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Original

Patient-provider communication, concordance, and ratings of care in dermatology: Results of a cross-sectional study.

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Abstract

Objective

To determine the impact of race concordance on patient perception of quality of dermatologic care.

Study design

Cross-sectional study.

Setting

Academic outpatient practices in the Departments of Dermatology of Eastern Virginia Medical School and the Johns Hopkins University School of Medicine.

Participants

The study cohort comprised 124 participants including 6 providers and 118 established patients.

Main Outcome Measures

We hypothesized, *a priori*, that patients in race-discordant dyads would report lower ratings of participatory decision-making (PDM), satisfaction, trust in the provider, and similarities with providers.

Results

Patients in race-discordant dyads reported less positive ratings on 4 out of 8 participatory decision-making questionnaire items (p values < 0.05), and were significantly more likely to perceive differences with providers in race and culture (p values < 0.05). These differences persisted to varying degrees after controlling for key confounders such as education and income level. Participants in race-concordant and race-discordant dyads did not differ in their perceptions of satisfaction or trust.

Conclusions

Patient perception of participation in the decision-making process and of shared similarities with their providers is attributable in varying degrees to race concordance. Continued strengthening of cultural competency skills during medical and dermatology residency training as well as increased diversification of the dermatologic workforce could attenuate the adverse influences of race discordance and other socioeconomic factors on patient-provider communication.

Keywords: concordance, race, workforce diversification, cultural competence, patient-provider communication, health disparities.

Introduction

The Institute of Medicine and the Agency for Healthcare Research and Quality published two landmark reports, *Unequal Treatment* [1] and *Health disparities: Measuring health care use and access for racial/ethnic populations* [2], documenting the substantial disparities in health outcomes among United States racial and ethnic minorities. Numerous studies have identified provider behaviors and bias as key contributing factors and suggest that cross-cultural differences between patients and their providers impact disparate healthcare outcomes [3-5]. Patient-provider race concordance is defined as similarity between a patient and their provider based on race. Some studies have shown that race discordance, dissimilarity between a patient and their provider, is associated with lower ratings of care. African American patients in race-discordant dyads are more likely than their white counterparts to report lower levels of participation in medical decision-making and physician trust [6-9]. Similarly, among Hispanics, race concordance is an important predictor of greater satisfaction with overall healthcare quality [9].

African American and Hispanic physicians are more apt to provide medical care to minorities [10]. Similarly, African American and Hispanic patients are more likely than their white counterparts to receive their care from a minority physician [10]. Despite this, minority patients receive the majority of their medical care from white physicians owing to the sheer paucity of Hispanic and African American physicians [11]. The dermatologic workforce represents an even more disproportionate subset of physicians; according to the American Association of Medical Colleges, African Americans and Hispanics accounted for only 3.6% and 4.8% of US dermatology graduates in 2012 [12], whereas they comprise 13.6% and 16.3% of the US population, respectively [13, 14]. Efforts to attenuate these profound disparities have occurred, in part, through cultural competency education for medical trainees [15]. Cultural competence is defined as a “set of congruent behaviors, attitudes, and policies that come together in a system, agency or among professionals and enable that system, agency or those professions to work effectively in cross-cultural situations [16].” Bridging the cultural disconnect between the providers and the recipients of healthcare is a prerequisite for effective communication and for inducing positive behavioral change.

Although the preponderance of race concordance research has occurred within the primary care setting, the unique dermatologic needs that vary across race and ethnicity [17-19], the large disparities in outcomes among minorities for life-threatening conditions such as melanoma [15], and the lack of diversity within the dermatologic workforce underscore the relevance of this

topic to dermatologists. The objective of this study is to increase the understanding of interpersonal processes related to the provision of dermatologic care. Specifically, we explored the impact of race concordance on patient perception of the quality of dermatologic care received. Based on the literature, we hypothesized *a priori* that patients in race-concordant pairings would report higher levels of satisfaction, participatory decision-making (PDM), shared similarities, and provider trust compared to patients in race-discordant pairings.

