Oncologist Perceptions of Racial Disparity, Racial Anxiety, and Unconscious Bias in Clinical Interactions, Treatment, and Outcomes

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ABSTRACT

Background: Cancer spares no demographic or socioeconomic group; it is indeed the great equalizer. But its distribution is not equal; when structural discrimination concentrates poverty and race, zip code surpasses genetic code in predicting outcomes. Compared with White patients in the United States, Black patients are less likely to receive appropriate treatment and referral to clinical trials, genetic testing, or palliative care/hospice. **Methods:** In 2021, we administered a survey to 369 oncologists measuring differences in perceptions surrounding racial disparity, racial anxiety, and unconscious bias and adverse influence on clinical interactions, treatment, and outcomes for non-White patients. We analyzed responses by generational age group, sex/gender, race/ethnicity, US region, and selection of "decline to respond." **Results:** The most significant differences occurred by age group followed by race/ethnicity. Racial disparity was perceived as moderate to very high by 84% of millennial, 69% of Generation X, and 57% of baby boomer oncologists, who were also 86% more likely than millennials and 63% more likely than Generation Xers to perceive low/nonexistent levels of racial anxiety/unconscious bias. **Conclusions:** Most oncologists rarely or never perceived racial anxiety/unconscious bias as adversely influencing clinical treatment or survival outcomes in non-White patients, and White oncologists were 85% more likely than non-White oncologists to perceive rare/nonexistent influence on referral of non-White patients to palliative care/hospice. The discrepancy between 62% of oncologists perceiving moderate to very high levels of racial anxiety/unconscious bias and 37% associating them with adverse influence on non-White patients shows a disconnect, especially among older oncologists (baby boomers), who were also least likely to select the decline option. Together, these factors hinder effective patient–provider communication and result in differential care and outcomes. Oncologists should uncover their own perceptions surrounding racial disparity, racial anxiety, and unconscious bias and modify their behaviors accordingly. It is this simple—and this complicated. Cancer does not discriminate, and neither should cancer care.

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Background

Cancer spares no demographic or socioeconomic group; it is indeed the great equalizer. But its incidence, prevalence, and mortality are not random or equally distributed. In fact, the disparities in screening, treatment, and outcomes pervading the cancer journey are rooted in societal injustices, medical mistrust, systemic health care inequities, health illiteracy, and lack of access to quality care that adversely affect social determinants of health (SDoH) for racial or ethnic minority populations in the United States (US).[1] The WHO defines SDoH as the "conditions in which people are born, grow, live, work, and age" and as "fundamental drivers of these conditions."[2,3] Deprivation and distributional differences in these conditions by race and geography, specifically structural discrimination, cause racial disparities (variations in care quality and/or outcomes that are not due to clinical factors),[4] and underlying them are racial anxiety (discomfort with experience or consequences of interracial interactions) and/or unconscious bias (automatic, subconscious associations or attitudes about racial or ethnic groups).[5–10] Long-standing practices and policies based on misinformation and treatment decisions influenced by assumptions, racial anxiety, and unconscious bias in interracial clinical interactions harm medical education, patient care and outcomes, research funding, scientific progress, workforce diversity, and career mobility.[3,5,11–14] In the US, residential neighborhood boundaries often arise from sorting by race or income, resulting in vastly different health-promoting and health-damaging environments.[15] When structural discrimination concentrates poverty and race, zip code surpasses genetic code in predicting individual access to care, health status, and life expectancy.[3,4,6,16–19]

Patients with cancer who are from racial or ethnic minority groups may also experience explicit discrimination and/or unconscious (implicit) bias in the clinical setting.[1] Unconscious racial or ethnic bias engenders social

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stereotypes about groups of people that lie outside of conscious awareness, yet they influence conscious decisions; consequently, biases may contrast with expressed, ostensibly egalitarian views.[5,6,10,17] Notably, unconscious biases are internalized from cultural exposure over time; in one study, nearly half of medical students reported derogatory comments from physicians about Black patients, and their levels of bias increased by their final year of training.[5] Moreover, most physicians may unconsciously view White patients more positively,[11] and biases surrounding patient health literacy, treatment adherence, or ability to pay for treatment can manifest during interracial clinical interactions.[10,17] Additionally, because physicians may consider Black patients as uncooperative, these providers can be more verbally dominant and less inclusive in decision-making and may shorten visits with them.[9,10,16,17] Although some studies have not associated unconscious bias with treatment decisions, others have correlated it with lower-quality patient–provider interactions as well as differential displays of empathy and pain management.[6] For example, one study found that as unconscious bias favoring White patients increased, so did the likelihood of treating White (and not Black) patients with thrombolysis.[17]

