

“The doctor will see you now... but not for long”: Linking physicians’ racial attitudes and patients’ discrimination experiences to racial disparities in the duration of medical consultations

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ABSTRACT

Objective: To investigate the relationship between non-Black physicians’ racial attitudes, Black patients’ discrimination experiences, and consultation duration in diverse clinical settings.

Methods: Secondary analyses were conducted on data from three prior studies involving non-Black primary care physicians (Study 1: $n = 14$, Study 2: $n = 5$) and their Black patients (Study 1: $n = 118$, Study 2: $n = 31$), as well as 15 non-Black oncologists and their 72 Black patients (Study 3). Data included physician and patient surveys, along with video-recorded consultations.

Results: Study 1 revealed that, relative to other physicians, physicians whose racial attitudes fit an aversive racist profile (i.e., low explicit racial bias, high implicit bias) had longer consultations with Black patients who reported more (vs. fewer) discrimination experiences. Study 2 and 3 found that physicians’ implicit racial bias is negatively associated with consultation duration. Finally, a meta-analysis supported the effects of aversive racism and patients’ discrimination experiences on consultation duration.

Discussion: These findings demonstrate how physicians’ racial attitudes and patients’ discrimination experiences can affect medical consultation duration—an important aspect of patient-provider communication quality.

Practical value: These results provide initial evidence for the importance of helping physicians manage the negative consequences of their implicit bias within the current structural constraints of limited medical consultation time and empowering Black patients to advocate for their healthcare needs.

1. Introduction

Limited medical consultation time is linked to many adverse consequences, including lower-quality patient-provider communication [1–5], diminished patient satisfaction [5–7], reduced trust in providers and healthcare systems [8,9], and increased malpractice claims [10,11]. Yet, a systematic review of research from 67 countries indicates that brief consultations are alarmingly common [12]. Limited consultation

time affect most patients, but Black patients, in particular, experience significantly shorter face-to-face interactions with non-Black providers⁵ than their White counterparts [5,13–16]. Such disparities may partially explain well-documented racial disparities in the quality of patient-provider communication and related patient outcomes. This research examines what contributes to racial disparities in the duration of medical consultations by drawing on the intergroup bias literature.

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⁵ We used the term non-Black to identify physicians who do not identify as Black or African American because a significant minority of US physicians maybe be Latinx, Asian, or Middle Eastern [17].

1.1. Why does the duration of medical consultations matter?

The duration of medical consultations plays a vital role in healthcare delivery [18–20], affecting the quality of treatment [21], shared-decision making [22], and patient-provider communication [2, 5], which further affect patient outcomes [19,23–25]. For instance, an analysis of over 8 million primary care visits found a significant link between consultation length and accuracy of physicians' decisions on antibiotic prescriptions for upper respiratory infections and joint opioids-benzodiazepines prescribing [19].

Adequate consultation time also facilitates patient-centered communication, allowing providers to better explore patients' concerns, expectations, preferences, and needs [2,26–27]. In contrast, short consultations disrupt communication, erode trust, and reduce patient involvement in healthcare decisions [9,28]. Consistent with these findings, patients' perceptions of time spent with providers significantly predict their care satisfaction [6,29]—one important factor in predicting patients' treatment adherence [30].

1.2. Racial disparities in medical consultation duration

Black patients tend to experience significantly shorter medical consultations than White patients [31–33]. Furthermore, when interacting with Black (vs. White) patients, non-Black physicians spend less time on treatment planning, health education, responding to questions, and assessing health awareness [14]. For example, Hirsh and colleagues [34] found that non-Black physicians spent more time evaluating the pain of White (vs. Black) patients in clinical vignettes. Siminoff and colleagues [16] found that oncologists spent less time fostering relationships with non-White patients. These disparities in medical consultation duration and in specific aspects of patient-provider communication can have negative clinical consequences. For instance, in a recent vignette study, Do Bú and colleagues [35] found that longer evaluation times for a White (vs. Black) patient predicted greater diagnostic and treatment accuracy for the White patient.

1.3. Factors contributing to racial disparities in medical consultation duration

Healthcare providers' racial attitudes are a major predictor of racial disparities in various kinds of healthcare, including diabetes management [36,37], mental health [38,39], palliative care [40], and pain management [34,41–43]. Racial attitudes can operate at both implicit (nonconscious, automatic) and explicit (conscious, deliberate) levels. Research suggests three broad racial attitude profiles based on the combination of their implicit and explicit racial attitudes: (1) prejudiced individuals (high on both implicit and explicit bias); (2) nonprejudiced individuals (low on both implicit and explicit bias); and (3) aversive racist individuals (high on implicit bias but low on explicit bias) [35, 44–47].

