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Social Inequalities in Palliative Care for Cancer Patients in the United States: A Structured Review

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Abstract

Objectives: To identify patterns of access to and use or provision of palliative care services in medically underserved and vulnerable groups diagnosed with cancer.

Data Sources: Google Scholar, PubMed, MEDLINE, and Web of Science were searched to identify peer-reviewed studies that described palliative care in medically underserved or vulnerable populations diagnosed with cancer.

Conclusion: Disparities in both access and referral to palliative care are evident in many underserved groups. There is evidence that some groups received poorer quality of such care.

Implications for Nursing Practice: Achieving health equity in access to and receipt of quality palliative care requires prioritization of this area in clinical practice and in research funding.

Keywords

Palliative care; under-served populations; vulnerable populations; cancer

Palliative care, an interdisciplinary, multi-component care model focused on relief of suffering throughout the course of a patient's illness has been found to improve health-related quality of life, particularly symptom management¹ and physical and psychological functioning in patients with cancer.^{2,3} There is recent evidence that early palliative care in patients with cancer can also improve coping strategies.⁴ National organizations such as the American Society of Clinical Oncology (ASCO) have recommended the integration of

palliative care services along with standard oncology care early in the course of treatment for patients with metastatic cancer and/or a high symptom burden.⁵

Disparities in outcomes across the cancer continuum have long been identified across numerous medically underserved populations.^{6,7} There is evidence that disparities exist in access to and provision of palliative care in underserved populations,⁸ but there is a paucity of health disparities research in palliative care.⁹ Our goal was to identify gaps in access to, and provision of, evidence-based palliative care services in multiple medically underserved and highly vulnerable persons diagnosed with cancer to determine programmatic, research, and policy needs that would in turn contribute to access to and receipt of equitable palliative care for medically underserved groups.

Methods

Adapted from the Krieger⁹ cancer disparities grid model, a structured review of the peer-reviewed literature was conducted on the domains of social inequality across the cancer continuum, beginning at the point of a cancer diagnosis through end of life. Google Scholar, PubMed, MEDLINE (EBSCO), and Web of Science were searched to identify published, peer-reviewed studies from January 2007 to June 2017 that described access to and use or provision of palliative care in medically underserved or vulnerable populations diagnosed with cancer. Medically underserved and vulnerable groups were defined as those in which there is prior evidence for cancer health disparities and includes: racial/ethnic minorities, older adults, those of lower socio-economic status, immigrants (including illegal immigrants), those living in underserved geographic areas such as rural areas, homeless populations, sexual minorities, those without insurance, and the intellectually disabled. The abstracts of identified articles were reviewed if they were published in English, conducted in the United States, and focused exclusively on adult populations with cancer. In addition to electronic database searches, the references of selected papers were hand searched to identify additional studies for inclusion. Full text articles that met study criteria and summarized their study characteristics and main findings by medically underserved/vulnerable population domain were reviewed.

All studies included in the review in the cancer disparities grid were organized according to provision of care into three groups across the cancer continuum that correspond to palliative care recommended by ASCO at certain stages across the cancer continuum: 1) at diagnosis of advanced cancer or cancer with high symptom burden (ASCO guidelines: when referral to palliative care should be made); 2) during treatment (ASCO guidelines: palliative care services should be offered concomitant with treatment) or post-treatment (survivorship); and 3) at end of life. Although ASCO guidelines do not specifically refer to the end-of-life phase, many studies focus specifically on this phase; therefore, we wanted to differentiate these from during treatment and/or survivorship phases. Studies were referenced within the respective cancer disparities domain(s) based on the study's goal, analysis, and results. For example, if a study's primary goal was to examine racial/ethnic differences in palliative care but also provided results by gender or geography (regardless of statistical significance), that single study would be referenced in multiple domains.

Results

Table 1 displays the current evidence and knowledge gaps in palliative care research by cancer disparity domains.¹⁰⁻¹²⁵ These domains are race/ethnicity, socioeconomic status, insurance status, age, rurality, immigrant status, sexual minorities, and intellectual disparity.

