A Social Psychological Approach to Improving the Outcomes of Racially Discordant Medical Interactions

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BACKGROUND: Medical interactions between Black patients and non-Black physicians are less positive and productive than racially concordant ones and contribute to racial disparities in the quality of health care.

OBJECTIVE: To determine whether an intervention based on the common ingroup identity model, previously used in nonmedical settings to reduce intergroup bias, would change physician and patient responses in racially discordant medical interactions and improve patient adherence.

IINTERVENTION: Physicians and patients were randomly assigned to either a common identity treatment (to enhance their sense of commonality) or a control (standard health information) condition, and then engaged in a scheduled appointment.

DESIGN: Intervention occurred just before the interaction. Patient demographic characteristics and relevant attitudes and/or behaviors were measured before and immediately after interactions, and 4 and 16 weeks later. Physicians provided information before and immediately after interactions.

PARTICIPANTS: Fourteen non-Black physicians and 72 low income Black patients at a Family Medicine residency training clinic.

MAIN MEASURES: Sense of being on the same team, patient-centeredness, and patient trust of physician, assessed immediately after the medical interactions, and patient trust and adherence, assessed 4 and 16 weeks later.

KEY RESULTS: Four and 16 weeks after interactions, patient trust of their physician and physicians in general was significantly greater in the treatment condition than control condition. Sixteen weeks after interactions, adherence was also significantly greater.

CONCLUSIONS: An intervention used to reduce intergroup bias successfully produced greater Black patient trust of non-Black physicians and adherence. These findings offer promising evidence for a relatively low-cost and simple intervention that may offer a means to improve medical outcomes of racially discordant medical interactions. However, the sample size of physicians and patients was small, and thus the effectiveness of the intervention should be further tested in different settings, with different populations of physicians and other health outcomes.

INTRODUCTION

Approximately 75 % of Black patients receive treatment from non-Black healthcare providers,[1] and communication in racially/ethnically discordant medical interactions is less positive, productive, and informative than in racially concordant ones.[2–6] Negative perceptions by physicians and patients play important roles in the dynamics and outcomes of these interactions.[7–10] One critical aspect of these perceptions is trust.[11] Non-Black physicians see Blacks patients as less trustworthy and compliant than White patients.[7,12] Black patients are less trusting of their non-Black physicians,[13,14] more likely to believe they have been mistreated because of race,[15] and show declines in trust following interactions with non-Black physicians.[16]

We explored whether an intervention derived from the common ingroup identity model, a social categorization approach to improving intergroup relations generally, could improve medical outcomes for racially discordant medical interactions by changing physician and patient reactions to one another. The model[17,18] proposes that members of different groups place one another in preexisting social categories, which facilitates spontaneous negative thoughts, feelings, and behaviors toward members of other groups. However, such reactions can be reduced by inducing members of these groups to recategorize themselves as members of the same, more inclusive group.[19] There is considerable evidence from nonmedical settings that this recategorization approach can improve how members of different groups view one another,[17,18] and increase feelings of trust and forgiveness between groups that have distrusted

and disliked one another.[20–22] The present research investigated whether an intervention derived from the common ingroup model can improve race-based trust in racially discordant primary care medical interactions, and thus produce more positive medical consequences. Physicians and their patients were randomly assigned to either a common ingroup identity treatment condition or a control condition. We hypothesized that immediately after the interactions, treatment-condition physicians would report a *greater sense of being on the same team* with their patient than would control-condition physicians. Similarly, we predicted that treatment-condition patients would report that (a) they had a *greater sense of being on the same team* with the physician, (b) the interaction was *more patient-centered,* and (c) they *trusted the physician more* than would control-condition patients. We also hypothesized that in the weeks following the intervention, treatment-condition patients, compared to control-condition patients, would report (a) greater *trust* of their physician and physicians in general and (b) greater *adherence to their physicians' recommendations*.

METHOD

Study Setting and Participants

The setting was a family medicine residency clinic operated by the Department of Family Medicine and Public Health Sciences at Wayne State University. Data were collected between February 2007 and February 2008. Physicians were 14 non-Black medical residents (*M* age 29.45; *SD*= 2.45; 50 % female) in either the second or third year of their residency. Eleven residents self-identified as Asian or South Asian (e.g. Indian, Pakistani) and three as White. Patients were 72 self-identified low-income, insured Blacks who had appointments at the clinic.