The first two racial attitudes profiles are straightforward: individuals with the prejudiced profile harbor negative feelings toward racially minoritized groups and openly express these sentiments. In contrast, individuals with the nonprejudiced profile genuinely hold positive attitudes towards racially minoritized groups and support egalitarian values. Lastly, individuals with the aversive racist profile endorse egalitarian values, but also harbor negative perceptions and feelings towards racially minoritized groups, often exhibiting discriminatory behaviors towards them [48].

Physicians exhibit both implicit and explicit racial biases at levels comparable to the general population—moderate-to-high levels of implicit bias and relatively low explicit bias levels [49]. Physicians (and other healthcare providers) with higher levels of implicit bias often have poorer communication with Black patients [50–53]. Additionally, while there is little evidence that explicit bias directly affects patient-provider communication [54], emerging evidence suggests that explicit and

implicit bias may interact to predict patient-provider communication [35,46–47]. Specifically, physicians with an aversive racist profile evoke fewer positive patient responses and less trust from Black patients [47] and are rated by observers as less engaged [46] than physicians with other racial attitudes profiles. Recently, Do Bú and colleagues [35] also found that medical students who fit an aversive racist profile spend the least time in evaluating clinical vignettes about a Black (vs. White) patient.

At first glance, it may seem contradictory that the aversive racist profile is associated with poorer quality patient-provider communication even compared to the prejudiced profile. However, these findings are consistent with the aversive racism literature [48,55–56]. Implicit bias typically manifests in subtle behaviors, such as nonverbal and paraverbal communication, while explicit attitudes manifest in more deliberate and overt behaviors, such as verbal communication [57–59]. Research has repeatedly shown that individuals who fit an aversive racist profile are often perceived as inauthentic or even deceitful by Black individuals [48,55]. This is because, despite positive verbal statements, their nonverbal and paraverbal behaviors still signal psychological distance or anxiety, sending mixed messages [48,55–56,59].

Studies have also found that Black patients' discrimination experiences [60] predict the dynamics of patient-provider communication independently from providers' racial attitudes. Black patients reporting greater experiences of discrimination tend to be less trusting of non-Black providers and the healthcare system [61–67]. Research has also shown that patients, regardless of race, tend to engage more actively in medical discussions when they fear suboptimal treatment [67–69]. This suggests that Black patients concerned about being discriminated against may be more assertive in communicating their needs, resulting in longer consultations [46].

Notably, prior studies typically investigate the roles of provider racial attitudes and patients' discrimination experiences in patient-provider communication separately. However, medical consultations constitute a complex, bidirectional interaction [70]. Some research suggests that the quality of patient-physician communication is determined by physicians' aversive racism and patients' discrimination experiences [46]. Specifically, non-Black physicians who fit the aversive racist profile were rated as less engaged, more negative, and less positive when interacting with Black patients who reported any experiences of discrimination. Therefore, a comprehensive understanding of racial disparities in medical consultation duration requires examination of the interactive effects of physicians' racial attitudes and patients' discrimination experiences.

1.4. Clinical specialties and medical consultation duration

The duration of medical consultations varies across clinical specialties. For example, patient-provider communication in primary care [71,72] often aims to forge enduring patient-provider relationships, with a holistic approach to care that encompasses a broad spectrum of health concerns [71–73]. Conversely, patient-provider communication in specialized areas, such as oncology, is primarily focused on diagnosing, treating, and managing illnesses [74,75], which may result in different consultation duration.

1.5. The present research

This research investigated the role of non-Black physicians' racial attitudes (i.e., implicit and explicit bias) and Black patients' discrimination experiences in the duration of medical consultations within separate clinic settings by conducting secondary analyses. Data come from three studies that assessed non-Black physicians' implicit and explicit racial bias, Black patients' discrimination experiences, and medical consultation durations. The first two studies were conducted in primary care settings and the last in an oncology setting. We hypothesized that physicians with an aversive racist profile would spend less

time with Black patients compared to physicians with a prejudiced or non-prejudiced profile. We also examined whether Black patients who reported greater discrimination experiences would have longer consultation durations, particularly when consulting with physicians with an aversive racist profile.

