

Multilevel Influencers of Screen Detectable Cancers in Medically Vulnerable Catchment Communities in Southern California

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Abstract

Purpose

Cancer screening uptake still does not meet the Healthy People 2030 national screening rates. This study explores racial/ethnic differences in cancer screening rates and barriers to cancer screening in our medically vulnerable catchment communities.

Methods

Data were obtained from a multilingual survey administered across Southern California from 2023 to 2025 to collect self-reported information on demographics, cancer screening receipt, and perceived barriers to screening. Analyses were performed using SPSS 29.0.0.

Results

A total of 1,457 participants were included in the analysis; a subsample of 64 participants completed the additional questions on barriers to cancer screening. Race/ethnicity was significantly associated with screening for breast ($p < 0.001$), cervical ($p = 0.042$), and colorectal ($p = 0.002$). Hispanic participants reported the lowest colorectal cancer screening (57.2%), Asian participants had the lowest breast cancer screening (60.9%) and prostate cancer screening (18.2%), and African American women reported the lowest cervical cancer screening (47.6%). Compared to the Healthy People 2030 targets, screening rates for cervical and colorectal cancers were significantly lower (65.5% vs. 79.2%, and 67.5% vs. 72.8%, $p < 0.001$). Significant disparities in screening rates were found among White/European, Black/African American, and Asian participants ($p < 0.001$). “Fear/worry about finding cancer”, “No recommendation/prescription for cancer screening by a healthcare provider”, and “Cost” were the commonly reported barriers.

Conclusion

Findings suggest that community-engaged screening programs should adopt multipronged solutions that address the role and impact of the healthcare system, providers, societal drivers, community health workers, social networks, and emotional aspects to improve the receipt of life-saving cancer screening.

Introduction

Cancer remains a critical public health issue in the U.S. In 2025, over 2 million new cases of cancer were diagnosed, and about 620,000 people died from the disease [1, 2]. Prostate, lung, and colorectal cancers accounted for an estimated 48% of all cancers diagnosed in men in 2025, while the three most common cancers for women are breast, lung, and colorectal, which accounted for an estimated 51% of all new

cancer diagnoses in women in 2025 [1]. By 2050, the cancer burden in the U.S. is projected to escalate dramatically due to rapid population aging and lifestyle factors, including obesity and physical inactivity [3].

A substantial proportion of cancer deaths can be prevented through screening and early detection [4]. Cancer screening for screen-detectable cancers is one of the most effective solutions for cancer prevention, early detection, and control. Some cancers can be prevented through screening (e.g., colon, cervical); significant improvements can be made in the lives of cancer patients by detecting cancer early and avoiding delays in care [5, 6]. To improve cancer screening and reduce the burden caused by cancer, the Healthy People 2030 initiative outlines specific national targets to increase cancer screening rates based on guidelines from the U.S. Preventive Services Task Force (USPSTF), with the targets for breast cancer screening as 80.3%, for cervical cancer screening as 79.2%, and for colorectal cancer screening as 72.8% [7].

However, disparities in cancer screening persist across racial/ethnic, lower socioeconomic status (SES), and other medically vulnerable populations, contributing to delays in early detection and poorer outcomes [8–10]. Many medically underserved communities face barriers to cancer screening and early detection, including systemic barriers (such as access, having a medical home, and provider recommendation) as well as socioecological barriers (such as life burden, language) [11, 12].

In the Southern California area, which is one of the most diverse areas in this country, several populations experience lower participation in recommended screenings compared to statewide averages [13–15]. Health disparities in this area are heavily driven by insurance coverage, language barriers, and socioeconomic factors [14]. Populations such as Black, Latinx, and uninsured residents consistently face reduced access to preventive care compared to statewide averages, leading to late-stage cancer diagnoses and higher mortality rates [13, 16]. The American Association for Cancer Research (AACR) Cancer Disparities Progress Report also indicated that lower screening rates for some types of cancer are observed among racial/ethnic minorities [17].

Previous studies have revealed the potential barriers to cancer screening; however, most studies focused on one specific racial/ethnic group or one specific cancer site [18–22]. There is a notable research gap, as few studies report on multiethnic samples that allow for comparison across groups and major cancer types. Additionally, very few studies compared perspectives of perceived barriers using data that come from a highly diverse area like Southern California. Therefore, this pilot project, the Community Cancer Prevention Needs Assessment (CCPNA), is responsive to this research gap and attempts to shed some light on cancer screening practices and barriers in multiethnic Catchment Communities.

