

Original Article

Bias and Stereotyping Among Research and Clinical Professionals: Perspectives on Minority Recruitment for Oncology Clinical Trials

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BACKGROUND: In recent years, extensive attention has been paid to the possibility that bias among health care professionals contributes to health disparities. In its 2003 report, the Institute of Medicine concluded that bias against racial minorities may affect communication or care offered. However, to the authors' knowledge, the role of bias within the context of recruitment of racial and ethnic minorities to cancer clinical trials has not been explored to date. Therefore, the authors assessed the experiences of clinical and research personnel related to factors influencing the recruitment of racial and ethnic minorities for cancer clinical trials. **METHODS:** A total of 91 qualitative interviews were conducted at 5 US cancer centers among 4 stakeholder groups: 1) cancer center leaders; 2) principal investigators; 3) referring clinicians; and 4) research staff. Data analysis was conducted using a content analysis approach to generate themes from the transcribed interviews. **RESULTS:** Five prominent themes emerged: 1) recruitment interactions with potential minority participants were perceived to be challenging; 2) potential minority participants were not perceived to be ideal study candidates; 3) a combination of clinic-level barriers and negative perceptions of minority study participants led to providers withholding clinical trial opportunities from potential minority participants; 4) when clinical trial recruitment practices were tailored to minority patients, addressing research misconceptions to build trust was a common strategy; 5) for some respondents, race was perceived as irrelevant when screening and recruiting potential minority participants for clinical trials. **CONCLUSIONS:** Not only did some respondents view racial and ethnic minorities as less promising participants, some respondents reported withholding trial opportunities from minorities based on these perceptions. Some providers endorsed using tailored recruitment strategies whereas others eschewed race as a factor in trial recruitment. The presence of bias and stereotyping among clinical and research professionals recruiting for cancer clinical trials should be considered when designing interventions to increase minority enrollment. *Cancer* 2020;126:1958-1968. © 2020 American Cancer Society.

KEYWORDS: bias, cancer, clinical trials, minority participation, stereotyping.

INTRODUCTION

The National Cancer Institute and the National Comprehensive Cancer Network have made enrolling patients in cancer clinical trials a priority, validating that the best management of any patient with cancer is on a clinical trial.¹ The centrality of clinical trials to cancer therapy is reinforced by the large number of emerging biomarker therapies being tested, with resulting improvements in patient outcomes.² Despite the obvious benefits of clinical trial participation, only a small percentage (<5%) of all eligible adult patients with cancer, regardless of race, actually enroll.^{3,4} More specifically, the percentage of racial and ethnic minorities participating in cancer clinical trials (15%-20%) is persistently lower than the percentage of minorities in the US population at large (36.3%).⁴⁻⁶ This underscores the need to investigate the reasons that racial and ethnic minorities are not fully represented in clinical trials. A fundamental social determinant of health in the United States, race continues to shape access to important resources, including cancer clinical trials.⁷

Investigators and referring clinicians play a significant role in the recruitment of patients to clinical trials.⁸⁻¹⁰ They typically introduce the option of clinical trial participation, and thus serve as the gatekeepers of trial participation. Previous research has engaged physicians in studies to examine their perspectives regarding what makes clinical trial accrual difficult. These studies have focused primarily on physician perspectives related to patient and study design barriers. To the best of our knowledge, few studies to date have explored how physician-related factors may play a role in the recruitment of study participants. One important factor may be bias. According to Dovidio, bias toward a group and its members can take 3 forms: prejudice, stereotypes, and discrimination.¹¹ In the clinical setting, researchers have speculated

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that bias is more likely to underlie treatment disparities than overt prejudice.¹² Clinicians hold race-based stereotypes that can influence their clinical decision making.¹³ Differences in referral and treatment patterns by providers, after controlling for medical need, have been shown to be associated with a patient's race or ethnicity.¹⁴⁻¹⁷ Although tumor types and stage of disease, comorbidities, and the health care system all influence treatment, disparities in cancer treatment persist after accounting for these factors,^{7,12,13,18-26} suggesting that previously unexplored factors also may influence cancer disparities. There is abundant literature suggesting that bias, within clinical contexts, may play a role in health care disparities.^{12,27-32} Using 8 clinical vignettes, Haider et al³³ reported the results of a survey of 211 medical students and noted that greater than one-half of the students surveyed had an implicit preference not only for white patients, but also for patients belonging to a higher socioeconomic class. Similarly, in an actual cohort of 386 patients with lung cancer who met full eligibility for lung cancer surgery, investigators explored which factors might influence the receipt of lung cancer surgery.³⁴ African American patients with >2 comorbidities were found to be less likely to undergo lung cancer surgery compared with African American patients with <2 comorbidities (odds ratio, 0.04; 95% CI, 0.01-0.25), while controlling for other demographics, clinical factors, patients' assessment of provider communication, and health care beliefs.³⁴ However, within the same cohort, white patients with more numerous comorbidities were no less likely than their white counterparts with fewer comorbidities to undergo lung cancer surgery (odds ratio, 0.45; 95% CI, 0.10-2.00).³⁴ To our knowledge, less is known regarding the presence or influence of bias among professional stakeholders enrolling participants for clinical trials.

To the best of our knowledge, the current research is limited to self-reported provider barriers, such as a lack of available protocols and/or a lack of provider awareness about clinical trials, preventing providers from discussing the opportunity of clinical trials. Bias has not been explored within the context of cancer clinical trials and how it may be manifested among professional stakeholders involved in the recruitment of minorities for these trials. A better understanding of how health care and research professionals perceive and engage in trial recruitment may provide insights into how bias may impact the recruitment of diverse populations to cancer trials. An improved understanding of these processes also may help to inform interventions with which to improve recruitment to cancer clinical trials. To this end, we explored how the biases

of health care and research professionals play a potential role in the recruitment and retention of racial and ethnic minority patients to cancer clinical trials.