Race/Ethnicity

A number of studies investigated racial/ethnic disparities in palliative care services, primarily using retrospective administrative databases (eg, SEER/SEER-Medicare), and a few included prospective cohort designs. Two reviews reported inconclusive results about the impact of race on the use of palliative care services.^{10,11} Most studies focused on end-of-life care and examined differences between white and black or African American populations diagnosed with one of the four leading cancers. A few studies assessed differences among Asian American and Hispanic populations, but none discussed palliative care utilization or needs of American Indian/Alaskan Native patients with cancer. The authors of the included studies used a variety of terms interchangeably when describing racial/ethnic groups (eg, black vs. African American). For the purposes of this section, results are described based on the terms used by the study authors.

Black/African Americans

Overall, the existing evidence suggests that black/African American race is associated with a lower likelihood of receiving palliative care services. With respect to symptom management and supportive care during active cancer treatment and survivorship, multiple studies indicate that black cancer patients are less likely to receive adequate symptom management and experience greater symptom burden than their white counter-parts.¹²⁻¹⁸ Another study examining racial differences in hospice use within urban and rural areas revealed that compared with whites, blacks with lung cancer were also less likely to receive hospice care, and rates of hospice were significantly lower among blacks across levels of socioeconomic status.¹⁹ Differences in the use of hospice and pain management have also been documented among African American women with breast cancer.²⁰ One study found that compared with white female Medicare beneficiaries with stage IV breast cancer, black female Medicare beneficiaries exhibited lower rates of supportive medication use and hospice use, but higher rates of emergency room admissions and in-hospital deaths.²¹

Inconsistencies between end-of-life preferences and outcomes of African Americans have also been documented,^{10,22} with blacks who reported having end-of-life discussions being significantly less likely to have do-not-resuscitate orders on file and more likely to receive life-prolonging care at end of life than whites who had end-of-life discussions.²² A content analysis of cancer-focused news stories found that African American media, versus mainstream sources, were significantly less likely to discuss cancer treatment-related issues (eg, adverse events of treatment, treatment failure) and reported no stories about end-of-life care during the 7-year study period.²³ In contrast, it is also worth noting that findings from a retrospective study of inpatients with advanced cancer demonstrated that African Americans were significantly more likely to have a palliative care consult and to be referred for hospice.²⁴ Moreover, another study of an outpatient supportive and palliative care program found

that race was not a significant predictor of the timing of referral, but the burden of symptoms for blacks remained significantly higher than non-Hispanic whites following referral.²⁵

Asian Americans/Pacific Islanders

There were some inconsistent results regarding patterns of palliative care among Asian American/Pacific Islanders. One prospective study found that Asian Pacific Islanders had an increased likelihood of hospice referral compared with whites.²⁶ However, another study reported that Asian Pacific Islanders had lower rates of hospice enrollment compared with whites, as well as ethnic-subgroup heterogeneity in hospice length of stay, with Japanese Americans having a shorter median length of stay compared with Filipino Americans.²⁷ Additionally, Smith et al²⁸ reported significantly lower rates of hospice use among Asians versus whites. Other studies have confirmed that the largest racial/ethnic gap in hospice use was between whites and Asian/Pacific Islanders; Asian American/Pacific Islanders in the poorest socioeconomic status quartiles were the least likely to receive hospice care.¹⁹

Hispanics/Latinos

A few studies documented ethnic differences in palliative care among Hispanic/Latino populations with cancer. Studies comparing Hispanics to non-Hispanic whites, found no significant ethnic differences in hospice referral²⁴ or use.²⁹ Reyes-Gibby et al²⁵ observed that race was not a significant predictor of the timing of referral to supportive and palliative care, but Hispanics had a significantly higher symptom burden than non-Hispanic whites after being referred. Further, Hardy et al¹⁹ found that Hispanics who lived in urban areas were also less likely to receive hospice services compared with whites.