Methods

Research Participants

This study is an extension of a completed pilot study of 12 patients (6 African American and 6 White) who were recruited from the Department of Dermatology at Eastern Virginia Medical School (EVMS). The extended study included the Department of Dermatology at the Johns Hopkins University School of Medicine (JHUSOM). Participants were recruited from December 2012 to April 2013 and from May to July 2014 at EVMS, and October to December 2014 at JHUSOM. To recruit dermatology providers (defined as physicians and physician assistants), we contacted each personally to discuss the objective of the study. For circumstances in which we were unable to schedule face-to-face meetings, providers were invited to participate via telephone. Only established patients of participating providers, who were 18 years of age and older were approached in a non-randomized fashion. Patients scheduled to see a participating provider were offered the opportunity to participate in the study by clinic receptionists, and if interested, were prompted to see one of the study personnel. Providers were not incentivized to participate, but patients were offered non-monetary base goods for participation. All participants provided written informed consent, which was in compliance with the Declaration of Helsinki protocols and was approved by the EVMS and JHUSOM Institutional Review Boards.

Data Collection

We used previously validated questionnaire items (Table I), adopted from Street et al. [20]. Prior to the office visit, we administered a brief questionnaire to patients and providers to obtain their demographic data. For patients, we collected data on age, race, and gender, level of educational attainment, annual household income, and marital status, as well as initial pre-visit perceptions of the PDM, satisfaction and trust variables. For providers, we queried their age, gender, race/ethnicity, number of years in practice, and whether or not they received cultural competency training during graduate or post-graduate training. Immediately following the office visit, patient participants completed a 14-item post-visit questionnaire, which included items measuring similarity, PDM, trust, and patient satisfaction. After each clinic session, participating providers completed a brief 6-item questionnaire on their familiarity, perceived similarity, and predicted patient outcome for each study patient.

Study Variables

The independent variable for our analyses was race concordance. Participants (providers and patients) self-reported their race (as White, African American, Asian, American Indian and Alaska Native, Native Hawaiian and Pacific Islander, or Other) and, for providers, their ethnicity (as Hispanic or non-Hispanic). We classified provider-patient dyads as *race concordant* when both individuals self-reported the same racial classification, or *race discordant* when the classifications differed. Our dependent variables were patient satisfaction, PDM, perceived personal/cultural similarity, and patient trust in the provider, which were all measured using numbered response scales (Box 1).

Statistical Methods

Descriptive and bivariate analyses were performed using SAS version 9.3 (SAS Institute Inc., Cary, NC). Summary statistics included mean, standard deviation, median and interquartile range for continuous variables as well as frequencies and percentages for categorical variables. Total item scores were computed for pre-visit and post-visit questionnaires. Race-concordant and race-discordant pairs of providers and patients were compared on individual items and total item scores using Wilcoxon's rank sum

Box 1. Non-demographic questionnaire items.

For patients:

- My doctor talks "down" to me
- My doctor values my input
- I feel comfortable asking my doctor questions
- I trust my doctor's advice and opinions
- I feel rushed during my doctor's visit
- I understand what my doctor told me to do
- My doctor answered all of my questions
- I feel comfortable with my treatment plan
- My doctor listened to me during my visit
- My doctor and I worked as a team
- I am likely to recommend my doctor to a friend
- I am likely to come back to this doctor
- The way my doctor and I speak is ____
- My doctor and I have ____ styles of communication
- My doctor and I have ____ general values in life
- The types of people I spend my free time with and the types of people my doctor spends his/her free time with are ____
- My doctor and I are ____ in terms of race
- My doctor and I are ____ in terms of culture
- My doctor and I are ____ in terms of skin color

For providers:

- How many times have you seen this patient?
- I know this patient well
- I relate to my patient's culture
- I relate to my patient's race
- I think my patient understood my treatment plan
- I think my patient will be compliant with my instructions/advice

^a Responses ranged from 1 (strongly disagree) to 5 (strongly agree).

^b Responses ranged from 1 (very different) to 6 (very similar).

^c Responses were either 1 (similar) or 2 (different).

^d Responses ranged from 1 (1-5), 2 (6-10), 3 (11-15), 4 (16+), 5 (don't know).

