Cancer Health Equity for Queer and Transgender Pacific Islanders: Addressing Intersectional Disparities Through a Cancer Justice Lens

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ABSTRACT

Native Hawaiians and other Pacific Islanders (NHPI) continue to experience substantial cancer-related morbidity and mortality. However, there is a limited consideration and inclusion of cancer-related disparities among Queer and Transgender Pacific Islanders (QTPI). QTPI are multiply marginalized due to historical and current interlocking structural arrangements (e.g., colonialism, racism, cis-genderism, transphobia) that pose unique vulnerabilities and disparities of cancer outcomes and cancer care. This paper underscores a framework to discuss both structural gaps of cancer outcomes that are pertinent to the NHPI population (prostate, breast, cervical, and endometrial) and implications for adopting an intersectional approach to enhance inclusive and comprehensive capacity building for clinicians, public health researchers, and policymakers to advance cancer justice, particularly for the QTPI population.

KEYWORDS: Cancer Disparities, QTPI, Queer, Transgender, Pacific Islanders, SGM, Intersectionality, Health Equity.

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Introduction

Native Hawaiian and Pacific Islander (NHPI) populations experience higher incidence and mortality of multiple cancers compared to other non-Indigenous populations throughout Oceania and the United States (Anderson et al., 2006; Hawai'i Tumor Registry, 2022; Olver et al., 2011; Pineda et al., 2023; Taparra, Qu, et al., 2022). Historically, cancer epidemiology studies suggested that Asian and Pacific Islander groups, when inappropriately aggregated, had overall lower rates of cancer compared to non-Hispanic White individuals (Miller et al., 2008; Taparra et al., 2021). When disaggregated, however, Pacific Islanders have higher cancer incidence and mortality rates compared to Asian and non-Hispanic White groups (Haque et al., 2023; Taparra et al., 2024, 2024). NHPI specifically experienced the highest cancer incidence compared to other Pacific Islander and ethnic groups in Hawai'i (Miller et al., 2008). These cancer disparities, a concept we use to distinguish the attributable health differences organized by deep inequitable social and structural power relations, warrant further attention to better understand the overall health of the NHPI population.

Assessing the epidemiologic patterns of cancer among ethnic and racial groups, such as the NHPI populations, is insufficient without considering the historical and structural arrangements of power that organize cancer disparities among NHPI (S.-Y. Chen et al., 2021; De La Cruz et al., 2024). Queer and Transgender Pacific Islanders (QTPI), which may comprise but not limited to Gela', Fa'afafine, Māhū, Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, or Asexual or Aromantic (LGBTQIA+) is a recommended community-guided terminology that represents the Pacific Islander community that encapsulates intimacies that transgress the categories of Western cis-heteronormative binaries (Camacho et al., 2024). The QTPI population represents a critical connection point between NHPI and sexual and gender minority (SGM) communities (Camacho et al., 2024).

SGM populations including the gender minority community experience unique cancer inequities and healthcare challenges that increase some of their overall cancer risks (Huang et al., 2024; Jackson et al., 2023; Quinn, Sanchez, et al., 2015). For example, although data are limited transgender people seem to have higher rates of specific types of cancers and may present with late-staged cancers and have worse outcomes (Bruan et al., 2017). Lesbian and bisexual cisgender women have also been noted to have a higher weighted prevalence of cervical cancer (17% lesbian women and 41% bisexual women vs 14% straight women) and colon cancer (5% lesbian vs 3% straight women) (Boehmer et al., 2014) compared to straight women. SGM people with cancer are also likely to be diagnosed with cancer at younger ages than their cisgender, heterosexual counterparts (Boehmer & Jesdale, 2024). Additionally, cisgender, sexual minority men and women with cancer have also been noted to report poorer mental health outcomes compared to their heterosexual counterparts (Boehmer et al., 2022). Despite rising interest in SGM cancer epidemiologic data, many gaps persist. SGM cancer health inequities, including those among NHPI SGM people, must be further elucidated to guide funding allocation and targeted interventions.

QTPI health has largely been underreported in the medical literature due to intersecting structural oppression and a subsequent lack of acknowledgment of this community by medical researchers. Emerging evidence has underscored the stark health disparities that the QTPI community faces when compared to heterosexual, cisgender counterparts within the NHPI community and the broader SGM community (Camacho et al., 2024; Kratzer et al., 2024). Cancer disparities for both NHPI and SGM populations suggest that cancer outcomes among QTPI may be particularly stark. Given the paucity of comprehensive reviews on this topic, we aimed to address QTPI cancer care obstacles through a health equity lens and discuss possible strategies to address these obstacles, which to our knowledge have not previously been described in the literature.

Methods

Narrative reviews summarize scholarly research on a specific research topic (Baumeister & Leary, 1997). Thus, we conducted a keyword search-based literature review using PubMed, Web of Science, and Scopus Advanced Search on or before 1 December 2024, for studies with abstracts or titles containing terms such as “QTPI”, “LGBTQ”, “sexual and gender minority”, “transgender”, “Pacific Islanders”, “cancer disparities”, “inequity”, “oncology”, “cancer”, “radiation”, “Indigenous health”, “cervical cancer”, “prostate cancer”, “breast cancer”, and “endometrial cancer”. This review was limited to research involving human subjects and included English language-based peer-reviewed articles (e.g., primary research, reviews, and editorials), online reports, electronic books, and press releases. Based on the available studies at the beginning of this search, we focused our review on studies performed in the US, and islands within Oceania including the three ethnogeographic regions of Melanesia, Micronesia, and Polynesia. All publications identified for review were assessed for relevance by the team of authors.