MATERIALS AND METHODS

Research Team and Reflexivity

The study design was led by multiple principal investigators (M.N.F., S.M.V., and R.W.D.) in conjunction with site principal investigators at the 4 other sites. The independent coder (S.J.N.) was a PhD-level medical sociologist with prior experience in analyzing qualitative research.³⁵ All members of the research team, with the exception of 3 individuals (S.M.V., B.R.K., and R.W.D.) were female. All team members were from nonwhite groups and all are currently engaged in activities to reduce cancer-related disparities.

Study Design

The consortium for Enhancing Minority Participation in Clinical Trials (EMPaCT) was established in 2009 at 5 National Cancer Institute–designated comprehensive cancer centers: 1) the University of Minnesota; 2) the University of Alabama at Birmingham; 3) Johns Hopkins University; 4) The University of Texas MD Anderson Cancer Center; and 5) The University of California at Davis. The goal of the consortium was to systematically address the limited enrollment of minorities in cancer clinical trials. In this analysis, we have presented the qualitative research findings from the portions of our interviews, which were conducted in November and December 2010 and focused on experiences and perspectives related to referring minority patients to clinical trials among clinical and research staff at the 5 cancer centers affiliated with EMPaCT. The qualitative approach, from stakeholder selection to interviewing through to coding and data analysis, was examined by the consortium members, with revisions based on input. Interview questions in particular were examined to ensure that further revisions to the data collection and analytic processes were not needed.

Study Population

Qualitative interviews were conducted at each site among 4 key stakeholder groups: 1) principal investigators; 2) research staff; 3) referring clinicians; and 4) cancer center leaders. Investigators used administrative data regarding existing oncology studies and personal contacts to identify eligible participants. Participants in each stakeholder group were recruited based on group-specific eligibility criteria (Table 1).

TABLE 1. Inclusion Criteria for Participants in Each Stakeholder Group

Stakeholder Group	Screening Criteria
Cancer center leadership	<ul style="list-style-type: none"> • Cancer center director or associate director • Financial administrators
Principal investigator	<ul style="list-style-type: none"> • Therapeutic and/or nontherapeutic trials for at least 3 y before study enrollment
Research staff	<ul style="list-style-type: none"> • Nonprincipal investigators involved in the "day-to-day" recruitment and/or enrollment of the study participants to cancer clinical trials • Potentially includes nurses, recruiters, or other research personnel directly involved in the recruitment of human participants
Referring clinicians	<ul style="list-style-type: none"> • At least 50% of time allocated to clinical duties

Data Collection

Based on literature and content expert review, a specific interview guide was developed for each of the 4 key stakeholder groups. Further details with regard to interviewer training and the administration of interviews are available elsewhere.³⁶ Certain content domains from the interview guide were selected (as listed below) to guide our scope of inquiry:

1. Tell me about your work as it relates to recruitment of racial and ethnic minorities in cancer clinical trials?
2. What particular trial characteristics make it easier to recruit racial and ethnic minority patients?
3. What particular trial characteristics make it more difficult?
4. What has been your general experience referring racial and ethnic minorities to cancer clinical trials?
5. What factors do you take into account when referring racial and ethnic minorities to clinical trials?
6. Can you tell me about any existing programs or models that you are aware of or may have used to successfully recruit racial and ethnic minorities to cancer trials? If YES: please describe these programs and/or models. What, in your opinion, makes them successful?
7. What types of things do you say or do in your efforts to retain racial and ethnic minority patients?
8. What factors do you take into account in your efforts to retain racial and ethnic minorities to clinical trials?

Data Analysis

Descriptive statistics were calculated to describe sample demographic characteristics. Further details are available elsewhere.³⁶ Within the context of probing stakeholders about their experiences and observations in minority recruitment, we have identified and reported those

codes potentially related to bias. Primary results have been reported elsewhere.³⁶ Transcripts were reviewed thoroughly by members of the study team (S.J.N., M.Y.M., and R.W.D.). One member (J.A.W.) reviewed data elements at requested time points. Transcripts were reviewed again by an independent coder (S.J.N.) and coded using QSR International's NVivo 11.4.3 software using line-by-line coding of all responses to the above mentioned questions, followed by focused coding for directed codes.²³ We used a content analysis approach including a constant comparative method²³ to generate themes from the transcribed data. The team (S.J.N., M.Y.M., and R.W.D.) discussed the coding process and contributed to the iterative data analysis.³⁷ Trustworthiness was achieved through data triangulation and peer debriefing.^{38,39} We relied on discussion as coauthors and conversations with colleagues to ask questions regarding methods, meanings, and interpretations. Due to logistical and financial constraints, we planned, in advance, for a robust number of interviews to capture multiple perspectives across the 5 cancer centers. Inductive thematic saturation^{40,41} was reached because all 91 interviews were coded and all insights were obtained.

RESULTS

The current study sample included 91 interviewees (Table 2). Men and women were represented almost equally among all interviewees; >70% of participants (67 participants) were white. The current study participants described referral and recruitment biases in relating their experiences, including identifying those factors they considered while referring and recruiting minority patients to clinical trials. A majority of the participants discussed factors outside of race while recruiting minority patients to clinical trials. Each participant quoted herein was expressing his or her own opinion emerging from their own observation or experience.