^e Responses ranged from 1 (strongly agree) to 5 (strongly disagree).

tests. Race concordance was separated into four groups: concordant (White provider), discordant (White provider), discordant (African American provider), and discordant (Asian provider); individual and total item scores were compared using Kruskal-Wallis test for overall comparisons across the four groups, and Wilcoxon's rank sum tests were used for pair wise comparisons using the concordant group as a referent. Multiple linear regression models were constructed to evaluate race concordance as a predictor of patient and provider perceptions, after controlling for key confounders including patient gender, education (<College, ≥College), household income (<\$50,000, ≥\$50,000), marital status (married, not married), number of provider visits (≤5, >5) and provider. Only relationships found to be significant in the bivariate analyses were considered for multivariate analyses. The internal consistency of items included in each questionnaire (Cronbach's alpha) was estimated. For most analyses, two-sided statistical tests were performed at an alpha level of 0.05. We used Bonferroni correction for pair wise comparisons, resulting in an alpha level of 0.017.

Results

Patient and provider characteristics are shown in Table 1. For the analyses, we excluded 7 patients (4 did not report their race and 3 reported their race as "Other") we could not pair with a participating provider, reducing the sample size to 118. Of this 118, 32

patients did not respond to one or more questionnaire items about perceived similarity. The sample was composed primarily of women, who accounted for 71% of patients and 83.3% of providers. There was low representation among Asians (1 patient and 1 provider). Of the 70 White patients, 26 were in race-concordant and 44 in race-discordant patient-provider dyads. Of the 47 African American patients, 33 were in race-concordant and 14 in race-discordant dyads; the sole Asian patient saw a race-discordant provider.

Table 1. Provider and patient demographic characteristics.

<i>Provider Characteristics</i>	n = 6	%
Gender		
Male	1	16.7
Female	5	83.3
Age (years)		
Mean (SD)	48.8 (15.5)	
Race		
White	2	33.3
African American	3	50.0
Asian	1	16.7
Years in practice		
< 10	4	66.7
> 10	2	33.3
Received cultural competency training		
Yes	3	50.0
No	3	50.0
<i>Patient Characteristics</i>	n = 118	%
Gender		
Male	34	28.8
Female	84	71.2
Age (years)		
Mean (SD)	52.5 (14.4)	
Median (IQR)	52.5 (42.0-64.0)	
Race		
White	70	59.3
African American	47	39.8
Asian	1	0.9
Education		
High School/General Education Development (GED)	21	18.3
Vocational Training	4	3.5
College	47	40.9
Post-graduate	36	31.3
Other	7	6.1
Annual Income (\$)		
<10000	5	4.4
10000-25000	10	8.8
26000-50000	28	24.6
51000-75000	19	16.7
76000-100000	18	15.8
100000+	24	21.1
Prefer not to answer	10	8.8
Marital Status		

Single	28	23.7
Married	68	57.6
Divorced	15	12.7
Widowed	7	5.9
Number of provider visits		
1-5	86	73.5
6-10	24	20.5
11-15	7	5.9
Mean (SD)	4.8 (4.8)	
Median (IQR)	4.0 (2.0-6.0)	

¹ Numbers for each questionnaire item may not add up to patient sample size due to no response by some patients.

² Percentages are based on the number of patients that responded to that questionnaire item.

³ The EVMS dermatology clinic population is comprised of approximately 57% white; 34% African American; 2.9% Asian; 0.7% Hispanic/Latino patients. 4.5% of patients did not report race/ethnicity. THE JHUSOM clinic population is 59.3% white, 0% Hispanic, 26.1% Black; 3.8% Asian, and 7.1% other. Demographic data are based on unique visits in 2015.

Patients

Patients in race-concordant and race-discordant dyads did not differ in their perceptions of satisfaction and trust (see Table 2). However, patients in race-discordant pairs did differ significantly in their assessment of PDM. Patients in discordant dyads with White providers were significantly more likely to report feeling less comfortable with their treatment plan, were less likely to report that all of their questions were answered, and felt less listened to by their provider. Discordant patients seeing the Asian provider reported lower levels of understanding. The discordant and concordant groups also differed significantly in questionnaire items related to perceived racial and cultural similarities. Pair wise comparisons showed that patients in race-discordant dyads with the Asian provider were more likely than patients in race-concordant dyads to perceive differences in race and culture. The discordant patients with African American and Asian providers tended to report greater levels of perceived similarities with their provider in manner of speaking, communication style, life values, and spending time with similar types of people than discordant patients of White providers.