History of Layered Oppression

NHPI are the Indigenous people of Oceania who share ancestry across Polynesia (e.g., Hawai‘i, Sāmoa, Tonga, Tahiti, Aotearoa), Melanesia (e.g., Fiji, Vanuatu, New Caledonia), and Micronesia (e.g., the Marshall Islands, the Federated States of Micronesia, Guåhan, Palau) (Fischer, 2013; Taparra et al., 2021). Europeans in the 1700s colonized NHPI ancestral lands; colonization severely impacted the health and vitality of NHPI peoples over the subsequent centuries (Anderson et al., 2006; Blaisdell, Kekuni, 1989). Settlers killed many NHPI people with physical violence and also introduced foreign diseases (e.g., influenza, Hansen’s disease, measles, tuberculosis), which contributed to the genocide of NHPI communities (Bushnell, 1993). For example, during the 1875 measles outbreak, over 20,000 Indigenous Fijians, over a quarter of the population, died over four months (Squire, 1879). Similarly, in 1918, influenza killed approximately 13,000 people in Guam, 90% of whom were Chamoru (Hattori, 2024). Between 1778 and 1898, the Native Hawaiian population was decimated from an estimated 800,000 people to 35,000, an estimated 95% decline in just a century. These deaths were due in part to the introduction of foreign infectious diseases (Goo, 2015; Goodyear-Kaopua et al., 2014) along with other contributors including the introduction of new animal and plant species that operated as vectors for disease transmission and decay of health-promoting natural resources (Baldwin et al., 1952; Howarth, 1985; Warner, 1968). The 1918 voyage led by Lieutenant-Colonel Robert Logan from Aotearoa to Apia, Sāmoa resulted in a rapid spread of influenza and led to an estimated 8,500 deaths, 22% of the population (Manatū Taonga — Ministry for Culture and Heritage, 2020). Colonizers imposed new political structures and belief systems; in keeping with a colonial settler mindset, colonizers attempted to use these structures and belief systems to replace Indigenous ways of life and governance across the continent of Oceania (Anderson et al., 2006).

Settler colonizers continue to oppress QTPI Indigenous people including Māhū, Fa‘afafine, Fakaleitī, Gela, and Vakaslewalewa, which contributes to the ongoing erasure of their cultural identities (Apana et al., 2024). Like other SGM populations, these QTPI similarly experience a high rate of alienation from their families, communities, and society, which has significant impacts on their mental health (Camacho et al., 2024). Furthermore, QTPI may encounter systemic manifestations of racism and xenophobia compounded by homophobia, biphobia, queerphobia, and transphobia which cause structural obstacles to employment, education, housing, and healthcare resulting in devastating health inequities. For example, in Fiji, the adoption of Christianity manifested in the complete erasure of QTPI indigenous terms such as the Vakasalewalewa, discouraging a sense of belonging in Fiji even in modern times (Johnston, 2018). Similarly, in Hawai'i, where Māhū communities posed similar threats to the imposed racial, sexual, and gendered Euro-American strategies of organizing populations, and have thus undergone negative colonial pathologizations that have impacted current stigma-related and health disparities (Hall, 2009). Recent efforts to reclaim QTPI identities have been led by Indigenous advocates who developed a glossary of Indigenous terms to codify these terms for parliamentary and community use (Asia Pacific Transgender Network, 2022).

To optimally understand and mitigate cancer disparities faced by QTPI populations, we illustrate how disparities in cancer outcomes are a problem of intersectional marginalization. Specifically, present cancer disparities are products of interlocking relationships that differentially categorize people in multiple structures that impact downstream determinants of health (Figure 1). An intersectional cancer justice lens is essential because the lives of QTPI and their cancer outcomes are rooted in their positions in structural margins at the intersections of ethnicity, gender, and sexual orientation. Thus, existing cancer outcomes must be theorized and analytically complicated through multi-dimensional relationships (Bowleg, 2008). Intersectionality, a framework rooted in Black feminist thought, posits that power, privilege, and oppression are simultaneously experienced at the micro-individual level while being structurally reinforced at macro-structural levels (Collective, 1977; Collins, 1990; Crenshaw, 1989). To advance QTPI health sovereignty and reduce continued inequitable cancer outcomes, it is critical to center expansive frameworks and alternative ways of delivering healthcare services that resist the expectations of colonial, heterosexual, cisgender, and Western systems (Goodyear-Kaʻo̱pua, 2018; Jae, 2023). Therefore, this review considers four key areas to actualize QTPI cancer equity: 1) obstacles to inclusive data collection, 2) the context of individual lived experiences, 3) beyond a single-axis lens, and 4) the process of Indigenous-driven healthcare access and delivery.