Compared with their White counterparts, Black patients are more likely to experience diagnostic and treatment delays,[13,16,20] less likely to be offered clinical trial participation[7,14,16,21] and genetic testing,[7,16] less likely to receive appropriate care across multiple tumor types,[13,22] and less likely to be referred to palliative care or hospice.[7] Together, these factors impede oncologic progress by reducing opportunities for workforce diversity,[1] thereby hindering effective interracial patient–provider communication and resulting in lower-quality care and outcomes. For example, racial anxiety negatively affects care when White physicians feel anxious about not appearing racist, and Black patients' experiences of the interaction are influenced not only by the physicians' anxiety but also by previous negative interactions.[9] This dynamic elicits increased distancing, decreased eye contact, and less conversation during office visits, all of which heighten the potential for racially disparate treatment and outcomes.[9]

Because these issues are not well studied in oncology, our primary objective was to assess self-reported perceptions of racial disparity, racial anxiety, and unconscious bias at oncology practices and their associated adverse influences on non-White patients.

Methods

In this cross-sectional, qualitative survey study, we administered an online Likert scale–based survey (see supplementary materials, available online with this article) to a convenience sample of US-based oncologists registered for our organizational research summit meetings (held virtually due to the COVID-19 pandemic). Oncologists attend the meetings to view presentations on and discuss clinical topics and trends. The study survey was developed in collaboration with 2 medical oncologists (A. Gajra, B.A. Feinberg) and presented to participants during web-based premeeting surveys administered prior to 6 summit meetings from February through April 2021. Recruitment was restricted to the Cardinal Health Oncology Provider Extended Network (OPEN)—comprising 800 oncology practices across the US—and participating oncologists were compensated according to fair market value. Only physicians who had not participated in a Cardinal Health–sponsored meeting in the previous 9 months were eligible to participate. We used a convenience sample of oncologists who had registered to attend the summits, and survey completion was required for attendance. Accordingly, we did not capture data on providers opting not to respond to the summit invitation, making the survey response rate 100%. Furthermore, the participants were not aware of the survey's content ahead of their summit meetings. This was designed to prevent selection bias, wherein those with low awareness of the issues may decline to participate. The oncologists' demographic and practice characteristics were collected, and they were aware that the results would be presented aggregately and that the intent was not to use or reproduce individual data.

The following terms were defined at the beginning of the survey: (1) racial or ethnic health care disparity—differences in quality and/or outcomes of care not due to clinical needs, preferences, appropriateness of intervention, or health care access–related factors; (2) racial anxiety—fear of/discomfort with experience and potential consequences of interracial interaction in the general population and among health care providers and their patients; and (3) unconscious bias—a state of mind in which conclusions about race or ethnicity of individuals or groups are formed without active thinking or reasoning, including automatic, subconscious associations or attitudes linked to patient health literacy, adherence to treatment, or ability to pay. The survey evaluated the oncologists' perceptions surrounding racial disparity, racial anxiety, and unconscious bias and their adverse influences on interracial clinical interactions, treatment, and outcomes for non-White patients. Various hypothetical clinical scenarios were posed addressing perceptions around decreased patient–provider communication and provider performance as they related to referrals to clinical trials, genetic testing, and palliative care or hospice, along with perceived influence on treatment selection, surgical recommendation, and survival. To encourage survey completion, we included an option of "decline to respond." Participants were asked to consider patients in general and at their own practices when responding.