Methods

Study Design and Settings

This project is a cross-sectional pilot study aimed at assessing the community's needs for cancer screening, barriers and facilitators, and access to care. Data were obtained from persons representing the City of Hope Comprehensive Cancer Center (a National Cancer Institute-designated cancer center) Catchment Communities in the Southern California area, including Los Angeles County, San Bernardino County, Riverside County, and Orange County. Surveys were distributed via paper and electronic formats to attendees at community health fairs/educational sessions from March 2023 to December 2025. Data were managed using Research Electronic Data Capture (REDCap) electronic data capture tools hosted at City of Hope [23,24]. REDCap is a secure, web-based software platform designed to support data capture for research studies, providing 1) an intuitive interface for validated data capture; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for data integration and interoperability with external sources [23,24]. The risk of this study is minimal, and there are no adverse effects, which meets the requirements of Exempt from full Institutional Review Board (IRB) review. Thus, a Waiver of Consent was issued by the IRB of City of Hope Comprehensive Cancer Center, and no informed consents were requested. No personal identifiers were collected.

Participants

Participants who were aged over 18 were recruited from community-based settings, including community events (e.g., health fairs) and community partners (community advisory board, health advocacy agencies, non-profits, faith-based organizations, etc.). Children and minors under 17 were excluded. A total of 1,557 participants initiated the survey and 1,457 completed it, with a completion rate of 93.6%. Additionally, a subsample of participants (n=64) also answered questions related to cancer screening barriers.

Measures

The quantitative survey used in this study comprised demographic information along with cancer screening history and a barrier to cancer screening scale. The survey was multilingual with English, Spanish, and Chinese versions; participant can respond in any of the three languages based on their preference. Demographic information, including age, gender, ethnicity/race, and educational attainment, was collected. Specifically, the categories of the ethnicity/race variable included Hispanic/Latino, White/European, Asian, Black/African American, and Other (including South Asian, Pacific Islander, Southeast Asian, American Indian or Alaska Native, or Middle Eastern).

For cancer screening history, four types of screening tests were assessed. Below are the age eligibility and survey questions:

1. Breast cancer: for females (at-birth) who were aged 45 and over at the time of participation only. Survey question: "In the past 2 years, have you been screened for breast cancer with a mammogram?"

2. Cervical cancer: for females (at-birth) who were aged 21-65 at the time of participation only. Survey question: "Have you received a cervical cancer screening (pap test or HPV test) in the past 5 years?";
3. Colorectal cancer: for all participants who were aged 45-75 at the time of participation. Three questions were asked to assess the screening status: "In the past 12 months, have you been screened for colon cancer with a home stool-based test (FIT or FOTB)?", "In the past 3 years, have you been screened for colon cancer with a stool DNA test (Cologuard)?", and "In the past 10 years, have you been screened for colon cancer with a colonoscopy?". Participants who had at least one of the above tests were considered as screened for colorectal cancer;
4. Prostate cancer: for males (at-birth) who were aged 45 and over at the time of participation and had a close relative diagnosed with prostate cancer, only. Survey question: "In the past 12 months, have you been screened for prostate cancer?"

The barriers to cancer screening scale included systemic barriers (e.g., inadequate provider referral, lack of trust), practical barriers (e.g., language, cost), social support barriers (e.g., no peer screened), and psychological barriers (e.g., fear, fatalism). The scale is a 3-point Likert scale ('A lot', 'A little', 'Not at all') and was recoded as binary items with 'barriers' (combined 'A lot' with 'A little') and 'non-barriers' ('Not at all') for analysis. The barriers were asked for general cancer screening and not related to any specific cancer site or screening type. Details can be found in the Results section.