Income Status—Three studies explicitly examined low-income status as a characteristic of the population of interest.³⁰⁻³² Two studies retrospectively analyzed administrative and clinical data of men with prostate cancer enrolled in a state-funded public assistance program (IMPACT) in California. Results showed that the low-income prostate cancer patients received comparable and high-quality hospice care in relation to those with higher incomes and insurance.^{30,31} Lyckholm et al's³² pilot study surveyed the perceived barriers to end-of-life care among low-income cancer patients, unmatched caregivers, and providers (eg, physicians, nurses, social workers) at an urban hematology/oncology clinic. There was a discrepancy in reporting of discussion of hospice care: 90% of caregivers and providers reported that this was discussed, compared with only 57% of patients who reported this discussion. Further, none of the issues providers perceived as barriers to palliative care (eg, unsafe neighborhoods for hospice care nurse visits, no desire to discuss health care issues with providers, etc.) were identified as barriers by the patients or caregivers.

Insurance Status—Most of the studies that examined patterns of palliative care by insurance status focused on differences in end-of-life care among Medicare beneficiaries diagnosed with cancer.³³⁻³⁵ Hospice use differed among patients enrolled in fee-for-service (FFS) versus those enrolled in health maintenance organizations (HMOs). Patients enrolled in HMOs received hospice care at higher rates than those enrolled in FFS.^{29,36,37} HMO/managed care patients also enrolled in hospice earlier (>180 days before death), with longer hospice stays, compared with FFS patients.³⁶ Income was also associated with length of stay

in hospice care,³⁷ as patients with the lowest incomes remained in hospice care for longer durations than those with higher incomes in HMOs. However, higher-income patients who were enrolled in either HMOs or FFS had similar lengths of stay in hospice care. An examination of end-of-life care use among deceased Medicare beneficiaries with cancer found that those treated in academic or community hospitals were significantly more likely to initiate hospice in the last 3 days of life, be hospitalized and in the ICU in the last month of life, compared with those who received care in National Comprehensive Cancer Network hospitals.³⁸ The use of aggressive treatment during end-of-life care differed between older cancer patients in the Veterans Health Administration and those enrolled in Medicare FFS.³⁹ Mack et al⁴⁰ observed that the use of hospice services was significantly lower among Medicaid-enrolled younger adults with stage IV lung cancer compared with Medicare-enrolled elderly patients with the same diagnosis.

Age—The overall numbers of older adults with cancer who receive hospice care have increased in the last two decades.⁴¹⁻⁴³ Yet some older adults with cancer continue to report unmet needs for hospice care, particularly those from minority and/or underserved populations. Lackan et al⁴² documented that variations in hospice use based on insurance status, marital status, residency (urban vs. rural), and income have decreased among older adults with cancer, whereas the variations related to education level, race and ethnicity, and gender have not changed over time. Subsequent studies indicated that older adults with cancer are less likely to enroll in hospice care if they are low income, members of a racial and ethnic minority population, and rural residing.⁴⁴⁻⁴⁷ These disparities among older cancer patients have been documented across various cancer types.^{42,45-47} El-Jawahri et al³⁹ found that a large proportion of older adults with acute myeloid leukemia were hospitalized within 30 days of death, and two thirds died in the hospital. This group of cancer patients rarely benefited from palliative care and hospice services, despite having a poor prognosis. In other groups of older adults with cancer, such as older women with breast cancer, being hospitalized was found to be associated with higher rates of hospice use, as well as visits to physicians and oncologists.⁴⁸ Several studies found that in the month preceding death, receiving aggressive treatment was more common among young adults with cancer compared with elderly patients, and they were more likely to die in the intensive care unit.^{49,50} Even when young adults with cancer received palliative care, such care is often initiated late, within a few days of death.⁴⁹⁻⁵²