We conducted univariate and multivariable analyses assessing the differences in proportions and odds of selecting each response option and stratified the oncologists by (1) generational age group at the time of survey administration in 2021 (ie, millennial [born 1981–1996, age <40 years], Generation X [born 1965–1980, age 40–59 years], baby boomer [born 1946–1964, age ≥60 years][23]); (2) sex/gender identity (female, male, nonbinary, other); (3) race or ethnicity (White and non-White [Black, Asian, Hispanic/Latinx, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native]); (4) US region of practice (Northeast, Midwest, South, West); and (5) declining to respond, with subgroups for disclosure versus nondisclosure of race/ethnicity and/or sex/gender. Because we included only responses of oncologists who answered every question (including by declining to respond), there were no missing data. Differences in means of continuous variables were evaluated using Wilcoxon signed-rank tests, and differences in proportions of responses were evaluated using chi-square or Fisher exact tests with 2-sided P values and alpha ≤.05. Reference groups were identified, and responses were dichotomized for logistic regression. Each of the 5 respective variables was analyzed sequentially, adjusting for the remaining 4 variables (eg, age group model adjusted for sex/gender, race or ethnicity, US region, and declining to respond). Along with controlling for confounding, the analyses included pairwise comparisons in which baby boomer physicians were paired with millennial and Generation X physicians, respectively, as the reference groups. Additionally, analyses of declines to disclose race or ethnicity were adjusted for age group, sex/gender, and US region and analyses of declines to disclose sex/gender were adjusted for age group, race or ethnicity (disclosed vs nondisclosed), and US region. SAS 9.4 (SAS Institute Inc.) was used to calculate odds ratios (ORs) and 95% confidence intervals (CIs).

Results

Of the 369 oncologists surveyed, most (63%) specialized in hematology/oncology, and the remaining 37% were medical oncologists. They had a mean of 17 years in practice (range, 2–49 years); they practiced in the South (33%), Midwest (23%), Northeast (23%), and West (21%) regions of the US; and 72% were in community practice. Additionally, generational age groupings were 64%

Table 1. Oncologists' Perceptions by Generation: Racial Anxiety/Unconscious Bias in Interracial Clinical Interactions

Perception	All (N=369) n (%)	Millennial (n=48) n (%)	Gen X (n=236) n (%)	Baby Boomer (n=85) n (%)	P Value: All Age Groups[a]
Racial/Ethnic health care disparity being experienced by non-White[b] patients					
Very high	26 (7)	4 (8)	17 (7)	5 (6)	.026
High	82 (22)	13 (27)	51 (22)	18 (21)	
Moderate	122 (33)	19 (40)	78 (33)	25 (29)	
Low	71 (19)	5 (10)	39 (17)	27 (32)	
None	37 (10)	2 (4)	26 (11)	9 (11)	
Declined	21 (8)	5 (10)	25 (11)	1 (1)	
Racial anxiety/unconscious bias among White providers toward non-White[b] patients					
Very high	11 (3)	2 (4)	7 (3)	2 (2)	.029
High	44 (12)	8 (17)	29 (12)	7 (8)	
Moderate	123 (33)	17 (35)	80 (34)	26 (31)	
Low	104 (28)	9 (19)	60 (25)	35 (41)	
None	42 (11)	5 (10)	24 (10)	13 (15)	
Declined	45 (12)	7 (15)	36 (15)	2 (2)	
Agreement that racial anxiety/unconscious bias among White providers adversely affects non-White[b] patients					
Strongly agree	42 (11)	12 (25)	22 (9)	8 (9)	.045
Somewhat agree	95 (26)	6 (13)	66 (28)	23 (27)	
Neither agree nor disagree	87 (24)	13 (27)	55 (23)	19 (22)	
Somewhat disagree	41 (11)	4 (8)	26 (11)	11 (13)	
Strongly disagree	67 (18)	8 (17)	39 (17)	20 (24)	
Declined	37 (10)	5 (10)	28 (12)	4 (5)	

Millennial: age <40 years (born 1981–1996); Gen X: age 40–59 years (born 1965–1980); baby boomer: age ≥60 years (born 1946–1964) based on 2021 survey administration.[23]
Abbreviation: Gen X, Generation X.
[a]P values calculated using chi-square or Fisher exact test as appropriate.
[b]Asian, American Indian or Alaska Native, Black, Hispanic/Latinx, Native Hawaiian or Other Pacific Islander, other race/ethnicity.

Generation X, 23% baby boomer, and 13% millennial. Most (70%) identified as male, 21% as female, <1% as nonbinary, and 9% declined to disclose sex/gender. Racial/Ethnic distribution was 32% White and 49% non-White, which included 33% Asian, 7% Black, 4% Hispanic/Latinx, and <1% American Indian/Alaska Native, and 5% who selected "other." The remaining 19% declined to disclose race or ethnicity, and 9% declined to disclose sex/gender. The largest proportion (30%) estimated that up to one-fourth of their patients were non-White. Sex/Gender and US regional differences in responses to the perception questions were not statistically significant.

