# Discrimination and Medical Mistrust in a Racially and Ethnically Diverse Sample of California Adults

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## ABSTRACT

**PURPOSE** Although we know that racial and ethnic minorities are more likely to have mistrust in the health care system, very limited knowledge exists on correlates of such medical mistrust among this population. In this study, we explored correlates of medical mistrust in a representative sample of adults.

**METHODS** We analyzed cross-sectional study data from the Survey of California Adults on Serious Illness and End-of-Life 2019. We ascertained race/ethnicity, health status, perceived discrimination, demographics, socioeconomic factors, and medical mistrust. For data analysis, we used multinomial logistic regression models.

**RESULTS** Analyses were based on 704 non-Hispanic Black adults, 711 Hispanic adults, and 913 non-Hispanic White adults. Racial/ethnic background was significantly associated with the level of medical mistrust. Adjusting for all covariates, odds of reporting medical mistrust were 73% higher (adjusted odds ratio [aOR] = 1.73; 95% CI, 1.15-2.61, $P$ <.01) and 49% higher (aOR = 1.49; 95% CI, 1.02-2.17, $P$ <.05) for non-Hispanic Black and Hispanic adults when compared with non-Hispanic White adults, respectively. Perceived discrimination was also associated with higher odds of medical mistrust. Indicating perceived discrimination due to income and insurance was associated with 98% higher odds of medical mistrust (aOR = 1.98; 95% CI, 1.71-2.29, $P$ <.001). Similarly, the experience of discrimination due to racial/ethnic background and language was associated with a 25% increase in the odds of medical mistrust (aOR = 1.25; 95% CI, 1.10-1.43; $P$ <.001).

**CONCLUSIONS** Perceived discrimination is correlated with medical mistrust. If this association is causal, that is, if perceived discrimination causes medical mistrust, then decreasing such discrimination may improve trust in medical clinicians and reduce disparities in health outcomes. Addressing discrimination in health care settings is appropriate for many reasons related to social justice. More longitudinal research is needed to understand how complex societal, economic, psychological, and historical factors contribute to medical mistrust. This type of research may in turn inform the design of multilevel community- and theory-based training models to increase the structural competency of health care clinicians so as to reduce medical mistrust.

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## INTRODUCTION

Medical mistrust is a major barrier to a strong patient-clinician relationship.[1-3] Patient mistrust in health care clinicians and in the health care system generally, negatively influences patient behavior and health outcomes.[1-3] Medical mistrust can greatly influence the communication of sensitive medical history and information between patients and health care clinicians.[4] It has also been shown to reduce patient commitment to their treatment plan prescribed by their health care clinician.[4]

Previous research has proposed several theoretical frameworks and models describing how mistrust influences health outcomes. For example, Lee and Lin[5] proposed that patient mistrust influences health outcomes

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via patient disclosure, the placebo effect, compliance, and the physician's caring behaviors. Several empirical studies have shown that mistrust is associated with a variety of adverse health outcomes including, but not limited to, nonadherence.[6-9] A recent meta-analysis of 47 studies documented the effect of patient mistrust on health outcomes.[10] Although it found only a small to moderate overall effect, the meta-analysis revealed that, from a clinical perspective, medical mistrust is linked to lower adherence to recommended healthier lifestyles, more adverse symptoms, less satisfaction with medical care, and poorer quality of life. Moreover, the same study showed a significant correlation between mistrust and self-reported subjective outcomes, which can greatly affect patient satisfaction and treatment outcomes.

For racial/ethnic minorities, medical mistrust may be rooted in patients' past experience of discrimination.[11-15] An extensive review of the literature revealed that among minority groups, patient mistrust is linked to a lack of commitment to treatment plans, negative health behaviors, and undesired health outcomes.[6,12,15,16] Insufficient comparative studies have been conducted to explore the impact of various types of discrimination by the health care system on patient mistrust. Additionally, the issue of medical mistrust is still relatively unexplored among the Hispanic population. Careful examination of this association within and between racial/ethnic groups may shed light on this complex phenomenon. Understanding the mechanisms of these racial differences may lead to better optimization of therapeutic effectiveness and decreased patient mistrust.[17]

The main objective of this comparative analysis was to examine correlates of medical mistrust among a large sample of non-Hispanic Black, Hispanic, and non-Hispanic White adults. Specifically, 2 distinct types of perceived discrimination by the health care system were examined, namely, discrimination based on race/ethnicity and language, and discrimination based on income and type of or lack of insurance.

