnic concordance with one's provider (OR = 9.18) and not having a routine visit (OR = 3.35). This study highlights the complex interplay between racial and ethnic concordance, distrust in providers, and healthcare utilization among rural populations, emphasizing the need for multifaceted approaches to improve healthcare access and outcomes. Future studies should determine whether perceived importance of concordance mediates the relationship between distrust in providers and getting an annual routine visit.

Keywords

trust, clinician–patient relationship, access to care, behavioral health

Introduction

Racial and ethnic concordance between patients and their providers is thought to be an important driver of high-quality patient–provider relationships.[1] Prior research reports that patients perceive a stronger relationship with their provider when they see themselves as racially and ethnically similar.[2] Racial and ethnic concordance among patients and providers is also associated with longer visits.[3] Interactions between patients and clinicians remain a strong source of health information and support among patients, which highlights the importance of trust as a hallmark of a high-quality patient–provider relationship.[4]

While the literature suggests that racial and ethnic concordance is associated with better patient–provider relationships, its association with better health-related outcomes is less

[1] Department of Population Health Sciences, Geisinger, Danville, Pennsylvania, USA
[2] Department of Health Services Research, Management and Policy, University of Florida, Gainesville, Florida, USA
[3] Department of Health Behavior, School of Public Health, Texas A&M University, College Station, TX, USA
[4] Center for Health Equity and Evaluation Research, Texas A&M University, College Station, TX, USA
[5] School of Community Health Sciences, Counseling and Counseling Psychology, Oklahoma State University, Stillwater, Oklahoma, USA
[6] Department of Health Policy and Administration, College of Health and Human Development, Penn State University, University Park, Pennsylvania, USA

Corresponding Author:
Bobbie L Johannes, Department of Population Health Sciences, Geisinger, 100 N. Academy Avenue, MC 44-00, USA.
Email: bjohannes@geisinger.edu

clear. A recent systematic review reported that the association between patient–provider concordance and health-related outcomes remains inconclusive.[5] For example, one study found that racial concordance was not associated with increased utilization of preventive services.[6] Conversely, Street et al (2008) found that discordance was associated with lower utilization of preventive care.[2] More recent research on health-related behaviors suggests that racial and ethnic concordance may improve patients' utilization of routine screenings.[7]

In rural communities, provider networks may be limited, healthcare resources are widely dispersed geospatially, and healthcare providers may be homogeneous in terms of race and ethnicity,[8,9] which presents challenges to healthcare access and routine care. Rural access to healthcare has been further confounded by deep mistrust in the healthcare system stemming from the opioid and COVID-19 pandemics.[10] Despite being recognized as a potential driver of trust in providers, healthcare utilization, and positive health outcomes, patient–provider racial and ethnic concordance is a complex construct to capture due to the lack of universally accepted definitions of race and ethnicity.[11] In this rural context, due to challenges in defining race and ethnicity, we examined patients' perceived importance of having racial and ethnic concordance with their provider, instead of narrowly focusing on the true concordance between patients and their providers. We attempted to identify if patients' distrust in providers, healthcare access, health literacy, and demographics were associated with the perceived importance of having racial and ethnic concordance with their provider among rural patients living throughout the United States. Then, we examined these patient characteristics, in addition to their perceived importance of concordance, to identify their association with patients not having a routine provider visit in the past year. Taken together, this study may contribute to a deeper understanding of the potential barriers to routine healthcare utilization among patients residing in rural areas. Therefore, our study identifies the patient characteristics associated with: (1) perceived importance of having racial and ethnic concordance; and (2) not having a routine provider visit in the past year among rural patients living throughout the United States.

Data and Methods

Data Collection

Cross-sectional data were collected using Qualtrics between March 17, 2020, and April 16, 2020.[12,13] The primary purpose of our survey was to assess rural perspectives on a model of primary care delivery. The survey items included in our questionnaire were drawn from other validated surveys and related to health beliefs, healthcare practices, understanding health information, insurance, access to care (ie, primary, specialty, wait times, distance to care, and financial barriers), and social interactions and networks.[14-20]

Potential participants were recruited using Amazon Mechanical Turk, a crowdsourcing platform that engages individuals registered in its panels to solicit survey responses.[21-23] Survey eligibility required respondents to be at least 18 years of age and enter a ZIP Code defined as rural by the Federal Office of Rural Health Policy.[24] Respondents consented to complete the survey.