Table 1 shows univariate analyses of the oncologists' responses to questions about clinical interactions. Nearly two-thirds perceived very high to moderate levels of racial disparity involving non-White patients. By age group, this was 75% of millennials, 62% of Generation Xers, and 56% of baby boomers ($P=.026$). Almost half of oncologists perceived very high to moderate levels of racial anxiety/unconscious bias among White providers toward non-White patients; this was 56% of millennials, 49% of Generation Xers, and 41% of baby boomers ($P=.029$). Approximately 37% of all oncologists agreed that racial anxiety/unconscious bias had adverse influence on outcomes for non-White patients; this was 38% of millennials, 37% of Generation Xers, and 36% of baby boomers ($P=.045$).

Table 2 shows univariate analyses of responses to questions about treatment and outcomes. Most oncologists (55%–65%) rarely or never perceived racial anxiety or unconscious bias as having adverse influence on the clinical treatment and outcomes of non-White patients. Concerning non-White patient referral to palliative care or hospice, 31% of oncologists perceived racial anxiety or unconscious bias as almost always, often, or sometimes having adverse influence. By race, this was 38% of non-White versus 24% of White oncologists. By age group, this was 46% of millennials, 31% of Generation Xers, and

Table 2. Oncologists' Perceptions by Generation and Race: Adverse Influence of Racial Anxiety/Unconscious Bias on Treatment and Outcomes

Perception	All (N=369) n (%)	Millennial (n=48) n (%)	Gen X (n=236) n (%)	Baby Boomer (n=85) n (%)	All Age Groups[a] P Value	Non-White[b] (n=182)[c] n (%)	White (n=118) n (%)	Non-White[b] vs White P Value
Referral to clinical trial								
Almost always, often, or sometimes	128 (35)	20 (42)	80 (34)	28 (33)	.198	77 (42)	35 (30)	.051
Rarely or never	202 (55)	22 (46)	127 (54)	53 (62)		96 (53)	79 (67)	
Declined	39 (11)	6 (13)	29 (12)	4 (5)		9 (5)	4 (3)	
Recommendation of surgical treatment								
Almost always, often, or sometimes	95 (26)	17 (35)	62 (26)	16 (19)	.027	61 (34)	21 (18)	.012
Rarely or never	231 (63)	23 (48)	144 (61)	64 (75)		112 (62)	90 (76)	
Declined	43 (12)	8 (17)	30 (13)	5 (6)		9 (5)	7 (6)	
Referral to genetic testing for tumor biomarker/mutation data								
Almost always, often, or sometimes	89 (24)	16 (33)	60 (25)	13 (15)	.034	54 (30)	20 (17)	.044
Rarely or never	241 (65)	26 (54)	148 (63)	67 (79)		120 (66)	92 (78)	
Declined	39 (11)	6 (13)	28 (12)	5 (6)		8 (4)	6 (5)	
Selection of a novel therapeutic regimen versus standard of care (eg, chemotherapy, targeted therapy, radiation therapy)								
Almost always, often, or sometimes	105 (28)	19 (40)	65 (28)	21 (25)	.073	58 (32)	30 (25)	.475
Rarely or never	226 (61)	23 (48)	143 (61)	60 (71)		116 (64)	83 (70)	
Declined	38 (10)	6 (13)	28 (12)	4 (5)		8 (4)	5 (4)	
Referral to palliative care/hospice								
Almost always, often, or sometimes	114 (31)	22 (46)	73 (31)	19 (22)	.007	69 (38)	28 (24)	.034
Rarely or never	217 (59)	20 (42)	135 (57)	62 (73)		105 (58)	85 (72)	
Declined	38 (10)	6 (13)	28 (12)	4 (5)		8 (4)	5 (4)	
Survival outcomes								
Almost always, often, or sometimes	122 (33)	21 (44)	77 (33)	24 (28)	.060	68 (37)	39 (33)	.740
Rarely or never	213 (58)	22 (46)	133 (56)	58 (68)		110 (60)	76 (64)	
Declined	34 (9)	5 (10)	26 (11)	3 (4)		4 (2)	3 (3)	

Millennial: age <40 years (born 1981–1996); Gen X: age 40–59 years (born 1965–1980); baby boomer: age ≥60 years (born 1946–1964) based on 2021 survey administration.[23]
Abbreviation: Gen X, Generation X.
[a]P values calculated using chi-square or Fisher exact test as appropriate.
[b]Asian, American Indian or Alaska Native, Black, Hispanic/Latinx, Native Hawaiian or Other Pacific Islander, other race/ethnicity.
[c]Includes non-White Asian and non-White non-Asian physicians.

