

## ***Medical Mistrust, Perceived Discrimination, and Satisfaction With Health Care Among Young-Adult Rural Latinos***

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**Medical Mistrust, Perceived Discrimination, and Satisfaction With Health Care Among Young-Adult Rural Latinos. *The Journal of Rural Health*, 30(4), 344–351.**  
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**Running Head:** Satisfaction With Care Among Rural Latinos

**Key words:** Medical mistrust, perceived discrimination, satisfaction with health care, rural Latinos

## **Medical Mistrust, Perceived Discrimination, and Satisfaction With Health Care Among Young-Adult Rural Latinos**

### **Abstract**

**Purpose:** Little research has analyzed mistrust and discrimination influencing receipt of health care services among Latinos, particularly those living in rural areas. The present study examined the associations between medical mistrust, perceived discrimination, and satisfaction with health care among young-adult rural Latinos.

**Research Design:** This cross-sectional study analyzed data from 387 young-adult Latinos (ages 18-25) living in rural Oregon. The Behavioral Model of Vulnerable Populations was utilized as the theoretical framework. Correlations were run to assess bivariate associations among variables included in the study. Ordered logistic regression models evaluated the associations between medical mistrust, perceived discrimination, and satisfaction with health care.

**Results:** On average, participants used health services 4 times in the past year. Almost half of participants had health insurance (46%). The majority reported that they were moderately (32%) or very satisfied (41%) with health care services used in the previous year. In multivariable models, medical mistrust and perceived discrimination were significantly associated with satisfaction with health care.

**Conclusions:** Medical mistrust and perceived discrimination were significant contributors to lower satisfaction with health care among young-adult Latinos living in rural Oregon. Health care reform implementation, currently under way, provides a unique opportunity for developing evaluation systems and interventions towards monitoring and reducing rural Latino health care disparities.

**Key words:** Medical mistrust, perceived discrimination, satisfaction with health care, rural Latinos.

Latinos are the largest racial/ethnic minority in the United States. The estimated 52 million Latinos accounted for 17% of the total US population in 2011.<sup>1</sup> Several states have experienced dramatic growth in their Latino populations.<sup>2</sup> Between 2000 and 2011, the Latino population grew by 71% in Oregon, 101% in Washington, and 81% in Idaho.<sup>1</sup> Latinos are also the youngest of any racial/ethnic group, with a median age of 27 (compared with 42 for whites, and 33 for African Americans).<sup>1</sup> The Pew Hispanic Center estimates that about 500,000 Latinos turn 18 every year. Another interesting trend is that, over the past 2 decades, Latinos have increasingly moved away from “traditional” immigrant urban centers (e.g., Los Angeles, Chicago, New York, Miami) and into “non-traditional” rural areas across the country.<sup>3,4</sup> Historically, Latino immigrant enclaves have served an important function in meeting newcomers’ needs, including help in finding and using health care.<sup>5,6</sup> The complexities of the US health care system make obtaining health care and services challenging for many, particularly for racial/ethnic and immigrant populations.<sup>7,8</sup> Previous research has documented disparities in health care access in the US between Latinos and non-Hispanic whites, between poor and higher income people, and between residents of rural and metropolitan areas.<sup>9</sup> Latinos in rural areas, therefore, represent a particularly vulnerable population. Identifying the barriers to access and satisfaction with health care among Latinos living in rural areas is essential to addressing disparities in health care.

Racial/ethnic disparities in health care occur in the context of broader historic and contemporary social and economic inequalities, including persistent racial and ethnic discrimination. The Institute of Medicine (IOM) report *Unequal Treatment* found that stereotyping, discrimination, mistrust, and biases of health care providers towards minority patients contributed to unequal treatment and health outcomes.<sup>10</sup> Further research has shown that racial/ethnic discrimination contributes to health disparities through, among other pathways, inadequate or degrading health care.<sup>11-13</sup> Among Latinos, a limited body of research shows that racial/ethnic discrimination influences receipt of quality health care.<sup>14-16</sup> In these studies, primarily urban and older Latino populations were surveyed. Recent studies have noted a