## METHODS

### Design and Settings

The Survey of California Adults on Serious Illness and End-of-Life is a cross-sectional representative survey of California residents conducted on behalf of the California Health Care Foundation.[18] Data collection for the survey took place from June 2019 to July 2019. To qualify for the survey, the respondent had to be aged 18 years or older. The sampling design and data collection methodology have been extensively described by PerryUndem Research/Communication,[18,19] the institution that conducted the survey. Participants were drawn from the Ipsos Knowledge Panel (Ipsos Group SA), the first representative online research panel in the United States. Panel members were randomly recruited through address-based sampling methods. All households were provided with Internet access as well as hardware that might be needed. Only adults from California, however, were selected to participate in this study. A sample of California households was invited to join the Ipsos Knowledge Panel to complete the survey through a series of mailings, including an initial invitation letter, a reminder postcard, and a subsequent follow-up letter. Survey respondents were not selected based on health- or illness-related criteria. Invited California households could join the panel by (1) completing and mailing back a paper form in a postage-paid envelope, (2) calling a toll-free hotline telephone number maintained by Ipsos, or (3) going to a designated Ipsos website and completing the recruitment form online.

Ipsos operates an ongoing modest incentive program to encourage participation and create member loyalty. In addition, the incentive program includes special raffles and sweepstakes with both cash rewards and other prizes to be won. PerryUndem Research/Communication reports that the survey completion rate is about 60%.[18]

To ensure that racial comparative analysis could be performed, the survey increased the study population of non-Hispanic Black participants using supplemental nonprobability sampling. The survey participants totaled 2,588 adults, with 35% non-Hispanic White, 28% non-Hispanic Black, 27% Hispanic, and 10% other ethnicity/race participants. The present study used a subset of those data: 2,328 individuals who were non-Hispanic Black, Hispanic, or non-Hispanic White. Ten percent (264) of the individuals who participated in the Ipsos Knowledge Panel identified as non-Hispanic, non-White, and/or non-Black. These individuals were grouped by Ipsos into the "other ethnicity/race" category, with no further specification of their race/ethnicity; we excluded them from our analysis.

### Survey Weights

Overall, the Ipsos Knowledge Panel survey targeted an equal number of participants with household incomes less than 150% of the federal poverty level, between 150% and 399% of the level, and at least 400% of the level and higher. After the survey data were collected, cleaned, and processed, we calculated design weights to account for nonresponses and stratification. We applied weights that generated results representative of the adult population in California.

## Measures

### Independent Variables

All the measures used in our studies were self-reported. Demographic and socioeconomic characteristics included age, sex, educational attainment, ethnicity, and household income (Table 1). Sex was a dichotomous measure: male (coded as 1) and female (coded as 0 and used as the reference group). Age was a continuous variable. Educational attainment was operationalized as a continuous variable with a range between 0 and 14, with a higher score reflecting more schooling. Income was measured as annual household income and categorized into the 3 levels described above according to federal poverty level. Self-identified race and ethnicity was a trichotomous variable, with non-Hispanic White designated as the reference category.

**Table 1. Characteristics of the Study Sample (N = 2,328)**

| Characteristic | Value |
|---|---|
| Sex, No. (%) | |
| Male | 979 (42.1) |
| Female | 1,349 (57.9) |
| Age, No. (%) | |
| 18-29 years | 409 (17.6) |
| 30-44 years | 566 (24.3) |
| 45-59 years | 611 (26.2) |
| ≥60 years | 742 (31.9) |
| Age, mean (SD) [range], y | 49.2 (17.4) |
| Educational attainment, No. (%) | |
| No high school diploma | 186 (8.0) |
| High school diploma | 524 (22.5) |
| Some college | 863 (37.1) |
| Bachelor's degree or higher | 755 (32.4) |
| Educational attainment,[a] mean (SD), y | 12.7 (2.01) |
| Household income, No. (%) | |
| <150% FPL | 873 (37.5) |
| 150%-399% FPL | 797 (34.2) |
| ≥400% FPL | 658 (28.3) |
| Ethnicity/race, No. (%) | |
| Non-Hispanic Black | 704 (30.2) |
| Hispanic | 711 (30.5) |
| Non-Hispanic White | 913 (39.2) |
| Has primary care provider, No. (%) | |
| No | 405 (17.4) |
| Yes | 1,919 (82.6) |
| Self-rated health status, No. (%) | |
| Excellent | 240 (10.3) |
| Very good | 814 (35.1) |
| Good | 841 (36.2) |
| Fair | 350 (15.0) |
| Poor | 77 (3.3) |
| Self-rated health,[b] mean (SD) | 2.49 (0.66) |
| Medical mistrust,[c] No. (%) | |
| A lot of trust | 971 (43.0) |
| Some trust | 980 (43.4) |
| Not at all/not too much trust | 306 (13.6) |

FPL = federal poverty level.