Theme 1: Interactions With Potential Minority Participants Were Perceived to Be Challenging

Respondents noted multiple factors that made communication with potential minority trial participants difficult, thereby complicating the recruitment process. First, participants perceived racial minority groups to have low knowledge of cancer clinical trials. This was considered to be a hindrance while explaining cancer clinical trials in the face of limited provider time during a clinical encounter.

African Americans I think have less knowledge. We take a little bit more time to explain to African American [sic]

TABLE 2. Characteristics of the Study Population

Characteristics	No. of Study Participants				
	Total N = 91	Principal Investigator N = 34	Research Staff N = 33	Referring Clinician N = 16	Cancer Center Leadership N = 8
Mean age, y	51	46	52	48	60
Sex, no.					
Men	43	21	3	12	7
Women	48	13	30	4	1
Race, no.					
White	67	24	26	10	7
African American	11	3	5	3	0
Asian	13	7	2	3	1
Ethnicity, no.					
Non-Hispanic	76	29	30	11	6
Hispanic	15	5	3	5	2
Mean no. of y of cancer trial experience	12	11	10	13	24
Type of trial, no.					
Therapeutic	27	4	19	2	2
Nontherapeutic	6	5	1	0	0
Therapeutic and nontherapeutic	56	24	12	14	6
Not indicated	2	1	1	0	0

I think if they have more questions because we know they are not more knowledgeable so I think it takes time. They have a lot of questions.—*Principal investigator*

One participant stated that clinicians or investigators use the language barrier as an excuse for not enrolling more minorities with limited English proficiency.

Minority groups have been excluded from some trials and I think that this is an issue and it's done under the guise of it's usually a communication issue. If someone can't communicate well how am I sure that they're really not sick from the medication? How am I sure it's not really hurting them? And how am I sure it's not you know if they got sick in the middle of the night and needed to call and no one was around how would I be able to take care of them if I couldn't if I don't speak their language or understand them culturally?—*Referring clinician*

One participant discussed the pressures of offering costly clinical care against investing time to discuss the complex nature of cancer clinical trials as burdensome and these pressures were used as a common reason for not offering these trials to minority patients with cancer.

I think the barrier [sic] are more of this is gonna be a lot of work you know this is gonna cost my department a lot of money if we have to give them this \$100,000 therapy and they can't ever pay it back and then I'm gonna get yelled at by someone at the hospital for you know being I mean there's different pressures for someone and I think in the end people sort of say it's almost easier just to ignore that group and just give them standard stuff cause then

no one gets in trouble and no one has to be crazy.—*Referring clinician*

Another participant stated that certain minority patients had distinct temperaments, which made the conversation of cancer clinical trials arduous.

It's funny there was a patient and she just had this attitude like she was doing me a favor and was constantly threatening me well I'm not gonna do that if I can't come on this day at this time and I'm not gonna do that if you're gonna make me keep getting these scans where they have to give me barium enemas and I'm like why you know and I just I don't know the way I handle things is I just said you know do you want to try and drug or not? I mean what do you want? Because you're yelling at me and I don't you know so she was a black lady and she so yeah I don't know. The feistiness sometimes.—*Research staff*

Theme 2: Potential Minority Participants Are Not Perceived to Be Ideal Study Candidates

Several clinical and research professionals stated that when potential minority patients are screened for cancer clinical trials, perception of protocol compliance was central to decision making regarding whether to refer or recruit these patients.

I think, with most of our protocols, it is a compliance issue though. You know, is this the right patient for this trial or are we going to get meaningful information or you know, are we going, is it going to be worth the risk to that patient's life if they're not able to meet

in the clinic on a routine basis or follow a very, sometimes complicated drug or medication instructions, so I think compliance and issues pertaining to that.

—*Referring clinician*

Another participant discussed physician bias regarding perceived noncompliance, and a lack of support systems when asked to discuss work as it relates to the recruitment of racial ethnic minorities in her/his cancer clinical trials.

Physician bias, I think it's huge. I don't have any data to tell you this, but my thought is that I think physicians think about whether or not the patient would comply with the study. Patient compliance I think is one of the things they think about. A lot of patients seem to be in that range, so in terms of what the study is going to require of the patient in terms of number of visits, intensity of visits, how much they're going to have to do at home, how much monitoring they're going to have to do, what they're going to have to be responsible for, and they're just—the patient's capacity to understand and do what they're supposed to do and follow the rules of the study. You know, in terms of how much support do they have at home. Physicians don't always—but sometimes they do. Well, he lives by himself. How are we going to make sure he does all this? I don't think it's worth asking him to take on all this. It will be too much for him. And that judgment can be made when, in fact, this person could be perfectly capable of doing it and would do a fine job, but never has that opportunity because this particular study may not have been presented to them.

—*Research staff*

In addition to adherence, respondents also anticipated minority nonadherence leading to additional burdensome work, such as reporting protocol deviations to the study sponsors.

It's just too darn hard to try to talk them into a clinical trial, so let's just do standard therapy. The belief that they won't follow through, they'll be dropped out. You'll have to explain that to the company or to the study group.—*Referring clinician*

A research staff member discussed the differences between minority groups regarding compliance to protocol rules and stated that it was a concern when enrolling minority patients to cancer clinical trials.

I've noticed that Hispanic women are much more willing to do exactly what they're told to do. Any waivers and they're on the phone with can I do this, can I do

that? Whereas African Americans are kind of like I know you told me not to take Tylenol but my head hurt I took that Tylenol. Compliance is the issue I would say.—*Research staff*

One respondent believed that altruism was the reason patients agreed to participate in a clinical trial and that certain racial groups were more altruistic than others.

I see that degree of altruism more in Caucasian women than I do African American women.—*Referring clinician*

A few respondents cited the role of the history of unethical research studies in the United States among racial and ethnic minorities. Among clinical and research professionals, this legacy of mistreatment often was assumed to be the reason minority patients don't participate in cancer clinical trials.