Populations in Rural Areas—Access to and delivery of palliative care services to those living in rural areas has been limited worldwide.⁵³ Rural areas have limited palliative care services, which results in a disparity in care for patients with metastatic or symptomatic cancer.⁵⁴ Rural patients with life-limiting illness are at high risk of not receiving appropriate care because of a lack of health professionals (nearly two thirds of rural US counties are in designated health professional shortage areas),⁵⁵ long distances to treatment centers,⁵⁶ and limited palliative care clinical expertise.⁵⁷ Even when palliative and hospice services are available, African Americans, compared with whites are more likely to receive medically ineffective, poor-quality, and high-cost care because of general mistrust of health care providers and a fragmented health care system that is generally insensitive to cultural differences that can guide treatment choices.⁵⁸⁻⁶³ There have been several innovative

strategies both in the US and elsewhere, including through community support, academic support and partnerships, telehealth, and community advisors, that have made the provision of palliative care possible, even in remote locations.^{2,64-69} This has been made possible by bringing palliative care expertise to the patient and ensuring that palliative care becomes embedded into the core of the rural communities, for example through telehealth, in nursing homes, and training local health care providers in primary palliative care.^{65,67,70,71} The ENABLE studies conducted by Bakitas et al⁷²⁻⁷⁵ are the first and, to date, the only studies that have focused on providing palliative care to rural cancer patients at the time of diagnosis and during treatment. These researchers found that this telephonic intervention was both feasible and effective; compared with participants receiving usual oncology care, those receiving a telephonic nurse-led, palliative care-focused intervention addressing physical, psychosocial, and care coordination provided concurrently with oncology care had higher scores for quality of life and mood.

Immigrant Status—There are approximately 11 million undocumented immigrants in the US, three quarters of whom are Latino,⁷⁶ with cancer as the leading cause of death in Latinos.⁷⁷ Lack of health insurance⁷⁸ and high rates of poverty⁷⁹ contribute to additional hardships that undocumented immigrants face at the end of life. Undocumented immigrants with cancer are at high risk of receiving inadequate cancer care, and the multiple challenges most people face at end of life are often amplified in this group. This includes limited access to care, which can result in delayed diagnosis, fragmented care, severe symptom burden, and lack of advance care planning, in turn resulting in lower quality cancer care, including care at the end of life.⁸⁰ Access to hospice is often restricted by hospice facilities⁸¹; almost one third of hospices would not enroll undocumented immigrants, and almost one quarter of referrals of undocumented immigrants to hospices were not accepted. There have been very few studies focusing on palliative care in undocumented immigrants, and no research that examines methods on how to best provide culturally based care for immigrant groups from different countries. A study by Fernandes et al⁵⁰ was the first to develop a home-based palliative care program for low-income, immigrant Asia/Pacific Islanders within the context of Federally Qualified Health Centers, demonstrating the effectiveness of palliative care in this population.

Sexual Minorities—Although the exact number of lesbian, gay, bisexual, and transgender (LGBT) population over the age of 65 is not known, the National Gay and Lesbian Task Force Policy Institute estimates that between 1.4 to 3.8 million Americans over 65 are sexual minorities, and project that this population will expand from 3.6 to 7.2 million by 2030.⁸² The risk of life-threatening illness, including cancer, among this population is high, with an associated higher lifetime risk of breast, cervical, uterine, and ovarian cancer than in heterosexual women.^{83,84} Gay men have a higher risk of anal⁸⁵ and HIV-related cancers.⁸⁶⁻⁹² There is also a greater risk of HIV, breast, and prostate cancer for male to female transgender people,⁹³⁻⁹⁵ and of ovarian, breast, and cervical cancer for female to male transgender people.⁹⁶ Despite the high incidence of cancer in this population, there is a paucity of research that focuses on understanding the needs, preferences, and perspectives of LGBT with cancer and their loved ones, and how their preferences and that of their loved ones influence their end-of-life care decisions.⁹⁶⁻⁹⁹ Other than the literature focusing on