Measures

Dependent Variables. In the current study, we assessed 2 dependent variables: the perceived importance of patient–provider racial and ethnic concordance, and receipt of an annual routine physician visit.

Perceived Importance of Patient–Provider Racial and Ethnic Concordance. We evaluated the perceived importance of patient–provider racial and ethnic concordance by asking our participants, "How important is it that your provider be the same race and/or ethnicity as you?" The Likert-like scale response options ranged from "not at all important" to "extremely important" and were dichotomized based on the frequency distribution to facilitate meaningful comparisons (i.e., not at all important, slightly important, and moderately important = 1 [referent group]; very important and extremely important = 2).

Annual Routine Physician Visit. We evaluated whether survey respondents had a routine physician visit in the past year by asking our survey respondents, "About how long has it been since you last visited a healthcare provider for a routine checkup?" To identify patient characteristics associated with less desirable healthcare utilization, responses were dichotomized to indicate those who had a routine provider visit in the past year (scored 0; referent group) and those who did not (scored 1). The survey defined a routine checkup as a general physical exam, not an exam for a specific injury, illness, or condition.

Independent Variables

Patient–Provider Distrust. A 5-point Likert-like scale assessed the degree to which respondents distrust their healthcare providers.[15] Response choices ranged from "strongly disagree" (scored 1) to "strongly agree" (scored 5). The items included: "I think my provider may not refer me to specialty care when needed"; "I think my provider is strongly influenced by health insurance rules when making decisions about my medical care"; "I think my provider may perform unnecessary tests or procedures"; and "I don't trust my provider to put my medical needs above all other considerations when treating my medical problems." Factor analysis with principal axis factoring and varimax rotation yielded a single-factor solution for these 4 items. Responses for each item were then summed to create a composite score, with higher scores indicating more distrust in their provider (scores ranged from 4 to

20). The Cronbach's alpha for this summated index of distrust in one's provider in the current sample was 0.802. We then dichotomize the summated distrust score using the theoretical midpoint of 13 (and median = 13) to create low (scores 4 to 12) and high (scores 13 to 20) provider distrust categories.

Healthcare Access. Multiple measures were included to assess respondents' access to healthcare. Respondents were asked to report if they had insurance (no = 0; yes = 1), if they believed they had enough choices for primary care providers (no = 0; yes = 1), and if they believed they had enough choices about where to get care (no = 0; yes = 1).

Health Literacy. To assess understanding of health-related information, respondents were asked 2 questions from the Behavioral Risk Factor Surveillance System: "How easy or difficult is it for you to understand information that doctors, nurses, and other healthcare providers tell you?" and "In general, how easy or difficult is it for you to understand written health information?" Response choices ranged from "very easy" to "very difficult." Responses were then dichotomized to facilitate meaningful comparisons (very easy and somewhat easy = 0; somewhat difficult and very difficult = 1).

Demographic Characteristics. The following respondent characteristics were also assessed: age group (18 to 24 years = 1; 25 to 34 = 2; 35 to 44 = 3; 45 to 54 = 4; 55 to 64 = 5; 65 to 74 = 6), sex (male = 1; female = 2), race and ethnicity (non-Hispanic white = 1; non-Hispanic, non-White = 2; Hispanic = 3) and annual household income collapsed into quartiles (<$30,000 = 1; $30,000-$59,999 = 2; $60,000-$69,999 = 3; $70,000 or more = 4). Finally, the Rural-Urban Continuum Codes (RUCC) for each ZIP code reported by survey respondents was identified using the Area Health Resource File to classify residential rurality into 2 groups (nonmetro, adjacent to metro area = 1 and nonmetro, nonadjacent to metro area = 2).[25,26]

Analysis

Respondents were included in the analytical sample if there were no missing data on variables of interest and if they lived in a rural RUCC code. Of the 196 survey respondents, 19 responses were omitted for missing data on one or more variables, and 11 were excluded for living in an urban RUCC code. The final analytic sample included 166 rural-residing adults.