To investigate the difference between the cancer screening rate in our catchment areas and that at the national level, we used the Healthy People 2030 cancer screening targets as the validation threshold. For the overall screening targets from Healthy People 2030, breast cancer screening is 80.3% (females aged 50 to 74 years), cervical cancer screening is 79.2% (females aged 21 to 65 years), and colorectal cancer screening is 72.8% (adults aged 45 to 75 years) [7]. Further, we compared the screening rates by race/ethnicity to the data from the AACR Cancer Disparities Progress Report. Based on the AACR report [17], the national level screening rates by cancer site and race/ethnicity are as follows:

1. Breast cancer (aged 50-74): Asian: 81.0%; Black: 86.0%; Hispanic: 78.0%; White: 79.0%;
2. Cervical cancer (aged 21-65): Asian: 63.0%; Black: 73.0%; Hispanic: 68.0%; White: 80.0%;
3. Colorectal cancer (aged 45-75): Asian: 57.0%; Black: 64.0%; Hispanic: 53.0%; White: 67.0%;
4. Prostate cancer (aged 50+): Asian: 26.0%; Black: 34.0%; Hispanic: 27.0%; White: 41.0%

Although the age eligibility of Healthy People 2030 and AACR differs slightly from ours, we still compared the screening rates from our catchment area to national-level thresholds to gain a better understanding of the cancer prevention status in Southern California.

Statistical Analyses

A descriptive statistical analysis approach was utilized to summarize the information gathered from the study. Frequencies and percentages were calculated to represent the participants' demographic

characteristics, cancer screening history, and perceived barriers to screening. Chi-square tests were conducted to identify the associations between race/ethnicity and screening status, as well as between race/ethnicity and barriers. One-sample z-tests for proportions were also conducted to identify if the differences between our screening rates and national-level data are statistically significant. A p-value less than 0.05 was set as the test of statistical significance. All statistical analyses were performed using IBM SPSS Statistics 29.0.0.

Results

Demographic Results

1. Total Sample

Table 1 shows the demographic characteristics of the total sample. A total of 1,457 participants aged 21 years old and over were included in the analysis. Participants were distributed across age groups, with the largest proportion aged 66-75 years (23.3%), followed by 56-65 years (19.3%). Younger age groups were also represented, including 21-35 years (15.7%), 36-45 years (15.6%), and 46-55 years (15.0%), while participants aged 76 years and older accounted for 11.1% of the sample. Most participants identified as female (73.8%), while 25.6% identified as male.

The sample was racially and ethnically diverse. Among participants with available race/ethnicity data, 40.4% identified as Hispanic/Latino, 23.0% as White/European, 12.7% as Asian, 9.1% as Black/African American, and 4.2% as Other.

Regarding education, 60.0% reported having a college degree or higher, 28.1% reported having completed high school or a General Educational Development (GED) certificate, and 11.9% reported having less than a high school education.

2. Subsample for Barriers

Subgroups of analyses were conducted among participants who completed additional questions related to barriers to cancer screening (n=64). Table 1 shows their demographic results. Most participants were female (84.1%), and 15.9% were male. By age, 43.8% were 21-35 years, 18.8% were 36-45 years, 17.2% were 46-55 years, 14.1% were 56-65 years, 4.7% were 66-75 years, and 1.6% were 76 years or older. Within this subgroup, participants were racially and ethnically diverse, 37.5% identifying as Asian, 18.8% as Hispanic/Latino, 17.2% as White/European, 7.8% as Black/African American, and 7.8% as Other. Regarding education, 67.2% reported a college degree or higher, 29.5% completed high school education/GED, and 3.3% did not complete high school.

Cancer screening rates by cancer sites among all participants

1. Breast cancer screening

Overall, the rate of breast cancer screening was 77.5% among eligible participants (n=543). Differences in screening participation were observed across racial and ethnic groups, with Black/African American females reporting the highest screening rate (86.5%), followed by Other (78.6%), Hispanic/Latina (75.7%), and White/European (69.8%). Asian females reported the lowest breast cancer screening rate (60.9%) compared to all other racial/ethnic groups. Chi-square test indicated that there was a statistically significant association between race/ethnicity and breast cancer screening ($\chi^2 = 56.04$, df = 18, $p < 0.001$).

2. Cervical cancer screening

Among all eligible female participants (n=374), the overall cervical cancer screening rate was 65.5%. Cervical cancer screening rates varied across racial and ethnic groups: White/European females reported the highest screening rate (76.1%), followed by Hispanic/Latina participants (69.0%), Asian (60.4%), and Other (60.0%). Black/African American females reported the lowest cervical cancer screening rate, at 47.6%. There was a statistically significant association between race/ethnicity and cervical cancer screening ($\chi^2 = 29.52$, df = 18, $p = 0.042$).