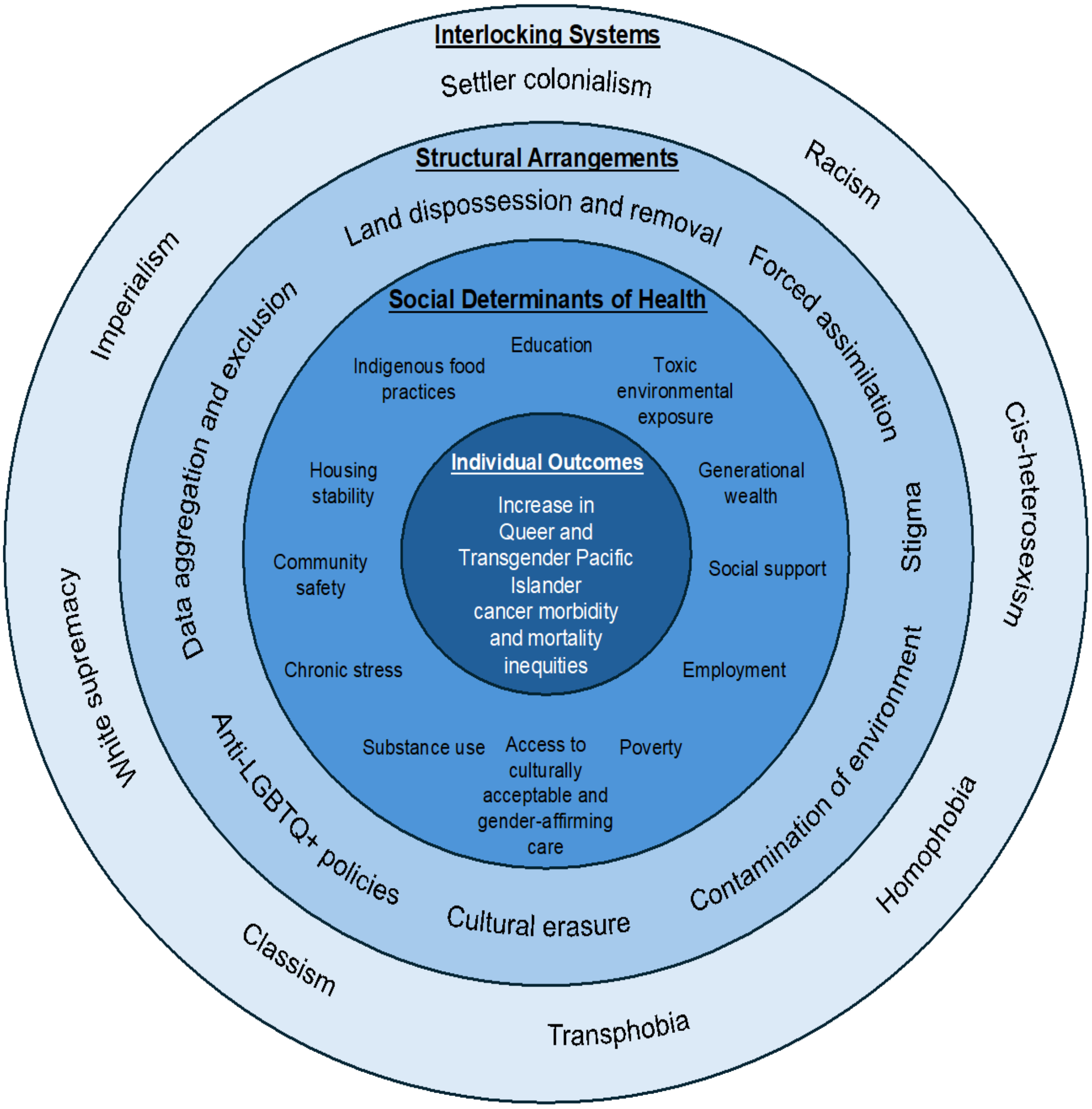

Figure 1. Conceptual model of the interlocking structural determinants on cancer outcomes among queer and transgender Pacific Islanders

The figure depicts the conceptual framework adapted by Collins (1990)'s matrix of domination to identify social and structural determinants of cancer outcomes among queer and transgender Pacific Islanders. The 'interlocking systems' (outer layer) are the hidden macro-level ideologies and mutual involvement of political, legal, economic, health, education, and carceral systems. These interlocking systems encompass and inform the 'structural arrangements' of materialized conditions, like the physical dispossession of and removal from land, the anti-LGBTQ+ policies proposed and mandated, and the ways medical and public health researchers categorized data. These structural arrangements dictate the advantages and disadvantages of 'social determinants of health' and lead to increased disparities in cancer morbidity and mortality throughout the continuum of care among QTPI.

Despite the resistance of NHPI communities against imperial frameworks and political structures, the multifaceted marginalization of NHPI, and more specifically QTPI, populations has likely exacerbated intergenerational health disparities. Understanding the extent of these QTPI cancer disparities is an area of active investigation. Coupled with the increased structural vulnerabilities of certain cancers and adverse cancer outcomes in SGM populations (e.g., prostate cancer, breast cancer, cervical cancer, and endometrial cancer), it is likely that QTPI experience more complex cancer-related disparities. This paper considers four cancers that have prominently impacted NHPI and SGM communities (Dachs et al., 2008; Quinn, Sanchez, et al., 2015; Tsark & Braun, 2009) to explore the dynamic aspects of NHPI health, QTPI health, and the multilevel structural factors that have shaped the following cancer outcomes: prostate cancer, breast cancer, cervical cancer, and endometrial cancer.