Study Variables

In an initial questionnaire, physicians provided demographic and professional information and completed a 25-item measure of *explicit racial bias*[23,24] (5-point scale; internal consistency α=.87) and a measure of *implicit racial bias,* the Implicit Association Test (IAT).[25] Physicians completed these measures at the beginning of the study while they were alone in a separate room. Immediately after a scheduled appointment, physicians answered two items about their sense of being on the same *team* with their patient[8,9] (5-point scale, inter-item correlation=.88).

In an initial questionnaire, patients provided information about demographic characteristics, mental, and overall health status (SF-20)[26] (5-point scales, α's>0.80) and completed measures of *perceived past discrimination in seven domains*[27] (e.g., housing, healthcare) (yes/no answers, odd even reliability with Spearman Brown correction=0.77),

two items concerned with *trust* of physicians in general[28] (6-point scale, inter-item correlation=0.84), and three items about *medical adherence* during the past month[26] (6-point scale, α=0.68*).* Immediately after their scheduled appointment, patients answered two questions about their sense of being on the same *team* with the physician (5-point scale, inter-item correlation=0.83),[8,9] two questions about *trust of the physician they had just seen*[28] (inter-item correlation= 0.71), and 15 questions about perceived *patient-centeredness* of the interaction[29] (4-point scale, α=0.86).

Four and 16 weeks after their appointment, patients answered the same two questions about *trust* of their *own* physician[28] they had answered immediately after the interaction (inter-item correlations: 4-week=0.95, 16-week=0.90) and about *trust* of physicians *in general*[28] they had answered at baseline (inter-item correlations: 4-week=0.76; 16-week= 0.73). Patients also re-answered the baseline questions about *adherence,*[26] now referring to adherence to their physician's recommendations (4-week α=0.70; 16-week α=0.63). Given the relatively high reliability for all measures, individual items were averaged to create a single score for each measure.

Recruitment/Attrition

The study was approved by Karmanos Cancer Institute and Wayne State University Institutional Review Boards. Physicians were recruited and consented by a Black female research coordinator at the beginning of the study. Physicians received a $50.00 gift card for participating. There was no physician attrition.

The same research coordinator recruited/consented patients when they arrived for their appointments. About 75 % of the patients approached agreed to participate. Patients received $15.00 gift cards on the day of their appointment and $20.00 cards for returning each of the two follow-up questionnaires. Of the 72 patients who agreed to be in the study, 42 were scheduled to see the treatment-condition physicians and 30 were scheduled to see the control-condition physicians. The difference in sample size between the two conditions reflects our lack of control over which physicians were in the clinic each recruitment day and their number of scheduled appointments on that day.

Fifty-three of these 72 patients (74 %) returned 4-week follow-up mail questionnaires; and 41 patients (77 % of those who returned the 4-week questionnaire and 57 % of the total sample) returned the 16-week questionnaire. There was no significant difference in attrition rates between the two conditions.

Treatment and Control Conditions

Physicians. Physicians (and thus their patients) were randomly assigned to either the *common ingroup identity*

treatment condition (*n*=7) or a general health information control condition (*n*=7). Shortly after being consented, physicians in the treatment condition received written instructions that they and patients of theirs who had agreed to be in the study "will be asked to act as a team during (the) appointment with you." Physicians would know these patients from buttons they would wear. Physicians received ten written suggestions for creating a sense of being on the same team as their patients (see Text Box). In the treatment condition interactions, these suggestions were also on a poster on the examination room wall. Physicians were asked to agree to follow the suggestions as much as possible during those interactions; all agreed. Then they received a button containing the words "Blue (or Red or Green) Team (previously established staff "teams")," "Family Practice Clinic," and the clinic logo, which showed schematic figures holding hands. Because clinical duties placed strong time demands on physicians, it was not possible to repeat these instructions over the course of the study. Control-condition physicians did not receive any instructions.

Text Box: Team Suggestions to Physician and Patients

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1. Remember, you are a team. Both of you are responsible for what happens today.
2. Do everything you can to answer questions as completely as possible.
3. Do everything you can to make sure the other person understands you.
4. Be sure to say something when you don't understand the other person.
5. Carefully listen to one another; try to understand the other person's point of view.
6. Try to find things you can agree about.
7. If you do disagree about something, do so respectfully and try to understand the other team member's point of view.
8. Both of you should participate in any decisions made today.
9. Both of you have joint responsibility for any decisions made today.
10. Your responsibilities as a good team member do not end today. You both have to continue to follow the plan of care you agreed on today.