paucity of research on the effects of discriminatory practices and mistrust of providers and the overall health care system among Latinos.<sup>11,14,17-20</sup> To date, no studies assessing medical mistrust or perceived discrimination have focused on Latinos living in rural areas or young-adult Latinos. Young Latinos' exposure to instances of ethnic discrimination or mistreatment is rooted in childhood and adolescent experiences while living in the US.<sup>21</sup> Differences from the majority culture, language, and immigration status, among other factors, can make navigating educational, medical, legal, and social service systems more challenging and may expose young Latinos to discrimination and mistreatment.<sup>22</sup> In turn, discrimination among young Latinos can lead to higher rates of depression and substance use.<sup>23,24</sup> Using the Behavioral Model of Vulnerable Populations as the theoretical framework, the purpose of the present study was to examine the associations between medical mistrust, perceived discrimination, and satisfaction with health care among young-adult rural Latinos.

## **Methods**

### **Study Design and Participants**

This is a cross-sectional study among 387 young-adult Latino men and women living in rural Oregon. The study was part of a larger project, *Proyecto de Salud Para Latinos*, which examined the social and cultural factors related to contraceptive use, sexual risk behavior, and STI prevention behavior among young-adult Latinos, primarily of Mexican heritage.<sup>25</sup>

Participants were recruited in rural areas of 4 Oregon counties (Benton, Linn, Marion and Polk). Areas were identified as rural based on the Health Resources and Services Administration (HRSA)'s Office of Rural Health Policy guidelines for identifying rural census tracts within metropolitan-designated counties.<sup>26</sup> Recruitment locations included farms, health clinics, health fairs, and other community locations using both passive (e.g., posters and fliers) and active (e.g., recruiters approaching potential participants) strategies. A toll-free telephone number was

advertised on all print materials and provided participants with an opportunity to contact the study team directly to ask questions or enroll in the study. Recruiters briefly described the study to potential participants, explained that they would need to be screened for eligibility and asked if they were willing to be screened.

Inclusion criteria were being between the ages of 18 and 25, self-identification as Latino, and report sexual intercourse within the past 3 months. Exclusion criteria were being pregnant/having a pregnant partner, planning to become pregnant/get a partner pregnant in the next year, being unable to understand informed consent or other aspects of the project description, or lacking fluency in either English or Spanish. Of the 952 individuals screened, 615 met the eligibility criteria. Of these, 499 completed interviews. Additionally, the present study excluded participants who had never seen a health care provider when they were sick or needed a checkup. Therefore, the final study sample included 387 participants (216 women and 171 men).

## **Data Collection**

Participants were recruited and enrolled in the study over a 4-month period between July and November 2006. Bilingual, bicultural staff members conducted interviews using a computer-assisted survey interviewing (CASI) system. Participants and interviewers were matched according to gender. Recruiter/interviewers (RIs) participated in an initial 2-day training as well as 2 short follow-up trainings to reinforce skills. RIs also received ongoing training and supervision through weekly team meetings to discuss recruitment and interviewing strategies, quality assurance issues, and problem solving.

The instrument was available in English and Spanish. The Spanish version was prepared using forward-translation and back-translation by different translators.<sup>27</sup> Measures included validated scales from previous studies as well as items developed for *Proyecto de Salud Para*

*Latinos* based on formative work with the population of interest.<sup>28</sup> For constructs measured with multi-item scales, Cronbach's  $\alpha$  were computed to assess internal consistency. All interviews lasted for approximately 60 minutes. Participants were paid for their time and compensated for travel and child care costs. The institutional review board (IRB) at Oregon State University approved the research protocol. Each participant provided written informed consent before starting the interview.