[a] On a scale from 1 (lowest) to 14 (highest).

[b] On a scale from 1 (excellent) to 5 (poor).

[c] There were 71 missing cases for this characteristic.

Self-rated health status was measured using a single item.[20-23] Response options were coded as excellent, very good, good, fair, and poor. The Institute of Medicine has recommended self-rated health status for monitoring the overall health of the US general population.[24]

Whether participants had a primary care provider was assessed with a single item asking them, "Do you have one person you think of as your main doctor or health care provider?" Responses options were No (coded as 0) and Yes (coded as 1).

Perceived discrimination was measured with a 10-item questionnaire. These items had been selected from other instruments that have been used to measure perceived discrimination because of race/ethnicity, language, income, and lack or type of insurance.[25-27] Principal component analysis was used to identify potential factors underlying the 10-item instrument that measures the type of discrimination. Varimax rotation produced 2 distinct factors, explaining almost 60% of the variance. The first factor explained 34% of the variance, while the second factor explained 25% of the variance. All items had primary loadings exceeding 0.5, and none of the items had a cross-loading of greater than 0.3. A higher score on this index reflects a higher level of perceived discrimination.

The first factor was associated with the 6 items that measure perceived discrimination due to income and type of or lack of insurance. The Cronbach $\alpha$ coefficient for these 6 items was calculated to be 0.84. Furthermore, the $\alpha$ coefficients if any 6 items were deleted ranged from 0.808 to 0.823, indicating that no single item decreased reliability appreciably. This factor is associated with the following items: (1) "Have you ever felt judged or treated differently by a health care provider because of your income?" (2) "Have you ever felt judged or treated differently by a health care provider because of the type of insurance you have?" (3) "Have you ever felt judged or treated differently by a health care provider because of being uninsured?" (4) "Have you ever felt like you could not get health care services you needed because of your income?" (5) "Have you ever felt like you could not get health care services you needed because of the type of insurance you have?" and (6) "Have you ever felt like you could not get health care services you needed because of being uninsured?"

The second factor produced by the varimax rotation is associated with 4 items that measured perceived discrimination due to race/ethnicity and language. The Cronbach α coefficient for these 4 items was calculated to be 0.74. The α coefficients if any of 4 items were deleted ranged from 0.632 to 0.698. A higher score on this factor indicates a lower level of perceived racial and ethnic discrimination. This factor is associated with the following items: (1) "Have you ever felt judged or treated differently by a health care provider because of your race or ethnicity?" (2) "Have you ever felt judged or treated differently by a health care provider because of your language?" (3) "Have you ever felt like you could not get health care services you needed because of your race or ethnicity?" and (4) "Have you ever felt like you could not get health care services you needed because of your language?"

### Outcome Variable

Our outcome variable was medical mistrust, which was measured with a single item asking participants, "In general, how much do you trust your health care providers to act in your best interest?" Response options included "not at all," "not too much," "some," and "a lot." In the multinomial regression analysis, we coded a lot as 1, some as 2, and not at all/not too much as 3 (assigned as the reference group).

### Statistical Analysis

We used SPSS 23.0 (IBM Inc) to perform our data analysis. For descriptive statistics, we reported means and proportions (frequencies). For bivariate analysis, we used $\chi^2$ or ANOVA tests. For multivariate models, we used the multinomial logistic regression technique. Adjusted odds ratios (aORs), 95% confidence intervals, and *P* values are reported. *P* values equal to or less than .05 were considered significant.

## RESULTS

### Participant Characteristics

Table 1 shows the characteristics of our study sample of 2,328 adults (704 non-Hispanic Black, 711 Hispanic, and 913 non-Hispanic White adults). The mean age was 49.2 (SD 17.4) years. More than 22% of our sample reported having a high school diploma, whereas 8% reported an educational level below the 12th grade. One-third of participants reported a household income between 150% to 399% of the federal poverty level, and almost 38% reported a household income of less than 150% of the federal poverty level. Only 10% and