Landscape of Cancer Disparities among QTPI Communities

Prostate Cancer

NHPI populations face elevated prostate cancer rates compared to other ethnic groups (Lindsey et al., 2016; Siegel, 2020). According to recent data, NHPI men have over 1.5 times the odds of presenting with high-risk prostate cancer compared to White men (Jain et al., 2022). Lower screening rates, limited access to healthcare, and cultural barriers that hinder early detection and treatment likely contribute to ongoing cancer disparities. SGM individuals are less likely to undergo regular prostate-specific antigen (PSA) screenings, with 23% of gay and bisexual, cisgender men and 35% of transgender women reporting never having a PSA test, compared to 15% of heterosexual, cisgender men (Ma et al., 2021). Transgender women are four times less likely to get routine prostate cancer screenings compared to cisgender men, primarily due to past negative experiences and subsequent discomfort with clinicians (Bertoncelli Tanaka et al., 2022). Transgender women as well as non-binary, and intersex individuals with prostates are also often overlooked in prostate cancer research and prevention efforts (Bertoncelli Tanaka et al., 2022; Squires et al., 2022; Zeeman & Aranda, 2020). This may be due to clinicians being inadequately educated and trained to provide individualized diagnostic and follow-up approaches for transgender, non-binary, and intersex individuals (Zeeman & Aranda, 2020); this exclusion results in inadequate screening and delayed diagnoses, which can have severe implications for health outcomes (Khan et al., 2004).

Healthcare providers must be equipped with the knowledge and sensitivity to address the specific needs to ensure equitable cancer care for SGM NHPI individuals (Patel et al., 2024). Data regarding QTPI prostate cancer epidemiology has yet to be reported. The disparities experienced by the NHPI population and the disparities experienced by both NHPI and SGM populations in prostate cancer screening suggest that QTPI potentially have experienced further inequitable outcomes due to the mutually reinforcing impacts of racial, sexual, and gender-based discrimination (Bowleg, 2008; Kelly-Brown et al., 2022). Future studies on QTPI populations should evaluate the access to PSA screening and evaluate individualized and cultural considerations for PSA screening programs (Table 1).

Table 1. Summary of cancer disparities for NHPI and SGM individuals, with actionable recommendations for QTPI population, highlighting prostate, breast, cervical, and endometrial cancers. The disparities in prostate, breast, cervical, and endometrial cancer across Native Hawaiian and other Pacific Islanders, sexual and gender minorities. Each cancer is noted with recommended implications for screening, research, and programming for clinicians, public health researchers, and policymakers of moving forward to advance cancer justice among queer and transgender Pacific Islander communities.

Cancer Type	NHPI Disparities	SGM Disparities	QTPI Considerations
Prostate Cancer	NHPI men have 1.5x higher odds of presenting with advanced-stage prostate cancer	Transgender women are 4x less likely to undergo PSA screening, on likely to experience delayed diagnosis due to misconceptions about risks	**Develop QTPI-specific screening campaigns** that incorporate culturally tailored education and provider training
	Limited NHPI access to prostate cancer clinical trials despite higher burden	Gay/bisexual men report mistrust of healthcare providers regarding prostate health	**Increase QTPI representation in prostate cancer clinical trials** through targeted recruitment efforts
Breast Cancer	NHPI women present at later stages, leading to poorer survival outcomes	Mammography rates are ~22% lower for lesbian/bisexual women compared to heterosexual women	**Tailor mammography screening outreach programs for QTPI**, including protocols for transgender individuals
	Native Hawaiian women experience delays in receiving guideline-concordant treatment	Transgender men post-mastectomy face limited provider knowledge on residual breast tissue risks for cancer	**Train providers in inclusive breast cancer care**, especially focusing on the prevention and management in transgender and intersex individuals
Cervical Cancer	NHPI women face lower HPV vaccination rates (17.6% initiation vs ~50% national average)	Lesbian/bisexual women have higher rates of HPV infections due to lower screening participation	**Expand HPV campaigns for QTPI populations**, addressing cultural stigma and misinformation
	NHPI women experience higher cervical cancer mortality despite HPV vaccine availability	Transgender men report significant discomfort and provider insensitivity during pap smears	**Implement SGM-affirming cervical cancer screening programs**, including trauma-informed care practices
Endometrial Cancer	NHPI women have 50% higher mortality rates compared to US national averages	Transgender individuals on long-term hormone therapy may develop hyperplasia or increased cancer risks	**Create QTPI-inclusive gynecological screening guidelines** to improve early diagnosis and follow-up care
	Delays in gynecological treatment exacerbate poorer outcomes for NHPI women	82% of transgender individuals report inadequate access to gynecological care	**Increase provider education** on gynecological needs of transgender and gender-diverse QTPI individuals

Abbreviations: NHPI=Native Hawaiian and Pacific Islanders; SGM=sexual and gender minority; QTPI=queer and transgender Pacific Islander; PSA=prostate screening antigen; HPV=Human Papillomavirus.