## **Measures**

### Conceptual Framework

The present study used the Behavioral Model for Vulnerable Populations (BMVP)<sup>29</sup> as the theoretical framework to evaluate the associations between medical mistrust, perceived discrimination, and satisfaction with health care. The BMVP builds on the more widely known Andersen & Aday model of health care utilization behavior.<sup>30,31</sup> The original model posits that use of health care services is a function of people's predisposition to use services (*predisposing factors*: demographics, health beliefs, social structure), factors that enable or impede use (*enabling factors*: personal/family resources), and their need for health care services (*need factors*: perceived/evaluated health). Further revisions of the model included outcomes of use, such as health status and satisfaction with care. The BMVP is the latest iteration and recognizes domains that are particularly relevant to vulnerable populations across predisposing (e.g., acculturation), enabling (e.g., medical mistrust, perceived discrimination) and need factors (e.g., vulnerable population health conditions).

### *Satisfaction With Health Care*

Participants who reported that they had ever seen a health care provider when they were sick or needed a checkup were asked a one-item measure previously used with Latino populations<sup>14,32</sup>:

“In general, how satisfied or dissatisfied would you say you are with the services you have received from health care providers in the past year?” Response categories included: *not satisfied*, *slightly satisfied*, *moderately satisfied*, *very satisfied*, and *extremely satisfied*.

### *Medical Mistrust*

Medical mistrust was assessed using a modified version of the Group-Based Medical Mistrust Scale (GBMMS),<sup>33</sup> which has been used with diverse populations<sup>34</sup> including Latinos.<sup>14</sup> The GBMMS captures measures of suspicion, group disparities in health care, and lack of support from health care providers. Participants were asked to rate their agreement with 11 items on a 5-point response scale (1 = Do not agree at all, to 5 = Completely agree). Based on feedback by bilingual/bicultural staff during the process of translating the English interview to Spanish, researchers rewrote one *suspicion* item, from “Doctors and health care workers treat people of my ethnic group like ‘guinea pigs’” to “Doctors and health care workers have sometimes done harmful experiments on people of my ethnic group.” Also, the item “People of my ethnic group are treated the same as people of other groups by doctors and health care workers” was excluded, since it was considered too similar (in Spanish) with “People of my ethnic group receive the same medical care from doctors and health care workers as people of other groups.” A mean score for the entire scale was computed (values ranging from 1 to 5), with higher scores indicating greater levels of medical mistrust. The internal consistency of the modified GBMMS was relatively high (Cronbach’s  $\alpha = 0.80$ ).

### *Perceived Discrimination*

A modified version of the Experience of Discrimination (EOD) scale<sup>35</sup> was used to measure perceived discrimination. Participants were asked “Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior in any of the



following situations because of your race, ethnicity, or color?” There were 9 specific experiences (eg, at school, getting medical care, getting housing) adapted from the EOD scale. Response categories included: *never, rarely, sometimes, most of the time, always*. An index of the number of situations in which participants experienced discrimination was created (0 = never; 1 = rarely; to 9 = always), with values ranging from 0 to 9. In this study, the modified scale showed high internal consistency (Cronbach’s  $\alpha = 0.88$ ).

### *Other Covariates*

Following the BMVP, covariates were selected as predisposing factors and enabling factors (no *need* factors were included in the original questionnaire). *Predisposing factors* included: age, gender, marital/cohabitation status, whether the participant had completed 12 or more years of education, was employed, was currently attending school, and acculturation. Acculturation was measured using the Short Acculturation Scale for Latinos (SASH).<sup>36</sup> The SASH is a 12-item scale that assesses language use, media use and ethnic social relations. The language and media use items were rated on a 5-point scale ranging from 1 = Only Spanish to 5 = Only English. The Ethnic Social Relations items were rated on a 5-point scale ranging from 1 = All Latinos to 5 = All non-Latinos. A mean score on the entire scale was computed, with higher scores indicating greater acculturation. The internal consistency of the SASH was high in this study (Cronbach’s  $\alpha = 0.91$ ). *Enabling factors* included income (“What is your current total yearly income?”), having health insurance, and number of health care visits in the past year.

