ORIGINAL RESEARCH

Validating the Group-Based Medical Mistrust Scale with English and Spanish Speaking Latino Parents of Adolescents

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Background: **Medical mistrust can be a barrier to health care utilization. While the Group-Based Medical Mistrust Scale (GBMMS) has been validated among diverse populations, we know little about its psychometric performance among English-Speaking (ES) and Spanish-Speaking (SS) Latinos. We aim to examine the factor structure of GBMMS among Latino parents and explore whether scale latent factor structures would be different across preferred languages.**

Methods: **Parents of adolescents participating in an urban academic enrichment program for low-income students completed an online survey as part of a cross-sectional study about Human Papillomavirus (HPV) prevention. We tested the validity of the GBMMS in ES and SS respondents and performed exploratory factor analysis to identify latent factors. We examined scale scores, item means, item endorsement, and residual variance across language groups.**

Results: **2-factor latent structure was identified for both ES and SS groups; factors were labeled as 'Suspicion' and 'System-wide discrimination.' Scale validity was better among SS (α = 0.76). Medical mistrust scores did not vary across language groups, but variation emerged in item endorsement by language.**

Discussion: **Our results suggest that the factor structures of the medical mistrust construct, measured by the GBMMS, are similar across ES and SS Latinos and that the GBMMS is valid for both populations. High factor pattern loading reflects a shared mistrust of how health care systems view and treat people of their racial/ethnic background, independent of their preferred languages. Measurement of medical mistrust and identifying its underlying causes are needed within diverse populations to fully address structural- and community-level influences on health inequities. (J Am Board Fam Med 2022;35:244–254.)**

Keywords: **Cancer, Cross-Sectional Studies, Group Based Medical Mistrust Scale, Health Behavior, Health Inequities, Hispanic or Latino, Minority Health, Parents, Patient Acceptance of Health Care, Statistical Factor Analysis, Trust**

Background

Thompson and colleagues defined medical mistrust as "a tendency to distrust medical systems and personnel believed to represent the dominant culture".[1] Medical mistrust has been identified as a barrier to health care utilization among minority populations. Along with logistic barriers to care, medical mistrust has been found to affect health care decision-making and lead to lower Human Papillomavirus (HPV) vaccine uptake,[2] coronavirus disease of 2019 (COVID-19) vaccine acceptance,[3,4] HIV care,[5,6] and utilization of cancer screening[7,8] and treatment services[9,10] among racial and ethnic minority groups in particular. As such, it is important that we understand how we can best measure medical mistrust as a construct to assess its impact on health-seeking behavior in racial/ethnic minority populations as we work to improve the uptake of preventive health services in vulnerable and underserved communities.

Thompson and colleagues developed the Group-Based Medical Mistrust Scale (GBMMS) to assess medical mistrust among Black and Latina women seeking mammography services[1] in New York City.

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The scale has since been used extensively[11] to examine relationships between medical mistrust and pediatric emergency services among English- and Spanish-speaking urban parents and caregivers,[12] cervical cancer screening among rural women,[13] breast cancer screening in Arab-American women,[14] and HIV medication adherence in African-Americans.[15] The scale has been validated among Black and Hispanic/Latino young adults,[16] Black urban men,[17] formerly incarcerated Black and Hispanic/Latino men,[18] and ethnically diverse adults and adolescents.[19] However, no studies to date have formally assessed medical mistrust constructs among Hispanic/Latino populations concerning their preferred language use.[20]

The history of Hispanics/Latinos as an ethnic group in the United States is markedly different from that of African-Americans, for whom most medical mistrust measures have been developed.[11] A history of abusive research and medical practices, culminating in the Tuskegee Syphilis Study, has led to a legacy of entrenched suspicion and skepticism of the medical system within the African American community.[21–23] Hispanics/Latinos in the United States are a heterogeneous group, and all may not share this legacy equally. At the same time, experiences of discrimination have been associated with medical mistrust among Hispanics/Latinos[24]; some analyses suggest that this relationship varies by socioeconomic status and place of residence.[25] In addition, Hispanics/Latinos living in Latin America report positive and trusting attitudes toward health care providers, suggesting that recent Hispanic/Latino immigrants may have a history of positive experiences with health care systems in their countries of origin.[26] While the GBMMS has been validated among various Hispanic/Latino samples, different latent factor structures (ie, "Discrimination" and "Suspicion")[18] and item factor loadings have emerged,[16] signaling that the scale may perform differently in Hispanics/Latinos and African-Americans. Furthermore, medical mistrust may operate differently between English-speaking (ES) and Spanish-speaking (SS) Hispanics/Latinos. While these 2 groups are frequently combined into a single entity, they tend to have different levels of acculturation,[27,28] disparate health vulnerabilities,[29–31] and diverse health behavior patterns.[30,32–34] In addition, there is evidence to suggest that SS Hispanic/Latino parents of adolescent girls are more likely to trust health care professionals than their ES counterparts.[35] Currently, there is no agreement on the best way to assess medical mistrust within linguistically diverse Hispanics/Latinos in the United States.