those with HIV and AIDS, there have been only a handful of studies focusing on the experiences of LGBT people at the end of life, for example: Cartwright et al,⁹⁸ and others,¹⁰⁰⁻¹⁰⁸ with a few focusing on their anticipated future plans.^{104,109,110} In a systematic review of this literature, Harding et al⁹⁶ were only able to find 12 studies. In a prevalence analysis of end-of-life preparation, Kcomt and Gorey¹¹¹ found only 10% of LGBT patients had a discussion on preferences for care with their primary care practitioners; the rate for transgender patients was significantly less. There is also documented evidence that some health care providers have strong biases against sexual and gender minorities that prevents them from providing quality care to their LGBT patients,¹²³ and even evidence of discrimination against LGBT patients.^{101,112-115} The first book that focuses on cancer in the LGBT community was published as recently as 2015,⁵⁸ followed by a special issue on LGBT health and cancer.⁵⁹ A more recent publication focuses on best practices for treating sexual and gender minorities in hospice and palliative care settings,¹¹⁶ and a book by Acquaviva⁶² serves as a practical guide for transforming hospice and palliative care settings to become LGBTQ-inclusive, the first such book on inclusive palliative care delivery.¹¹⁷ In 2017 ASCO issued recommendations, published in a policy statement, for strategies to reduce cancer health disparities among sexual and gender minority populations.^{118,119}

Physical and Intellectual Disabilities—The wishes, values, and preferences of people with physical disabilities in health care decision making, so crucial in this group, have unfortunately been overlooked in programs, research, and policy affecting advance care planning and provision of palliative care.¹²⁰

The life expectancy of those with intellectual disabilities (defined in DSM-5 as a disorder with a medical/neurobiological emphasis)¹²¹ has changed dramatically in the last century,¹²² following an increase in longevity.¹²³ Although those with intellectual disabilities still have an increased risk of early death,¹²⁴ those with mild longevity often survive into old age,¹²⁵ which in turn has led to an increase in deaths from age-related conditions, including cancer.¹²⁶ Despite this increase, there is limited research evidence on provision of palliative care services among those with intellectual disabilities. Adults with intellectual disabilities often now experience a prolonged period of dying, similar to that of the general population; although most adults with such disabilities depend on residential care when they face a terminal illness such as cancer. Tuffrey-Wijne et al¹²² highlight two challenges for such patients: symptom assessment and management, a cornerstone of palliative care. Symptom assessment and management relies to a large extent on patient self-report, which is particularly challenging for adults with intellectual disabilities, especially those with challenges in communication. Measurement tools used in assessing symptoms may not be appropriate for this population. Advanced care planning, another key aspect of palliative care, raises complicated ethical issues around consent, autonomy, best interest, and who makes the decisions. Both are potential barriers to providing quality palliative care among this patient population.

Homelessness—Compared with the general population, homeless individuals have higher morbidity and mortality rates, with an average life expectancy of 42 to 52 years, and an increased disease/illness prevalence.¹²⁷ However, there is limited evidence on provision of

palliative care services, and very limited research on palliative care among homeless populations. The few studies conducted do not focus on those with cancer, and very few take place in the US.^{128,129} Multiple non-US studies demonstrate the urgent need for such research to be conducted in the US. In interviews with homeless groups, Shulman et al¹³⁰ found that many homeless people die in unsupported and unacceptable circumstances. Krakowsky et al¹²⁷ conducted interviews with homeless care providers in Canada and found that to increase access to and serve terminally ill homeless people, an increase in positive interaction of this group with the health care system needed to occur. Health care staff also required training into the unique issues facing this group, as well as guidance on tailored care delivery methods. Kayser et al⁷ used a community-based participatory research approach to examine stressors associated with living with a chronic illness and barriers to access and utilization of palliative care resources in low-income patients in five inner cities. Stressors of chronic illness centered around five themes: lack of family support, communication barriers with health care professionals, minority stress, caregiver burden, and lack of spiritual support, many of which could be ameliorated with palliative care. In terms of program development, there have been several isolated efforts to provide palliative care services to homeless populations in Canada.¹³¹⁻¹³³ One¹³² study demonstrated that palliative care programs for the homeless are appreciated by this group, and resulted in a significant health-care cost saving. Some raise concerns that current medically based systems may not be appropriate for homeless populations, and strongly recommend the development of other models of care.¹³⁴

Discussion

There is a significant shortage of studies focusing on palliative care in underserved groups, and those that have been conducted primarily focus on end-of-life care highlighting the need for studies focusing on referral to and provision of palliative care during cancer treatment/survivorship. Only a few studies were identified at the point of access to palliative care and during treatment. More research needs to be conducted to examine patterns of referral to palliative care and subsequent enrollment, as well as concordance between cultural preferences for care and referrals. Disparities in both access and referral to palliative care are evident in many underserved groups, and there is evidence that some groups received poorer quality of such care. The need for several areas of research that would begin to address existing barriers, although by no means inclusive, is described below.