I will say sometimes certain ethnic groups are more concerned about having their blood drawn, where's that blood stored, who's gonna have this, are they in my DNA you know based on things that have happened in America. And you have to discuss those things if they come up but I still think you discuss it broadly with the patient I think it's how information's presented and if you would just consider presenting that information because of biases meaning oh that person's not gonna participate, etc.—*Referring clinician*

Theme 3: A Combination of Clinic-Based Barriers and Negative Perceptions of Minority Study Participants Leads to Providers Withholding Clinical Trial Opportunities From Potential Minority Participants

When asked what is most needed to increase the retention or recruitment of racial and ethnic minorities in cancer clinical trials, a few participants believed that constraints, including limited physician time, made it burdensome to discuss the complex nuances of clinical research. Therefore, they perceived the demands of clinical medicine as a barrier to offering cancer clinical trials to racial and ethnic minorities.

To get them to understand that requires a lot of ground work, you know, and a lot of education, and you know, when you're pushed to see 20 patients in a day, and when the, the metric that is used to measure your performance is how much patients you put through the hospital, and that's the overriding pressure on you, clinical trials will fall by the wayside, and I would imagine that trust is more difficult to build in certain.—*Referring clinician*

Respondents stated that among some minority patients, low English proficiency, despite the use of translators, was a “barrier for referral of patients to trials.” Other participants discussed the extra physician time required to discuss the complex nuances of cancer clinical trials, even when using a translator.

I have had certainly a few opportunities, and language clearly was a barrier to the point where if it was a busy clinic, I wasn’t gonna take the time to get the translator to go spend 30 minutes. And, you know, it’s a hard concept for me to get through a translator about randomization, placebo and so, you know, a lot of this I would take the blame for just for not being able to explain it well enough through a translator.—*Referring clinician*

One respondent discussed the personal discomfort of working with minority patients as a barrier to recruiting minorities to cancer clinical trials.

I don’t know if it’s more them or me because I’m uncomfortable. One of my own personal biases if I’m going to do the study and I know I have to enroll minorities, have I really had a conversation with myself? Am I really going to work—am I really willing to do the work to be able to make—to have a buy-in and to really connect with somebody and to really have a trust factor so that people understand? You have to have people who are willing to be able to work with different groups.—*Research staff*

According to one participant, cancer clinical trials may be even more expensive in “underserved populations,” and this perception may lead to fewer minorities being invited to join trials.

It’s just more expensive to do clinical trials in, in the really underserved population. I think that there’s a physician bias that’s subconscious. We know that if African Americans are offered clinical trials, their acceptance rate is about the same as the white population. I mean, there’s data out there on that. You’ve probably seen that. You know, if they are offered, their acceptance rate is no different from...so they’re just not offered.—*Leader*

Theme 4: When Clinical Trial Recruitment Practices Were Tailored to Minority Patients, Addressing Misconceptions to Build Trust Was a Common Strategy

Respondents stated that they were cognizant of medical research abuses and they placed emphasis on discussing

the clinical reason a potential minority patient is being offered a clinical trial.

I try any time I’m speaking with an African American patient to be aware of the history of the abuses that have taken place in this country, particularly in the African American population. And so, you know, I try very hard to explain the trial well, you know, what’s the rationale for the trial, why are we doing this trial, and, you know, I want to be very clear. It’s just the way I am, but I want to be very clear with my African American patients about what’s up in the trial and why it might be of interest to them or relevant to them to participate.—*Referring clinician*

Respondents discussed the inherent trust that patients have in the medical community and stated the same can be expected from minority groups if providers work hard to establish a trusting relationship between themselves and the patients.

I wonder if it’s just a matter of establishing rapport, meaning, you know, we are so ingrained about going to a doctor and trusting that person, their medical knowledge, their medical recommendations, and taking that as gospel. Oftentimes, minorities do the same thing, but it seems to take a little bit longer time, maybe to get to that point, and, and sometimes you have to prove, as a physician.—*Referring clinician*

Participants discussed the use of positive body language as an important component of discussing cancer clinical trials with minority patients.

I just, you know, try and address their misconceptions. And generally, I think I always do address that—address them. I’m saying to you is that I don’t internally roll my eyes and say, well, this is a no-win situation. I do try and address it. I concentrate on making eye contact with the patients. And I know this all sounds silly, but I’ve, through the years, tried desperately hard not to cross my arms, so, you know, I just try and sit there in kind of a neutral position and look at them.—*Principal investigator*

Specifically, participants stated that perceived mistrust in the minority communities regarding biobanking needs to be addressed with honesty and openness.

The person qualifies based on being a woman or a man, this age group, whatever, that criteria, that’s fine. If you’re specifically recruiting African Americans or Latinos or Pacific Islander, whatever it is, I think then you need to be transparent to that group to say this is

not a negative thing meaning we're not recruiting all of your samples to plant your DNA at the crime scene or some kind of crazy ridiculousness but I think based on what has happened in medicine you need to clear the air and be up front about it.—*Referring clinician*

Respondents stressed the importance of both being transparent regarding their personal roles in the clinical trial recruitment enterprise and emphasizing that participation in clinical trials does not result in "suboptimal care." These are 2 points of emphasis respondents used to recruit minority patients into cancer clinical trials.

Upfront, making them understand that you're their advocate reduces the likelihood of challenges and sort of obstructionism to moving forward with the trial should they be a good candidate for one.—*Referring clinician*

In the same vein, another participant discussed the nature of experimental therapy and its distinction from cancer clinical trials as experiments on human beings as a strategy to bolster trust between the research team and the potential minority patients.