### **Statistical Analyses**

Summary statistics were calculated for all variables included in this study, both for the full sample and by gender. Significant differences by gender were tested using chi-square for discrete variables and *t*-test for continuous variables. Then, correlations were carried out to

examine bivariate associations between medical mistrust, perceived discrimination, and other covariates, with satisfaction with health care. Only variables that were significantly associated with satisfaction with health care ( $P < .1$ ) were included in multivariable models. Three-step ordered logistic regression models were conducted to assess the association between medical mistrust and satisfaction with health care (model 1), adjusting for perceived discrimination (model 2), and other covariates (model 3). Ordered logistic regression was applied given the ordinal nature of the outcome variable (5 “ordered” categories ranging from *not satisfied* to *extremely satisfied*).<sup>37</sup> The Brant test of parallel regression assumption was used to test that the relationship between each pair of outcome groups was the same. A non-significant test statistic provides evidence that the parallel regression assumption has not been violated. Stata version 12.1 (StataCorp, College Station, Texas) was used for all data analyses. The `ologit` command was used for ordered logistic regression analyses.

## Results

On average, participants visited health care providers 4 times in the past year (mean = 3.93, SD = 6.43). The average number of visits was significantly higher for females (mean = 4.80, SD = 6.08) than males (mean = 2.82, SD = 6.70;  $P = .003$ ). Almost half of participants had health insurance ( $n = 178$ , 46%), which was similar for both females and males ( $P = .782$ ). The majority of participants reported that they were either moderately satisfied ( $n = 124$ , 32%) or very satisfied ( $n = 157$ , 41%) with the services they had received from health care providers in the past year (Table 1). Both female and male participants reported similar levels of satisfaction ( $P = .68$ ). The mean medical mistrust score, 2.13 (SD = 0.64), was significantly higher for males (mean = 2.26, SD = 0.70) than for females (mean = 2.02, SD = 0.57;  $P < .001$ ). Perceived discrimination followed a similar pattern. The mean score (mean = 4.63, SD = 3.0) was significantly higher for males (mean = 5.28, SD = 2.85) than for females (mean = 4.12, SD =

3.02;  $P < .001$ ).

--- Insert Table 1 about here ---

The average income was \$20,503 (SD = \$14,565), which supported about 3 people per household (mean = 3.35, SD = 1.99). No significant differences were found in either income or household size by gender ( $P = .945$ ; and  $P = .757$ , respectively). By design the participants' age ranged between 18 and 25 years (mean = 21.45, SD = 2.27). Almost two-thirds had completed high school education or more ( $n = 247$ , 64%). However, only a third were enrolled in school at the time of the interview ( $n = 128$ , 33%). More than half of participants (57.6%) were foreign-born and had lived in the US for an average of 13.8 years (SD = 7.50).

More than half of participants were employed ( $n = 232$ , 60%), with men significantly more likely to be employed ( $n = 115$ , 67%) than women ( $n = 117$ , 54%;  $P = .009$ ). Acculturation followed a similar pattern. Acculturation score was higher for males (mean = 2.85, SD = 0.85) than for females (mean = 2.50, SD = 0.94;  $P < .001$ ). However, marital status was almost the opposite of both employment and acculturation. More female participants were married/cohabiting ( $n = 138$ , 64%) than males ( $n = 47$ , 27%;  $P < .001$ ).

In bivariate analysis, 4 variables were significantly associated with satisfaction with health care: medical mistrust ( $r = -0.26$ ,  $P < .01$ ), perceived discrimination ( $r = -0.22$ ,  $P < .01$ ), age ( $r = -0.11$ ,  $P < .01$ ), and health insurance ( $r = 0.09$ ,  $P < .10$ ). These 4 variables were included in multivariable analyses (see Table 2). Medical mistrust and perceived discrimination were moderately correlated ( $r = 0.47$ ,  $P < .01$ ). Being female was negatively correlated with both medical mistrust and perceived discrimination ( $r = -0.19$ ,  $P < .01$ , in both cases). In contrast, acculturation was positively correlated with medical mistrust ( $r = 0.09$ ,  $P < .10$ ) and perceived discrimination ( $r = 0.14$ ,  $P < .01$ ). Having high school education or higher, and currently attending school, were positively correlated with perceived discrimination ( $r = 0.12$ ,  $P < .05$ ; and  $r = 0.10$ ,  $P < .10$ , respectively).