Table 2. Race concordance and patient perceptions.

Questionnaire Item	Mean (SD)			Kruskal-Wallis P value	
	Concordant n=59	Discordant			
		White provider n=8	AA provider n=27		Asian provider n=24
<i>Perceived Similarity</i>					
The way my doctor and I speak is	5.5 (0.8)	5.3 (0.8)	5.7 (0.5)	5.8 (0.4)	0.17
My doctor and I have ___ styles of communication	5.4 (0.8)	5.3 (0.7)	5.5 (0.8)	5.7 (0.6)	0.31
My doctor and I have ___ general values in life	5.2 (1.1)	5.2 (0.8)	5.5 (0.7)	5.3 (0.9)	0.84
The types of people I spend my free time with and the types of people my doctor spends his/her free time with are ___	4.5 (1.5)	3.5 (1.7)	4.8 (1.2)	4.1 (1.4)	0.24
My doctor and I are ___ in terms of race	1.5 (1.5)	1.5 (0.5)	1.9 (0.4)	1.8 (0.4)	<0.0001
My doctor and I are ___ in terms of culture	5.1 (1.0)	4.3 (0.9)	4.6 (1.3)	3.6 (1.6)	0.003
My doctor and I are ___ in terms of skin color	5.4 (0.9)	2.1 (1.9)	1.5 (1.1)	2.6 (1.6)	0.41
<i>Participatory Decision-Making</i>					

I understand what my doctor told me to do	4.6 (0.8)	3.6 (1.7)	4.8 (0.4)	4.9 (0.3)	0.004
My doctor answered all of my questions	4.7 (0.5)	4.0 (1.3)	4.9 (0.4)	4.8 (0.4)	0.037
I feel comfortable with my treatment plan	4.6 (0.6)	3.6 (1.4)	4.6 (0.8)	4.7 (0.6)	0.034
My doctor listened to me during my visit	4.7 (0.4)	3.8 (1.5)	4.9 (0.3)	4.8 (0.4)	0.015
My doctor and I worked as a team	4.6 (0.6)	3.6 (1.4)	4.7 (0.6)	4.6 (0.5)	0.064
My doctor talks “down” to me	1.7 (1.3)	2.1 (1.8)	1.9 (1.4)	1.3 (0.6)	0.54
My doctor values my input	4.3 (0.8)	3.8 (1.4)	4.4 (0.7)	4.1 (0.9)	0.39
I feel comfortable asking my doctor questions	4.5 (0.7)	4.1 (1.5)	4.6 (0.5)	4.6 (0.9)	0.74
<i>Patient Satisfaction and Trust</i>					
I am likely to recommend my doctor to a friend	4.9 (0.4)	4.8 (0.5)	4.7 (0.8)	4.7 (0.6)	0.39
I am likely to come back to this doctor	4.8 (0.7)	4.9 (0.4)	4.8 (0.8)	4.7 (0.6)	0.47
I feel rushed during my doctor’s visit	2.1 (1.3)	2.1 (1.2)	2.2 (1.4)	1.9 (0.9)	0.95
I trust my doctor’s advice and opinions	4.4 (0.9)	3.8 (1.8)	4.7 (0.5)	4.4 (0.9)	0.39

¹ P Value of 0.05 or less is considered statistically significant.

² Questionnaire item evaluates personal similarity.

³ Questionnaire item evaluates ethnic similarity.

Providers

The African American and Asian providers in discordant dyads were less likely than White providers to perceive shared similarities in terms of race and culture (see Table 3). The Asian provider was also less likely to report that discordant patients understood their treatment plans and would comply with their instructions.

Table 3. Race concordance and provider perceptions.

Questionnaire Item	Mean (SD)			Kruskal-Wallis P value	
	Concordant n=59	Discordant			
		White provider n=8	AA provider n=27		Asian provider n=24
I know this patient well	2.8 (1.3)	2.6 (1.4)	2.9 (1.1)	2.4 (0.9)	0.41
I relate to my patient's culture	2.3 (1.1)	2.4 (0.7)	3.3 (0.8)	3.0 (0.0)	<0.0001
I relate to my patient's race	1.8 (0.9)	2.4 (0.7)	3.7 (0.9)	3.0 (0.0)	<0.0001
I think my patient understood my treatment plan	2.1 (1.2)	3.0 (1.8)	2.4 (1.2)	1.0 (0.0)	<0.0001
I think my patient will be compliant with my instructions/advice	2.2 (1.2)	3.0 (1.8)	2.4 (1.1)	1.0 (0.0)	<0.0001

¹ A P value of 0.05 or less is considered statistically significant.