Patients. Common identity treatment-condition patients were introduced to the concept of being on a team with their "doctor" via written instructions. Patients were asked to read and sign a team contract stating "that (they and their doctor) will be partners in a team that is working to solve (their medical problems)," which their physician had previously signed. All patients agreed. Patients were also informed of their team color and given the same button as their physician to wear during their appointment, and a pen in the team color with the words "Blue (Red, Green) Team Family Practice Clinic" on it. Finally, patients received the same suggestions to facilitate working together as a team with their physician. To assess *fidelity of the intervention*, patients were asked after the appointment whether they had received a pen and button, and whether there had been a team poster in the room. Control-condition patients received general health information before the interactions; they did not receive buttons, pens, or team suggestions.

Statistical Analysis

Because patients were nested within physicians, we conducted General Estimating Equation linear regressions with robust empirical SE estimates (SPSS 20) to examine the effects of the intervention on outcome variables. Physician explicit and implicit racial bias and patient perceived past racial discrimination were all significantly associated with one or more of the outcomes of interest[7–9] and were used as covariates. We controlled for baseline trust and adherence when these were the outcomes. Statistical power for the analyses was moderate, from 0.85 for the full sample to 0.60 for the 16-week follow-up. A mediation analysis was conducted with the "Process" macro,[30] using an ordinary least squares path analytical framework for estimating mediator effects. Bootstrap methods were implemented (*N*=5,000) for inference about indirect effects.

RESULTS

Patient and physician characteristics are presented in Table 1. Preliminary analyses revealed no systematic differences on any measures as a function of physician race or ethnicity; thus, this factor was not included in subsequent analyses. There were no demographic differences between

Table 1. Baseline Means, Standard Deviations and Frequencies for the Overall Sample and Treatment and Control Conditions

	M ± *SD* or *No.* (%)	*M* ± *SD* or *No.* (%)	*M* ± *SD* or *No.* (%)
Physicians	Overall (*N*=14)	Treatment (*n*=7)	Control (*n*=7)
Age	30.45±2.39	29.40±2.40	31.33±2.18
Gender			
Female	7 (50)	3 (43)	4 (57)
Ethnicity			
Asian	11 (77)	6 (84)	5 (70)
White	3 (23)	1 (16)	2 (30)
Year in Residency			
2nd Year	8(57)	3(43)	5(71)
3rd Year	6(43)	4(57)	2 (29)
Explicit Racial Bias	2.03±0.41	1.98±0.29	2.08±0.54
Implicit racial Bias	−0.09± 0.37	−0.04± 0.44	−0.14± 0.31
Patients	Overall (*N*=72)	Treatment (*n*=42)	Control (*n*=30)
Age	39.61± 11.72	38.83± 11.70	40.70± 11.86
Gender			
Female	57 (79)	34 (81)	23 (77)
Education			
≤ H.S.	38 (53)	25 (59)	13 (43)
Income			
≤ $30,000	44 (61)	28 (66)	16 (54)
Mental Health	3.65±0.68	3.27±0.90	3.47±1.02
Overall Health	3.35±0.95	4.18±0.99	4.07±0.90
Past Discrimination	1.23±1.54	1.02±1.46	1.55±1.64
Trust in Physicians (General)	4.55±0.98	4.77±1.01	4.53±0.97
Adherence	4.65±1.03	4.75±1.08	4.53±0.98

Participants in the treatment and control conditions did not differ on any of the baseline measures

either physicians or patients assigned to the two conditions. Patients in the two conditions did not differ in health or initial measures of bias, discrimination, trust or adherence. On average, physicians showed a nonsignificant ($D=-0.09$) implicit pro-Black bias. Patients who completed the two follow-up questionnaires did not differ from those who did not on any baseline or immediate post-interaction measures.

Over 90 % of patients correctly reported receiving/not receiving the pen and button and seeing/not seeing the poster in the examination room. In order to not compromise random assignment, the few patients who incorrectly answered these questions were included in the analyses.

Immediate Post-Interaction Questionnaires

Table 2 presents baseline and outcome scores overall and separately for treatment and control conditions. Physicians in both conditions reported an equivalently strong sense of being on the same *team* with their patients. Patients in the two conditions also both strongly agreed they were on the same *team* with the physician, perceived the interaction as *patient-centered*, and reported equivalent high levels of *trust* in their physician. The first two hypotheses were thus not supported.