--- Insert Table 2 about here ---

In ordered logistic regression models, medical mistrust was negatively associated with satisfaction with health care, after adjusting for perceived discrimination, age, and health insurance (OR = 0.54, 95% CI: 0.39, 0.76). The relationship between perceived discrimination and satisfaction with health care was also negative, after adjusting for medical mistrust, age, and health insurance (OR = 0.92, 95% CI: 0.86, 0.99). Age and health insurance were not significantly associated with satisfaction with health care.

Sensitivity analyses included: 1) running multivariable analyses with all covariates (regardless of statistical significance in bivariate correlations); and 2) adding 2 interaction terms (medical mistrust \* female; perceived discrimination \* female) to test for gender differences. In both cases, results were not significantly different from those shown here.

## Discussion

The present study examined the association between medical mistrust, perceived discrimination, and satisfaction with health care among a sample of young-adult rural Latinos in Oregon. Using the Behavioral Model of Vulnerable Populations as the theoretical framework, this study is among the few to analyze the effects of medical mistrust and perceived racial/ethnic discrimination on satisfaction with health care among Latinos<sup>14,15,20</sup> or other minorities<sup>13,38-40</sup> in the United States. As supported by the theory, the present study found that medical mistrust was significantly associated with satisfaction with health care, after adjusting for perceived discrimination and other covariates. In contrast, a recent study among Dominican women (ages 40 and older) in New York City found that medical mistrust was only “a marginally statistically significant predictor of dissatisfaction with health care.”<sup>14(p.503)</sup>

Perceived discrimination was also significantly associated with satisfaction with health care among this sample of rural Latinos, which is similar to a previous study with a random sample of Latinos nationwide.<sup>20</sup> These results suggest that, although medical mistrust and

perceived discrimination are prevalent, they may have a greater impact on satisfaction with health care rather than the number of health care visits.<sup>13</sup> It should be noted, however, that by design, the present study excluded participants who never used health care services. Current evidence on this issue is mixed. While some studies have found that mistrust and discrimination are associated with use of health care services among minorities,<sup>18,41,42</sup> others have found no significant associations.<sup>17,43,44</sup> In the present study, participants had relatively high rates of health care utilization. This may be due in part to the availability of student health centers since a third of participants were currently attending school. Student health centers may be more trusted and more likely to provide culturally competent services than other providers. Recent research among rural Latinos indicates that trust in medical providers and institutions (e.g., community health centers, faith-based organizations) may enable them to seek health care services.<sup>28,45</sup> In the study area, the mix of providers might include a number of trusted providers.

Interpretation of the findings should be considered within the context of the study limitations. The present study used self-reported, cross-sectional data, which makes it prone to report biases and limits its ability to establish cause-effect relationships. Data collection took place in 2006. It is possible that opinions may have shifted since then. Although medical mistrust and perceived discrimination were measured using previously validated multi-item scales, satisfaction with health care was measured with a single item.<sup>14,32</sup> Also, the present study did not include measures of need, patient-provider ethnic-concordance, waiting time, or quality of patient-provider interaction, which have been found to affect satisfaction with health care in previous studies.<sup>14,32</sup> By design, the sample consisted of young-adult (ages 18-25) Latinos living in rural Oregon, primarily of Mexican background. Therefore, these findings may not be generalizable to other Latino populations in the United States.