And the experiment is not on the patient, it's on the agent that's being employed. So I try to make distinctions between the agent which if it's brought to the level of a clinical trial, it presumably has promise in providing some benefit. I emphasize 1 the novelty of the agent, 2 the potential benefits of the agent even though they haven't, in some cases, perhaps they have not been confirmed, and you know, the opportunity that exists in participating to receive something that might be in some cases a little bit better than what we currently have to offer.—*Referring clinician*

Some respondents discussed the influence of cultural norms, such as family keeping the details of a diagnosis from the actual patient, on the approach to minority enrollment in cancer clinical trials.

There are some cultural differences where the way they protect or shield individuals from information and although I wasn't immediately involved there were patients who went on clinical trials and never really heard the word the fact that they had cancer that they were getting a treatment. But through interpreters and through family and through a lot of time through the referring investigator that did it I think most people felt the patient understood that they were in a life-threatening situation that they needed to get a treatment for their bone marrow problem that this was

what the team was recommending as the best treatment.—*Research staff*

Theme 5: For Some Respondents, Race Was Viewed as Irrelevant When Screening and Recruiting Potential Minority Participants for Clinical Trials

Our participants stated that race neutrality was the best approach when recruiting patients to clinical trials. They stated that race was a topic of little or no importance when trying to recruit patients to cancer clinical trials.

I don't view the recruitment of African American patients any differently than I do any patients.—*Referring clinician*

Another participant discussed the lack of resources for concerted strategies to recruit minorities.

There's no strategy—I'm not going to go and advertise in black communities or Hispanic communities or provide them with transportation or hotel, you know, protocols don't do that and there's no funds for that.—*Principal investigator*

Being race-neutral was the most common approach to recruiting minorities for the clinical and research professionals who participated.

The strategy is, just like clinical, any part of clinical medicine, you have to personalize, or individualize, the therapy according to the patient, and his or her wishes. So, the, what I do here is it's almost color blind.—*Principal investigator*

Reiterating that race was not a contributing factor when trying to recruit patients, many participants stated that a patient's socioeconomic background would be a stronger predictor of trial participation.

It's education, it's economics, and it's rural versus urban because most cancer centers are in larger metropolitan areas and so they're going to have that big feel for folks who are coming from the outside from the rural communities.—Leader

Participants also believed that other factors such as education and socioeconomic status, rather than race, influenced patients' decision making surrounding trial participation.

I do think that there is an economic/educational issue which transcends the minority issue. It's more of an economic thing. And that those of low education, low socioeconomic, I just get the sense are less trusting of being placed on a clinical trial.—*Referring clinician*

Similarly, one participant elaborated that an upper middle class individual, irrespective of race, would not differ from other individuals belonging to this economic stratum, reiterating that socioeconomic status supersedes race in shaping perceptions of trial participation.

We see middle class African Americans. I mean an upper middle class African American patient in XX resembles all other patients at XX; in the way that most of those people think about clinical research and what their interests are and what there, you know the things they want are very similar.

—*Referring clinician*

A few participants discussed that a percentage of patients with cancer were simply not open to the idea of medical research, irrespective of race.

You know, black or white, some people come to the meetings with pretty set ideas about research and, you know, those are folks that, you know, you're not going to change their mind.—*Referring clinician*

DISCUSSION

To our knowledge, the current study is the first to explore bias among cancer center stakeholder groups across 5 National Cancer Institute–designated cancer centers within the context of minority recruitment to cancer clinical trials. The results of the current study have suggested that referral and recruitment biases exist among the participants in the current study. These biases influence professional stakeholders' decisions to offer clinical trial opportunities to patients of racial and ethnic minority groups. It builds on previous research that has described “the good study patient”: the ideal study candidate to whom a clinical trial customarily is offered.¹⁰ The results of the current study demonstrated that cancer clinical trials may not be offered to minority patients based on negative stereotypes regarding minority racial and ethnic groups. Although a previous study³⁶ discussed multilevel structural barriers, such as lack of insurance, potentially limiting minority trial participation, the results of the current study demonstrated that stakeholders' perceptions of a minority group could lead to cancer clinical trials not being offered to minorities, thereby limiting the opportunities among these racial and ethnic subpopulations to benefit from trial participation.

Similar to a systematic review demonstrating the role of implicit bias in clinical care,⁴² the results of the current study suggested that health care and research professionals associate minorities with certain negative stereotypes,

such as noncompliance with clinical trial activities, potentially leading to differential patient referral to cancer clinical trials based on race and ethnicity. Although the respondents herein held the general belief that there is lower potential for adherence to trial requirements among African American patients, there was no definitive evidence to support the idea that race alone is a consistent predictor of adherence to study protocols.^{43,44} Some of the participants herein verbalized racial stereotypes when asked about challenges in referring minority patients. Racism increasingly is recognized as a fundamental cause of racial and/or ethnic inequalities in health care.⁷ It can be expressed in multiple forms, including as stereotypes (categorical beliefs), prejudice (negative attitudes), and discrimination (unequal treatment).⁴⁵ The results of the current study demonstrated that stakeholders' perceptions of negative stereotypes and gross generalizations of minority groups may lead to fewer opportunities for clinical trial participation for these same racial and ethnic subgroups. The potential denial of opportunities to participate based on the racial prejudices of professional stakeholders could directly hinder efforts to elucidate the underlying mechanisms explaining poorer cancer clinical outcomes in many racial and ethnic minorities compared with white individuals. Similar to a prior qualitative investigation,³⁵ a majority of the current study participants stated that a patient's racial and ethnic designation does not influence clinical trial recruitment efforts, thereby claiming “color-blind” efforts toward trial recruitment. However, endorsing a color-blind strategy in hospitals and clinics negatively affects communication in racially discordant professional-patient interactions, thereby perpetuating racial disadvantages and reiterating the fallacy that any disparities that exist in treatment between white and minority patients simply are due to biological differences.⁴⁶ Although all stakeholders in the current study were asked about factors that are taken into account when referring patients of racial and ethnic minorities to clinical trials, we noted that referring clinicians generally were more likely to express racial stereotypes compared with other stakeholder groups. This may be due to the fact that among all professional stakeholders involved in the recruitment process for cancer clinical trials, referring clinicians may be less focused on the granular inclusion and exclusion criteria that ultimately determine study eligibility. If tasked with only identifying the “potentially eligible,” referring clinicians may be more prone to more subjective assessments, which may include bias and stereotyping. These ideas also precluded the identification of barriers specific to or disproportionately hindering