22% of baby boomers (P=.007). Generational differences were also found in perceptions of whether survival was influenced by racial anxiety or unconscious bias, with 46%, 56%, and 68% of millennials, Generation Xers, and baby boomers, respectively, responding that racial anxiety or unconscious bias "rarely or never" had an adverse influence on survival outcomes (P=.060) (Figure 1).

Table 3 shows multivariable analyses of responses pertaining to clinical interactions. Concerning racial disparity experienced by non-White patients, levels were perceived as very high, high, or moderate by 84% of millennials, 69% of Generation Xers, and 57% of baby boomers. Additionally, baby boomers were 3 times as likely as millennials (OR, 3.04; 95% CI, 1.16–7.96; P=.016) and 69% more likely than Generation Xers (OR, 1.69; 95% CI, 0.93–3.05; P=.084) to perceive low or nonexistent levels. Concerning racial anxiety/unconscious bias among White providers toward non-White patients, baby boomers were 86% more likely than millennials (OR, 1.86; 95% CI, 0.81–4.26; P=.072) and 63% more likely than Generation Xers (OR, 1.63; 95% CI, 0.92–2.89; P=.093) to perceive low or nonexistent levels.

Table 4 shows multivariable analyses of responses pertaining to treatment and outcomes. In all age groups, most oncologists (52%–84%) rarely or never perceived racial anxiety/unconscious bias as adversely influencing surgical recommendation, selection of novel versus standard therapeutic regimens, referral to clinical trials or genetic testing, or survival in non-White patients. These questions each had more responses of "rarely or never" than "almost always, often, or sometimes." Responses concerning palliative care or hospice referral were the exception; 52% of millennials perceived racial anxiety/unconscious bias as almost always, often, or sometimes adversely influencing non-White patient referrals, whereas fewer of them (48%) responded "rarely or never." Additionally, baby boomers were nearly 3 times as likely as millennials (OR, 2.94; 95% CI, 1.26–6.86; P=.030) to perceive rare or nonexistent influence on these referrals. By oncologist race/ethnicity, every question received more responses of "rarely or never" than "almost always, often, or sometimes." Additionally, White oncologists were 85% more likely than non-White oncologists to perceive rare or nonexistent influence on non-White patient referrals to palliative care or hospice (OR, 1.85; 95% CI, 1.08–3.19; P=.026). The White oncologists were also 75% more likely (OR, 1.75; 95% CI, 1.05–2.93; P=.032) to respond "rarely or never" regarding referral of non-White patients to clinical trials and nearly twice as likely (OR, 1.97; 95% CI, 0.97–3.98; P=.011) to reply accordingly for surgical recommendation. The odds of declining to respond to questions about adverse influence on treatment decisions were up to 11 times higher among oncologists who did not disclose their own race/ethnicity or sex/gender.

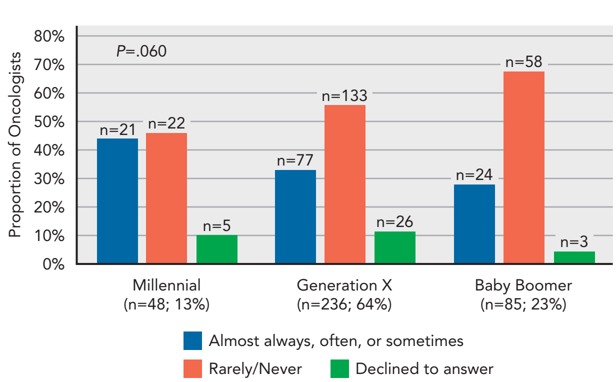

Figure 1. Perceptions of racial anxiety/unconscious bias adversely affecting patient survival, by oncologists' generational age groups at time of survey administration in 2021.
Millennial: age <40 years (born 1981–1996); Generation X: age 40–59 years (born 1965–1980); baby boomer: age ≥60 years (born 1946–1964).[23]