Despite these limitations, this study contributes to the literature documenting the pervasive effects of medical mistrust and perceived discrimination on racial/ethnic disparities in access to and quality of health care received.<sup>10,11</sup> This is the first study to find evidence of a

significant association between medical mistrust and satisfaction with health care among young-adult Latinos living in rural areas. Future research should explore these relationships with larger, more diverse Latino samples (e.g., Puerto Ricans, Cubans, etc.), because the effects may not be similar to those reported here.<sup>17,20</sup> Also, future research should use more robust measures of satisfaction, such as the Michigan Academic Consortium Patient Satisfaction (MAC-PS) scale.<sup>38</sup>

In the context of the Affordable Care Act implementation process, it is necessary to incorporate interpersonal and institutional measures of medical mistrust and perceived discrimination to performance evaluation systems being developed across the country, including rural areas. The development of these systems could provide a unique opportunity to track progress at the federal and local levels on the success of reform towards reducing rural Latino health care disparities. The same is true for young-adult Latinos, whose satisfaction with health care could have long-term impacts in how they (and eventually their children) access health care services throughout their lives.

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**Table 1.** Characteristics of Young-Adult Rural Latino Participants for the Full Sample and by Gender

	Full sample (N=387)		Female (n=216, 55.8%)		Male (n=171, 44.2%)		P <sup>c</sup>
<b>Predisposing factors</b>							
Age (M, SD)	21.45	2.27	21.69	2.21	21.14	2.31	.018
Married/cohabiting (n, %)	185	47.8	138	63.89	47	27.49	<.001
Completed HS education or more (n, %)	247	63.82	146	67.59	101	59.06	.083
Employed (n, %)	232	59.95	117	54.17	115	67.25	.009
Household size (M, SD) <sup>a</sup>	3.35	1.99	3.32	1.80	3.39	2.24	.757
Currently attending school (n, %)	128	33.16	75	34.88	53	30.99	.420
Acculturation score (M, SD)	2.66	0.90	2.50	0.94	2.85	0.81	<.001
<b>Enabling factors</b>							
Income (\$, M, SD) <sup>b</sup>	20502.98	14564.84	20547.29	14157.74	20439.63	15175.98	.945
Health insurance (n, %)	178	45.99	98	45.37	80	46.78	.782
Perceived discrimination score (M, SD)	4.63	3.00	4.12	3.02	5.28	2.85	<.001
Medical mistrust score (M, SD)	2.13	0.64	2.02	0.57	2.26	0.70	<.001
<b>Utilization</b>							
Number of health care visits in past year (M, SD)	3.93	6.43	4.80	6.08	2.82	6.70	.003
<b>Satisfaction with health care (n, %)</b>							
Not satisfied	17	4.39	9	4.17	8	4.68	.680
Slightly satisfied	40	10.34	18	8.33	22	12.87	
Moderately satisfied	124	32.04	70	32.41	54	31.58	
Very satisfied	157	40.57	91	42.13	66	38.60	
Extremely satisfied	49	12.66	28	12.96	21	12.28	

<sup>a</sup> N=358 (n=214, female; n=144, male).<sup>b</sup> N=362 (n=213, female; n=149, male).<sup>c</sup> Chi-square tests for discrete variables; t-tests for continuous variables.

**Table 2.** Ordered Logistic Regression for Medical Mistrust, Perceived Discrimination, and Other Factors, With Satisfaction With Health Care Among Young-Adult Rural Latinos (n=387).

	OR	95% CI		P
<b>Model 1</b>				
Medical mistrust	0.45	0.34	0.61	<.001
<i>Brant test</i> <sup>a</sup>		$\chi^2 = 1.26, P = .738$		
<b>Model 2</b>				
Medical mistrust	0.54	0.39	0.76	<.001
Perceived discrimination	0.92	0.85	0.98	.016
<i>Brant test</i>		$\chi^2 = 3.60, P = .731$		
<b>Model 3</b>				
Medical mistrust	0.54	0.39	0.76	<.001
Perceived discrimination	0.92	0.86	0.99	.023
Age	0.94	0.86	1.02	.111
Health insurance	1.26	0.87	1.82	.226
<i>Brant test</i>		$\chi^2 = 12.81, P = .383$		

<sup>a</sup> Brant test of parallel regression assumption. A non-significant test statistic provides evidence that the parallel regression assumption has not been violated.