minority trial participation. Furthermore, race-neutral perspectives do not allow for the allocation of research resources specifically to recruit minorities.

Although some respondents stated that they did not have a specific strategy for recruiting minorities, others reported that they were mindful of previous examples of research abuses in certain minority groups and made concerted efforts to allay the fears of these patients. There was no clear dominant strategy noted for recruiting minority patients.⁴⁷ It is interesting to note that although participants in the current study stated that medical research abuses needed to be addressed, previous literature has shown that knowledge of the US Public Health Service Syphilis Study at Tuskegee was not necessarily negatively associated with a willingness to participate in research.⁴⁸⁻⁵⁰ Nevertheless, the commonality between respondents who had a specific strategy to recruit and those who did not is that clear, honest communication between providers and patients plays a key role in the successful recruitment of minority patients to cancer clinical trials through increased alignment of the goals and motivations of patients and providers.

To address bias among clinical and research professionals involved in recruiting and retaining racial minority patients in cancer clinical trials, we recommend adopting an interventional framework originally meant for medical trainees and practicing physicians to prevent unconscious racial attitudes and stereotypes from negatively influencing the course and outcomes of clinical encounters.⁵¹ Although the aforementioned framework was created for clinical care, we believe that it also may be effective in the recruitment of minorities to cancer clinical trials. These strategies and skills are designed to: 1) enhance internal motivation to reduce bias while avoiding external pressure; 2) increase understanding about the psychological basis of bias; 3) enhance providers' confidence in their ability to successfully interact with socially dissimilar patients; 4) enhance emotional regulation skills; and 5) improve the ability to build partnerships with patients. Of course, increasing diversity among professional stakeholders and the patient populations at respective centers also would likely enhance understanding across cultural frameworks and potentially mitigate the influence of bias.⁵² In the United States, only approximately 2.3% of practicing oncologists self-identified as African American and 5.8% of practicing oncologists self-identified as Hispanic,⁵³ reflecting the dire need to increase the diversity of the cancer care workforce.

The current study had some limitations. As a qualitative study based on interviews at 5 comprehensive cancer centers, the data may not be generalizable to community-based

physicians and researchers based at sites other than cancer centers. However, the interview participants represented 4 stakeholder groups at 5 different cancer centers located in different regions of the United States with different local minority populations, allowing for the inclusion of multiple perspectives. Participant data were collected in 2010, and it is possible that professional perspectives have changed over the years. However, more recently published data have suggested that bias based on race and ethnicity not only persists but influences decision making in health care settings similar to those in which recruitment for clinical trials takes place.⁵⁴⁻⁵⁶ Although the stakeholder data corresponded to only some of the data in the previous literature,³⁶ we cannot rule out the possibility that stakeholders' views are informed both by their personal experience and previously published literature regarding racial disparities in clinical trial participation. In addition, although it also is important to gather views and perspectives regarding increasing the clinical trial participation of minority patients from clinical and research professionals from cancer centers, the current study did not include patients' or caregivers' perspectives, especially those who previously have been or currently are enrolled in clinical trials at these cancer centers. Future research should assess the qualitative findings of the current study, particularly the extent to which bias is perceived by potential minority participants.

The objective of the current study was to investigate whether bias was present in the descriptions regarding referring and recruiting minority participants to cancer clinical trials. We found that although some respondents discussed their personal biases regarding minority patients, others stated that race was not a parameter in referring, recruiting, and retaining patients with cancer to clinical trials. Meanwhile, few respondents reported a more nuanced approach that allowed referring clinicians and principal investigators to account for racial differences and tailor recruitment approaches accordingly. Based on the known correlations of race and ethnicity with survival outcomes in the United States, this approach, considering both race and ethnicity,⁵⁷ may be the best approach when recruiting and retaining minority patients to cancer clinical trials.

Conclusions

Despite the best intentions to provide equal clinical trial access to all patients, disparities in clinical trial participation persist and may lead to unacceptable increases in morbidity and mortality for some individuals. Herein, we have suggested that bias may impede the willingness of some clinical and research professionals to offer clinical trial enrollment and may explain, in part, variations

in participation in cancer clinical trials. In contrast to a race-neutral approach to recruitment, we have suggested a tailored, nuanced recruitment strategy that may increase minority participation in cancer clinical trials.

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The authors made no disclosures.

AUTHOR CONTRIBUTIONS

Soumya J. Niranjan: Analysis of the data and drafting and revising of the article. **Michelle Y. Martin:** Concept and design, analysis of the data, and drafting and revising of the article. **Mona N. Fouad:** Concept and design and drafting and revising of the article. **Selwyn M. Vickers:** Concept and design and drafting and revising of the article. **Jennifer A. Wenzel:** Concept and design and drafting and revising of the article. **Elise D. Cook:** Concept and design and drafting and revising of the article. **Badrinath R. Konety:** Concept and design and drafting and revising of the article. **Raegan W. Durant:** Concept and design, analysis of the data, and drafting and revising of the article.