3. Colorectal cancer screening

Colorectal cancer screening was reported by 67.5% of eligible individuals (n=772), while 32.5% reported no prior screening. Among participants with available race/ethnicity data, there was a statistically significant association between race/ethnicity and colorectal cancer screening ($\chi^2 = 5.13$, df = 3, $p = 0.002$). Screening participation varied across racial and ethnic groups, with Black/African American participants reporting the highest screening rate (70.2%), followed by White/European participants (62.1%) and Other (62.0%). Hispanic/Latino (57.2%) and Asian (59.3%) participants reported comparatively lower screening rates.

4. Prostate cancer screening

Prostate cancer screening was reported by 37.7% of eligible individuals (n = 191), and Black/African American males reported the highest screening rate (50.0%), followed by Hispanic/Latino males (45.1%), Other (33.3%), White/European males (29.4%), and Asian males (18.2%). There is no statistically significant association between race/ethnicity and prostate cancer screening ($\chi^2 = 19.59$, df = 16, $p = 0.239$).

5. Overall screening rates compared to the Healthy People 2030 target

Compared to the Healthy People 2030 targets, the cancer screening rates in our catchment areas are significantly lower. The total screening rate for breast cancer in our area is 77.5%, which is 2.8% below the target ($z = -2.69$, $p = 0.007$). Similarly, colorectal cancer screening rate in our area is 67.5% and 5.3% below the target ($z = -4.26$, $p < 0.001$). Regarding the cervical cancer screening rate, our participants reported a -13.7% gap between the Healthy People goals (65.5% vs. 79.2%, $z = -10.86$, $p < 0.001$), which is the biggest difference compared to other types of cancer screening.

6. Racial/ethnic screening rates compared to the AACR data

We observed screening rate differences by race/ethnicity between our catchment area and the national data presented by AACR. For breast cancer, all races/ethnicities reported lower screening rates, except for Black/African American females, with a 0.5% higher rate ($z = 0.36$, $p = 0.72$). The rate gaps between our participants and national data were: Hispanic/Latina as -2.3% ($z = -1.95$, $p = 0.051$), White/European as -9.2% ($z = -6.68$, $p < 0.001$), and Asian as -20.1% ($z = -13.41$, $p < 0.001$); Asian females had the biggest difference compared to racial/ethnic groups.

For cervical cancer, all races/ethnicities reported lower screening rates, except for Hispanic/Latinas, with a 1.0% higher rate ($z = 0.74$, $p = 0.46$). The rate gaps between our participants and national data were: Asian as -2.6% ($z = -2.00$, $p = 0.045$), White/European as -3.9% ($z = -2.96$, $p = 0.003$), and Black/African American as -25.4% ($z = -17.50$, $p < 0.001$); Black/African American females had the biggest difference compared to racial/ethnic groups.

In contrast, all racial/ethnic minorities reported higher colorectal cancer screening rates compared to national data: Asian as 2.3% ($z = 1.85$, $p = 0.064$), Hispanic/Latino as 4.2% ($z = 3.36$, $p < 0.001$), and Black/African American as 6.2% ($z = 4.38$, $p < 0.001$); Black/African American participants had the biggest difference compared to racial/ethnic groups. However, White/European participants reported a 4.9% lower colorectal cancer screening rate than the AACR data (62.1% vs. 67.0%, $z = -3.63$, $p < 0.001$).

Regarding prostate cancer screening, compared to the AACR data, Asian males (18.2% vs. 26.0%, $z = -5.42$, $p < 0.001$) and White/European males (29.4% vs. 41.0%, $z = -8.21$, $p < 0.001$) had lower rates; while Black/African American males (50.0% vs. 34.0%, $z = 10.85$, $p < 0.001$) and Hispanic/Latino males (45.1% vs. 27.0%, $z = 12.42$, $p < 0.001$) reported higher screening uptakes.

All cancer screening rate results and comparisons can be found in Tables 2, 3, and 4.

Barriers to Cancer Screening

1. Cancer screening rates among the subsample (n=64)

Among participants who completed the additional barriers questions, 58.3% reported having undergone screening for colorectal cancer, while 41.7% indicated that they had not yet participated in those screenings. For breast cancer screening, 90.9% of eligible women confirmed that they were screened. Meanwhile, 63.6% of eligible women reported having undergone cervical cancer screening. The proportion of eligible men screened for prostate cancer was 33.3%.