Breast Cancer

NHPI populations experience higher rates of morbidity and mortality from breast cancer compared to other ethnic groups (Bock, 2023; Taparra, Dee, et al., 2022). Native Hawaiian women have a breast cancer incidence rate of 175.8 per 100,000, which is significantly higher than the rates for non-Hispanic White women (133.7 per 100,000). Moreover, NHPI women often present with more advanced stages of breast cancer and have delayed access to treatments; contributing to poorer outcomes and higher mortality rates (Gorin et al., 2006; Taparra, Dee, et al., 2022). SGM individuals face barriers to breast cancer healthcare because of their unique identities. Lesbian and bisexual women, as well as transgender and nonbinary people, often have lower rates of breast cancer screening and mammography, around 22% lower in some populations, due to various barriers including discrimination, lack of culturally competent healthcare providers, and financial obstacles (Oladeru et al., 2022; Warwar et al., 2023). While these studies indicate that transgender men, particularly those who have undergone gender-affirming mastectomy, face challenges in accessing appropriate breast cancer screening and care, leading to delayed diagnoses and poorer outcomes (Joint et al., 2018), this scholarship does not include those who occupy transgender nonbinary identities.

Gender-affirming therapy including hormones and surgeries have been shown to impact breast tissue and likely alter cancer development risk. For example, transgender people who have undergone chest masculinization have a significantly reduced risk of breast cancer compared to cisgender women who have not undergone similar procedures. In contrast, transgender people who are prescribed estradiol, have an increased incidence of breast cancer compared to cisgender men and a decreased incidence compared to cisgender women (de Blok et al., 2019). The American College of Radiology has updated its mammography guidelines, recommending that transgender women who have undergone hormone therapy for more than five years follow similar mammography screening protocols for cisgender women, while transgender men who have not had a mastectomy should also receive regular screenings, individualized based on their medical and family history (Brown et al., 2021). Breast cancer data among the QTPI population has yet to be reported but given the increased prevalence of breast cancer among the NHPI population, advocacy and education for QTPI must address their unique obstacles in breast cancer screening (**Table 1**). Such advocacy along with oncological education and interventions to improve breast cancer screening for QTPI populations must take into account cis-heterosexist gendering of cancers and how to best provide services for people whose bodies deviate from normative categories of the body (Alpert et al., 2023). Along with cultivating gender-neutral spaces (e.g., physical office space, bathroom names, education materials posted in rooms), continued efforts to de-gender oncology and cancer epidemiology may support destigmatized encounters for breast cancer screenings and promote more holistic forms of care that transgress the conflation of sex/gender metrics (Alpert et al., 2021; Kamen et al., 2019).

Cervical Cancer

Cervical cancer is a significant health concern among NHPI women, who face notably higher incidence and mortality rates compared to other ethnic groups (Cohen et al., 2023). The American Cancer Society's 2024 report on Asian American, Native Hawaiian, and Pacific Islander Cancer Facts & Figures highlights the alarming rates of cervical cancer incidence and mortality among NHPI cisgender women (American Cancer Society, 2024). Specifically, the recent report reveals that NHPI cisgender women have higher cervical cancer incidence rates (9.1 per 100,000) compared to non-Hispanic White cisgender women (7.2 per 100,000), emphasizing the urgent need for targeted interventions and improved healthcare access within these communities. These gendered disparities across ethnoracial groups are compounded by various factors, including reduced access to healthcare, cultural barriers, and lower participation in preventive measures like screening and vaccination (Tanjasiri et al., 2019; Whetstone et al., 2022). Previous studies have demonstrated alarming treatment practice patterns among NHPI cisgender women with cancer who have reportedly some of the lowest guideline-concordant treatment for gynecological malignancies with brachytherapy (Taparra et al., 2023).

Recent studies indicate that NHPI individuals exhibit lower participation rates in human papillomavirus (HPV) vaccination programs compared to other ethnoracial groups (Chan et al., 2023; Williams et al., 2016), which significantly contributes to the higher cervical cancer incidence among this population. A study by Boakye and colleagues (2022) revealed that the HPV vaccination initiation and completion rates among NHPI individuals were 17.6% and 7.9%, respectively (Boakye et al., 2022). Complementing these findings, Shing and colleagues (2023) conducted an analysis of HPV-associated cancer incidence among disaggregated Asian American and NHPI ethnicities, uncovering distinct and elevated cancer risks for NHPI populations (Shing et al., 2023). These findings together demonstrate that low vaccination rates and high prevalence of HPV-associated cancers among the NHPI population may contribute to the higher cervical cancer prevalence (Boakye et al., 2022; Shing et al., 2023). Furthermore, lesbian and bisexual, cisgender women, for instance, are significantly less likely to receive regular Pap smears compared to their heterosexual counterparts, with 37% of lesbian and 21% of bisexual, cisgender of women not having a Pap smear in the past three years, compared to 13% of heterosexual, cisgender women. These disparities in accessing effective screening services may be attributed to structural factors such as healthcare discrimination, lack of culturally competent care, and lack of affordable services that impose financial barriers (Agénor et al., 2014). Transgender men with a cervix also experience lower screening rates, likely due to negative past experiences with healthcare providers, gendering of screening services, and subsequent discomfort with the procedure, leading to delayed cervical cancer diagnoses and treatment (Peitzmeier et al., 2017, 2020).

Despite the emerging evidence on disparities in cervical cancer prevention and outcomes for NHPI and SGM populations, data on QTPI are limited due to the danger associated with disclosure of SGM identities within healthcare (LaSala et al., 2008; Veldhuis, 2022), barriers to research careers for SGM investigators (Sánchez et al., 2015), lack of funding for SGM-focused research projects (Coulter et al., 2014), and a significant lack of systematic data collection on sexual orientation and gender identity (SOGI) in medical and research settings (Cahill & Makadon, 2014; Streed et al., 2020). These structural deficiencies limit the understanding of the specific health needs and risks faced by QTPI individuals diagnosed with cervical cancer and impede capacity-building opportunities to implement affirming screening and treatment programs (**Table 1**). Health policies advocating for the safety of SGM people and improved access to healthcare, including gynecologic oncology clinics, and related inclusive and disaggregated data collection are vital to understanding existing QTPI cervical cancer disparities.