This article aims to examine the psychometric properties of the medical mistrust construct using the GBMMS among a sample of English and Spanish-speaking Hispanic/Latino parents of adolescents within a larger HPV vaccination study. Assessing the validity and reliability of this scale among these 2 groups is a necessary first step in understanding how to best measure medical mistrust and its relation to the utilization of cancer prevention services in these populations. The primary goal of our analysis was to determine whether different factor structures would emerge in our sample compared with those of the original validation sample.[1] We also aimed to understand whether different experiences and histories with medical systems would lead to different latent factor structures among ES and SS parents completing the GBMMS. Lastly, we aimed to assess the overall performance of the GBMMS scale in assessing medical mistrust among both of our samples (ES and SS).

Methods

Study Sample and Recruitment

Survey data were collected as part of a larger study examining parental knowledge, attitudes, beliefs, and hesitancy related to HPV and uptake of HPV vaccination among children/adolescents. Parents of middle and high school students enrolled in the University of Southern California's (USC) Leslie and William McMorrow Neighborhood Academic Initiative (NAI), an academic enrichment program serving a largely Hispanic/Latino, low-income, first-generation student population in Los Angeles, California, were recruited to participate in an online survey during 2 Saturday morning parent enrichment virtual workshops in March 2021. Study eligibility included being the parent or guardian of an adolescent aged 9–17 years and able to complete the survey in English, Spanish, or Mandarin. During the virtual workshops, eligible parents were asked to complete the online survey in real time. The study was approved by USC's Institutional Review Board.

Survey Instrument

The survey instrument included questions about HPV vaccination, parent acculturation (using the Brief Acculturation Scale for Hispanics [BASH][36]), and sociodemographic information, in addition to the GBMMS. A professional translation company with

substantial experience performing translations of health-related questionnaires was contracted to translate the study survey from English into Spanish. The translated Spanish survey was then reviewed and approved by bilingual staff associated with our research community partner (NAI), who have a long history of working with our target population and have an understanding of their cultural and linguistic needs.

Measures

We used the 12-item GBMMS[1] to assess medical mistrust among our study sample (see Table 2 for item list). Each measure has a 5-item Likert-type response scale ranging from 1 (strongly disagree) to 5 (strongly agree), including a neutral response option. Item responses are summed to calculate a scale score ranging from 12 to 60, with higher scores indicating higher medical mistrust. The original psychometric testing of the scale found high reliability with $\alpha = 0.83$ and identified a 3-factor structure: factor 1) Suspicion, factor 2) Group disparities in health care, and factor 3) Lack of support from health care providers among Black and Latina women seeking mammogram services in East Harlem, New York City.[1]

Sociodemographic Characteristics

We assessed age, sex, nativity, acculturation, marital status, education, employment, income, and insurance in the full sample as well as among the ES and SS subgroups. Using c^2 and Fishers Exact tests, we also examined whether these characteristics varied by respondent language use.

Participants indicated their self-reported race/ethnicity from a list of racial/ethnic groups: American Indian or Alaska Native; Asian or Asian American; Black or African American; Hispanic/Latinx/Chicanx; Native Hawaiian/Other Pacific; White; or prefer not to answer. Respondents could select multiple responses; all participants that selected Hispanic/Latino as at least one of their choices were included in our sample.