Multivariate Analyses

To determine whether race concordance was a predictor of patient and provider perceptions, we constructed multivariate linear regression models using the questionnaire items found significant in the univariate analysis (see Tables 4 and 5). The differences in patient understanding of provider instructions initially observed in the discordant African American provider group lost significance after controlling for gender, income, marital status, and education in the multivariate analysis. In contrast, in the multivariate analysis only, patients in this same group perceived similarities in culture, whereas patients in Asian provider discordant pairs perceived similarities in race with their providers. In both univariate and multivariate analyses, discordant patients paired with the Asian provider perceived significant differences in culture. For discordant dyads containing a White provider, in

both univariate and multivariate analyses, patients reported lower levels of comfort and understanding with their treatment plan than patients in concordant dyads.

Table 4. Multivariate analysis of patient questionnaire items showing comparison between race-concordant and race-discordant dyads.

Outcome variable	Univariate			Multivariate		
	β	SE	P	β	SE	P
<i>I understand what my doctor told me to do</i>						
Concordant	--	--	--	--	--	--
Discordant (White Provider)	-0.93	0.28	0.0013	-0.60	0.36	0.10
Discordant (AA Provider)	0.26	0.17	0.15	0.32	0.21	0.13
Discordant (Asian Provider)	0.36	0.18	0.052	0.32	0.22	0.14
<i>My doctor answered all of my questions</i>						
Concordant	--	--	--	--	--	--
Discordant (White Provider)	-0.68	0.24	0.0018	-0.96	0.28	0.0011
Discordant (AA Provider)	0.17	0.13	0.19	0.18	0.16	0.28
Discordant (Asian Provider)	0.11	0.14	0.41	0.15	0.17	0.37
<i>I feel comfortable with my treatment plan</i>						
Concordant	--	--	--	--	--	--
Discordant (White Provider)	-0.99	0.27	0.0004	-1.51	0.36	<0.0001
Discordant (AA Provider)	0.019	0.17	0.91	0.048	0.20	0.81
Discordant (Asian Provider)	0.056	0.17	0.75	0.010	0.21	0.96
<i>My doctor listened to me during my visit</i>						
Concordant	--	--	--	--	--	--
Discordant (White Provider)	-0.98	0.21	<0.0001	-1.36	0.27	<0.0001
Discordant (AA Provider)	0.16	0.13	0.21	0.11	0.15	0.46
Discordant (Asian Provider)	0.021	0.13	0.87	0.098	0.16	0.54
<i>My doctor and I are ___ in terms of race</i>						
Concordant	--	--	--	--	--	--
Discordant (White Provider)	-0.044	0.49	0.93	0.47	0.53	0.37
Discordant (AA Provider)	0.30	0.27	0.26	0.31	0.27	0.25
Discordant (Asian Provider)	0.21	0.29	0.49	0.76	0.30	0.012
<i>My doctor and I are ___ in terms of culture</i>						
Concordant	--	--	--	--	--	--
Discordant (White Provider)	-0.83	0.63	0.19	-0.58	0.76	0.45
Discordant (AA Provider)	-0.48	0.31	0.12	-0.82	0.35	0.023
Discordant (Asian Provider)	-0.46	0.33	<0.0001	-1.46	0.38	0.0002

¹The multivariate model controlled for the following confounders: Gender, education, household income, marital status, number of provider visits and provider race.

² β represents the parameter estimate.

³SE represents the standard error.

⁴A P value of 0.05 or less is considered statistically significant.

Table 5. Multivariate analysis of provider questionnaire items showing comparison between race-concordant and race-discordant dyads.