Endometrial Cancer

Endometrial cancer is one of the most common gynecological malignancies and continues to increase in incidence worldwide, with an estimated 400,000 new cases annually (Crosbie et al., 2022). Among NHPI populations, endometrial cancer mortality is notably higher than the United States national average, with NHPI women experiencing a 50% greater likelihood of death compared to other racial/ethnic groups (Haque et al., 2023). NHPI populations experience higher mortality rates for endometrial cancer with a mortality rate ratio over 3 times that of other Asian subgroups (Medina et al., 2021). Data suggests that cisgender and transgender individuals receiving long-term estrogen therapy may have an increased risk of endometrial hyperplasia, a precursor to endometrial cancer (Crissman & Moravek, 2021). However, limited research exists on endometrial cancer risk specifically within transgender and gender non-conforming populations (Kratzer et al., 2024). Furthermore, discrimination, stigma, and reduced access to inclusive healthcare often result in delayed diagnoses, with only 18% of transgender individuals with cervixes reporting routine gynecologic screenings, contributing to worsened outcomes (Grimstad et al., 2020). Thus, sexual and gender-affirming training of providers and inclusive environments can make it possible for QTPI to be empowered to discuss important information (e.g., sexual health history, hormone changes, engagement of health behaviors often socially stigmatized (e.g., smoking, unhealthy eating) to provide timely patient care (Quinn, Schabath, et al., 2015). Addressing these inequities through targeted research, screening programs, and education is critical to improving health outcomes for QTPI populations (**Table 1**).

Intersectionality as a Lens for Queer and Transgender Pacific Islander Cancer Justice

QTPI Data Obstacles

The first key area to actualize QTPI cancer equity is the challenge of obtaining and analyzing QTPI cancer statistics. The lack of safety for QTPI people and the lack of QTPI cancer epidemiology data collected and reported equates to the structurally racist and settler colonial processes that erase QTPI from cancer studies (Tuck & Yang, 2012). As a result, public health efforts to address these health inequities remain under-resourced and limit our ability to mobilize structural changes for QTPI communities (Morey et al., 2020; Samoa et al., 2020). The salient omission of NHPI persons from research or their aggregation with other ethnoracial groups, such as individuals racialized as Asian or Asian American, reinforces the exclusion and erasure of NHPI and QTPI cancer-related experiences (Chang et al., 2020; Kaholokula et al., 2020; Srinivasan & Guillermo, 2000; Taparra & Pellegrin, 2022). Despite a 1997 federal mandate from the Office of Management and Budget (OMB) federal race and ethnicity to report data for "Native Hawaiian or Other Pacific Islander" separate from the "Asian" category (Office of Management and Budget, 1997), the specific cancer incidence, prevalence, outcomes and disparities of NHPI frequently go unnoticed (Kamaka et al., 2021; National Council of Asian Pacific Islander Physicians, 2020a, 2020b; Pacific Islander Center of Primary Care Excellence, 2020; UCLA Center for Health Policy and Research, 1994). While significant gains have been made in the availability of accurate NHPI data, obstacles remain evident in the inconsistencies of disaggregated data reports presented by the different federal agencies (Kamaka et al., 2021; Tajo & Ko, 2024; The Leadership Conference Education Fund, 2022). Given the NHPI population itself risks data erasure due to issues of small sample sizes, the QTPI population experiences even more extreme challenges with data exclusion.

The U.S. Census Bureau, particularly through the Household Pulse Survey, notably started collecting sexual orientation and gender identity (SOGI) data in July 2021. Once included, the SOGI data revealed key socioeconomic inequities experienced by the SGM communities (e.g., loss of employment, eviction) (Carrazana & Rummler, 2021). This likely prompted the Biden Administration to sign the historic Executive Order on Advancing Equality for Lesbian, Gay, Bisexual, Transgender, Queer, and Intersex Individuals on June 15, 2022. This further prompted the formation of the Sexual Orientation, Gender Identity, and Sex Characteristics (SOGISC) Subcommittee charged with advancing federal data gaps to measuring SOGI (Federal Commitee on Statistical Methodology, 2024; The White House, 2021). State-level systems, such as the Behavioral Risk Factor and Surveillance System (BRFSS), have also moved toward incorporating SOGI questions. Yet, 11 states do not ask any SOGI questions in their BRFSS surveys while only 4 include specific SOGI questions, and 34 states use standard SOGI questions (National LGBT Cancer Network, 2019). To date, only the states of Oregon and California have legal mandates for their respective health departments to collect SOGI. However, no QTPI from the BRFSS have been reported possibly due to sample size limitations.