Statistical Analyses

Using descriptive analyses, we examined the mean and standard deviation of each of the 12 scale items in the ES and SS samples. Following Thompson and colleagues,[1] we created a sum of the 'Agree' and 'Strongly agree' categories to obtain an estimate of the overall endorsement of each item; for items that are positively worded (questions 2, 8, 10, and 11), we summed the 'Disagree' and 'Strongly disagree' responses. We used Chi-square tests to examine response distribution per language for each survey item.

Scale scores were calculated by creating a sum of all items in the scale (after reverse coding the 4 positively worded items). Paired *t*-tests were used to detect differences in medical mistrust scores among language groups; we selected $\alpha = 0.05$ as our criteria for statistical significance. Cronbach's alphas were used to determine the scale's reliability in the 2 groups, using 0.8 as the threshold for good reliability.

Exploratory factor analysis (EFA) is a statistical method used to identify the underlying constructs ("factors") that constitute an observed trait or phenomena and is key to assessing the internal reliability of a questionnaire.[37,38] EFA is particularly important for examining changes in the internal reliability of a scale among different groups of people; EFA has previously been used to validate the GBMMS among African-American breast cancer survivors,[39] formerly incarcerated Black and Hispanic/Latino men,[18] and urban Black men in need of prostate cancer screening.[17] We used EFA to identify the latent factor structures of the GBMMS in our 2 language groups. EFA was used instead of confirmatory factor analysis (CFA) because our objective was to identify the factors that emerged from the new GMMS data observed rather than to confirm the relationship between the original 3 factors across the 2 groups.[37,38]

We used the following criteria to determine factor extraction: eigenvalue greater than 1; factors above the Scree plot break; factors explaining greater than 10% of item variance; factors with at least 3 associated items; and factors that resulted in a simple structure,[40] defined as extracted factors having high factor loading for some variables, and near zero for the remaining variables, and having most variables with relatively high factor loading on only 1 factor, and near-zero on others. We considered that an item loaded onto a factor if it had a factor pattern loading greater than 0.4. We anticipated that factors would be highly and positively correlated so that higher 'Suspicion' would be associated with higher perceived 'Group disparities in health care' and higher 'Lack of support from health care providers'. In our analysis, appropriate rotation methods were selected to account for intercorrelation between the factors (ie, promax for interrelated factors and varimax for unrelated factors).

There was no data missing from the 12 GBMMS items in both groups, so a complete case

analysis was used in all analyses. All analyses were performed using SAS Version 9.

Results

Participant Characteristics

Overall, 422 parents completed an online survey. Of the 339 parents who provided information about their race/ethnicity, 264 (75% of the full sample) identified as Hispanic/Latino; of these, 4 identified with more than 1 race/ethnic group. Among these 264 Hispanic/Latino parents, 143 (54%) answered the survey in English and 121 (46%) in Spanish. We used these 2 groups, ES and SS Hispanic/Latino survey participants as our analytic sample. Full information on sample demographics is presented in Table 1.

Most participants were aged 41–50 years (46%), married (67%), and the vast majority were women (90%). Nearly 3 quarters of our sample (73%) were not born in the United States, and most reported low acculturation rates, per BASH categorizations[36] (69%). More than 3 quarters of the sample had less than a college degree; 50% reported being employed, and 72% had incomes of less than $50,000. Nevertheless, most of the sample had some type of insurance coverage, with 35% reporting access to private insurance and 45% being enrolled in a government insurance program (Medi-Cal, Medicare, or My Health LA).

Differences in sociodemographic characteristics were explored by language use. A much larger proportion of the SS participants were non-US born ($P < .01$), and SS also had lower acculturation rates than ES respondents ($P < .01$). Overall, SS survey respondents had lower income ($P < .01$), less education ($P < .01$), and were less likely to be employed ($P = .04$) or have private insurance ($P < .01$). A higher proportion of ES respondents were divorced, separated, or widowed ($P = .02$).

GBMMS Distributions and Mean Scores

We examined endorsement for each of the 12 items in the GBMMS scale, as well as differences by language in item endorsement. Table 2 provides means, standard deviations, and percent endorsement of each specific item for the full sample and separately by language. Over 20% of endorsement emerged for the following items: "People of my ethnic group receive the same medical care from doctors and health care workers as people from other groups." (25.0%); "Doctors and health care workers do not take the medical complaints of people of my ethnic group seriously." (26.1%); "People of my ethnic group are treated the same as people of other groups by doctors and health care workers." (25.4%); and "In most hospitals, people of different ethnic groups receive the same kind of care." (24.2%). The remaining items received less than 20% endorsement.