**Table 2. Bivariate Associations Between Perceived Discrimination and Race/Ethnicity (N = 2,328)**

| | | Race/Ethnicity | | | |
|---|---|---|---|---|---|
| **Perceived Discrimination Survey Item** | **No/ Yes** | **Hispanic, No. (%)** | **Non-Hispanic Black, No. (%)** | **Non-Hispanic White, No. (%)** | ***P* Value** |
| **Perceived discrimination because of income, or type, or lack of insurance** | | | | | |
| Have you ever felt judged or treated differently by a health care provider because of your income? | No | 603 (88) | 581 (82) | 817 (90) | .001 |
| | Yes | 82 (12) | 132 (19) | 90 (10) | |
| Have you ever felt judged or treated differently by a health care provider because of the type of insurance you have? | No | 576 (84) | 521 (73) | 775 (85) | .001 |
| | Yes | 116 (16) | 196 (27) | 133 (15) | |
| Have you ever felt judged or treated differently by a health care provider because of being uninsured? | No | 609 (88) | 575 (81) | 821 (91) | .001 |
| | Yes | 82 (12) | 135 (19) | 80 (9) | |
| Have you ever felt like you could not get health care services you needed because of your income? | No | 513 (74) | 504 (71) | 720 (79) | .001 |
| | Yes | 513 (26) | 208 (29) | 187 (21) | |
| Have you ever felt like you could not get health care services you needed because of the type of insurance you have? | No | 491 (71) | 477 (67) | 707 (78) | .001 |
| | Yes | 203 (29) | 238 (33) | 200 (22) | |
| Have you ever felt like you could not get health care services you needed because of being uninsured? | No | 509 (73) | 531 (75) | 762 (84) | .001 |
| | Yes | 186 (27) | 181 (25) | 144 (16) | |
| **Perceived discrimination because of race/ethnicity or language spoken** | | | | | |
| Have you ever felt judged or treated differently by a health care provider because of your race or ethnicity? | No | 620 (89) | 499 (70) | 874 (97) | .001 |
| | Yes | 74 (11) | 216 (30) | 29 (3) | |
| Have you ever felt judged or treated differently by a health care provider because of your language? | No | 623 (90) | 666 (94) | 889 (98) | .001 |
| | Yes | 69 910) | 40 (6) | 14 (2) | |
| Have you ever felt like you could not get health care services you needed because of your race or ethnicity? | No | 636 (92) | 579 (81) | 892 (98) | .001 |
| | Yes | 53 (8) | 136 (19) | 17 (2) | |
| Have you ever felt like you could not get health care services you needed because of your language? | No | 624 (91) | 674 (95) | 898 (99) | .001 |
| | Yes | 63 (9) | 33 (5) | 10 (1) | |

18% of participants reported their health as excellent and poor/fair, respectively, while 71% indicated that their health was very good (35%) or good (36%). More than 17% of participants indicated that they did not have one person they thought of as their main doctor or health care provider. Almost 14% indicated a lot of medical mistrust (mistrust in their health care providers), whereas more (43%) reported "some" or "a lot" of trust in their clinicians.

## Bivariate Associations

Table 2 shows the bivariate associations between racial/ethnic backgrounds and various measures of perceived discrimination. Non-Hispanic Black participants reported greater discrimination by health care providers due to their racial/ethnic background, income, and type of insurance, as compared with Hispanic and non-Hispanic White participants. Hispanic participants also reported discrimination by health care clinicians, yet it was largely attributed to language differences. Both Hispanic and non-Hispanic Black participants cited lack of insurance as a cause of perceived discrimination by the health care system.

Table 3 shows bivariate associations between all of the independent variables and medical mistrust. At the bivariate level, all participant characteristics (independent variables) showed significant associations with levels of trust in health care providers, even after applying the Bonferroni correction.

## Multivariate Associations

Table 4 reports the results of multinomial logistic regression analyses estimating the associations between participants characteristics and mistrust. Adjusting for demographics, education, household income, and level of perceived discrimination, as well as level of self-rated health and other covariates in the model, the odds of reporting medical mistrust were 73% higher (aOR = 1.73; 95% CI, 1.15-2.61, *P* <.01) for non-Hispanic Black participants and 49% higher (aOR = 1.49; 95% CI, 1.02-2.17; *P* <.05) for Hispanic participants when compared with non-Hispanic White participants. After adjusting for demographics, education, household income, and health, both factors measuring perceived discrimination (race/ethnicity/language and income/insurance) were associated with level of mistrust. Having a higher level of perceived discrimination, due to income and type of or lack of insurance, increased the odds of being among survey participants who reported "not at all or not enough trust" with their clinicians by 98% relative to that of participants who reported that they had "lots of trust" (aOR = 1.98; 95% CI, 1.71-2.29, *P* <.001). Similarly, experiencing a higher level of discrimination increased the odds of being among survey participants who reported "not at all or not enough trust" with their clinicians by 40% compared with that among participants who reported that they had "some trust" (aOR = 1.41; 95% CI, 1.24-1.59; *P* <.001). Furthermore, experiencing a higher level of racial/ethnic and language discrimination increased the odds of being among participants who reported "not at all or not enough trust" in their clinicians by 25% relative to that of counterparts who reported that they had "lots of trust" (aOR = 1.25;