REFERENCES

1. Sherman S, Waldinger M, Paul D. The 2010 National Comprehensive Cancer Network (NCCN) research benchmarking survey (RBS): clinical trials in the academic cancer center. *J Clin Oncol.* 2011;29(suppl 15):6116.
2. Renfro LA, An MW, Mandrekar SJ. Precision oncology: a new era of cancer clinical trials. *Cancer Lett.* 2017;387:121-126.
3. Trimble EL, Denicoff AM, Abrams JS. Strengthening accrual to cancer clinical trials. *Gynecol Oncol.* 2010;116:291-292.
4. Murthy VH, Krumholz HM, Gross CP. Participation in cancer clinical trials: race-, sex-, and age-based disparities. *JAMA.* 2004;291:2720-2726.
5. Chen MS, Lara PN, Dang JH, Paterniti DA, Kelly K. Twenty years post-NIH Revitalization Act: enhancing minority participation in clinical trials (EMPaCT): laying the groundwork for improving minority clinical trial accrual. *Cancer.* 2014;120(suppl 7):1091-1096.
6. Scalici J, Finan MA, Black J, et al. Minority participation in Gynecologic Oncology Group (GOG) studies. *Gynecol Oncol.* 2015;138:441-444.
7. Phelan JC, Link BG. Is racism a fundamental cause of inequalities in health? *Ann Rev Sociol.* 2015;41:311-330.
8. Howerton MW, Gibbons MC, Baffi CR, et al. Provider roles in the recruitment of underrepresented populations to cancer clinical trials. *Cancer.* 2007;109:465-476.
9. Ford JG, Howerton MW, Lai GY, et al. Barriers to recruiting underrepresented populations to cancer clinical trials: a systematic review. *Cancer.* 2008;112:228-242.
10. Joseph G, Dohan D. Diversity of participants in clinical trials in an academic medical center: the role of the 'Good Study Patient?'. *Cancer.* 2009;115:608-615.
11. Dovidio JF, ed. The SAGE Handbook of Prejudice, Stereotyping and Discrimination. Sage Publications; 2014.
12. Green AR, Carney DR, Pallin DJ, et al. Implicit bias among physicians and its prediction of thrombolysis decisions for black and white patients. *J Gen Intern Med.* 2007;22:1231-1238.
13. Chapman EN, Kaatz A, Carnes M. Physicians and implicit bias: how doctors may unwittingly perpetuate health care disparities. *J Gen Intern Med.* 2013;28:1504-1510.
14. Fiscella K, Franks P, Gold MR, Clancy CM. Inequality in quality: addressing socioeconomic, racial, and ethnic disparities in health care. *JAMA.* 2000;283:2579-2584.
15. Hall WJ, Chapman MV, Lee KM, et al. Implicit racial/ethnic bias among health care professionals and its influence on health care outcomes: a systematic review. *Am J Public Health.* 2015;105:e60-e76.
16. Williams DR, Wyatt R. Racial bias in health care and health: challenges and opportunities. *JAMA.* 2015;314:555-556.
17. Tehranifar P, Neugut AI, Phelan JC, et al. Medical advances and racial/ethnic disparities in cancer survival. *Cancer Epidemiol Biomarkers Prev.* 2009;18:2701-2708.
18. Daly B, Olopade OI. A perfect storm: how tumor biology, genomics, and health care delivery patterns collide to create a racial survival disparity in breast cancer and proposed interventions for change. *CA Cancer J Clin.* 2015;65:221-238.
19. Hayn MH, Orom H, Shavers VL, et al. Racial/ethnic differences in receipt of pelvic lymph node dissection among men with localized/regional prostate cancer. *Cancer.* 2011;117:4651-4658.
20. Griggs JJ, Culakova E, Sorbero ME, et al. Social and racial differences in selection of breast cancer adjuvant chemotherapy regimens. *J Clin Oncol.* 2007;25:2522-2527.
21. Penner LA, et al. Life-threatening disparities: the treatment of Black and White cancer patients. *J Soc Issues.* 2012;68:328-357.
22. Griggs JJ, Sorbero ME, Stark AT, Heininger SE, Dick AW. Racial disparity in the dose and dose intensity of breast cancer adjuvant chemotherapy. *Breast Cancer Res Treat.* 2003;81:21-31.
23. Murphy CC, Harlan LC, Warren JL, Geiger AM. Race and insurance differences in the receipt of adjuvant chemotherapy among patients with stage III colon cancer. *J Clin Oncol.* 2015;33:2530-2536.
24. Meghani SH, Kang Y, Chittams J, McMenamin E, Mao JJ, Fudin J. African Americans with cancer pain are more likely to receive an analgesic with toxic metabolite despite clinical risks: a mediation analysis study. *J Clin Oncol.* 2014;32:2773-2779.
25. Patel MI, Ma Y, Mitchell B, Rhoads KF. How do differences in treatment impact racial and ethnic disparities in acute myeloid leukemia? *Cancer Epidemiol Biomarkers Prev.* 2015;24:344-349.
26. Hassett MJ, Schymura MJ, Chen K, Boscoe FP, Gesten FC, Schrag D. Variation in breast cancer care quality in New York and California based on race/ethnicity and Medicaid enrollment. *Cancer.* 2016;122:420-431.
27. Schulman KA, Berlin JA, Harless W, et al. The effect of race and sex on physicians' recommendations for cardiac catheterization. *N Engl J Med.* 1999;340:618-626.
28. White-Means S, Zhiyong Dong, Hufstader M, Brown LT. Cultural competency, race, and skin tone bias among pharmacy, nursing, and medical students: implications for addressing health disparities. *Med Care Res Rev.* 2009;66:436-455.
29. Blair IV, Havranek EP, Price DW, et al. Assessment of biases against Latinos and African Americans among primary care providers and community members. *Am J Public Health.* 2013;103:92-98.
30. Blair IV, Steiner JF, Fairclough DL, et al. Clinicians' implicit ethnic/racial bias and perceptions of care among black and Latino patients. *Ann Fam Med.* 2013;11:43-52.
31. Blair IV, Steiner JF, Hanratty R, et al. An investigation of associations between clinicians' ethnic or racial bias and hypertension treatment, medication adherence and blood pressure control. *J Gen Intern Med.* 2014;29:987-995.
32. Blair IV, Steiner JF, Havranek EP. Unconscious (implicit) bias and health disparities: where do we go from here? *Perm J.* 2011;15:71-78.
33. Haider AH, Sexton J, Sriram N, et al. Association of unconscious race and social class bias with vignette-based clinical assessments by medical students. *JAMA.* 2011;306:942-951.
34. Cykert S, Dilworth-Anderson P, Monroe MH, et al. Factors associated with decisions to undergo surgery among patients with newly diagnosed early-stage lung cancer. *JAMA.* 2010;303:2368-2376.
35. Niranjan SJ, Durant RW, Wenzel JA, et al. Training needs of clinical and research professionals to optimize minority recruitment and retention in cancer clinical trials. *J Cancer Educ.* 2019;34:26-34.
36. Durant RW, Wenzel JA, Scarinci IC, et al. Perspectives on barriers and facilitators to minority recruitment for clinical trials among cancer center leaders, investigators, research staff, and referring clinicians: enhancing minority participation in clinical trials (EMPaCT). *Cancer.* 2014;120(suppl 7):1097-1105.
37. Charmaz K. Constructing Grounded Theory. Sage Publications; 2014.
38. Creswell JW, Clark VLP. Designing and Conducting Mixed Methods Research. Sage Publications; 2017.