There were different response patterns between ES and SS respondents. ES were more likely than SS to agree with the following items: "People of my ethnic group should not confide in doctors and health care workers because it will be used against them." ($P = .03$); "People of my ethnic group should be suspicious of information from doctors and health care workers." ($P = .01$); "People of my ethnic group cannot trust doctors and health care workers." ($P = .01$)"; and "People of my ethnic group should be suspicious of modern medicine." ($P = .06$). SS respondents were more likely to disagree (given its positive wording) with the following item: "Doctors have the best interests of people of my ethnic group in mind." ($P = .04$).

The GBMMS score for the full Hispanic/Latino sample (n = 264) was 28.06; scale scores were not significantly different between ES and SS groups (27.48 vs 28.74 respectively, $P = .26$).

Exploratory factor Analysis for GBMMS by Language

English Sample

Two factors were extracted for English survey respondents (n = 143). Factor 1 had an eigenvalue of 5.54, and it explained 35% of the proportion of the variance of the items, and factor 2 had an eigenvalue of 1.85 and explained 21% of the proportion of the variance. In contrast, the third factor identified had an eigenvalue of 0.82 and explained 7% of the proportion of the variance. An analysis of the Scree plot found 2 factors above the break. The 2 factors were highly negatively correlated (r=-0.39); we, therefore, used an oblique (Promax) rotation. The scale's reliability in this group was α = 0.61, which was lower than the 0.8 threshold established.

Item loadings for both factors are listed in Table 3. Since the majority of items loading onto factor 1 were the same as in the original validation study, the authors decided that 'Suspicion' continued to be an appropriate label for this factor. Factor 2 was, for the most part, a combination of the items that had loaded into factors 2 (Disparities in health care)

Table 1. Sample Characteristics of English and Spanish-Speaking Hispanic/Latino Parents of Adolescents in Los Angeles, California (n = 264)

Characteristic	Frequency (%) / Mean (SD) Total N = 264	English N = 143	Spanish N = 121	*p*-value
Age				*P = .26*
<40 years	88 (33%)	54 (38%)	34 (28%)	
41–50 years	122 (46%)	61 (43%)	61 (51%)	
50 years or older	53 (20%)	28 (20%)	25 (21%)	
Sex				*P = .80*
Female	237 (90%)	129 (90%)	108 (89%)	
Male	27 (10%)	14 (10%)	13 (11%)	
Nativity				*P < .01**
US born	66 (27%)	64 (48%)	2 (2%)	
Non-US born	180 (73%)	70 (52%)	110 (89%)	
Acculturation				*P < .01**
High	82 (31%)	77 (54%)	5 (4%)	
Low	182 (69%)	66 (46%)	116 (96%)	
Marital Status				*P = .02**
Married	177 (67%)	87 (61%)	90 (74%)	
Single	32 (12%)	18 (13%)	14 (12%)	
Divorced/Separated/Widowed	38 (14%)	29 (20%)	9 (7%)	
Prefer not to answer	17 (6%)	6 (3%)	8 (6%)	
Education				*P < .01**
High school diploma or less	143 (54%)	58 (41%)	85 (70%)	
Some college or vocational/technical training	76 (29%)	58 (41%)	18 (15%)	
College degree or above	28 (11%)	22 (15%)	6(5%)	
Prefer not to answer	17 (6%)	5 (4%)	12(10%)	
Employment				*P = .04**
Employed	133 (50%)	87 (61%)	46 (38%)	
Unemployed	48 (18%)	22 (15%)	26 (21%)	
Homemaker	59 (22%)	20 (14%)	39 (32%)	
Other/Prefer not to answer	24 (9%)	14 (10%)	10 (8%)	
Income				*P < .01**
Less than $20,000	68 (26%)	22 (15%)	46 (38%)	
$20,000-$49,999	122 (46%)	59 (41%)	63 (52%)	
$50,000-$79,999	55 (21%)	43 (30%)	12 (10%)	
$80,000 or more	19 (7%)	19 (13%)	0 (0%)	
Insurance				*P < .01**
Uninsured	37 (14%)	10 (7%)	27 (22%)	
Private insurance	91 (35%)	73 (51%)	18 (15%)	
Public insurance	120 (45%)	53 (37%)	67 (55%)	
Other	16 (6%)	7 (5%)	9 (8%)	

* P-value is statistically significant.
Abbreviations: SD, standard deviation.

and 3 (Lack of support from health care providers) in the original scale validation, so we assigned the label of 'System-wide discrimination' to the second factor. Means, standard deviations, and factor pattern loading for each item in the scale are listed in Table 3.