2. Method

2.1. Participants

Study 1 involved 17 non-Black primary care residents at a Family Medicine clinic and their 156 Black patients [47,76]. With removal of 38 cases (consultations without video-recordings, physicians with no implicit or explicit bias data, patients with no perceived discrimination data), this secondary analysis used data from 14 physicians and 118 patients.

Study 2 involved six non-Black primary care physicians and 37 Black patients [77]. This secondary analysis excluded one physician with no implicit and explicit bias data, along with their five patients, and one appointment with no videorecording. This resulted in 5 physicians and 31 patients.

Finally, Study 3 included 15 non-Black oncologists and 72 Black patients from a previous study [52]. Table 1 summarizes participant demographics. Follow-up analyses indicated that participants in the current secondary analyses did not significantly differ from the larger samples of participants in the parent studies.

2.2. Procedures and measures

Detailed procedures and measures of the parent studies are available elsewhere [47, 52,76]. Data for the reported results are available on Open Science Framework: <https://osf.io/q8h7x/>.

2.2.1. Implicit racial bias

Implicit racial bias was assessed using the Race Implicit Association Test (IAT) [73] in all three studies. We computed *D* scores following the standard guidelines [78]. *D* scores can range from -2 (preference for Black people over White people) to $+2$ (preference for White people over Black people), with 0 indicating no preference.

2.2.2. Explicit racial bias

Three measures were used to assess non-Black physicians' explicit racial bias. Study 1 used 25 items from the Attitudes Toward Blacks Scale [79] and Modern Racism Scale [80]. The scale ranged from 1 (totally disagree) to 7 (totally agree) ($\alpha = .89$). Study 2 used the eight-item Symbolic Racism Scale [81]. The scale ranged from 1 (strongly disagree) to 4 (strongly agree) ($\alpha = .82$). For both measures, higher mean scores indicated greater explicit racial bias.

In Study 3, the Feeling Thermometer [82] asked oncologists to rate how they feel toward social groups, including Black people and White people, using a scale ranging from 0 (Cold/Unfavorable) to 100 (Warm/Favorable). The explicit pro-White/anti-Black bias score was computed by subtracting the score for Black people from that for White people, mirroring IAT *D* scores [83]. Positive values indicate an explicit preference for White individuals, whereas negative values indicate a preference for Black individuals, with 0 indicating no explicit preference.

2.2.3. Discrimination experiences

Two measures were used to assess Black patients' experiences of racial discrimination. In Studies 1 and 3, Black patients reported previous unfair treatment experiences in seven social domains (e.g., employment) using a dichotomous scale (1 = yes, 0 = no) [46], with scores ranging from 0 to 7. Study 2 used five items from scales by Branscombe et al. [84] and Levin et al. [85]. The scale ranged from 1 (strongly disagree) to 5 (strongly agree) ($\alpha = .78$). Higher mean scores indicated greater discrimination experiences.

2.2.4. Medical consultation durations

We examined videorecorded medical interactions between physicians and patients to measure consultation duration in seconds, defined as the time from the physician's entry into the room to their departure.

2.3. Analysis plan

Descriptive statistics were used to examine the distribution of each variable. Hypothesis testing followed three steps. First, we performed a mixed-model analysis regressing medical consultation duration on grand-mean-centered predictors and the interactions between them.

Second, due to low statistical power resulting from the small sample sizes, we explored the three-way interactions among physicians' implicit bias, physicians' explicit bias, and patients' discrimination experiences, regardless of whether the interaction reached statistical significance ($p < .05$). Specifically, we compared consultation durations across three profiles of physician racial attitudes (aversive racist, prejudiced, non-prejudiced profiles). The aversive racist profile was defined by low ($-1SD$) explicit but high ($+1SD$) implicit racial bias, the prejudiced profile by high ($+1SD$) implicit and explicit racial bias, and the non-prejudiced profile by low ($-1SD$) implicit and explicit racial bias [47].

Lastly, we conducted a meta-analysis to evaluate the consistency of findings across studies. We included 18 effect sizes: six from participants with an aversive racist profile, six from participants with a prejudiced profile, and six from non-prejudiced individuals. Using the *metaregression* command in the R package *meta* and with Cohen's *d* as the effect size [86,87], we employed the restricted maximum likelihood estimation method. A forest plot was created to visually display effect sizes and

Table 1
Demographic characteristics of participants in secondary analyses across the three studies.