39. Shenton AK. Strategies for ensuring trustworthiness in qualitative research projects. *Educ Inform.* 2004;22:63-75.
40. Strauss A, Corbin JM. Grounded Theory in Practice. Sage Publications; 1997.
41. Saunders B, Sim J, Kingstone T, et al. Saturation in qualitative research: exploring its conceptualization and operationalization. *Qual Quant.* 2018;52:1893-1907.
42. Maina IW, Belton TD, Ginzberg S, Singh A, Johnson TJ. A decade of studying implicit racial/ethnic bias in healthcare providers using the implicit association test. *Soc Sci Med.* 2018;199:219-229.
43. Shavers-Hornaday VL, Lynch CF, Burmeister LF, Turner JC. Why are African Americans under-represented in medical research studies? Impediments to participation. *Ethn Health.* 1997;2:31-45.
44. Weinberger MH, Fineberg NS, Fineberg SE. Effects of age, race, gender, blood pressure, and estrogen on arterial compliance. *Am J Hypertens.* 2002;15(4 pt 1):358-363.
45. Priest N, Slopen N, Woolford S, et al. Correction: stereotyping across intersections of race and age: racial stereotyping among White adults working with children. *PLoS One.* 2018;13:e0205614.
46. Plaut VC, Thomas KM, Goren MJ. Is multiculturalism or color blindness better for minorities? *Psychol Sci.* 2009;20:444-446.
47. UyBico SJ, Pavel S, Gross CP. Recruiting vulnerable populations into research: a systematic review of recruitment interventions. *J Gen Intern Med.* 2007;22:852-863.
48. Brown DR, Topcu M. Willingness to participate in clinical treatment research among older African Americans and Whites. *Gerontologist.* 2003;43:62-72.
49. Bates BR, Harris TM. The Tuskegee Study of Untreated Syphilis and public perceptions of biomedical research: a focus group study. *J Natl Med Assoc.* 2004;96:1051-1064.
50. Fouad MN, Partridge E, Green BL, et al. Minority recruitment in clinical trials: a conference at Tuskegee, researchers and the community. *Ann Epidemiol.* 2000;10(suppl 8):S35-S40.
51. Burgess D, van Ryn M, Dovidio J, Saha S. Reducing racial bias among health care providers: lessons from social-cognitive psychology. *J Gen Intern Med.* 2007;22:882-887.
52. Price EG, Gozu A, Kern DE, et al. The role of cultural diversity climate in recruitment, promotion, and retention of faculty in academic medicine. *J Gen Intern Med.* 2005;20:565-571.
53. American Society of Clinical Oncology. Facts & Figures: diversity in oncology. Accessed October 4, 2019. <https://www.asco.org/sites-new-www.asco.org/files/content-files/practice-andguidelines/documents/2017-diversity-strategy.pdf>
54. Lowe C, Beach MC, Roter DL. Individuation and implicit racial bias in genetic counseling communication. *Patient Educ Couns.* Published online November 7, 2019. doi:10.1016/j.pec.2019.10.016
55. Breathett K, Yee E, Pool N, et al. Does race influence decision making for advanced heart failure therapies? *J Am Heart Assoc.* 2019;8: e013592.
56. Katz AD, Hoyt WT. The influence of multicultural counseling competence and anti-Black prejudice on therapists' outcome expectancies. *J Couns Psychol.* 2014;61:299-305.
57. Ansell A. Race and Ethnicity: The Key Concepts. Routledge; 2013.