Spanish Sample

Similar to our English-preferred sample, 2 factors were also extracted from the Spanish-speaking sample (n = 121): factor 1 had an eigenvalue of 4.24 and explained 46% of the item variance, and factor 2 had an eigenvalue of 2.58 and explained 15% of the

Table 2. Means, Standard Deviations, Percent Endorsement, and p-values for 12 Items of the Group-Based Medical Mistrust Scale (GBMMS)

Scale Items	Total Sample		English Sample		Spanish Sample		
	Mean (SD)	% Somewhat or Strongly agree	Mean (SD)	%Somewhat or Strongly agree	Mean (SD)	% Somewhat or Strongly agree	*p*-value
1. Doctors and health care workers sometimes hide information from patients who belong to my ethnic group.	2.67 (1.25)	67 (25.4%)	2.56 (1.23)	29 (20.3%)	2.80 (1.28)	38 (31.4%)	0.12
2. Doctors have the best interests of people of my ethnic group in mind.†	3.73 (1.14)	35 (13.3%)‡	3.60 (1.16)	23 (16.1%)±	3.89 (1.09)	12 (9.9%)±	0.04§
3. People of my ethnic group should not confide in doctors and health care workers because it will be used against them.	2.16 (1.25)	40 (15.2%)	2.00 (1.12)	13 (9.1%)	2.34 (1.38)	27 (22.3%)	0.03§
4. People of my ethnic group should be suspicious of information from doctors and health care workers.	2.16 (1.18)	37 (14.0%)	1.99 (1.02)	11 (7.7%)	2.36 (1.31)	26 (21.5%)	0.01§
5. People of my ethnic group cannot trust doctors and health care workers.	2.06 (1.21)	37 (14.0%)	1.88 (1.02)	10 (7.0%)	2.26 (1.38)	27 (22.3%)	0.01§
6. People of my ethnic group should be suspicious of modern medicine.	2.07 (1.18)	37 (14.0%)	1.94 (1.10)	15 (10.5%)	2.22 (1.26)	22 (18.2%)	0.06
7. Doctors and health care workers treat people of my ethnic group like "guinea pigs."	2.11 (1.23)	40 (15.2%)	2.06 (1.18)	19 (13.3%)	2.17 (1.28)	21 (17.4%)	0.47
8. People of my ethnic group receive the same medical care from doctors and health care workers as people from other groups.†	3.37 (1.26)	66 (25.0%)‡	3.42 (1.25)	35 (24.5%)±	3.31 (1.27)	31 (25.6%)‡	0.50
9. Doctors and health care workers do not take the medical complaints of people of my ethnic group seriously.	2.61 (1.31)	69 (26.1%)	2.56 (1.30)	37 (25.9%)	2.66 (1.33)	32 (26.4%)	0.53
10. People of my ethnic group are treated the same as people of other groups by doctors and health care workers.†	3.40 (1.25)	67 (25.4%)‡	3.29 (1.25)	41 (28.7%)±	3.52 (1.25)	26 (21.5%)‡	0.14
11. In most hospitals, people of different ethnic groups receive the same kind of care.†	3.45 (1.22)	64 (24.2%)‡	3.40 (1.18)	35 (24.5%)±	3.51 (1.27)	29 (24.0%)‡	0.45
12. I have personally been treated poorly or unfairly by doctors or health care workers because of my ethnicity.	2.18 (1.32)	50 (18.9%)	2.20 (1.29)	26 (18.2%)	2.16 (1.37)	24 (19.8%)	0.78

† Items are reverse coded.
‡ Percent disagree or strongly disagree (due to item wording).
§P-value is statistically significant.
Abbreviations: SD, standard deviation.

item variance. In comparison, the third factor identified had an eigenvalue of 0.88, explained 6% of the item variance, and was therefore not extracted. The Scree plot showed a break starting after factor 2, confirming the scale's 2-factor structure in this sample.