2. Reported barriers to cancer screening

Participants in the study identified several common barriers to cancer screening (Table 5). Among all listed barriers, “No recommendation/prescription for cancer screening by a healthcare provider” was most frequently reported; almost half of the participants (43.5%) believed this was a barrier to cancer

screening. Notably, 41.3% reported “Healthcare provider does not treat me with respect/dignity,” and 40.0% felt “No regular place/medical home to get care” impacted their cancer screening plans. Other systemic barriers were also highlighted, as about 1 in 3 participants agreed that “Health team/provider does not provide information about cancer screening”, “Health system lack of trustworthiness”, and “I do not know where to go to get screening” were barriers to screening.

Alongside structural challenges, some practical barriers were also reported. “Distance/transportation”, “Language”, and “Cost” were the top 3 barriers that appeared among responses, with 29.0%, 28.6%, and 28.1% of participants agreeing, respectively. Additionally, about 1 in 4 of the participants lacked support for family demands and urgent needs, which prevented them from being screened.

Regarding social support barriers, “No one in my friend group gets screening” was most frequently reported, as 22.6% felt this was a barrier, followed by “No one in my family gets screening” (22.2%), “Cancer is stigmatized in my community” (21.0%), and “My community does not believe in cancer screening” (21.0%).

For psychological barriers, about 1 in 5 of the participants (21.3%) believed “I pray about things, so I don't need to get cancer screening” and agreed that this was a barrier to screening. “Fear/worry about finding cancer” and “Should not screen/look for cancer when I have no symptoms” were also reported, and 19.7% agreed that this was a barrier to screening.

3. Top 3 barriers to screening by race/ethnicity

When analyzing barriers based on race and ethnicity (Table 6), differences in the most commonly reported challenges were noted among various groups. “Cost” was the No.1 barrier for Asian and White/European. The biggest barrier for Hispanic/Latino participants was “Fear/worry about finding cancer”, while “Health team/provider does not provide information about cancer screening” was the No.1 barrier for Black/African American participants. “No recommendation/prescription for cancer screening by a healthcare provider” ranked No.2 among Asian, Hispanic/Latino, and Black/African respondents, while “Fear/worry about finding cancer” became No.2 for White/European. Notably, the No.3 barrier to screening was varied across racial/ethnic groups: “Fear/worry about finding cancer” for Asian, “Health team/provider does not provide information about cancer screening” for Hispanic/Latino, “Should not screen/look for cancer when I have no symptoms” for Black/African American, and “I do not know where to go to get screening” for White/European. For the Other group, practical barriers influence more since the top 3 barriers they ranked are “Cost”, “Distance/transportation”, and “Language”.

Discussion

Cancer screening for screen-detectable cancers is one of the most effective solutions for cancer prevention, early detection, and control. However, many medically vulnerable populations are experiencing various barriers to cancer screening, which lead to low screening rates and poor health-related quality of life. Findings of this study provide insights into the current cancer screening status and

possible barriers to screening in multiethnic catchment communities of a comprehensive cancer center in Southern California.

First, the current cancer screening rates in our catchment area have not met the Healthy People 2030 targets. The cervical cancer screening rate needs to be improved the most since the gap between ours and the target is as large as 13.7%. Compared to the national-level racial/ethnic cancer screening rates provided by the AACR, some differences in our catchment communities are worth discussing. In our study, the breast screening rate for Black/African American women was above the national rates. Although Black/African American women have a higher breast cancer screening rate, they still face a 40% higher mortality rate, which may be caused by more aggressive tumors and systemic challenges such as delays in treatment and survivorship care [25, 26]. Thus, it is important to ensure Black/African American females receive proper and timely follow-up care if they have abnormal screening results. On the other hand, Asian women reported the lowest breast cancer screening rate, which is much lower than the national data [17]. Previous research has stated that breast cancer is rising fast in Asian American women, especially for those who are under 50 and have advanced-stage or certain aggressive subtypes of breast cancer [27]. Since screening is a powerful tool for early diagnosis and helps reduce mortality, for Asian women, interventions to promote screening are needed. Meanwhile, the results of this study indicate that, overall, the cervical cancer screening rate in the catchment communities is low and needs to be addressed, especially for women.