Discussion

We aimed to assess self-reported perceptions of racial disparity, racial anxiety, and unconscious bias at oncology practices and their associated adverse influences on non-White patients. We found the most significant differences by generational age group, followed by racial/ethnic group. Notably, a persistent inverse correlation emerged between increasing age and decreasing levels of perception, which were highest in millennials, lower in Generation Xers, and lowest in baby boomers. Additionally, perception was statistically significantly higher in non-White than White oncologists. Although nearly half of oncologists perceived very high to moderate levels of racial anxiety/unconscious bias, more responded with "rarely or never" than "almost always, often, or sometimes" to every question. Agreement that racial anxiety/unconscious bias adversely affect non-White patients was highest in millennials and lowest in baby boomers. Nevertheless, baby boomers were the most willing to vocalize their perceptions (their rates of declining to respond were consistently lowest). Our findings also support other studies concluding that racial anxiety/unconscious bias are common and that racial disparities are prominent in palliative care, clinical trial, and genetic testing referrals.[4,5,10,12,13,24–26] Although the finding of decreased perception among White oncologists did not surprise us, we did not anticipate that the largest and most statistically significant differences would be generational. Nor did we expect that the most polarized variations in agreement that racial anxiety or unconscious bias adversely affects patient referrals would lie within the baby boomer and White oncologist groups—within each, up to 68 percentage points separated responses of "almost always, often, or sometimes" from "rarely or never."

Table 3. Adjusted Analyses by Generation: Adverse Influence of Racial Anxiety/Unconscious Bias on Interracial Clinical Interactions

Perception	Millennial (ref) (n=48) n (%)	Gen X (n=236) n (%)	Baby Boomer (n=85) n (%)	*P* Value: All Age Groups[a]	aOR (95% CI): Baby Boomer vs Millennial (ref)[b,c]	*P* Value: Baby Boomer vs Millennial[a,c]	aOR (95% CI): Baby Boomer vs Gen X (ref)[b,c]	*P* Value: Baby Boomer vs Gen X[a,c]
Racial/Ethnic health care disparity being experienced by non-White[d] patients								
Very high, high, or moderate (ref)	36 (84)	146 (69)	48 (57)	.008	3.04 (1.16–7.96)	.016	1.69 (0.93–3.05)	.084
Low or none	7 (16)	65 (31)	36 (43)					
Answered (ref)	43 (90)	211 (89)	84 (99)	.024	0.42 (0.03–7.10)	.313	0.23 (0.03–1.91)	.175
Declined	5 (11)	25 (11)	1 (1)					
Racial anxiety/unconscious bias among White providers toward non-White[d] patients								
Very high, high, or moderate (ref)	27 (66)	116 (58)	25 (42)	.017	1.86 (0.81–4.26)	.072	1.63 (0.92–2.89)	.093
Low or none	14 (34)	84 (42)	48 (58)					
Answered (ref)	41 (85)	200 (85)	83 (98)	.007	0.31 (0.05–1.98)	.111	0.26 (0.06–1.15)	.076
Declined	7 (15)	36 (15)	2 (2)					
White provider racial anxiety resulting in experiences of distrust/hostility during non-White[d] patient interactions								
Very to somewhat often (ref)	20 (50)	93 (46)	41 (51)	.747	1.01 (0.45–2.27)	.742	0.81 (0.46–1.43)	.469
Rarely or never	20 (50)	109 (46)	40 (49)					
Answered (ref)	40 (83)	202 (86)	81 (95)	.043	0.31 (0.05–2.00)	.177	0.37 (0.08–1.75)	.210
Declined	8 (17)	34 (14)	4 (5)					

Millennial: age <40 years (born 1981–1996); Gen X: age 40–59 years (born 1965–1980); baby boomer: age ≥60 years (born 1946–1964) based on 2021 survey administration.[23]
Abbreviations: aOR, adjusted odds ratio; Gen X, Generation X.
[a]*P* values calculated using chi-square, Fisher exact, or Wilcoxon signed-rank test as appropriate.
[b]Adjusted for self-reported sex/gender identity (male vs female), self-identified race/ethnicity (White vs non-White), and US region.
[c]Pairwise comparisons conducted of baby boomer versus millennial physicians, with millennial as the reference group, and of baby boomer versus Gen X physicians, with Gen X as the reference group.
[d]Asian, American Indian or Alaska Native, Black, Hispanic/Latinx, Native Hawaiian or Other Pacific Islander, other race/ethnicity.