**Table 3. Bivariate Associations Between Participant Characteristics and Level of Trust (N = 2,257)**

| | Level of Trust | | | |
|---|---|---|---|---|
| **Characteristic** | **A Lot** | **Some** | **Not at All or Not Too Much** | ***P* Value** |
| Sex, No. (%) | | | | <.001 |
| Male | 449 (48) | 361 (38) | 133 (14) | |
| Female | 522 (40) | 619 (47) | 173 (13) | |
| Age, mean (SD), y | 54.5 (17.95) | 46.4 (16.44) | 42.3 (14.10) | <.001 |
| Education, mean (SD) | 10.6 (1.92) | 10.2 (2.06) | 10.1 (2.07) | <.001 |
| Household income, No. (%) | | | | <.001 |
| <150% FPL | 312 (37) | 374 (45) | 150 (18) | |
| 150%-399% FPL | 321 (42) | 348 (45) | 100 (13) | |
| ≥400% FPL | 338 (52) | 258 (39) | 56 (9) | |
| Ethnicity/race, No. (%) | | | | <.001 |
| Non-Hispanic Black | 259 (37) | 332 (47) | 113 (16) | |
| Hispanic | 236 (36) | 311 (47) | 115 (17) | |
| Non-Hispanic White | 476 (53) | 337 (38) | 78 (9) | |
| Primary care provider, No. (%) | | | | <.001 |
| No | 54 (16) | 171 (49) | 123 (35) | |
| Yes | 917 (48) | 807 (42) | 183 (10) | |
| Self-rated health status, mean (SD) | 2.49 (0.96) | 2.68 (0.91) | 3.02 (1.02) | <.001 |
| Perceived discrimination due to income and type of or lack of insurance, mean (SD)[a] | −0.27 (0.80) | 0.07 (1.01) | 0.61 (1.19) | <.001 |
| Perceived racial and language-related discrimination, mean (SD)[a] | −0.07 (0.80) | −0.01 (0.98) | 0.27 (1.45) | <.001 |

FPL = federal poverty level.

Notes: Sample size reflects 71 missing cases. Refer to Table 1 for measurement scales.

[a] A higher score indicates a higher level of perceived discrimination.

**Table 4. Multivariate Associations Between Participant Characteristics and Trust (N = 2,257)**

| | Level of Trust[a] | | | |
|---|---|---|---|---|
| | A Lot | | Some | |
| Characteristic | aOR (95% CI) | P Value | aOR (95% CI) | P Value |
| Sex | | | | |
| Male | 1.09 (0.79-1.50) | .59 | 1.41 (1.04-1.90) | <.05 |
| Female (ref) | 1.00 | … | 1.00 | … |
| Age, per year | 0.97 (0.96-0.98) | <.001 | 0.99 (0.98-1.00) | .10 |
| Educational attainment, y | 0.98 (0.90-1.07) | .66 | 1.02 (0.95-1.11) | .57 |
| Household Income | | | | |
| <150% FPL | 1.03 (0.66-1.60) | .90 | 1.30 (0.85-1.98) | .23 |
| 150%-399% FPL | 1.09 (0.76-1.55) | .64 | 1.36 (0.98-1.90) | .07 |
| ≥400% FPL (ref) | 1.00 | … | 1.00 | … |
| Race/ethnicity | | | | |
| Non-Hispanic Black | 1.73 (1.15-2.61) | <.01 | 1.32 (0.89-1.95) | .17 |
| Hispanic | 1.49 (1.02-2.17) | <.05 | 1.29 (0.91-1.82) | .15 |
| Non-Hispanic White (ref) | 1.00 | … | 1.00 | … |
| Primary care provider | | | | |
| No | 7.56 (5.06-11.30) | <.000 | 2.76 (2.01-3.78) | <.001 |
| Yes (ref) | 1.00 | … | 1.00 | … |
| Self-rated health[b] | 1.68 (1.43-1.98) | <.001 | 1.39 (1.20-1.62) | <.001 |
| Perceived discrimination due to income and type of or lack of insurance | 1.98 (1.71-2.29) | <.001 | 1.41 (1.24-1.59) | <.001 |
| Perceived racial or language-related discrimination | 1.25 (1.10-1.43) | <.001 | 1.19 (1.06-1.33) | <.003 |

aOR = adjusted odds ratio; FPL = federal poverty level; ref = reference group.

