

Published in final edited form as:

J Rural Health. 2014 April ; 30(2): 214–220. doi:10.1111/jrh.12046.

Trust in Physicians Among Rural Medicaid-Enrolled Smokers

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Abstract

PURPOSE—Associations have been found between trusting patient-physician relationships and use of preventive care and a greater adherence to prescribed care. The objectives of this study were to assess the level of trust rural Medicaid smokers have in their physicians and whether trust was related to patient characteristics or physician behavior.

METHODS—This was a cross-sectional study of smokers who were enrolled in a tobacco dependence treatment program. Participants were rural Medicaid-enrolled adults, age 18 and older, who were current smokers. Participants were enrolled from 8 primary care clinics as they came in for an appointment with their physician. The Trust in Physician Scale was completed at the baseline visit. One week later, an interview was conducted with the smoker to determine whether the physician provided tobacco dependence treatment counseling at the visit. Mixed models were used to model the relationship between trust and participant characteristics and physician behaviors.

FINDINGS—Medicaid smokers in this study exhibited a high level of trust in their health care provider, as levels were similar to those reported in the general population of patients. Trust was significantly higher among individuals with better self-reported health.

CONCLUSIONS—Rural Medicaid smokers appeared to have similar levels of trust in their physician as other patients. Future research should explore the role trust plays in shaping

interactions between underserved populations and physicians within the context of smoking cessation counseling.

Keywords

epidemiology; Medicaid; observational data; rural; tobacco dependence treatment

Americans have traditionally placed a high level of trust in their physicians.^{1,2} Throughout the 1800s and into the 20th century, the field of medicine made great improvements in the diagnosis and treatment of disease, which allowed physicians to acquire a great degree of social capital. At the heart of this positive public image was trust.³ Researchers have found that trust plays a crucial role in the patient-provider relationship. Trusting relationships promote communication of relevant information between providers and patients.⁴ Higher degrees of trust have been shown to predict which patients seek out preventive care, such as cancer screenings.⁵ Trust further contributes significantly to the likelihood of an early diagnosis and to a greater adherence to prescribed care, all of which contribute to significantly lower rates of heart disease, obesity, cancer, and premature mortality.^{2,6-11}

Later studies have indicated that trust in physicians has diminished over time, starting during the 1970s.^{2,12} However, the decline in trust has not occurred equally throughout American society. Specifically, older patients tend to be more trusting of their physicians while young patients are significantly less trusting.⁹ In one study, patients who lacked insurance or who were covered under a managed care plan were found to have particularly low levels of trust in physicians.⁸ Gender, race, age, socioeconomic status, and self-reported health status have all been found to be significantly associated with trust in physicians. These associations, however, are not consistent in all studies.^{9,12-15} One factor that has been consistently related to trust, though, is the ability of a physician to demonstrate good interpersonal skills.^{2,10,16-18} In summary, trust is contingent upon a variety of factors. While certain demographic characteristics are associated with trust, the literature suggests that a physician may have the power to create an environment in which a trusting relationship can develop.

Culture may also influence the level of trust that a patient feels for a physician. The Appalachian region of the United States, in particular, has been identified as a region having its own unique framework regarding health.^{5,19} Appalachians have been described as viewing health and illness fatalistically and therefore are slow to utilize care and accept preventive measures.^{5,20} Furthermore, Appalachians are community-oriented and can be skeptical of outsiders, particularly outside medical professionals.²¹

Appalachia as a region suffers from a shortage of medical services and residents interact less with medical personnel than do other populations.^{19,22,23} Other studies have shown that the region experiences elevated rates of cancer, heart disease, and premature mortality.^{5,23} Appalachians smoke more, eat less healthy diets, exercise less, and engage in riskier sexual activity than other populations.²⁴ Because of the socioeconomic disadvantage that characterizes many Appalachian communities, Medicaid is a source of insurance for a large number of residents. Medicaid patients may be even more vulnerable within the larger Appalachian region because this population is less likely to engage in preventive care.^{23,25}

Trust could be an important component in understanding health disparities in underserved populations given the associations that have been found between trusting patient-physician relationships and use of preventive care and a greater adherence to prescribed care. While some studies have examined trust among disadvantaged populations, the question has been largely unexplored among Medicaid patients. Trust could also play an important role in how a smoker reacts to brief smoking cessation counseling delivered by a physician. The Clinical Practice Guideline *Treating Tobacco Use and Dependence* recommends that physicians advise all smokers to quit and assist with a quit attempt in various ways.²⁶ An unknown is how trust interacts with the provision of brief counseling. The objective of this study was to measure the level of trust Medicaid-enrolled smokers in the Appalachian region of Ohio have for their physicians. A second objective was to determine how the smoker's level of trust relates to participant-level characteristics and the delivery of brief smoking cessation counseling by the physician.