Two major limitations of our study are the self-reported responses to hypothetical scenarios (rather than actual care evaluation) and the inability to analyze non-responders. However, other studies of racial anxiety or unconscious bias in clinical interactions have similarly contextualized oncologists' perceptions. For example, medical residents surveyed in 2019 expressed no preference for White over Black patients, and none stated that Black patients were less cooperative,[9] but studies using the Race Attitude Implicit Association Test have uncovered unconscious biases that Black patients are less cooperative.[9,10,27,28] Additionally, Race Attitude IAT results from 404,277 participants, with 2,535 physicians among them, have indicated that physicians' unconscious racial biases may contribute to racial disparities.[10] The strength of measured bias surpassed that of self-reports among all except Black physicians, the only group showing no racial preference.[10,17] Most oncologists likely assume their own neutrality toward any racial or ethnic group of patients, but along with a growing body of evidence, our research challenges that assumption.[5,9,10,29–31] The discrepancy between physicians perceiving racial anxiety or unconscious bias at their practices (62%) and those associating these factors with adverse influence on non-White patients (37%) shows a disconnect between unconscious biases and conscious actions. Consequently, racial disparities in care and outcomes not only persist but are widening.[4,12]

Given that the US medical education and health care systems have historically favored White patients,[6,18,32] the lower levels of perception among baby boomers may echo the sociocultural or economic environments in which they have spent most of their careers, and their increased vocality may demonstrate the self-confidence that comes with age. Concurring with a 2022 survey,[29] our finding of heightened perception of racial anxiety or unconscious bias among millennials may reflect current national priorities; generally, both awareness of and efforts to counteract racial inequity have improved.[5,6] It also suggests the potential for progress in attenuating the health-harming effects of racially differential patient experiences—unlike race or ethnicity, age is modifiable. The passing of generations alone, however, will not eradicate deeply rooted racial disparities among non-White patients. Increasing awareness of racial disparity, racial anxiety, and unconscious bias in medical education, practice, and research will be instrumental. Although our data did not show differences by sex/gender, the 2022 survey also reports that male oncologists were more likely than female oncologists to believe that patients of racial or ethnic minority are often treated unfairly.[29]

Table 4. Adjusted Analyses by Generation and Race: Adverse Influence of Racial Anxiety/Unconscious Bias on Interracial Clinical Interactions

Perception	Millennial (ref) (n=48) n (%)	Gen X (n=236) n (%)	Baby Boomer (n=85) n (%)	*P* Value: All Age Groups[a]	aOR (95% CI): Baby Boomer vs Millennial (ref)[b,c]	*P* Value: Baby Boomer vs Millennial[a,c]	aOR (95% CI): Baby Boomer vs Gen X (ref)[b,c]	*P* Value: Baby Boomer vs Gen X[a,c]	Non-White[d,e] (ref) (n=182) n (%)	White (n=118) n (%)	aOR (95% CI)[f]	*P* Value: Non-White[d] vs White[a]
Referral to a clinical trial												
Almost always, often, or sometimes (ref)	20 (48)	80 (39)	28 (35)	.370	1.52 (0.68–3.43)	.498	1.00 (0.56–1.81)	.997	77 (45)	35 (31)	1.75 (1.05–2.93)	.032
Rarely or never	22 (52)	127 (61)	53 (65)						96 (55)	79 (69)		
Answered (ref)	42 (88)	207 (88)	81 (95)	.134	0.99 (0.09–11.57)	.699	0.50 (0.10–2.44)	.392	173 (95)	114 (97)	0.78 (0.23–2.73)	.702
Declined	6 (13)	29 (12)	4 (5)						9 (5)	4 (3)		
Recommendation of surgical treatment												
Almost always, often, or sometimes (ref)	17 (43)	62 (30)	16 (20)	.034	2.32 (0.94–5.76)	.074	1.55 (0.78–3.07)	.209	61 (35)	21 (19)	1.97 (0.97–3.98)	.011
Rarely or never	23 (58)	144 (70)	64 (80)						112 (65)	90 (81)		
Answered (ref)	40 (83)	206 (87)	80 (94)	.124	0.28 (0.04–1.77)	.166	0.39 (0.08–1.87)	.239	173 (95)	111 (94)	1.55 (0.53–4.50)	.424
Declined	8 (17)	30 (13)	5 (6)						9 (5)	7 (6)		
Referral to genetic testing for tumor biomarker/mutation data												
Almost always, often, or sometimes (ref)	16 (38)	60 (29)	13 (16)	.022	2.84 (1.10–7.32)	.025	1.99 (0.95–4.20)	.070	54 (31)	20 (18)	1.85 (1.01–3.37)	.050
Rarely or never	26 (62)	148 (71)	67 (84)						120 (69)	92 (82)		
Answered (ref)	42 (88)	208 (88)	80 (94)	.275	1.37 (0.14–14.01)	.946	0.65 (0.17–2.56)	.540	174 (96)	112 (95)	1.38 (0.44–4.32)	.585
Declined	6 (13)	28 (12)	5 (6)						8 (4)	6 (5)		
Selection of a novel therapeutic regimen versus standard of care (eg, chemotherapy, targeted therapy, radiation therapy)												
Almost always, often, or sometimes (ref)	19 (45)	65 (31)	21 (26)	.090	2.06 (0.89–4.59)	.186	1.17 (0.62–2.20)	.639	58 (33)	30 (27)	1.25 (0.73–2.15)	.420
Rarely or never	23 (55)	143 (69)	60 (74)						116 (67)	83 (73)		
Answered (ref)	42 (88)	208 (88)	81 (95)	.153	0.94 (0.08–10.90)	.624	0.44 (0.09–2.15)	.309	174 (96)	113 (96)	1.18 (0.04–3.90)	.791
Declined	6 (13)	28 (12)	4 (5)						8 (4)	5 (4)		
Referral to palliative care/hospice												
Almost always, often, or sometimes (ref)	22 (52)	73 (35)	19 (23)	.006	2.94 (1.26–6.86)	.030	1.46 (0.77–2.78)	.244	69 (40)	28 (25)	1.85 (1.08–3.19)	.026
Rarely or never	20 (48)	135 (65)	62 (77)						105 (60)	85 (75)		
Answered (ref)	42 (88)	208 (88)	81 (95)	.153	0.94 (0.08–10.90)	.624	0.44 (0.09–2.15)	.309	174 (96)	113 (96)	1.18 (0.04–3.90)	.791
Declined	6 (13)	28 (12)	4 (5)						8 (4)	5 (4)		