Notes: Sample size reflects 71 missing cases; multinomial logistic regression analysis. The –2 log likelihood was 3,740; degrees of freedom = 22; Nagelkerke = 0.234.

[a] Reference category is not at all/not too much trust.

[b] Scale of 1 to 5, excellent to poor.

95% CI, 1.10-1.43; *P* <.001). Finally, controlling for all other variables, having a primary care provider was associated with lower medical mistrust, indicating that individuals who reported not having a primary care provider had more than 7 times the odds of reporting mistrust in their providers (aOR = 7.56; 95% CI, 5.06-11.30; *P* <.001) relative to their counterparts who had a primary provider.

## DISCUSSION

Our multivariate analysis shows that compared with non-Hispanic White participants, non-Hispanic Black and Hispanic participants had 73% and 49% higher odds, respectively, of reporting mistrust with health care professionals. Additionally, more than 53% of non-Hispanic White participants trusted their clinicians "a lot," compared with only 36% and 37% of Hispanic and non-Hispanic Black counterparts, respectively. This finding adds to the established body of literature indicating higher levels of mistrust among non-Hispanic Black and Hispanic individuals.[1,12,15,28-39] We also documented a strong association between medical mistrust and perceived discrimination. Furthermore, we found a significant relationship between not having a primary care physician and higher level of mistrust with clinicians.

### Findings in Context

Within the last decade, several studies have focused on the role of implicit racial/ethnic bias and the quality of communication and trust between clinicians and minority and marginalized populations.[38,40-44] Implicit bias refers to prejudicial attitudes toward and stereotypical beliefs about a particular social group or members therein.[45] A recent systematic review of literature revealed that health care professionals exhibit the same levels of implicit bias as the greater population.[46] Maina and colleagues[47] found that close to 84% of studies (31 out of 37) established evidence of pro-White clinicians or bias toward light-skin/anti-Black, Hispanic, and other minority populations among health care professionals in various disciplines. Moreover, clinicians who exhibit implicit racial/ethnic bias may have poorer communication or communicate differently in clinical encounters with minority patients, reducing patients' comfort with and trust in those clinicians.[38,40-43]

Recent examination of these challenges within our health care system has revealed and publicized the negative impact of clinicians' implicit bias on minorities, leading to increased training on implicit bias and innovative approaches for changing the delivery of care by clinicians, including medical students and residents.[48-52] Implicit bias is not routinely addressed in medical and residency education, and training specific to underserved and vulnerable populations is infrequent.[53] Hagiwara and colleagues[45] indicate that there are gaps in these trainings, however, and suggest that the development and implementation of successful implicit bias trainings must focus on 3 stages. The initial stage is to identify strategies driven by relevant theories to reduce implicit bias in general populations. The second stage involves the development of implicit bias training based on the findings in the first stage and to test its effectiveness with health care professionals. Finally, the third stage must evaluate the effectiveness of implicit bias training after it is adapted into the existing curriculum and training.

Another interesting result of our study that warrants additional attention is the strong association between mistrust in clinicians and 2 factors: perceived discrimination due to race/ethnicity and language, and perceived discrimination due to income and type of or lack of insurance. This survey showed that a large number of non-Hispanic Black and Hispanic participants reported being treated differently or were unable to attain health care services they needed because of their insurance type. For example, 30% of non-Hispanic Black and 10% of Hispanic participants reported that they felt judged or treated differently by a clinician because of their race or ethnicity. Similarly, 33% of non-Hispanic Black and 29% of Hispanic participants reported that they could not get the health care services they needed because of their insurance type. These findings add to the discourse that disparities in diversity, equity, and inclusivity are widespread in the American health system and general society.[54]