All analyses were performed using SPSS version 28.[27] Descriptive statistics were calculated for all variables of interest (i.e., means, standard deviations, and frequencies). Bivariate analyses were performed to compare sample characteristics by respondents': (1) perceived importance that their healthcare provider is of the same race and/or ethnicity; (2) not having a routine provider visit in the past year; and (3) distrust in providers. Pearson's chi^2 tests were used to assess differences in frequency distribution for categorical variables across the dependent variables. Independent sample t-tests were used to assess mean differences for continuous variables. Two binary logistic regression models with backward entry were fitted to assess patient characteristics associated with perceived importance of racial and ethnic concordance and not having a provider visit in the past year. Both regression models adjusted for age, sex, race/ethnicity, income, RUCC, healthcare access (i.e., insurance status, whether the respondent perceived that they have enough choices for primary care, and whether the respondent perceives that they have enough choices for where to get care), health literacy (i.e., whether it is easy or difficult to understand information that providers tell them and whether it is easy or difficult to understand written health information), as well as their levels of distrust in providers. Additionally, the model examining routine physician visits in the past year adjusted for perceived importance of racial/ethnic concordance between the patient and provider. Full and reduced models are reported for both analyses, and Nagelkerke R^2 coefficients are reported to document model fit. A p-value <.05 was used to determine statistical significance for all analyses in this study. Odds ratios (OR) and 95% confidence intervals (CIs) are reported.

Ethics Statement

Electronic informed consent was obtained from the survey respondents for their anonymized information to be used for this study. This study was approved by the Institutional Review Boards (IRB) of Geisinger and Penn State University.

Results

Descriptives

Table 1 presents the sample characteristics by perceived importance of patient–provider racial and ethnic concordance, past year routine visit, and distrust in provider. About 37% of all respondents reported that provider racial and ethnic concordance was somewhat or very important, and 42.8% reported no routine provider visit in the past year. Fifty-five percent of the total sample had high distrust in providers. The sample is predominantly non-Hispanic White males between the ages of 18 and 34.

A significantly larger proportion of respondents who did not have a routine provider visit in the past year believed provider concordance was somewhat or very important (57.4%, $p = .004$). A significantly larger proportion of respondents who believed concordance is somewhat/very important had high levels of distrust in providers (87%, $p < .001$). A greater percentage of respondents who believed concordance is somewhat/very important did not have a routine provider visit in the past year (49.3%, $p = .004$). A greater percentage of respondents that reported high distrust in providers

Table 1. Sample Characteristics by Provider Concordance Importance, Routine Physician Visit in Past Year, and Provider Distrust.