Variables	Study 1 (Primary Care)		Study 2 (Primary Care)		Study 3 (Cancer Care)	
	Residents (<i>n</i> = 14)	Patients (<i>n</i> = 118)	Attending physicians (<i>n</i> = 5)	Patients (<i>n</i> = 31)	Oncologists (<i>n</i> = 15)	Patients (<i>n</i> = 72)
Age						
<i>M</i> (<i>SD</i>)	29.9 (2.80)	43.7 (14.3)	43.8 (5.67)	55.3 (11.4)	47.8 (10.6)	58.2 (10.7)
Gender						
Male	7 (50.0 %)	28 (23.7 %)	2 (40.0 %)	7 (22.6 %)	8 (53.3 %)	5 (7.0 %)
Female	7 (50.0 %)	90 (76.3 %)	2 (40.0 %)	24 (77.4 %)	7 (46.7 %)	66 (93.0 %)
Other	-	-	1 (20.0 %)	-	-	-
Race						
White	2 (14.3 %)	-	2 (40.0 %)	-	7 (46.7 %)	-
East Asian	6 (42.9 %)	-	1 (20.0 %)	-	6 (40.0 %)	-
South Asian	6 (42.9 %)	-	1 (20.0 %)	-	2 (13.3 %)	-
Black	-	118 (100 %)	-	31 (100 %)	-	72 (100 %)
Other	-	-	1 (20.0 %)	-	-	-

confidence intervals for each study, allowing clear comparisons of effect magnitude and direction across participant profiles [88]. Horizontal lines represent a racial attitude profile across levels of patients' discrimination experiences. Squares indicate the effect size, and the line length shows the 95 % confidence interval.

3. Results

Table 2 presents the summary of mixed-model regression results.

3.1. Study 1

There was a significant positive association between patients' discrimination experiences and consultation duration: Black patients who reported greater (vs. less) discrimination experiences had longer medical consultations. This main effect was qualified by two two-way interactions (between physicians' implicit bias and patients' discrimination experiences and between physicians' explicit bias and patients' discrimination experiences) and a three-way interaction among all predictors (Fig. 1).

When interacting with Black patients who reported greater discrimination experiences, non-Black primary care physicians with an aversive racist profile had significantly longer consultations than the other two profiles pooled ($b = 1472$, $SE = 77$, $p = .001$). However, when physicians who fit an aversive racist profile were compared against those who fit other profiles individually, the difference became non-significant (prejudiced: $b = 1402$, $SE = 880$, $p = .084$; and non-prejudiced participants: $b = 1380$, $SE = 800$, $p = .089$). In contrast, with Black patients reporting less discrimination experiences, there were no differences in consultation duration between providers with an aversive racist profile and the other profiles, whether pooled ($b = 489$, $SE = 700$, $p = .832$) or individually (prejudiced: $b = 342$, $SE = 670$, $p = .952$; nonprejudiced: $b = 637$, $SE = .731$, $p = .892$) (Fig. 2).

3.2. Study 2

Regression analysis revealed a significant main effect of primary care physicians' implicit bias, with higher bias leading to shorter consultations with Black patients. However, none of the higher order interactions were significant. The follow-up exploratory examination of Figs. 1 and 2 suggests that the nature of the three-way interaction was similar to Study 1. Specifically, physicians who fit an aversive racist profile seemed to have longer consultations than physicians with other racial attitudes profiles when interacting with Black patients who reported greater (vs. less) discrimination experiences.

3.3. Study 3

Consistent with Study 2, regression analysis yielded a significant main effect of physicians' implicit bias, with higher bias predicting shorter consultations. None of the higher order interactions were significant. The follow-up exploratory examination of Figs. 1 and 2

revealed a pattern of the three-way interaction among physicians' implicit bias, physicians' explicit bias, and patients' discrimination experiences that is distinct from those in Studies 1 and 2. Regardless of the extent of the discrimination experienced by patients, physicians who fit an aversive racist profile had shorter consultations than those who fit the other profiles.

3.4. Meta-analysis

The meta-analysis of consultation duration across studies yielded a significant overall effect size (Cohen's $d = .13$, 95 % $CI [.05, .21]$). However, significant heterogeneity in the random-effects model ($\tau^2 = .013$, $p = .049$) indicates variability in effect size across studies, which was moderated by physicians' racial attitude profiles and patients' discrimination experiences. Specifically, the effect among physicians with an aversive racist profile interacting with patients who reported less discrimination experiences was significant across the studies (Cohen's $d = .15$, 95 % $CI [.01, .29]$). Medical consultations between physicians with an aversive racist profile and patients with less discrimination experiences were shorter than other consultations. The effects for the other racial attitudes profiles were not significant (Fig. 3).