METHODS

Setting

The setting for this study was the Appalachian region of Ohio, a 32-county area characterized by significantly (from a statistical perspective) higher poverty rates (25% versus 23% in other regions of Ohio), lower education levels (16% without a high school degree versus 12% in other regions of Ohio), higher uninsured rates (16% versus 14% in other regions of Ohio), higher Medicaid coverage rates (15% versus 12% in other regions of Ohio), and high smoking rates (33% versus 24% in other regions of Ohio).²⁷ Participants were recruited from clinics in 4 counties, and these counties ranged from 44.5% to 77.4% rural as defined by the US Census Bureau.²⁸

Participants

The participants in this study were enrolled in a larger study that examined the effect of a tobacco dependence treatment program on quit attempts and use of smoking cessation pharmacotherapy. Eight primary care clinics, located in 4 of the most southeastern counties in Ohio, were involved in the study. The clinics were part of 2 large health care systems in the Appalachian region of Ohio: one was a private system and the other was a university medical system. From each clinic, one physician was enrolled in the intervention. From each physician's practice, the goal was to recruit 30 Medicaid-enrolled smokers. Eligible participants were adults age 18 years or older, daily smokers, enrolled in Medicaid at the time of the appointment, and willing and able to provide consent. Neither motivation to quit smoking nor the reason for the health care visit was a criterion for enrollment, as the goal was to recruit a representative sample of Medicaid-enrolled smokers who visit their health care providers.

Procedures

All of the procedures were approved by our university's institutional review board. Recruitment occurred between November 2010 and August 2011. Participants were recruited by a research interviewer who was not a clinic staff member. On the day the interviewer was at the clinic, all eligible participants were approached in the waiting room

and given a description of the study. If a person was interested in participating in the study, the interviewer reviewed the consent document and answered any additional questions about the study before the consent form was signed. Following recruitment and completion of the consent document, participants were asked to complete a baseline questionnaire that contained a variety of demographic, health-related and tobacco-related items, and the Trust in Physician Scale (see next section). The baseline questionnaire was completed in the waiting room, before the participant saw the physician in the exam room. One week after the visit, participants were called by a research nurse not associated with the clinic and asked questions about the visit with the physician during the previous week. The research nurse made up to 10 attempts to reach participants on the phone number they provided at baseline. If necessary, secondary contacts were called as well in an attempt to reach participants.

Measures

The measures used for this study came from the baseline and one-week surveys. The primary variable of interest was the Trust in Physician Scale score assessed during the baseline survey.^{29,30} This 11-item questionnaire was designed to measure a patient's level of interpersonal trust with his or her physician. A high level of interpersonal trust implies that the patient believes the physician will provide support while at the same time providing “good” care that is in the best interest of the patient.²⁹ The items on the Scale tap various aspects of trust, including whether the physician is truthful, caring, thorough, and trustworthy (ie, keeps information confidential). Table 1 lists the statements included on the Scale. Each statement is rated on a 5-point scale that ranges from “totally agree” to “totally disagree” with a neutral response option. Seven of the items are positively worded (“totally agree” implies more trust) and 4 are negatively worded (“totally disagree” implies more trust). The 4 negatively worded items were reverse scored and then all items were summed and converted to a 0-100 scale for the analysis. In previous studies that have used the scale in samples of primary care patients, scores have ranged between 75.3 and 91.6.^{13,29-31} The Trust in Physician Scale has been validated in samples of patients that have varied widely in terms of race, gender, health status, and smoking status. While the scale has never specifically been used in a Medicaid population, previous research suggests that it has good internal consistency (Cronbach alpha estimate range 0.85 to 0.89) and test-retest reliability (correlation coefficient = 0.77).²⁹⁻³¹

Other variables examined during the baseline survey included demographic, health, health care provider-related, and smoking-related variables. Baseline demographic variables included gender, age, education, income, marital status, and clinic. Health and health care provider-related variables included self-rating of health and a question asking whether the provider ever advised the patient to quit smoking. The smoking-related variables included years of smoking, quit attempts in past year, and nicotine dependence using the Fagerström test of nicotine dependence (FTND).³² At one week post-visit, participants were re-contacted and asked questions about their clinic visit with the physician. Items that were asked included whether the physician: 1) asked about tobacco use; 2) advised the participant to quit; and 3) assisted with the quit attempt by suggesting a quit date, the quit line, counseling, self-help materials, cessation pharmacotherapy, or prescribing pharmacotherapy.