		Importance of provider race/ethnicity concordance			Routine physician visit in past year			Distrust in provider scale		
	Total ($n=166$)	Not/a little/neutral ($n=105$)	Somewhat/very ($n=61$)	p	Yes ($n=95$)	No ($n=71$)	p	Low ($n=75$)	High ($n=91$)	p
Importance of provider race/ethnicity concordance				–			.004			<.001
Not/a little/neutral	63.3%	–	–		72.6%	50.7%		89.3%	41.8%	
Somewhat/very	36.7%	–	–		27.4%	49.3%		10.7%	58.2%	
Routine physician visit in past year				.004			–			<.001
Yes	57.2%	65.7%	42.6%		–	–		72.0%	45.1%	
No	42.8%	34.3%	57.4%		–	–		28.0%	54.9%	
Distrust in provider scale				<.001			<.001			–
Low	45.2%	63.8%	13.1%		56.8%	29.6%		–	–	
High	54.8%	36.2%	86.9%		43.2%	70.4%		–	–	
Age group*	2.75 (±1.17)	2.86 (±1.20)	2.56 (±1.09)	.111	3.02 (±1.22)	2.38 (±0.99)	<.001	2.91 (±1.22)	2.62 (±1.11)	.110
Sex				.005			<.001			.006
Male	53.0%	44.8%	67.2%		41.1%	69.0%		41.3%	62.6%	
Female	47.0%	55.2%	32.8%		58.9%	31.0%		58.7%	37.4%	
Race and ethnicity				<.001			<.001			<.001
Non-Hispanic White	65.1%	81.9%	36.1%		77.9%	47.9%		82.7%	50.5%	
Non-Hispanic, non-White	12.0%	11.4%	13.1%		10.5%	14.1%		9.3%	14.3%	
Hispanic	22.9%	6.7%	50.8%		11.6%	38.0%		8.0%	35.2%	
Income quartiles*	2.30 (±1.08)	2.27 (±1.16)	2.34 (±0.93)	.638	2.46 (±1.11)	2.07 (±1.01)	.018	2.37 (±1.16)	2.23 (±1.01)	.405
Residential rurality				.082			.235			.014
Nonmetro, adjacent	48.2%	53.3%	39.3%		44.2%	53.5%		58.7%	39.6%	
Nonmetro, nonadjacent	51.8%	46.7%	60.7%		55.8%	46.5%		41.3%	60.4%	
Insurance status				.197			<.001			.608
Has insurance	85.5%	82.9%	90.2%		93.7%	74.6%		84.0%	86.8%	
No insurance	14.5%	17.1%	9.8%		6.3%	25.4%		16.0%	13.2%	
Enough choices for primary care physicians				.019			.029			.935
Yes	65.7%	59.0%	77.0%		72.6%	56.3%		65.3%	65.9%	
No	34.3%	41.0%	23.0%		27.4%	43.7%		34.7%	34.1%	
Enough choices about where to get care				.318			.029			.682
Yes	65.7%	62.9%	70.5%		72.6%	56.3%		64.0%	67.0%	
No	34.3%	37.1%	29.5%		27.4%	43.7%		36.0%	33.0%	
Understand information that providers tell you				.505			.032			.146
Easy	88.0%	86.7%	90.2%		92.6%	81.7%		92.0%	84.6%	
Difficult	12.0%	13.3%	9.8%		7.4%	18.3%		8.0%	15.4%	
Understand written health information				.037			<.001			.822
Easy	81.9%	86.7%	73.8%		90.5%	70.4%		82.7%	81.3%	
Difficult	18.1%	13.3%	26.2%		9.5%	29.6%		17.3%	18.7%	

* Compared with independent sample t-tests (all else compared with chi^2 tests).

reported not having a routine visit (70.4%, $p < .001$). A greater proportion of respondents that had high distrust in providers also reported concordance is somewhat/very important (58.2%, $p < .001$). A greater proportion of respondents with high distrust reported not having a routine provider visit in the past year (54.9%, $p < .001$).

Regression

Table 2 reports findings from the regression model explaining variables associated with perceived importance of provider racial and ethnic concordance. In the reduced model (Nagelkerke $R^2 = 0.491$), being Hispanic (OR = 10.87, CI [3.90-30.27]) and having high distrust in providers (OR = 9.18, CI [3.56-23.72]) was associated with perceived importance of racial and ethnic concordance with one's provider.

Table 3 reports findings from the regression model explaining variables associated with not having a routine provider visit in the past year. In the reduced model (Nagelkerke $R^2 = 0.446$), high distrust in providers was associated with higher odds of not having a routine visit (OR = 3.35, CI [1.42-7.92]). Being Hispanic, compared to non-Hispanic White, was associated with 9 times greater odds of not having a routine provider visit (OR = 9.22, CI [3.13-27.17]). Compared to rural residents living in a nonmetro adjacent area, living in a nonmetro, nonadjacent area was associated with lower odds of not having a routine provider visit in the past year (OR = 0.30, CI [0.13-0.73]). Finally, finding it difficult to understand written health information was associated with higher odds of not having a routine visit (OR = 3.32, CI [1.21-9.10]).

Discussion

Our study identified the patient characteristics associated with perceived importance of racial and ethnic concordance among rural patients as well as the characteristics associated with not having a routine provider visit on an annual basis. While distrust in providers was associated with perceived importance of racial and ethnic concordance with healthcare providers, perceived importance of concordance was not significantly associated with routine provider visits. We found that rural persons identifying as Hispanic, and with high levels of distrust in providers are most likely to perceive that patient-provider racial and ethnic concordance is somewhat or very important. However, we find that perceived importance of racial and ethnic concordance is not associated with a lack of a routine visit. Distrust in providers and logistical aspects of accessing healthcare such as a lack of insurance, not enough choices for primary care, and difficulty understanding written health information are driving the health behavior.