Several contemporary examples of differential treatment, medical harm, and inequitable care may show that medical mistrust among minority populations, particularly non-Hispanic Black populations, are linked to existing discrimination in our health care system. Multiple systematic reviews conducted in recent years have documented multidimensional racial inequalities in health care use, medical treatment, and quality of care in minority populations, particularly the non-Hispanic Black population in the United States.[55-76] These systematic reviews documented a variety of racial disparities including but not limited to delay in initiation or receipt of cancer screening and inadequate treatment[55-57]; access for and management of Parkinson disease[58]; treatments for dementia[59]; use of neurology care[60]; end-of-life, palliative, and hospice care[61-63]; home health care disparities[64]; care quality, treatment, and outcomes of cardiovascular diseases[65,66,76]; acute and chronic pain management[67,68]; HIV care[69]; trauma mortality[70]; complications and/or mortality following orthopedic procedures[71,72]; and children's health and health care.[73-75] These structural and systematic racial disparities in the United States have led to poor health outcomes, worse health status, and low quality of care for minority groups, especially non-Hispanic Black and Hispanic populations. Unethical medical experimentations have also negatively affected minority groups, especially non-Hispanic Black populations, with long-lasting perceptions of deception and exploitation.[77-80] These beliefs have undermined the trust of the non-Hispanic Black and Hispanic community in the health care system and in clinicians.[81]

Our study found that the correlation between mistrust of medical professionals and perceived discrimination due to income, and type and lack of insurance remained significant even after household income, race/ethnicity, and other variables were accounted for. Our data revealed a stronger association between perceived discrimination due to income and type of or lack of insurance and mistrust in clinicians than the perceived discrimination due to race/ethnicity and language and mistrust in clinicians. This finding is similar to that of a cross-sectional study conducted among adult Florida Medicaid beneficiaries that showed that fewer participants reported discrimination on the basis of race/ethnicity (9%) than on the basis of Medicaid status (14%).[82] Patients reliant on public insurance, such as Medicare and MediCal, have greater mistrust and suspicion compared with private insurance holders.[83] Idan and colleagues[84] found that among the non-Hispanic Black population in California, uninsured persons were more likely to express greater mistrust toward health care organizations and clinicians. More importantly, our findings revealed that discrimination attributed to income and insurance status was still significant after controlling for other common causes of discrimination, including race/ethnicity and language. If this association is causal, that is, if perceived discrimination causes medical mistrust, this finding supports the notion that individuals who have low socioeconomic status and lack insurance are more likely to perceive discrimination, have greater mistrust, and experience poorer health outcomes.

We also found that individuals with no primary care provider had more than 7 times the odds of not trusting their clinicians. It is conceivable that adults with no primary care provider are more likely to receive their medical care at various facilities, such as urgent care clinics and the emergency department. This pattern of use may lead to a major gap in their continuity of care. Systematic and critical reviews of the literature show: (1) a consistent and significant positive relationship between interpersonal continuity of care and patient satisfaction,[85,86] (2) a significant association between increased continuity of care and lower mortality rates,[86,87] (3) a significant connection between having a primary care physician and a lower level of emergency department visits,[88] and (4) a significant association between interpersonal continuity of care and patient satisfaction.[85] Furthermore, for patients, continuity of care can produce a sense of security and confidence in the health care system and may be an essential component of building a trusting relationship.[89,90]

Because of the coronavirus disease 2019 (COVID-19) pandemic, the Centers for Medicare and Medicaid Services authorized clinicians to provide more services to new or current patients via telehealth to mitigate the risks of virus transmission. This change allows clinicians to use remote communication to develop healing human relationships. Patients with no primary care physicians, however, may face additional structural barriers to receiving this type of virtual service, which in turn leads to gaps in health care use and greater mistrust in the health care system. The current dilemma facing health care systems is how to provide service to hard-to-reach patients who are already marginalized and receive insufficient care. It is important for clinicians to understand the social contextual issues, which include lack of awareness, accessibility, and acceptability of telehealth, in order to identify barriers to continuity of care.[91] The conversion to telemedicine demonstrates its utility as an effective tool for social distancing in clinical or other settings.[92] It may further marginalize others, however, who instead require physical distancing with social connectedness.[93] Even though primary care practices have transitioned to telehealth visits to keep patients at home and decrease the transmission of the disease, an unintended consequence of this transition may be higher mistrust among minority populations with health disparities.