Statistical Analysis

Only participants residing in a census tract that was majority rural, as defined by the Census, were included in the analysis. Participants residing in majority urban census tracts were excluded from the analysis. All of the statistical analyses were performed using SAS, version 9.2 (SAS Institute Inc., Cary, North Carolina). First, the psychometric properties of the Trust in Physicians Scale were examined. Cronbach's alpha was calculated to assess the internal consistency and reliability of the Scale.³³ In addition, for each item on the Scale, an item-to-total scale score (minus the item of interest) correlation coefficient was calculated. Second, descriptive statistics were calculated for the entire sample using means and standard deviations for continuous variables and frequency distributions for categorical variables. Third, the relationship between the Trust in Physician Scale score (0-100 scale) and the other demographic, health care provider-related (whether the physician ever advised the patient to quit), and smoking-related variables was assessed using linear mixed models. The score was regressed on the baseline variable (fixed effect) and the clinic (random effect), with the exception of the clinic comparisons, which were performed using a one-way analysis of variance (ANOVA). Finally, to determine whether the Scale score was associated with the provision of tobacco dependence treatment counseling by the physician at the baseline visit, logistic mixed models were used, regressing each physician behavior variable on the Trust in Physician Scale score (fixed effect) and a random clinic effect. By including the random clinic effect as a predictor in both the linear and logistic mixed models, we obtained covariate effects that were adjusted for the clinic effect.

RESULTS

A total of 229 Medicaid-enrolled smokers were approached and asked to participate, of which 214 agreed and enrolled in the study (93.4%). Of these participants, 197 (92.1%) completed the one-week survey. Of the 214 participants with baseline data, 5 did not answer all questions on the Trust in Physician Scale. After we excluded the participants residing in majority urban areas, there were 110 participants with data at baseline and 99 with data at the one-week follow-up.

The individual Trust in Physician Scale item statistics are presented in Table 1. As indicated in the table, the average item scores ranged from 3.7 to 4.3. The item-total scale correlation coefficients ranged from 0.26 ("I doubt that my doctor or health care provider really cares about me as a person") to a high of 0.77 ("My doctor or health care provider is well qualified to manage (diagnose and treat or make an appropriate referral) medical problems like mine."). The standardized Cronbach alpha value was 0.84, which did not vary much by deleting individual items (range of alpha values was 0.80 to 0.85).

Characteristics of the participating patients are shown in Table 2. The sample was largely female (66%) and the majority was age 40 or older (60%). With respect to education, 31% had less than a high school education and 24% had at least a college degree. Half of the participants reported fair or poor health. Over half (58%) reported smoking 20 years or more. While almost all of the participants had been told by a doctor to quit smoking in the past (96%), over half (52%) reported that they had not made a serious attempt to quit in the past year. With respect to nicotine dependence, 42% of the participants were classified as

having a “moderate” level of dependence on the FTND, while the remaining participants were classified as having a “heavy” level (21%) or a “light” level (37%).

The overall Trust in Physician Scale score, on the 0-100 scale, was 81.5. The results from the linear mixed models that were fit to examine whether there was an association between the Trust in Physician Scale score and other participant characteristics are presented in Table 2. As indicated in the table, only self-reported health status was significantly related to the level of trust in one's physician, with those in greater health feeling greater trust for their physician (mean score = 83.0) compared to those in fair or poor health (mean score = 79.9) ($P = .05$).

Table 3 contains information about how the smoking cessation counseling behaviors of the physician related to the Trust in Physician Scale score. As indicated in the table, about two-thirds of patients were asked about their smoking status (64%) and were advised to quit (69%) at the baseline visit. However, few patients were encouraged to set a quit date (21%), to use a cessation class, program, quit line, or counseling (30%), or provided cessation material such as pamphlets or videos (21%). Almost half of participants received a prescription for pharmacotherapy (45%). The Trust in Physician Scale score was not significantly related to any of these physician-related behavioral outcomes.

DISCUSSION

The purpose of this study was to examine the level of trust that rural Medicaid-enrolled smokers have in their primary care providers and whether trust varied with patient characteristics or physician behavior. An important finding is that, in general, these rural Medicaid-enrolled smokers had a high level of trust in their primary care providers. The mean level of trust in our sample was similar to that reported in other populations.^{30,31,34} This was a somewhat surprising finding, given that Appalachians tend to be generally less trusting of health care providers.^{19,21} These results suggest that perhaps a distrust of medicine at the institutional level does not necessarily mean an individual will be distrustful of his or her own doctor. This may be important as the field continues to consider what kinds of behaviors engender trust in physicians.