Additionally, in our communities, Asian men reported lower prostate cancer screening rates than the national level [17]. One possible reason for the low prostate cancer screening rate among Asian men is that they have the lowest incidence and mortality rates for prostate cancer globally; therefore, they may not get screening recommendations from providers [28]. However, prostate cancer is rising rapidly across the Asian American population due to factors such as aging populations, urbanization, and changing lifestyles [29]. Thus, regular PSA (Prostate-Specific Antigen) tests are still important for them, and awareness of prostate cancer screening needs to be improved among Asian men.

In contrast with the lower screening rates of the other three types of cancer, colorectal cancer screening rates among all racial/ethnic minorities in our catchment communities are higher compared to the national level. A possible reason for this high colorectal cancer screening rate is the successful implementation of a community outreach and engagement intervention conducted by this study team [30]. This intervention launched a multi-ethnic multimedia campaign and reached 35.4 million impressions; the education training reached 300 diverse community members, and the provider/staff training reached 150 medical providers. An overall increase in CRC screening rates was achieved across the communities from this intervention, despite clinic staffing challenges during the COVID-19 pandemic [30].

Regarding the perceived barriers to cancer screening, most of our participants face systemic barriers. Still, it calls for efforts of the whole healthcare system to improve the quality of healthcare. Practical barriers like long-distance, cost, and insurance coverage are also reported, which suggests vulnerable

populations may need more financial support. Notably, psychological barriers were also significant barriers to screening. Cancer is still stigmatized in some minority communities, as no one wants to discuss cancer in their culture; “fatalistic” beliefs also heavily reduce screening rates. The top 3 barriers that commonly appear across all racial/ethnic groups are “Cost”, “No recommendation/prescription for cancer screening by a healthcare provider”, and “Fear/worry about finding cancer”. Understanding these systemic and emotional roadblocks is essential for improving early detection rates. For example, collaborative care can play an important role in increasing cancer screening. Primary care teams should have basic training in knowledge and skills to identify and manage cancer care. For healthcare professionals who work in general hospitals and already have the essential knowledge to identify other health needs, they should be able to refer patients to specialized oncologists, which can help patients to access related cancer care services or encourage them to have screening tests. Also, a robust community outreach campaign to spark cancer screening awareness and whole-person care is another key solution. Especially in faith-based communities, leaders of these communities can host more health fairs for their congregations to emphasize the importance of early detection and inquire about local and national resources for their vulnerable populations, which will also address psychological barriers. The community-engaged efforts are cultivating greater and deeper trusting and productive community partnerships towards addressing cancer disparities in prevention, screening, quality care, provider bias, and health-related quality of life, including follow-up care and survivorship. Additionally, we need to strengthen community-engaged and community-responsive interventions and programs to increase screening and use community-informed strategies, including communication strategies, e.g., infographics, social media, and ethnic newspapers, to help. Engage, train, and integrate Community Health Workers/Advisors and deploy diverse health professionals representing underserved Catchment Communities will also provide ongoing support to improve cancer screening and follow-up care.

Limitations

This study has several limitations. First, the responses in this study are self-reported, which may have social desirability bias and recall bias. Although we ensured anonymity and used standardized questionnaires, we cannot eliminate the bias. Second, due to time and funding limitations, this pilot study only included 64 participants to complete the additional barriers questions, and the sample size is relatively small. Most of these participants were younger (under 45) than the overall sample, which may not be able to represent the general population. We plan to enroll more representative participants in our future study. Third, this paper only provides descriptive and chi-square results and does not conduct analyses to predict factors that impact the screening rates or perceived barriers. For this paper, we aimed to provide an initial understanding of the screening and barriers in our catchment communities. We will develop another paper to identify the potential factors that are associated with the outcomes and how those factors impact these outcomes.

Despite the limitations, this novel pilot study explores racial/ethnic differences in cancer screening rates and barriers to cancer screening in medically vulnerable catchment communities towards designing and deploying community-responsive interventions and provides practical solutions to increase cancer

screening and early detection. Future studies will continue investigating how to develop tailored interventions targeting different races/ethnicities.

Conclusion

Although cancer screening is one of the most effective tools to prevent cancer, several populations experience lower participation in recommended screenings due to systemic, practical, and psychological barriers, including provider recommendation, cost, and fear of finding cancer, which lead to low screening rates. Medically underserved populations in our catchment communities have lower screening rates for some types of cancer compared to the national level rates. In response to the findings of this study, community-engaged screening programs ought to attend to multipronged solutions, including the healthcare system, providers, societal drivers, community health workers, social networks, e.g., friends/community, and emotional aspects to improve receipt of life-saving cancer screening. Leaders of these communities also should emphasize the importance of early detection and are inquiring to local and national resources for their vulnerable populations, which will also address psychological barriers.