## Implications

This and other recent studies focusing on patient-clinician communication and trust ask the same major question: How do we move from mistrust to a state of trust? As stated by Sullivan,[94] "in the work to resolve mistrust, the responsibility cannot lie with the patients, who have historically been the subject of exploitation and discrimination, to reevaluate their understanding of the situation and place their trust in the American medical system." Assuming that much of the atmosphere of mistrust is due to implicit racial and ethnic bias,[46] rooted in institutional systems,[94] resolving mistrust requires addressing systemic bias and prejudice in the medical system. At minimum, therefore, using multilevel community- and theory-based training models that provide structural competency for health care professionals is needed. Additionally, implementing strategies that increase power-sharing and trust-building mechanisms can enhance trust between clinicians and patients, especially for underserved populations.[95]

Health care professionals should be further trained and encouraged to perform actions that can decrease mistrust and foster stronger partnerships with their patients, especially minority individuals. At all times, clinicians should express genuine commitment and concern for all patients,[96] regardless of race/ethnicity, language, or socioeconomic and insurance status. Clinicians can empower their patients by engaging them in decision making about their treatment plan, which will likely increase transparency and lessen mistrust. Clinicians should also ensure that they are culturally and linguistically competent to meet the needs of their patients, which can also build trust.[97] It is recommended that patient-centered care approaches be used with the inclusion of racially tailored, culturally humble, and equitable care.[98] Additionally, ethnic matching between clinicians and patients may be very beneficial for minority patients, leading to improved treatment outcomes and reductions in risky and harmful health behaviors.[99,100] With increased trust and commitment, patients are more likely to adhere to healthier lifestyle behaviors and report better quality of life.[10]

To reduce inequalities, use of structural competency as a conceptual framework can promote social justice in medicine.[101] Structural competency encourages clinicians to recognize how social, economic, and political conditions produce health inequalities in the first place.[102] Indeed, it is argued that clinicians remain unsure of how to address these structural barriers in clinical contexts. Previous training models, such as cultural competency, focused on identifying clinician bias and improving communication with patients.[101,103] Structural competency, however, inspires clinicians to recognize ways that institutions, neighborhood conditions, market forces, public policies, and health care delivery systems shape symptoms and diseases, and to mobilize for correction of inequalities, both in physician-patient interactions and beyond the clinic walls.[103] For example, a recent study conducted among 4,389 adults found that police brutality increased medical mistrust for all racial groups.[39] This association indicates that structural conditions outside the medical system—such as police brutality—affect relationships with the medical system. One important aspect of implementing this new approach is to develop "structural humility," which mandates that health care practitioners collaborate across disciplines and with community members. Creation of community-based participatory research[104,105] and partnerships is needed to develop effective structural humility to address both explicit and implicit bias among health care clinicians. These collaborations enhance the knowledge base of health care clinicians on existing structural barriers of stigma and health inequalities developed outside of medicine.[106] This approach helps medical education to move beyond cultural competency to address how structures produce health inequalities, by infusing clinical training with a structural focus on institutional racism as a cause of health inequities.[39,101,103,107]

Addressing structural racism, especially during the COVID-19 pandemic, should be considered an urgent issue because of its impact on communities of color and other vulnerable populations.[108-114] The pandemic has revealed, more than ever before, the discrimination and disparities that frame our health care system by the appalling death rates and poor outcomes among the minority population.[115] This pandemic has clearly revealed social and political fractures, with discriminatory responses to treatment that are disproportionately affecting underserved and minority communities.[116] Antiracism education and training on research with and care for underserved and vulnerable population must be more fully integrated into public health and medical education, with specific focus on structural and cultural competency. Jaiswal and colleagues[117] argue that clinicians and public health professionals have a moral and professional obligation to communicate science in an effective, accurate, and accessible manner, without bias, and with the understanding that discrimination and structural racism and other forms of oppression be identified as the root causes of inequality-driven mistrust.

## Limitations

This study had some methodologic limitations. The cross-sectional design prevents determination of any causal relationships. All the measures were self-reported, which may present a degree of bias. This study is unique, however, as it included a large representative sample of adults in California. Additionally, various socioeconomic factors were considered, including income and education, which could affect the mistrust of various minority groups. Lastly, we were unable to include other racial/ethnic groups, such as Asian American or Native American populations, in our analysis because of the low prevalence of these groups in the survey population. Still, this study is unique for focusing on the comparative differences of mistrust among various minority groups, especially for this geographic urban region.

## Conclusions

Our findings reveal that medical mistrust is correlated with both race/ethnicity and perceived discrimination. These correlations are complex and due to a wide range of historical, social, and cultural mechanisms at the individual, community, and organizational levels. A large number of factors should be addressed if we want to increase competency and care in patient-clinician relationships. More longitudinal research is needed to better understand how societal, economic, psychological, and historical complex factors contribute to mistrust and health outcomes. This type of research may guide the design of multilevel community- and theory-based training models that provide structural competency for clinicians.

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**Key words:** race; ethnicity; ethnic groups; Blacks; African Americans; Hispanics; minority groups; medically uninsured; low-income population; discrimination; mistrust; structural competency; disparities in health & health care; vulnerable populations

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