Previous research has supported the argument that low levels of trust are associated with a low use of services and little use of preventive care,^{7,35} including such care among rural patients.^{38,39} Future research should focus on examining trust in a sample that was not recruited from the physician's office so that there can be a more complete examination of how trust relates to use of health care services.

Similar to other investigations, we found no significant associations between trust and participant demographic factors.^{9,12,14,15} However, trust was related to self-reported health, with participants in excellent/very good/good health reporting higher levels of trust in their physicians. This finding is similar to that reported by Armstrong et al, who found in a population-based survey of US adults that distrust of the health care system was higher among individuals with fair or poor self-reported health.⁴⁰ Patients with worse health status

likely spend more time in the health care system; thus future studies should focus on determining the reason for such a relationship between health status and trust.

These results may have important implications for health care reform under the Affordable Care Act (ACA). The Medicaid population is already large in the Appalachian region of Ohio, as approximately 11% of adults are covered by Medicaid.²⁷ In 2014, Medicaid expansion allows states to expand eligibility to all, covering individuals with incomes up to 138% of the federal poverty level. This expansion will extend coverage to families near the poverty line and be the first major coverage expansion for childless adults.³⁷ Therefore, many additional adults will be eligible for Medicaid and thus primary care providers will see more Medicaid patients. It will be important to track whether the level of trust Medicaid patients feel for their physicians remains high as patient volume increases.

This study has limitations that provide an opportunity for important future research. This study was conducted within the context of a tobacco dependence treatment program. As such, this study of trust did not include a comparison group outside of the population of Medicaid smokers. Research assessing trust within both Medicaid and non-Medicaid populations in Appalachia may better describe levels of trust within the Appalachian region. Furthermore, research should be conducted solely aimed at assessing trust in rural Medicaid populations outside of Appalachia to determine whether trust among Medicaid enrollees varies by other environmental or cultural factors.

In conclusion, Medicaid-enrolled smokers in the rural Appalachian region of Ohio appear to have a high level of trust in their physicians. Medicaid providers should be encouraged to leverage this trust in an attempt to improve cessation-related outcomes in Medicaid patient populations.

Acknowledgments

Funding: This study was funded by the National Institutes of Health (NIH) grants R21 CA141603-01 (PI: Ferketich), “Examining the effect of a provider-delivered intervention among Medicaid smokers” and P50CA105632-06 (PI: Paskett), “Reducing Cervical Cancer in Appalachia.”

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Table 1

Descriptive Statistics for the Individual Trust in Physician Scale Items (n=110)

| Scale Item | Mean | SD | Item-Scale Correlation |
|---|------|-----|------------------------|
| 1. I doubt that my doctor or health care provider really cares about me as a person. ^a | 4.3 | 1.0 | 0.26 |
| 2. My doctor or health care provider is usually thoughtful of my needs and puts them first. | 4.1 | 0.9 | 0.47 |
| 3. I trust my doctor or health care provider so much that I always try to follow his or her advice. | 4.1 | 0.8 | 0.66 |
| 4. If my doctor or health care provider tells me something is so, then it must be true. | 3.7 | 0.9 | 0.49 |
| 5. I sometimes distrust my doctor's or health care provider's opinion and would like a second opinion. ^a | 3.9 | 1.0 | 0.39 |
| 6. I trust my doctor's or health care provider's judgments about my medical care. | 4.2 | 0.9 | 0.62 |
| 7. I feel my doctor or health care provider does not do everything he or she should about my medical care. ^a | 4.0 | 1.0 | 0.31 |
| 8. I trust my doctor or health care provider to put my medical needs above all other considerations when treating my medical problems. | 4.1 | 0.8 | 0.71 |
| 9. My doctor or health care provider is well qualified to manage (diagnose and treat or make an appropriate referral) medical problems like mine. | 4.2 | 0.8 | 0.77 |
| 10. I trust my doctor or health care provider to tell me if a mistake was made about my treatment. | 4.2 | 0.7 | 0.67 |
| 11. I sometimes worry that my doctor or health care provider may not keep the information we discuss totally private. ^a | 4.2 | 0.9 | 0.39 |

^a Items are reverse-scored.