4. Discussion

This research examined the role of non-Black physicians' racial attitudes and Black patients' experiences of racial discrimination in the duration of medical consultations. The initial regression analyses revealed divergent results between Study 1 and Studies 2 & 3. Study 1 showed that primary care physicians who fit an aversive racist profile had longer consultations than physicians who fit either the prejudiced or non-prejudiced profiles when meeting with Black patients who reported greater discrimination experiences. In contrast, Studies 2 (with primary care physicians) and Study 3 (with oncologists) showed that only physicians' implicit bias was associated with consultation duration; it was associated with shorter consultations. One potential reason for the distinct patterns of results between Study 1 and Studies 2 & 3 might be whether providers were residents (Study 1) or attending physicians (Studies 2 and 3).

Many residents may still be developing their communication styles or routines when interacting with patients. Therefore, their behavior during medical consultations may be more influenced by patient behavior. Additionally, research indicates that Black patients who have experienced significant discrimination are likely to expect unfair treatment from physicians [60–62] and might anticipate suboptimal care. Consequently, these patients might more explicitly express their health concerns, ask more questions, and advocate for themselves [46,66]. This level of patient engagement could prompt residents, especially those who fit an aversive racist profile, to extend the consultation duration to address patient concerns adequately, whether out of a genuine desire to provide high quality care or to avoid perceptions of racial bias [35,48]. Thus, the significant three-way interaction found in Study 1 may reflect flexible, dyadic communication between residents and patients. In

Table 2
Fixed Effects Parameter Estimates from Mixed Model Analyses.

Predictors	Study 1			Study 2			Study 3		
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>
Intercept	1127	139	.001	1848	202	.001	1671	167	.001
Implicit racial bias	157	146	.308	−1049	464	.034	−1899	557	.003
Explicit racial bias	.209	163	.999	−1492	1666	.380	9.6	14	.546
Implicit*Explicit racial bias	−218	164	.201	−3069	3618	.182	139	78	.103
Discrimination experiences	115	44	.010	1115	810	.405	−26	54	.629
Implicit racial bias*Discrimination experiences	99	41	.020	990	2103	.642	7.59	314	.981
Explicit racial bias*Discrimination experiences	−90	44	.047	−5786	7138	.426	−1.35	3.73	.719
Implicit*Explicit racial bias*Discrimination experiences	−249	87	.005	−2262	19807	.265	35	33	.298

Note. Information in bold represents significant results.