Data documenting the relationship between policies and cancer incidence and outcomes among SGM communities is still in its infancy. For example, Weideman and colleagues (2024) examined how restrictive LGBTQIA+ state policies and SGM cancer prevalence and survivorship were significantly associated (Weideman & McAlpine, 2024). SGM located in states with restrictive LGBTQIA+ policies were more likely to be diagnosed with cancer and report multiple co-morbidities, such as poor physical health, and physical and cognitive disabilities, compared to SGM more protective states (Weideman & McAlpine, 2024). Waters and colleagues (2024) also systematically document the extent of whether LGBTQIA+ considerations are included across state, jurisdiction, and tribal comprehensive cancer control plans (CCC) (Waters et al., 2024). While 54.6% of CCC had mentioned LGBTQIA+ populations and one in six discussed the collection of SGM data, only one plan discussed protection strategies to ensure patient safety. Thus, the record number of anti-LGBTQIA+ policies being introduced and passed across the U.S. (American Civil Liberties Union, 2024), and the likely curtailment in LGBTIA+ protections, will require more work to form robust safety mechanisms to continue addressing cancer disparities (Kamen et al., 2023; Waters et al., 2024; Weideman & McAlpine, 2024).

Committees such as SOGISC usher hope for improved data capture of cancer statistics for SGM communities, but smaller populations such as QTPI have yet to have any contact with the SOGISC. This is particularly concerning as indigenous QTPI people do not map well into western SOGI categories which can confound the recounting of their lived experiences with cancer (Ravulo, 2021). Approaches offered to improve the reporting of NHPI data include incorporating tools like imputation, pursuing community-engaged methods and qualitative data collection, strategically leveraging and improving existing data collection efforts, and combining private data with public datasets (Tajo & Ko, 2024). Physicians and researchers alike should work to create universal and disaggregated data collection of sexual orientation, gender identity, and ethnoracial categorizations of Pacific Islanders to identify and rectify the cancer disparities for QTPI communities.

Contextualizing the Individual-Level Experiences

The second key area to consider to actualize QTPI cancer equity is the need to contextualize the lived experiences of individuals within the NHPI population. Individual-level behaviors among the QTPI community (e.g., smoking, sedentary lifestyles, and high-caloric diets) have been associated with higher risks for certain cancers. For instance, the Williams Institute at the University of California Los Angeles reported that QTPI persons were more likely to report being current smokers (37% vs 23%) and drink heavily (16% vs 5%) compared to their heterosexual and cisgender counterparts (Choi et al., 2021). This report also demonstrated that a higher percentage of QTPI experienced other disadvantages, including unemployment (14% vs 9%), being food insecure (40% vs 22%), and living below the 200% federal poverty level (55% vs 42%) compared to non-QTPIs (Choi et al., 2021).

A core principle of intersectionality's critical analytical framework is that individual-level experiences of people, like QTPI populations, reflect interlocking systems and structures of power (Bowleg, 2023; Collins, 1990; Combahee River Collective, 1977). Thus, locating the rooted systems and structures of fundamental cancer disparities among QTPI communities should not remain limited to the dominant individualistic biomedical and psychosocial models that may focus on individual behavior and suggest individual responsibility. Instead, researchers must pursue opportunities to apply intersectional and decolonial theories to cancer health equity research (Bowleg, 2023; Metzl & Hansen, 2014) and understand the structural forces that lead to inequities. For instance, Camacho and colleagues 2024 discuss intergenerational QTPI health inequities through the particularities of settler colonial arrangements that are intertwined with familial systems, community cohesion and support, and cultural values and traditions (Camacho et al., 2024). Others like Donaldson and colleagues (2023) examined how the cancer risk factor of tobacco use (Quinn, Sanchez, et al., 2015) among young SGM of color (compared to cisgender White youth) was due to a lack of high-quality tobacco education, cessation support, community connectedness, and programs to address anxiety and depression (Donaldson et al., 2023). However, the researchers contextualized these outcomes through a structural disadvantage rather than an individualized deficit, using an Intersectional lens.

Despite the major efforts to highlight QTPI health disparities, the extent of scholarship across QTPI research continues to face shortcomings in theoretically and methodologically bridging the social to the structural conditions that shape inequitable QTPI cancer outcomes (Bowleg, 2012; Collins, 1990; Collins et al., 2021).

Beyond a Single-Axis Minority Lens

The third key area to consider to actualize QTPI cancer equity is the resistance to a myopic single-axis minority lens (Bowleg, 2008; Crenshaw, 1989). Intersectional approaches to cancer justice for QTPI communities should also extend beyond symbolic data representations but also incorporate explicit measurements and estimations on the effects of settler colonial and structural discrimination on cancer (Bailey et al., 2017). For SGM persons, the minority stress framework has been widely adopted and used to elucidate associations between sexual and gender-based discrimination on health (Meyer, 2003). Similarly, the gender minority stress and resilience (GMSR) model, tailored specifically for transgender and non-binary individuals, suggests that external or distal (macro) stressors are associated with direct and indirect proximal (micro) stressors (e.g., internalized transphobia, stigma, identity concealment) that affect health (Testa et al., 2015). Yet, current models of healthcare and dominant medical knowledge systems that privilege certain forms of data (quantitative versus qualitative) as more “worthy” than other forms of evidence (Petteway, 2023) perpetuate the erasure and opportunities to inform cancer care through the embodied experiences of NHPI and QTPI.