Millennial: age <40 years (born 1981–1996); Gen X: age 40–59 years (born 1965–1980); baby boomer: age ≥60 years (born 1946–1964) based on 2021 survey administration.[23]
Abbreviations: aOR, adjusted odds ratio; Gen X, Generation X.
[a]*P* values calculated using chi-square, Fisher exact, or Wilcoxon signed-rank test as appropriate.
[b]Adjusted for self-reported sex/gender identity (male vs female), self-identified race/ethnicity (White vs non-White), and US region.
[c]Pairwise comparisons conducted of baby boomer versus millennial physicians, with millennial as the reference group, and of baby boomer versus Gen X physicians, with Gen X as the reference group.
[d]Asian, American Indian or Alaska Native, Black, Hispanic/Latinx, Native Hawaiian or Other Pacific Islander, other race/ethnicity.
[e]Includes non-White Asian and non-White non-Asian physicians.
[f]Adjusted for generational age group, self-reported sex/gender identity (male vs female), and US region.

Conclusions

The social construct of race still pervades oncology; disease nomenclature, screening/treatment guidelines, and clinical decision algorithms remain extensively based on data from White patients.[5] Interventions focused on the patient are many (eg, addressing SDoH), yet those implicating the US health system are few,[5,33–36] and the appetite for them is anemic. For example, a 2022 editorial describes a "mass exodus" of physicians from the room in which a physician was to speak about unconscious racial bias.[37] Nevertheless, attempting to "eliminate" biases or ignore race may be ineffective at best and counterproductive at worst; increasing institutional awareness may be more impactful in minimizing the adverse influence of racial anxiety or unconscious bias.[5,36] At the personal level, practicing intercultural responsiveness and humility in the clinical and research settings can mitigate harm. For example, because racial assumptions hinder clinical trial referrals of non-White patients,[29] basing referral decisions on potential patient eligibility—not perceptions of comprehension, interest, or financial means—can improve clinical trial accrual and representation of non-White participants. Rather than stifling discussions surrounding these issues by lacking insight or denying their existence, everyone in the oncology workforce should uncover their own levels and triggers of racial anxiety or unconscious bias and modify their behaviors accordingly. It is this simple—and this complicated. Until we understand the full spectrum of ancestral, biologic, clinical, environmental, epigenetic, genomic, social, and systemic factors catalyzing cancer in diverse patient populations, cancer will continue burdening disproportionately and afflicting indiscriminately. Cancer care should not discriminate either.

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