Declarations

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Author Contributions:

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Data Availability: The datasets generated and/or analyzed during the current study are not publicly available due to institutional regulations. But data are available from the corresponding author on reasonable request.

Compliance with Ethical Standards: This study is an exempt study by the Institutional Review Board (IRB) of City of Hope Comprehensive Cancer Center. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The IRB issued the Waiver of Consent. The participant has consented to the submission of the manuscript to the journal.

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Analytic code availability: There is no analytic code associated with this study.

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References

1. National Cancer Institute Cancer Statistics. National Cancer Institute.
<https://www.cancer.gov/about-cancer/understanding/statistics> (accessed 2026-07-10)
2. National Cancer Institute Common Cancer Sites - Cancer Stat Facts. SEER.
<https://seer.cancer.gov/statfacts/html/common.html> (accessed 2026-07-10).
3. Sung H, Filho AM, Laversanne M et al (2026) Global cancer statistics 2024: GLOBOCAN estimates of incidence and mortality worldwide for 34 cancers in 186 countries. CA Cancer J Clin e70090. 10.3322/caac.70090
4. Loud JT, Murphy J (2017) Cancer Screening and Early Detection in the 21st Century. Semin Oncol Nurs 33(2):121–128. 10.1016/j.soncn.2017.02.002

5. National Cancer Institute Screening Tests for Cancer. National Cancer Institute.
<https://www.cancer.gov/about-cancer/screening/screening-tests> (accessed 2026-07-10)
6. World Health Organization Cancer. World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/cancer> (accessed 2026-07-10)
7. U.S. Department of Health and Human Services. Cancer - Healthy People 2030 | Odphp.Health.Gov (2019) <https://odphp.health.gov/healthypeople/objectives-and-data/browse-objectives/cancer> (accessed 2026-07-28)
8. American Association for Cancer Research. AACR Cancer Disparities Progress Report (2026) https://cancerprogressreport.aacr.org/wp-content/uploads/sites/2/2026/06/AACR_CDPR_2026.pdf. (accessed 2026-07-10).
9. Smith RA, Paskett ED, DeSantis CE et al (2020) Disparities in cancer prevention services in the USA: A long-standing, persistent cause of inequity. In: Wild CP, Weiderpass E, Stewart BW, editors. World Cancer Report: Cancer research for cancer prevention. Lyon (FR): International Agency for Research on Cancer; 4.6. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK606483/>
10. Zavala VA, Bracci PM, Carethers JM et al (2021) Cancer health disparities in racial/ethnic minorities in the United States. *Br J Cancer* 124(2):315–332. 10.1038/s41416-020-01038-6
11. Chen AM (2025) Barriers to health equity in the United States of America: can they be overcome? *Int J Equity Health* 24(1):39 Published 2025 Feb 7. 10.1186/s12939-025-02401-w
12. Aguiar-Ibáñez R, Mbous Y, Sharma S, Chakali R, Chawla E (2025) Barriers to cancer screening uptake and approaches to overcome them: a systematic literature review. *Front Oncol.* ;15:1575820. Published 2025 Aug 6. 10.3389/fonc.2025.1575820
13. LISTING OF DEPARTMENT OF PUBLIC HEALTH PRESS RELEASES [publichealth.lacounty.gov. http://publichealth.lacounty.gov/phcommon/public/media/mediapubhpdetail.cfm?prid=4667](http://publichealth.lacounty.gov/phcommon/public/media/mediapubhpdetail.cfm?prid=4667) (accessed 2026-07-10).
14. Burra A, Gonzales N, Jiang J et al (2025) Understanding Barriers to Colon Cancer Screening Among Individuals Experiencing Housing Insecurity in Los Angeles. *Cureus* 17(12):e98313 Published 2025 Dec 2. 10.7759/cureus.98313
15. Wisseh C, Hildreth K, Marshall J et al (2021) Social Determinants of Pharmacy Deserts in Los Angeles County. *J Racial Ethnic Health Disparities* 8:1424–1434. <https://doi.org/10.1007/s40615-020-00904-6>
16. Health Disparities by Race and Ethnicity in California — (2024) Edition [healthpolicy.ucla.edu. https://healthpolicy.ucla.edu/our-work/publications/health-disparities-race-and-ethnicity-california-2024-edition](https://healthpolicy.ucla.edu/our-work/publications/health-disparities-race-and-ethnicity-california-2024-edition) (accessed 2026-07-10)
17. American Association for Cancer Research. AACR Cancer Disparities Progress Report (2026) Accessed June 24, 2026. https://cancerprogressreport.aacr.org/wp-content/uploads/sites/2/2026/06/AACR_CDPR_2026.pdf
18. Moyce S, Claudio D, Aghbashian E, Keenan K, Comey DL, Chavez-Reyes G (2025) Barriers and Facilitators to Breast and Cervical Cancer Screenings for Hispanic Women in a Rural State. *J racial*