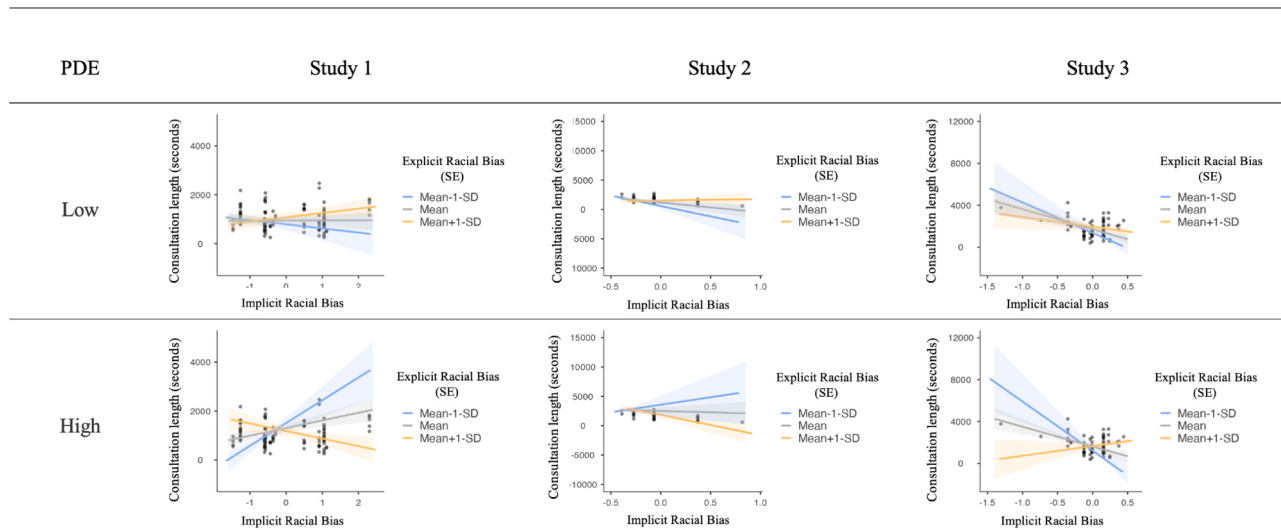


Fig. 1. Three-way Interactions Among Physicians' Implicit Racial Bias, Physicians' Explicit Racial Prejudice, and Patients' Discrimination Experiences. Note. PDE = Patients' Discrimination Experiences.

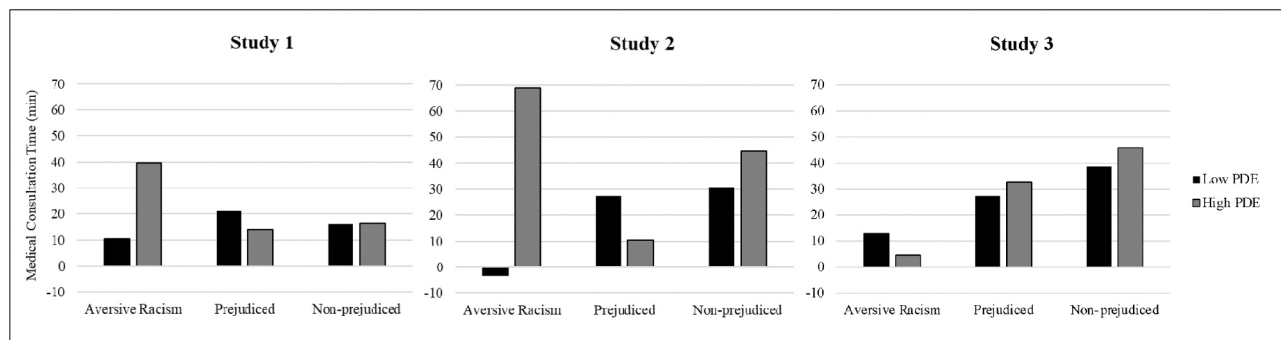


Fig. 2. Medical Consultation Duration According to Racial Attitudes Profiles (Studies 1–3). Note. PDE = Patients' Discrimination Experiences. Aversive Racism profile = high implicit racial bias, and low explicit bias; Prejudiced profile = high implicit and explicit bias; Nonprejudiced profile = low implicit and explicit racial bias. The values depicted in the figure correspond to estimated marginal means.

contrast, attending physicians may have already established their communication styles and become less flexible during medical consultations. The significant main effect of physicians' implicit bias, without interaction with patients' discrimination experiences, found in Studies 2 and 3 may reflect attending physicians' more stable and consistent approaches to medical consultations.

The follow-up exploratory examination of three-way interaction among physicians' implicit bias, physicians' explicit bias, and patients' discrimination experiences further revealed distinct results patterns between Studies 1 & 2 and Study 3. In Studies 1 and 2, physicians with an aversive racist profile tended to have the longest consultations when interacting with patients who reported greater (vs. less) discrimination experiences. In contrast, Study 3 showed that physicians with an aversive racist profile appeared to have shorter consultations than those with other profiles, regardless of patients' discrimination experiences. These divergent patterns may be explained by the contextual and structural differences inherent to the two clinical treatment settings: primary care and cancer care.

In primary care, Black patients with greater discrimination experiences might have taken a more active role during consultations [46]. In contrast, in most oncology settings, patients often feel overwhelmed or even lost because of the severity and complexity of the processes involved in diagnosing and treating cancer [74,75]. This could lead to a situation where patients do not know how to effectively advocate for themselves. Moreover, oncology consultations heavily rely on objective

data from lab and imaging, diminishing the patients' input compared to primary care, where patient self-reports of symptoms are critical [71–75,89–90].

Different results across the three studies might also be due to different measures of physicians' explicit bias and/or patients' discrimination experiences used. While these variables have been assessed with many different measures in prior research [46–48,91–96], whether they produce different findings is yet to be examined.