While previous research has identified that logistical barriers such as lack of insurance and limited healthcare options influence healthcare utilization, our study uniquely combines these factors with patients' distrust in providers and the perceived importance of racial and ethnic concordance to examine their collective impact on routine healthcare visits among rural populations. This multifactorial approach provides a deeper understanding of how these variables interact in rural contexts, where geographic isolation and systemic inequities further complicate access to care. Notably, our findings challenge the assumption that perceived racial and ethnic concordance would significantly influence routine physician visits, highlighting instead the outsized role of distrust in shaping healthcare-seeking behaviors. This distinction is critical in rural settings, where limited provider options can magnify the consequences of distrust. By focusing on this interplay of factors, our study offers a nuanced perspective that goes beyond what is already known, shedding light on the unique barriers faced by rural populations and informing targeted interventions to improve healthcare access and trust in these communities.

The findings regarding Hispanic individuals were particularly noteworthy. Respondents who are Hispanic were significantly more likely to perceive racial and/or ethnic concordance with their healthcare provider as important (OR = 10.87, $p < .001$). This aligns with previous research suggesting that racial/ethnic minorities often place higher value on concordance in healthcare settings.[28] However, respondents who are Hispanic also faced substantial barriers to accessing routine care. They had 9 times greater odds of not having a routine provider visit in the past year compared to non-Hispanic whites (OR = 9.22, $p < .001$). This disparity in access to routine care is consistent with broader trends in healthcare utilization among Hispanic populations in the United States.[29] For example, rural patients who are Hispanic face access-related barriers such as a lack of health insurance and limited access to healthcare facilities.[30] Moreover, rural patients who are Hispanic seek out linguistically and culturally appropriate care to reduce barriers, but choices are limited due to a shortage of healthcare providers who are Hispanic practicing in rural areas and may impact access to routine care.[31-33] The combination of valuing concordance highly while simultaneously facing significant barriers to care suggests a complex interplay between cultural preferences and structural obstacles in healthcare access for rural Hispanic individuals. These findings underscore the need for targeted interventions to improve healthcare access for rural Hispanic populations, potentially including efforts to increase the diversity of the rural healthcare workforce.[34] These difficulties might lead to higher levels of distrust in providers.

The role of distrust in healthcare utilization emerged as a critical factor in our study. Respondents with high levels of distrust in providers were significantly more likely to perceive racial and/or ethnic concordance as important (OR = 9.19, $p < .001$) and had higher odds of not having a routine provider visit in the past year (OR = 3.35, $p = .006$). These findings suggest that distrust may be a key mediator in the relationship between perceived importance of concordance and healthcare utilization behaviors. Our results diverge

Table 2. Factors Associated With Perceived Importance That Provider Is the Same Race and/or Ethnicity.

	Full model			Reduced model (ninth iteration)		
		95% CI			95% CI	
	OR	Lower	Upper	OR	Lower	Upper
Age group	0.96	0.64	1.46	–	–	–
Male	REF	REF	REF	–	–	–
Female	1.99	0.69	5.77	–	–	–
Non-Hispanic White	REF	REF	REF	REF	REF	REF
Non-Hispanic, non-White	2.76	0.77	9.91	1.85	0.60	5.74
Hispanic	13.65	3.94	47.21	10.87	3.90	30.27
Income quartiles	1.34	0.87	2.07	–	–	–
Nonmetro, adjacent	REF	REF	REF	–	–	–
Nonmetro, nonadjacent	0.69	0.28	1.73	–	–	–
Has insurance	REF	REF	REF	–	–	–
No insurance	0.97	0.24	3.95	–	–	–
Enough choices for primary care physicians: Yes	REF	REF	REF	–	–	–
Enough choices for primary care physicians: No	0.53	0.17	1.71	–	–	–
Enough choices about where to get care: Yes	REF	REF	REF	–	–	–
Enough choices about where to get care: No	1.39	0.46	4.18	–	–	–
Understand information that providers tell you: Easy	REF	REF	REF	–	–	–
Understand information that providers tell you: Difficult	0.28	0.07	1.21	–	–	–
Understand written health information: Easy	REF	REF	REF	REF	REF	REF
Understand written health information: Difficult	3.93	1.14	13.59	2.50	0.89	7.05
Distrust in provider scale: Low	REF	REF	REF	REF	REF	REF
Distrust in provider scale: High	15.30	5.03	46.59	9.18	3.56	23.72
*REF = reference category	Nagelkerke $R^2 = 0.533$			Nagelkerke $R^2 = 0.491$		