Outcome variable	Univariate			Multivariate		
	β	SE	P	β	SE	P
<i>I relate to my patient's culture</i>						
Concordant	--	--	--	--	--	--
Discordant (White Provider)	0.12	0.34	0.72	0.28	0.40	0.49
Discordant (AA Provider)	1.05	0.21	<0.0001	0.69	0.22	0.0027
Discordant (Asian Provider)	0.75	0.23	0.0014	1.15	0.25	<0.0001

<i>I relate to my patient's race</i>						
Concordant	--	--	--	--	--	--
Discordant (White Provider)	0.54	0.30	0.076	0.69	0.39	0.077
Discordant (AA Provider)	1.86	0.19	< 0.0001	1.67	0.22	< 0.0001
Discordant (Asian Provider)	1.17	0.21	< 0.0001	1.38	0.24	< 0.0001
<i>I think my patient understood my treatment plan</i>						
Concordant	--	--	--	--	--	--
Discordant (White Provider)	0.90	0.43	0.041	0.87	0.48	0.076
Discordant (AA Provider)	0.32	0.27	0.24	0.19	0.27	0.49
Discordant (Asian Provider)	-1.1	0.29	0.0003	-0.51	0.30	0.095
<i>I think my patient will be compliant with my instructions/advice</i>						
Concordant	--	--	--	--	--	--
Discordant (White Provider)	0.85	0.42	0.048	0.68	0.48	0.16
Discordant (AA Provider)	0.23	0.27	0.38	0.13	0.27	0.63
Discordant (Asian Provider)	-1.15	0.29	0.0001	-0.58	0.30	0.056

¹The multivariate model controlled for the following confounders: Gender, education, household income, marital status, number of provider visits, and provider race.

² β represents the parameter estimate.

³SE represents the standard error.

⁴A P value of 0.05 or less is considered statistically significant.

Discussion

To our knowledge, this is the first study to explore the impact of race concordance on the dermatologic encounter. Our findings suggest that patient perception of participation in the decision-making process and of shared similarities with their providers are attributable in varying degrees to race concordance. After controlling for sociodemographic and clinical characteristics and for provider race, patients in discordant dyads with White providers felt less comfortable with their treatment plans, were less likely to feel that their questions were addressed, and were less apt to report feeling listened to by their providers than those in other race-discordant provider groups. In multivariate analysis, patients in discordant Asian and African American provider groups were less likely to perceive cultural and racial similarities with their provider than those in other discordant dyads with White providers. Despite lower levels of PDM in discordant dyads and higher ratings of perceived similarities among concordant dyads, race-concordant and race-discordant dyads did not differ significantly in their levels of overall satisfaction and trust, suggesting a role for factors beyond race.

Patient-provider interaction is an established predictor of quality of care [21, 22, 9], with substantial evidence suggesting that the effects of race concordance may be mediated through the collaborative nature of patient-physician interaction [6, 15, 23-26]. We found that patients in discordant pairs with White providers not only reported lower interpersonal communication scores than patients in concordant pairings, but also reported the lowest PDM scores of all four groups. Our results corroborate those of two prior studies which found that patients in race-discordant pairs reported lower PDM scores than those in race-concordant pairs [23] and that African American patients reported less participation in their patient-physician encounters than did their White counterparts [6]. To explain the differences in levels of PDM reported by different racial groups, researchers have examined some of the verbal, non-verbal, and psychosocial constituents of the patient-physician interaction. Length of encounter [25], positive emotional affect [23], open body position, and smile and touch gestures [26] have been found to be enhanced in race-concordant interactions. On the other hand, African American patients report more physician verbal dominance than do their White counterparts [24]. These findings show that more in-depth research is necessary to ascertain what collection of these elements is primarily responsible for driving the trends in our results.

Despite the strength of association between race concordance and PDM, patient expectations and preconceptions may also have impacted their judgment and may explain some of our results. Moreover, other factors such as gender [27, 6], age [28], and

language [29, 10] may confound the effects of race concordance to varying degrees. Nonetheless, the level of PDM during the patient-provider interaction appears to be a strong link in the association between race concordance and patient perceptions, thus offering a promising avenue for further investigation.