Follow-Up Questionnaires

As indicated in Table 2, 4 weeks after the interactions, treatment-condition patients reported greater trust of their own physician and physicians in general than did control-

Table 2. Post-Interaction Means and Standard Deviations for Team Perception, Patient-Centeredness, and Adherence for the Treatment and Control Conditions

	Treatment		Control	
	M ± SD	*n*	*M ± SD*	*n*
Immediately After				
Patients				
Team Perception	4.39[a]±0.69	42	4.42[a]±0.66	30
Patient-Centeredness	3.85[a]±0.42	37	3.83[a]±0.49	28
Physician Trust (Specific)	5.4[a] 7±0.82	42	5.39[a]±0.71	28
Physicians				
Team Perception	4.1[a] 5±0.60	7	4.03[a]±0.64	7
Week 4 Follow-Up				
Patients				
Physician Trust (Specific)	5.41[a]±0.92	30	4.56[b]±1.53	23
Physician Trust (General)	5.25[a]±0.66	30	4.02[b]±1.35	23
Adherence	4.90[a]±1.10	30	4.72[a]±0.97	23
Week 16 Follow-Up				
Patients				
Physician Trust (Specific)	5.43[a]±0.52	20	4.55[b]±1.53	21
Physician Trust (General)	5.03[a]±0.52	20	4.26[b]±1.50	21
Adherence	4.63[a]±1.01	20	4.49[b]±0.97	21

Means for the treatment and control conditions with different superscripts were significantly different in the GEE analyses (P< 0.05)

condition patients ($B_{own}=0.426$, $SE=0.21$, *Wald's* $\chi^2(1)=4.30$, $P=0.038$); ($B_{general}=1.10$, $SE=0.21$, *Wald's* $\chi^2(1)=10.56$, $P=0.001$). Greater patient trust of their own physicians and physicians in general was also found at 16 weeks after the interactions as well ($B_{own}=0.347$, $SE=0.15$, *Wald's* $\chi^2(1)=5.49$, $P=0.019$); ($B_{general}=0.502$, $SE=0.23$, *Wald's* $\chi^2(1)=4.54$, $P=0.033$).

There was no significant effect of treatment on patients' *adherence* to physician's recommendations 4 weeks after the interaction. However, at 16 weeks treatment-condition patients reported significantly more adherence than did control-condition patients ($B=0.347$, $SE=0.13$, *Wald's* $\chi^2(1)=7.34$, $P=0.007$).

We also explored whether the relationship between the intervention and adherence at 16 weeks was mediated by patient trust at the 4-week follow-up. The overall model (with baseline adherence controlled) was not significant, $R^2(3,34)=0.186$, $P=0.069$. However, indirect effect of trust of physicians in general on adherence was significant ($B=0.407$, $SE=0.24$, 95 % $CI=0.017-0.992$).

DISCUSSION

The common ingroup identity intervention had significant long-term effects on patient trust of physicians (4 and 16 weeks after the interaction) and adherence to physicians' treatment recommendations (16 weeks after the interaction). Whereas patient trust declined over time in the control condition, it remained high over 16 weeks in the treatment condition. Moreover, although the findings should be interpreted cautiously because of small sample size, differences in patient trust 4 weeks after the visit mediated the greater adherence of treatment-condition patients than control-condition patients 16 weeks after their appointment.

The absence of any effects among physicians merits some comment. All physicians in this study had received some formal training in patient-centered care.[31] Many concepts in patient-centered care overlap with a common identity approach to medical interactions. This training, and the associated value of taking a patient-centered approach to their patients, may have led physicians in both conditions to perceive a cooperative, "team" relationship with the patient, producing high physician team ratings regardless of experimental condition (note in Table 2 the average was over 4 on a 5-point scale). This would have reduced any differential impact of the intervention on how physicians in the two conditions answered team questions.

Moreover, any initial effect of the team intervention on physicians may have diminished over time. Although the study lasted a year, physicians' very busy schedules at this clinic and their other rotations made it impossible to provide periodic boosters during the time physicians were in the

study. Thus, even if the common identity intervention was effective with physicians at the beginning of the study, the salience and impact of the intervention likely weakened as time passed.