- ethnic health disparities 12(4):2145–2153. <https://doi.org/10.1007/s40615-024-02037-6>
19. Byrd TL, Chavez R, Wilson KM (2007) Barriers and facilitators of cervical cancer screening among Hispanic women. *Ethn Dis* 17(1):129–134
 20. Mojica CM, Vargas N, Bradley S, Parra-Medina D (2023) Barriers and Facilitators of Colonoscopy Screening Among Latino Men in a Colorectal Cancer Screening Promotion Program. *Am J Men's Health* 17(3):15579883231179325. <https://doi.org/10.1177/15579883231179325>
 21. White PM, Itzkowitz SH (2020) Barriers Driving Racial Disparities in Colorectal Cancer Screening in African Americans. *Curr Gastroenterol Rep* 22(8):41. <https://doi.org/10.1007/s11894-020-00776-0>
 22. Lee J, Ewing B, Holmes D (2023) Barriers and Facilitators to Colorectal Cancer Screening in South Asian Immigrants: A Systematic Review. *Asian Pac J cancer prevention: APJCP* 24(5):1463–1475. <https://doi.org/10.31557/APJCP.2023.24.5.1463>
 23. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG (2009) Research electronic data capture (REDCap) – A metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inf* 42(2):377–381
 24. Harris PA, Taylor R, Minor BL, Elliott V, Fernandez M, O'Neal L, McLeod L, Delacqua G, Delacqua F, Kirby J, Duda SN, REDCap Consortium (2019 May) The REDCap consortium: Building an international community of software partners. *J Biomed Inf* 9. 10.1016/j.jbi.2019.103208]
 25. McDowell S (2022) Breast Cancer Death Rates Are Highest for Black Women—Again | Breast Cancer Facts & Figures, 2022–2024; American Cancer Society. <https://www.cancer.org/research/acs-research-news/breast-cancer-death-rates-are-highest-for-black-women-again.html> (accessed 2026-07-21)
 26. Torres JM, Sodipo MO, Hopkins MF, Chandler PD, Warner ET (2024) Racial Differences in Breast Cancer Survival Between Black and White Women According to Tumor Subtype: A Systematic Review and Meta-Analysis. *J Clin oncology: official J Am Soc Clin Oncol* 42(32):3867–3879. <https://doi.org/10.1200/JCO.23.02311>
 27. Gomez SL, Von Behren J, McGuire V et al (2026) Breast Cancer Survival in Asian American Patients. *JAMA Netw Open* 9(7):e2621041. 10.1001/jamanetworkopen.2026.21041
 28. Ha Chung B, Horie S, Chiong E (2019) The incidence, mortality, and risk factors of prostate cancer in Asian men. *Prostate Int* 7(1):1–8. <https://doi.org/10.1016/j.prn.2018.11.001>
 29. Ko LC, Gravina N, Berghausen J, Abdo J (2025) Rising Trends in Prostate Cancer Among Asian Men: Global Concerns and Diagnostic Solutions. *Cancers* 17(6):1013. <https://doi.org/10.3390/cancers17061013>
 30. Kimlin Ashing M, Garcia T, Kidambi G, Idos S, Yeung C, Mikail M, Martinez S, Kim K, Tran P, Gregerson P, Round C, Lee P-C, Wu N, Chen (2023) Stephen Denq, Narissa Nonzee; Abstract 1930: Community outreach and engagement to increase colorectal cancer screening in ethnic minority communities. *Cancer Res* 1 April ; 83 (7_Supplement): 1930. <https://doi.org/10.1158/1538-7445.AM2023-1930>

Tables

Tables 1 to 6 are available in the Supplementary Files section.

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