The concept of shared identity between patient and provider is multi-dimensional [20]. Our questionnaire items examined two facets of similarities: 1) *personal similarities*, which reflect commonalities in thinking, life values, and styles of communication; and 2) *ethnic similarities*, which look at factors related to race and culture [20]. Although patients visiting discordant Asian and African American providers were less likely than those in concordant dyads to report shared ethnic likeness, concordant dyads did not differ from discordant dyads in perceived personal similarities between patients and providers. Street et al. showed that there was no impact of perceived racial and cultural mutuality on patient outcomes; but rather, patient perception of personal similarities with their physician was a strong predictor of patient trust, satisfaction, and intent to comply with the prescribed treatment plan [20]. Although we did not directly test the effects of perceived similarities on patient satisfaction and trust, our results are consistent with findings from Street et al. [20], that shared personal attributes outweigh the importance of factors related to race and culture.

We were surprised that patients in discordant dyads reported lower levels of PDM but did not have significantly lower perceptions of satisfaction and trust from those in concordant dyads. We speculate that other factors such as patient and provider expectations and judgments, other dimensions of communication (e.g., provider clarity), degree of clinical response to treatment, and visit duration may have offset the negative effects of PDM. Reports of the influence of race concordance on physician satisfaction are mixed. Several studies have found little or no association between race concordance, patient trust [20, 30], involvement, satisfaction, and intent to adhere to recommended treatments [7]. Underscoring the complexity of the interaction between race, patient satisfaction, and trust are the dichotomous interpretations of findings from the Commonwealth Fund 2001 Health Care Quality Survey by two distinct research teams. Phillips et al. [31] found that patient-perceived interpersonal sensitivity significantly impacted patient satisfaction, whereas race and ethnic concordance did not. However, using the same dataset, Saha et al. [22] found that Asian and Hispanic patients had lower satisfaction with the healthcare system than African Americans and Whites. Race concordance does not entirely explain these ostensibly conflicting conclusions. A recent study introduced the broader category of “social concordance,” which postulates that physicians of similar age, gender, or education with their patients received higher ratings and were more likely to be recommended by the patients to their friends [32]. This echoes the aforementioned conclusions of Phillips et al. that perceptions of interpersonal sensitivity may be the true determinant of patient satisfaction, rather than race concordance alone. Further research is needed to more precisely determine the influence of race concordance on patient satisfaction.

Limitations

This study has several important limitations. First, the cross-sectional design limited our ability to evaluate changes in patient and provider perceptions over time and to determine the influence of perceived similarities on patient satisfaction and trust outcomes longitudinally. Second, the study sample was racially unbalanced, having only two Asian participants (including one provider), so that Asian participants could only be in discordant dyads. Our lack of Hispanic representation further limits the generalizability of our findings. Third, by including only established patients we may have selected for those satisfied with the practices, thus explaining why we found no effect for satisfaction. Fourth, we were unable to account for demographic and clinical factors (e.g., encounter length, duration of time between visits, insurance status, region, religion, language, and health status) which may also contribute to a patient’s perception of the clinical encounter. Fifth, inquiring about PDM, satisfaction, and trust prior to the encounter might have led to recall bias. However, we chose to only approach established patients in order to attenuate the impact of this bias on patients’ perceptions. Last, the majority of our questionnaire items were modified from previously validated primary care studies [20]; some of these questions may not be applicable in the dermatological setting.

Conclusion

In summary, although race concordance does influence certain aspects of the dermatology visit, our findings suggest that socioeconomic factors such as education and income level are equally important. Although a multitude of social, clinical, and

institutional factors influence patient satisfaction, trust, and perceived healthcare quality, understanding race concordance may serve as a starting point in developing effective interventions to improve provider communication.

Future work should: 1) focus on identifying the mechanistic pathways linking race concordance and PDM, 2) include a more diverse participant pool with ample Asian and Hispanic patients and providers, 3) explore other factors such as patient-centeredness that lead to increased levels of patient satisfaction, 4) explore disease specific scenarios where concordance may be of particular relevance from the patient perspective- including pigmentary disorders and hair issues 5) test patient- and provider-based interventions designed to improve interpersonal communication, and 6) examine the possible links between patient perceptions and their impact, if any, on health outcomes as this may further substantiate the need for increased diversity in the dermatology workforce. Our findings argue for the continuation of strengthening cultural competency skills during medical and dermatologic residency training and for greater diversification of the dermatologic workforce, to provide patients a more comprehensive pool of providers from which to choose. Such modifications may enhance the patient-provider relationship while improving both patient perceptions and dermatologic outcomes.

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