from previous research that found no significant association between racial concordance and trust.[5] This discrepancy may be due to the unique characteristics of our rural sample, or the specific measure of distrust used in our study. The strong association between distrust and lack of routine care underscores the importance of building trust in patient–provider relationships, particularly in rural settings where healthcare options may be limited. Strategies to address distrust could include improving cultural competency among providers, enhancing communication skills, and implementing community-based interventions to build trust in local healthcare systems.[35] Future research should explore the patient, provider, and patient–provider interaction characteristics contributing to distrust among rural populations and evaluate interventions aimed at fostering trust in healthcare providers and systems.

We found that difficulty understanding health-related information also contributes to a lack of access to routine care. This finding is consistent with previous research reporting that compared to people with higher health literacy, those with lower health literacy had lower odds of receiving annual physical examinations.[36] Implementing interventions among rural residents to enhance their health literacy skills and provide training among health care providers to improve patient–provider communication are effective strategies to reduce distrust and promote preventive care use in rural areas.[37-39]

Unsurprisingly, older age groups were more likely to have a routine provider visit in the past year. Rural respondents living in areas not adjacent to metro were more likely to have a routine provider visit in the past year. This may be because rural residents in nonadjacent to a metropolitan area rely more heavily on primary care whereas rural residents in adjacent to a metropolitan area might have greater access to specialty care or urgent/convenient cares and can more easily forego the use of primary care for their healthcare needs.

Our findings provide critical insights into the multifaceted dynamics of patient–provider relationships and healthcare utilization in rural settings. Building on the existing literature, this study underscores the interplay between cultural factors, trust, and healthcare behaviors. For example, the pronounced association between distrust and the perceived importance of racial and ethnic concordance suggests an opportunity for healthcare systems to strengthen patient–provider relationships through culturally tailored interventions. Moreover, the significant barriers faced by Hispanic patients highlight the need for targeted outreach strategies that address both structural inequities and cultural preferences. Future research should explore the potential of community-based participatory approaches to engage rural populations in designing interventions that reflect their unique needs and preferences. Additionally, implementing policies to diversify the rural healthcare workforce and integrate culturally sensitive care practices could have a

Table 3. Factors Associated With Not Having a Routine Physician Visit in Past Year.

	Full model			Reduced model (sixth iteration)		
		95% CI			95% CI	
	OR	Lower	Upper	OR	Lower	Upper
Age group	0.71	0.49	1.02	0.68	0.47	0.97
Male	REF	REF	REF	–	–	–
Female	0.67	0.28	1.63	–	–	–
Non-Hispanic White	REF	REF	REF	REF	REF	REF
Non-Hispanic, Non-White	1.17	0.36	3.82	1.18	0.38	3.72
Hispanic	7.97	2.36	26.86	9.22	3.13	27.17
Income quartiles	0.82	0.56	1.21	–	–	–
Nonmetro, adjacent	REF	REF	REF	REF	REF	REF
Nonmetro, nonadjacent	0.27	0.11	0.69	0.30	0.13	0.73
Has insurance	REF	REF	REF	REF	REF	REF
No insurance	6.44	1.73	23.97	7.69	2.10	28.12
Enough choices for primary care physicians: Yes	REF	REF	REF	REF	REF	REF
Enough choices for primary care physicians: No	1.97	0.69	5.62	2.89	1.18	7.11
Enough choices about where to get care: Yes	REF	REF	REF	–	–	–
Enough choices about where to get care: No	1.74	0.65	4.68	–	–	–
Understand information that providers tell you: Easy	REF	REF	REF	–	–	–
Understand information that providers tell you: Difficult	1.45	0.43	4.91	–	–	–
Understand written health information: Easy	REF	REF	REF	REF	REF	REF
Understand written health information: Difficult	2.43	0.82	7.18	3.32	1.21	9.10
Distrust in provider scale: Low	REF	REF	REF	REF	REF	REF
Distrust in provider scale: High	3.03	1.17	7.84	3.35	1.42	7.92
Importance of provider race/ethnicity concordance: Not/a little/neutral	REF	REF	REF	–	–	–
Importance of provider race/ethnicity concordance: Somewhat/Very	1.17	0.45	3.06	–	–	–
*REF = reference category	Nagelkerke $R^2 = 0.464$			Nagelkerke $R^2 = 0.446$		