In contrast, the intervention was likely quite salient to the patients when they met the physician and resulted in sustained trust in physicians among patients in the common identity condition 4 and 16 weeks after their clinic visit, whereas trust declined among control-condition patients. Like physicians, there were no significant patient differences in team perceptions as a function of the intervention immediately after visits. One explanation is that medical interactions are already inherently team-oriented, creating a ceiling effect that suppresses differences by condition. Differences as a function of the intervention might be more apparent if it had focused more specifically on how patients and physicians experienced their relationship (e.g., feeling like members of one group versus different groups),[17] than on the instrumental (team) aspect of the situation.

For patients, the difference in trust by condition also did not appear immediately after the interaction, probably because of the demands of the context in which post-interaction trust was initially assessed. Patients were alone when they completed the measures, and had been told that no one at the clinic would ever see their answers. Nonetheless, the situation may still have aroused patient expectations about what desirable answers would be. The research coordinator could easily have been perceived to be part of clinic staff. The patient satisfaction literature suggests a strong positive response bias in patients' reports of satisfaction with physicians.[32,33] Such a response bias probably served to artificially raise scores on some of the immediate post-interaction measures and mask effects of the intervention. During the mail follow-ups, however, contextual demands for positive answers were weaker, because patients completed questionnaires in their homes, names were not asked for, and the questionnaires were returned to a university address rather than the clinic.

Two, potentially related microprocesses may be responsible for the between-condition differences in patient trust. First, the intervention may have created better physician–patient rapport. Research in non-medical contexts demonstrates that sharing a common identity facilitates greater self-disclosure[34] and promotes smoother and more effective intergroup interactions.[18] Future research might use dyadic analyses to explore interrelationships between patient and physician trust during the interactions, and how these perceptions influence the quality (e.g., self-disclosing content) of patient participation in the exchange and subsequent adherence.

Second, patients in the two conditions may have differed in how they processed and interpreted the information they received during the interactions. Feelings of common ingroup identity lead people to process information more deeply,[35] be more trusting of people conveying the information,[36,37] and thus ultimately be more influenced by the information.[38] Also, people give ingroup members greater "benefit of the doubt,"[39] which would help to maintain patient trust in physicians and adherence over time.

One potential study limitation of the present study is that most of these interactions involved non-Black physicians from the Asian subcontinent. Despite this, we believe that our findings are likely generalizable to other racially discordant medical interactions involving Black patients. The large percentage of Asian physicians in our sample is quite typical for clinics that serve low-socioeconomic ethnic minority patient populations in the United States.[40] We also did not find any systematic differences associated with physician race or ethnicity, but we note that our sample size of physicians was restricted and thus statistical power for these tests was quite low (<0.50). In addition, the interactions fit the conditions that would lead to ingroup and outgroup categorization. Physicians in our sample occupied a professional role in the medical encounters that was quite distinct from the role held by patients. Furthermore, the non-Black physicians and Black patients could readily recognize from a number of physical features and accents that they did not share common racial/ethnic/social identities. It is true that the physicians in this sample showed less implicit bias than White physicians in general.[41] However, there is no evidence that physician bias (or patient perceived discrimination) operated any differently in this study than in several other studies of racially discordant medical interactions.[7–9,42–45] Nevertheless, it is possible that because this particular group of physicians had a slight pro-Black bias, had been trained in patient-centered communication skills, and/or had racial/ethic socialization experiences that differ from those of large portions of White Americans, it might have been easier to engender patient trust of them than it would be with a sample of White physicians displaying a stronger pro-White implicit bias. Thus the effectiveness of the intervention merits testing with other samples of physicians varying in attitudes, background, and prior training.

In conclusion, the current findings have practical implications for improving healthcare of Black patients. This relatively low-cost and effective intervention does not require substantial amounts of time from either physicians or patients. In addition, a common ingroup identity intervention can be used with both physicians and patients and may have mutually reinforcing effects on the dynamics of medical interactions and, ultimately (as we demonstrated) on patients' longer-term responses to medical care. However, the sample size of physicians and patients in the present study was limited, and thus the effectiveness of the intervention should be further tested in different settings, with different populations of physicians and other health

outcomes. Nevertheless, results are promising and offer initial evidence of an efficient and useful intervention to improve outcomes of racially discordant medical interactions and address the continuing pervasive racial disparities in the quality of healthcare.[46]

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