Table 2

Mean Score of Trust in Physician Scale (transformed to 0-100) by Patient Subgroups in Rural Area (n=110)

| Baseline Variable | N (%) | Mean | SD | P Value ^a |
|---|-----------|------|-----|----------------------|
| Gender | | | | .86 |
| Women | 73 (66%) | 80.9 | 6.2 | |
| Men | 37 (34%) | 82.6 | 5.0 | |
| Age | | | | .20 |
| 39 | 44 (41%) | 79.5 | 5.1 | |
| 40-64 | 60 (56%) | 83.0 | 6.2 | |
| 65+ | 4 (4%) | 76.8 | 7.5 | |
| Education | | | | .42 |
| Elementary School | 34 (31%) | 83.5 | 5.6 | |
| High School Diploma/GED | 50 (46%) | 80.2 | 6.4 | |
| College degree or higher | 26 (24%) | 81.2 | 4.6 | |
| Income | | | | .52 |
| <\$15,000 | 80 (73%) | 81.7 | 6.0 | |
| \$15,000 or higher | 29 (27%) | 80.3 | 5.1 | |
| Marital Status | | | | .83 |
| Single | 38 (35%) | 80.7 | 4.3 | |
| Married | 38 (35%) | 82.3 | 6.0 | |
| Separated/Divorced/Widowed | 34 (31%) | 81.3 | 7.0 | |
| Self-Reported Health Status | | | | .05 |
| Excellent/very good/good | 55 (50%) | 83.0 | 5.4 | |
| Fair/Poor | 55 (50%) | 79.9 | 6.2 | |
| Number of Years Smoking | | | | .34 |
| 1 to 10 | 21 (19%) | 78.2 | 5.5 | |
| 11 to 20 | 25 (23%) | 82.2 | 4.7 | |
| 20 or more | 64 (58%) | 82.2 | 6.3 | |
| Has a Doctor Told You to Quit | | | | .14 |
| Yes | 105 (96%) | 81.8 | 5.6 | |
| No | 5 (5%) | 74.5 | 8.5 | |
| Quit Attempts in Last Year | | | | .33 |
| 0 | 51 (52%) | 81.1 | 5.2 | |
| 1 to 2 | 34 (35%) | 82.0 | 5.4 | |
| 3 or more | 13 (13%) | 85.7 | 7.6 | |
| Fagerström Test for Nicotine Dependence | | | | .26 |
| Light | 40 (37%) | 82.9 | 5.1 | |
| Moderate | 46 (42%) | 80.4 | 6.3 | |
| Heavy | 23 (21%) | 81.7 | 6.2 | |
| Clinic | | | | .21 |
| 1 | 24 (14%) | 84.5 | 6.5 | |
| 2 | 17 (13%) | 84.3 | 6.4 | |

| Baseline Variable | N (%) | Mean | SD | <i>P</i> Value ^a |
|-------------------|----------|------|-----|-----------------------------|
| 3 | 10 (14%) | 84.0 | 5.8 | |
| 4 | 14 (12%) | 79.4 | 4.2 | |
| 5 | 4 (14%) | 84.1 | 4.3 | |
| 6 | 11 (8%) | 76.2 | 5.6 | |
| 7 | 17 (11%) | 80.7 | 5.3 | |
| 8 | 13 (14%) | 77.1 | 5.5 | |

^aObtained using linear mixed model for transformed trust in physician score regressed on baseline variable (fixed effect) and clinic random effect. *P* value from comparing clinics obtained from one-way ANOVA.

Table 3

Mean Trust in Physician Score (transformed to 0-100 scale) by Physician Behaviors in Rural Area (n=99)

| One Week Variable | Percent | Mean Scale score \pm SD | <i>P</i> value ^a |
|--|---------|---------------------------|-----------------------------|
| Doctor Asked about Smoking Status | | | |
| Yes | 64% | 82.0 \pm 5.5 | .37 |
| No/Don't know | 36% | 80.1 \pm 6.1 | |
| Doctor Advised to Quit | | | |
| Yes | 69% | 81.0 \pm 5.8 | .72 |
| No/Don't know | 31% | 82.2 \pm 5.6 | |
| Doctor Helped to Set a Quit Date | | | |
| Yes | 21% | 81.5 \pm 6.1 | .99 |
| No/Don't know | 79% | 81.3 \pm 5.6 | |
| Doctor Suggested Using Cessation Class, Quit Line, or Counseling | | | |
| Yes | 30% | 80.8 \pm 5.6 | .73 |
| No/Don't know | 70% | 81.6 \pm 5.8 | |
| Doctor Provided Cessation Material | | | |
| Yes | 21% | 84.2 \pm 4.7 | .16 |
| No/Don't know | 79% | 80.6 \pm 5.9 | |
| Doctor Prescribed Medication ^a | | | |
| Yes | 45% | 83.6 \pm 5.2 | .08 |
| No/Don't know | 55% | 79.4 \pm 5.9 | |

^a Obtained using mixed effects logistic regression analysis for transformed trust in physician score regressed on baseline variable (fixed effect) and clinic random effect.