profound impact on reducing disparities and improving healthcare access and outcomes. By addressing the root causes of distrust and prioritizing equity in care delivery, healthcare systems can take meaningful steps toward fostering trust and promoting preventive healthcare utilization among underserved populations.

Limitations

This study has several limitations that should be considered when interpreting the results. First, the use of a crowdsourcing platform for data collection yielded a nonprobabilistic convenience sample, which, while efficient, may have introduced selection bias. Respondents may not be fully representative of the broader rural population, potentially limiting the generalizability of our findings.[40] Second, the cross-sectional nature of our data precludes causal inferences about the relationships observed between variables. Longitudinal studies are needed to establish causal links between distrust, perceived importance of concordance, and healthcare utilization behaviors. Moreover, the data were collected in 2020 at the start of the COVID-19 pandemic in the United States and may be less generalizable to the present day. Third, our measure of distrust, while reliable (Cronbach's alpha = .802), may not capture all dimensions of patient–provider trust relevant to rural populations. Future studies could benefit from more comprehensive or context-specific measures of trust. Fourth, our sample size ($N = 166$) was relatively small, which may have limited our statistical power to detect smaller effect sizes and introduced uncertainty about the true population parameter being estimated (e.g., note the large odds ratios and wider confidence interval ranges for some variables). Fourth, while we controlled for several sociodemographic variables, there may be other unmeasured confounders influencing our results, such as specific cultural beliefs or local healthcare system characteristics. Finally, in addition to the close-ended survey items related to trust, qualitative data may enhance our understanding of patients' trust in providers. Recognizing this, we recommend that future research consider employing mixed-methods approaches, integrating both qualitative and quantitative data, to capture a more comprehensive perspective on the complex dynamics of patient–provider trust. Despite these limitations, our study provides valuable insights into the patient characteristics and perceptions influencing healthcare utilization among rural populations and highlights areas for future research and intervention.

Conclusions

This study highlights the complex interplay between racial and ethnic concordance, distrust in providers, and healthcare utilization among rural populations, emphasizing the need for multifaceted approaches to improve healthcare access and outcomes. Because perceived importance of patient–provider racial and ethnic concordance is not associated with having an annual routine visit, future studies should determine whether perceived importance of concordance mediates the relationship between distrust in providers and an annual routine visit. While increasing provider diversity remains an important long-term goal, our findings suggest that more immediate gains in healthcare utilization might be achieved by focusing on building trust between patients and providers, particularly among Hispanic individuals and other minority populations in rural areas. Future interventions should aim to address the barriers to accessing healthcare in rural communities such as a lack of insurance, language, income inequality, and racism, as well as the interpersonal factors that influence patient–provider relationships, with a particular emphasis on culturally competent care and trust-building strategies.

Author Contributions

BLJ and SEO conceptualized and developed the data collection tools, survey methodology, and collected the data; BLJ, MLS, and AGMIII conceptualized the paper; MLS developed the methodology and carried out the analysis; BLJ wrote the original draft of the manuscript; BLJ, AGMIII, TP, XC, SEO, and MLS contributed to writing and editing the final manuscript.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Ethical Statement

Electronic informed consent was obtained from the survey respondents for their anonymized information to be used for this study. This study was approved by the Penn State IRB (No. STUDY00013707) on January 6, 2020, for data collection and analysis and the Geisinger IRB (No. 2022-0785) on October 12, 2022, for continued analysis of data.

ORCID iDs

Bobbie L Johannes https://orcid.org/0000-0002-1649-7141
Tyler Prochnow https://orcid.org/0000-0001-7886-4456
Xuewei Chen https://orcid.org/0000-0001-6391-1459
Matthew Lee Smith https://orcid.org/0000-0002-8232-9285

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