Lastly, the meta-analysis of all studies found a small but significant effect of physicians' racial attitudes in predicting consultation duration. Across the three studies, aversive racist physicians had significantly shorter consultations with Black patients who reported less discrimination experiences. Collectively, our findings offer preliminary evidence that physicians' implicit bias, either alone or in combination with explicit bias, may be one major factor contributing to racial disparities in consultation duration. Our findings also suggest that considering Black patients' discrimination experiences may provide a more comprehensive understanding of the mechanisms underlying such racial disparities.

4.1. Theoretical and practical implications

Findings from these studies advance both applied healthcare disparities research and basic social psychology research on "intergroup time bias." Racial disparities in the duration of consultations have been well-documented. However, little research has investigated the

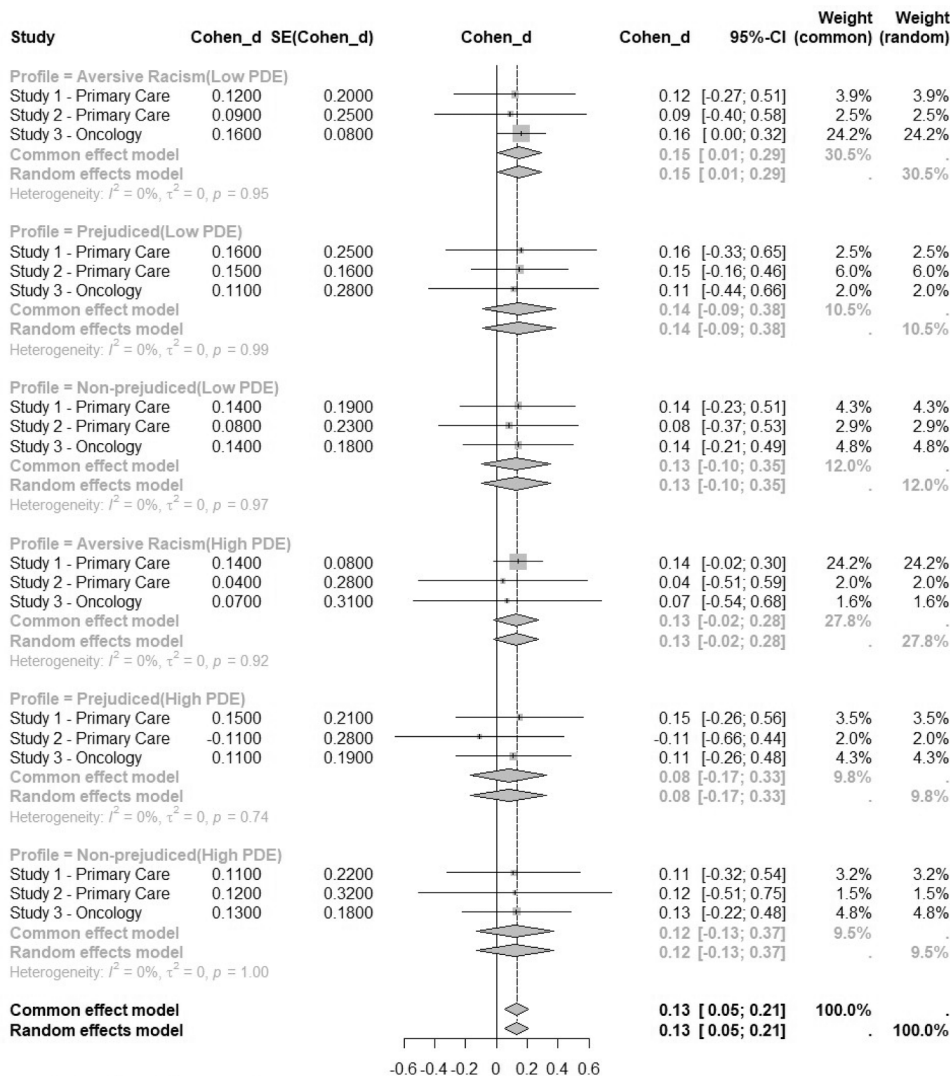


Fig. 3. Forest Plot of Meta-Analytic Results: Aversive Racist Versus Consistently Prejudiced Versus Nonprejudiced Profiles According to Patients' Discrimination Experiences. Note. SE = standard error; CI = confidence interval; PDE = Patients' Discrimination Experiences.

mechanisms underlying these disparities. Our findings suggest that patients' discrimination experiences can either mitigate or exacerbate the negative healthcare consequences of aversive racism among physicians in clinical settings. This research also contributes to the emerging social psychology literature on intergroup time bias [97] by documenting, for the first time, evidence of this bias and its association with aversive racism in real-world healthcare settings. Our research demonstrates that despite numerous other factors influencing consultation duration, aversive racism still plays a role. This, along with findings from the medical vignette study [35], provide further evidence of the importance of addressing aversive racism in medical contexts. By showing that consultation lengths can be affected by both physicians' biases and patients' discrimination experiences, our research supports the call for more in-depth inquiry into how these factors collectively affect healthcare.