Factor 1 was associated with the same items as in the English sample, with the addition of items 9 and 12; however, after discussions involving all 3 authors, it was decided that 'Suspicion' was still an appropriate label for this factor since both items express experiences of mistrust emerging from negative interactions with the health care system due to ethnic identification: "Doctors and health care workers do not take the medical complaints of people of my ethnic group seriously." (Item 9), and "I have personally been treated poorly or unfairly by doctors or health care workers because of my ethnicity." (Item 12). Factor 2 includes all items as in the English sample except for Item 9, so we retained the label of 'System-wide discrimination' for the Spanish sample as well.

The 2 factors had very low negative correlation (r=-0.08), so an orthogonal (Varimax) rotation was used. While slightly below the preset threshold of 0.8 to determine reliability, the scale performed better in the Spanish sample than in the English sample, with α = 0.76. Information on means, standard deviation, and factor pattern loading for each item is in Table 3.

Factor Structure

Diverging from the findings of the original GBMMS validation study,[1] we found that a 3-factor structure for the GBMMS (factor 1: Suspicion; factor 2: Group disparities in health care; and factor 3: Lack of support from health care providers) did not fit our ES or SS samples. Instead, a 2-factor structure was identified (factor 1: Suspicion; factor 2: System-wide discrimination), and we found that the same structure fit both samples equally. We found that most of the same items loaded into the 'Suspicion' factor as in the original study. However, the items associated with 'Group disparities in health care' and 'Lack of support from health care providers' seem combined in our samples into a new factor that we are calling 'System-wide discrimination'. This is especially true if we put aside items 9 and 12, which had low and problematic loading in the original validation study.

Discussion

In our study of English and Spanish-speaking Hispanic/Latino parents in Los Angeles, we examined the psychometric properties of the GBMMS in these groups. Overall, we found that mean scores for medical mistrust were low, which aligns with previous work using this scale to assess medical mistrust among Hispanics/Latinos,[41,42] and found that medical mistrust scores did not vary significantly between English-speaking and Spanish-speaking Hispanic/Latino groups. In line with the findings of Valera and colleagues,[18] we found support for a 2-factor structure rather than for the 3-factor structure identified in the Thompson's[1] original validation of the GBMMS.

Our results suggest that, albeit similar, subtle differences may make the experiences of medical mistrust among English and Spanish-speaking Hispanic/Latino parents slightly different from those of the population of the original validation study, for which half of the sample was African American. While Wheldon and colleagues found that a modified version of the GBMMS performed similarly among Hispanics/Latinos and African Americans,[16] few studies have aimed to compare the psychometric properties of the scale across ethnic and racial groups.[11] While such a comparison is beyond the scope of this work, performing CFA on independent samples of English- and Spanish-speaking Hispanics/Latinos will be an important next step in confirming the 2-factor structure that emerged in our analysis.

Two of the factors from Thompson's original validation study, 'Group disparities in health care' and 'Lack of support from health care providers,' seem to be combined in our ES and SS samples, which speaks to the idea that while these groups perceive some mistreatment at the health system level, those are not differentiated into issues of racial/ethnic group disparities and lack support. It suggests that both of these groups share a mistrust of how the health care systems views and treats people of their racial/ethnic background as a whole. This is particularly impactful if we consider that previous research has found that medical doctors are the most trusted source of health information among Hispanics/Latinos,[20,43,44] as it implies that there is a perception of hostility present in the health relationship on which they rely the most.

Despite previous research suggesting the contrary,[35] we found that ES and SS Hispanic/Latino groups

Table 3. Factor Pattern Loadings for Group-Based Medical Mistrust Scale (GBMMS) Items