It is also to ensure that examinations of cancer disparities among QTPI are conceptualized and measured through mutually constitutive relationships (Collins, 1990; Glenn, 2015). Because QTPI experiences are neither separate nor independent of the structural determinants (Collins, 1995; Cuadraz & Uttal, 1999), these approaches should not be additive alongside other oppressive systems. Hence, the use of measuring and operationalizing different forms of oppression (e.g., racism, sexism, classism) are coalescing pathways that are context-dependent based on micro-level experiences, while simultaneously being multiplicative and mutually reinforcing synergies at a macro-level (Scheim & Bauer, 2019). The investment in intersectional data and measurement procedures that examine multilevel systems of oppression on cancer among SGM NHPI patients, physicians, researchers, and policymakers will advance tailored structural interventions that alleviate barriers to the cancer-care continuum.

Such intersections of discrimination and oppression should not be seen as additive products parallel to other oppressive systems but rather as multiplicative and mutually reinforcing synergies that are context-dependent. Hence, the use of measures focus on singular forms of oppression (e.g., racism, sexism, classism) is inadequate for intersectional praxis; efforts for measuring these intersectional oppressions are growing, however (Scheim & Bauer, 2019). The investment in intersectional data and measurement procedures that examine multilevel impacts of oppression on cancer disparities among SGM NHPI individuals are uniquely positioned to advance tailored multilevel interventions that alleviate barriers to the cancer-care continuum.

Indigenous-Driven Healthcare Access and Delivery

The fourth key area to consider to actualize QTPI cancer equity is advancing healthcare access and delivery through Indigenous-driven knowledge systems and cultural protocols and practices. With the compelling call for Indigenous interventions (Kaholokula et al., 2018; Okamoto et al., 2014; Yamane & Helm, 2022), which can span from prevention to treatment, there is an opportunity to integrate these beneficial and culturally adapted approaches to address QTPI cancer-related inequities (American Cancer Society, 2021; Y.-Y. Chen et al., 2019; Farias & Du, 2017; Giuliani et al., 2020; Ward et al., 2004). QTPI populations experience higher rates of being uninsured (21%) compared to non-QTPI persons (16%) (Choi et al., 2021). Interactions with medical providers, and particularly the ways these are shaped by structural racism, cisgenderism, and heteropatriarchy, greatly impact patient trust and adherence (Epstein & Street Jr, 2007), shared decision-making (Elwyn et al., 2012), emotional and psychological support (Dekker et al., 2020), patient education (Giuliani et al., 2020), and coordination of care (Tseng, 2021), all of which impact cancer outcomes.

Due to the deleterious impacts of colonial systems, QTPI communities face great barriers to health care and subsequent poorer cancer outcomes. There has been a budding interest in Indigenous-led and grounded avenues toward health sovereignty, specifically approaches rooted in cultural knowledge systems separated from Western epistemological paradigms of knowing (Camacho et al., 2024; Cochran et al., 2008; Kaholokula et al., 2018; Yamane & Helm, 2022). One emerging strategy is Culture-As-Health, which is an expansive concept of leading with culture, including the nuances and complexity of Indigenous values, norms, and practices, when implementing interventions (Auger, 2016; Yamane & Helm, 2022). For example, Kaholokula and colleagues (2018) discuss their PILI ʻOhana Project (POP), a community-driven intervention to address inequities in diabetes outcomes among NHPI communities in Hawaiʻi. POP comprises an equitable research space for equal governance of principles, multimethodological approaches (e.g., surveys, focus groups, key-informant interviews, formative assessments), and a representative steering committee that enables iterative reviewing and incorporations of culturally grounded principles into interventions, which ultimately led to positive effects of improving NHPI outcomes (Kaholokula et al., 2014; Kaholokula et al., 2018). Thus, not only is it necessary to improve interpersonal experiences with healthcare providers, but also to re-imagine shared knowledge systems and alternative delivery models for Indigenous-specific care services to support QTPI (Harfield et al., 2018).

Furthermore, it is imperative to advance public health policies that enable the development and maintenance of culturally accepted programs and cancer care delivery models for Indigenous health sovereignty and liberation. Compelling policies that center Indigenous culture and knowledge systems (e.g., preserving sacred spaces and histories, upholding native languages), as well as queer and trans-health-promoting policies (e.g., equitable healthcare coverage, training curriculums, sexual and gender-affirming care), are viable opportunities to forward QTPI self-determination and disrupt existing cancer health injustices (Camacho et al., 2024; Okamoto et al., 2014; Thomas et al., 2022; Yamane & Helm, 2022).

Conclusion

To our knowledge, this is the first comprehensive cancer-specific review of QTPI health disparities. There is a true need for further intersectional research to best address QTPI cancer disparities. This knowledge will allow healthcare workers to better understand the cultural perspectives of this population and mitigate their unique systemic healthcare barriers. Collecting data, contextualizing individual-level experiences, visualizing inequities multi-dimensionally, and Indigenizing healthcare are four key avenues that should be considered to obtain QTPI health justice. There is a need for fostering care rooted in cultural humility and inclusive policies that will ensure that QTPI health becomes more of a priority. Community-led initiatives will be key to impacting change for this population now and in the future.

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Conflicts of interest

The authors declare no relevant conflicts of interest.

Authors' contributions

Conceptualization: BPT, RKP, HC, KT; Writing – original draft preparation: BPT, RKP, HC, KT; Writing – review and editing: BPT, RKP, HC, ABA, RS, CNW, KT; Supervision: KT. All authors have reviewed and agreed to the published version of the manuscript.

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