There are also some practical implications for future intervention research. The consistent role of physician implicit bias in consultation duration across all three studies highlights the need to reduce the effects of physicians' implicit bias. One approach could be to reduce physicians' implicit bias. Many US healthcare organizations have implemented implicit bias training programs [98,99]. However, a recent systematic review found no evidence supporting their effectiveness [100]. Therefore, a more viable approach might be to help physicians manage the

negative consequences of their implicit bias within the current structural constraints of limited consultation time. Specifically, we recommend first investigating how shorter consultations affect the quality of patient care and then develop evidence-based interventions aimed at directly mitigating the adverse effects of shorter consultations.

Another finding that may inform interventions is the role of patients, particularly when they were interacting with physicians who fit an aversive racist profile. The finding that these physicians had longer consultations with Black patients who reported greater discrimination experiences suggests that interventions should attempt to empower patients to take an active role in their medical consultations. This may include educating patients about their rights, assisting them articulate their concerns, and equipping them with strategies to ensure they receive adequate attention and care. These goals can be achieved through a multilevel approach, such as the simultaneous use of patient navigators [101–103] and question prompt lists [104,105].

4.2. Limitations and directions for further research

Given the relatively small sample sizes, the findings should be cautiously interpreted. However, physicians' implicit bias, either alone or in combination with explicit bias, consistently predicted the duration of medical consultations across all three studies. Additionally, the meta-

analytical integration provides preliminary evidence supporting the role of aversive racism in consultation duration, particularly when the consultations involve Black patients who have reported experiencing little discrimination. Future research should replicate these findings with larger samples and in more diverse clinical settings. These investigations should then inform interventional studies that assess the efficacy of bias-mitigation strategies.

Another limitation of our secondary analyses was our inability to assess structural factors that might have affected the duration of medical consultations. For example, consultations with physical exams may be longer than those without physical exams, and physical exams might be more common in primary care than in oncology care. Further, the actual length of consultations scheduled for a 15-minute block would be more than likely to be shorter than those scheduled for a 30-minute. However, our study focused on the association between physicians' racial attitudes, patients' discrimination experiences, and consultation duration *within* a given medical setting. Thus, our findings—higher levels of physician implicit bias are associated with shorter medical consultations within each study—cannot be explained by structural differences. Nevertheless, future research should take a comprehensive approach to identifying and controlling for factors that covary with consultation duration.

Relatedly, another limitation is the study's predominant focus on individual-level factors (i.e., physicians' racial attitudes and patients' discrimination experiences). Consultation duration is determined by many factors including the resources available at a clinic, guidelines in the healthcare system, and patient volume. Future research should investigate how structural and institutional healthcare factors may exacerbate or mitigate the role of physician and patient factors in consultation duration.

5. Conclusion

The current studies offer valuable insights into the mechanisms underlying racial disparities in medical consultation duration. The findings underscore the role non-Black physicians' racial attitudes plays in determining how long they interact with Black patients. Further, the significant interactive effects of physicians' racial attitudes and patients' discrimination experiences on medical consultation duration suggests the important role Black patients may play in determining consultation duration. Through replications of the current findings with larger samples and across diverse clinical contexts, a more comprehensive and nuanced understanding of racial disparities in medical consultation duration can be achieved.

CRedit authorship contribution statement

Louis Penner: Funding acquisition, Writing – review & editing. **Nao Hagiwara:** Supervision, Writing – review & editing. **Susan Eggly:** Funding acquisition, Writing – review & editing. **Emerson Araújo Do Bú:** Conceptualization, Formal analysis, Investigation, Methodology, Project administration, Software, Writing – original draft, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no financial, personal, or professional competing interests that could have influenced the research, analysis, or reporting of this manuscript.

We confirm that this manuscript represents original work, and there are no conflicts that could compromise the integrity or objectivity of the research presented.

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Data availability

Datasets and Supplementary Material used in this research program can be accessed at the Open Science Framework repository platform: <https://osf.io/q8h7x/>

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