	English Sample		Spanish Sample	
	Factor Pattern Loading		Factor Pattern Loading	
Scale Items	Factor 1	Factor 2	Factor 1	Factor 2
1. Doctors and health care workers sometimes hide information from patients who belong to my ethnic group.	**0.611**‡	−0.187	**0.594**‡	−0.049
2. Doctors have the best interests of people of my ethnic group in mind.†	−0.153	**0.525**‡	−0.107	**0.634**‡
3. People of my ethnic group should not confide in doctors and health care workers because it will be used against them.	**0.879**‡	0.143	**0.748**‡	−0.025
4. People of my ethnic group should be suspicious of information from doctors and health care workers.	**0.893**‡	0.041	**0.767**‡	−0.127
5. People of my ethnic group cannot trust doctors and health care workers.	**0.853**‡	−0.025	**0.860**‡	0.071
6. People of my ethnic group should be suspicious of modern medicine.	**0.826**‡	0.029	**0.809**‡	0.052
7. Doctors and health care workers treat people of my ethnic group like "guinea pigs."	**0.626**‡	−0.305	**0.734**‡	−0.141
8. People of my ethnic group receive the same medical care from doctors and health care workers as people from other groups.†	0.104	**0.864**‡	0.02	**0.820**‡
9. Doctors and health care workers do not take the medical complaints of people of my ethnic group seriously.	0.370	**−0.486**‡	**0.551**‡	0.186
10. People of my ethnic group are treated the same as people of other groups by doctors and health care workers.†	0.064	**0.880**	−0.025	**0.874**‡
11. In most hospitals, people of different ethnic groups receive the same kind of care.†	0.004	**0.828**‡	0.007	**0.796**‡
12. I have personally been treated poorly or unfairly by doctors or health care workers because of my ethnicity.	0.355	−0.397	**0.655**‡	−0.28

† Items are reverse coded.
‡ Factor loadings above 0.4.

seem to have similar experiences with medical mistrust, as found in the latent structure identified in this scale. This denotes that experiences among Hispanic/Latino respondents with health care providers in this sample were similar regardless of language preference, suggesting that something aside from acculturation level, citizenship status, and other factors associated with language preference among Hispanics/Latinos is driving these experiences. Further qualitative exploration of medical mistrust among these groups could provide more insight into this trend.

Some limitations to this study should be noted. While the scale items ask participants to provide information about their own opinions and experiences with medical mistrust, data from this study was collected as part of a study examining HPV vaccination in adolescents for which the participants were parents or caregivers. As such, it is possible that the questions regarding vaccination of their children could have primed participants to answer differently than they would have if they were responding to questions regarding their own use of health care services. Further research is needed to confirm these results among ES and SS Hispanics/Latinos seeking care for themselves. Another limitation is the heterogeneity of Hispanics/Latinos in the United States; there can be cultural and linguistic properties specific to our study participants that are not generalizable to other Hispanic/Latino subgroups. The translation of our survey is also a limitation; it is possible that a different translation of the GBMMS would have yielded a different factor structure. In addition, it is possible

that bias in participant response styles could have altered our results, as preference and/or avoidance of extreme values responses in survey research have been documented across different cultures, races, and genders.[45–47] Other scales to assess medical mistrust have been validated among racial/ethnic minorities,[11,48] and their factor structure should be examined to explore factor structure differences across scales. In addition, given sample size limitations, our analyses were limited to EFA only. The 2-factor structure we identified needs to be confirmed in a new sample of ES and SS Hispanics/Latinos. Lastly, our current work does not examine the relationship between medical mistrust and specific health-seeking behaviors, such as vaccine uptake. More work must be done to look at how the latent factors identified in our sample drive health outcomes in this population.

Nonetheless, the results of the analyses presented herein are an important first step in understanding how medical mistrust should be assessed among ES and SS Hispanic/Latino parents. While mean scores in our sample seem low, endorsing even 1 of the items in the GBMMS demonstrates a substantial mistrust against health care systems and medical professionals. Further research must explore ways in which medical trust can be built and on how to engage in partnerships that can help foster more positive, respectful, and effective interactions with ES and SS Hispanics/Latinos to provide care and improve the health of this growing population. Our study findings could inform the development of brief interventions focused on improving provider communications when interacting with populations with a history of medical mistrust. Training in motivational interviewing has been implemented with promise in other contexts[49,50] and could be leveraged to identify ways in which medical mistrust in the clinical encounter can be acknowledged and validated. Further research should focus on specific ways in which medical mistrust can be overcome in this population and on how to implement trust-building practices in health care delivery settings that are responsive to the specific cultural and linguistic needs of the communities served. Our results can also guide further studies examining medical mistrust in multilingual populations and individuals who make health care decisions for others.

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