Race

The included studies examining racial/ethnic disparities provide strong evidence of significant differences in access to and use of palliative care services during cancer treatment through end of life. Race/ethnicity often also interacts with other patient characteristics (eg, insurance type, age) and must be taken into account to ensure culturally sensitive, guideline-concordant care. Most studies compared whites and blacks/African Americans in relation to symptom management and hospice referral or use. Additional research on palliative care access and utilization among Asians/Pacific Islanders, Hispanics/Latinos, their ethnic subgroups (eg, Puerto Ricans, Japanese Americans), as well as other understudied racial/ethnic populations in the US, such as American Indians/Alaskan Natives, is warranted.

Additionally, the use of quantitative methodologies currently dominates what is known about differences in access to and use of palliative care by race and ethnicity. The use of qualitative and/or mixed methods with racial/ethnic minority populations has the potential to provide deeper insights and explanations for race/ethnicity-specific palliative care utilization patterns reported in quantitative studies. For example, the use of mixed methods and qualitative methodologies (eg, conversational analysis) could uncover unknown or poorly understood reasons why end-of-life care consultations between providers and black/African American patients do not consistently lead to high-quality care.²²

Income

Limited studies have assessed the impact of low-income status on cancer patients' access to and receipt of palliative care in the US. The included studies mainly defined "low-income" status based on the cancer patients' eligibility for state or federally funded insurance or cancer treatment assistance programs. To better understand the potential effect that low-income or low socioeconomic status plays in the provision of guideline-concordant palliative care, there must be a clear operationalization of the term with respect to other related concepts, such as insurance status. Future studies should include a variety of methodologic approaches (eg, prospective designs, qualitative methods) that examine the impact of low-income/socioeconomic status on access to and use of palliative care services across the continuum, and how its impact may vary by cancer diagnosis and across geographic areas in the US.

Insurance Status

Medicare is the largest payer of end-of-life care in the US.¹³⁵ Thus, it is not surprising that all of the studies included in this domain focused on the use of end-of-life care, primarily among Medicare beneficiaries diagnosed with cancer. Among Medicare beneficiaries, the literature highlighted variation in key end-of-life outcomes, such as hospice use, by region and type of Medicare plan (FFS vs. HMO). This variation may be due, in part, to differences in reimbursement for care that might influence whether providers offer hospice care or not.^{37,42} Beyond Medicare, there is limited knowledge of access to and use of palliative care among other insured and uninsured patients with cancer. Future research can begin to fill this gap in knowledge by: 1) studying the provision of palliative care at the time of cancer diagnosis and during cancer treatment and survivorship; and 2) describing access to and use of palliative care services among cancer patients enrolled in Medicaid, TRICARE, or other plans.

Age

Given the benefits of early initiation of palliative care among young adults, it is important to understand the factors that shape providers' decisions and patients' and their families' attitudes related to palliative care. The documented use of aggressive treatment and acute care among older adults with cancer suggests that the quality of hospice care among older adults with cancer needs to be further examined and improved.

Rurality

Research to guide rural palliative care practice is sparse. Approaches to telehealth, community–academic partnerships, and training rural health care professionals show promise, but more research is needed to determine best practices for providing palliative care to patients living in rural settings.² Regardless of efforts to bring palliative care to rural areas, shortages of palliative care specialists are a reality. Encouraging development of primary palliative care skills (eg, communication, symptom control, and advance care planning) among primary care and oncology providers will increase the likelihood of providing high-quality care for all cancer patients in rural areas,¹³⁷ as will the implementation of telehealth services. Elk and colleagues¹³⁶ recently used a community-based participatory research approach to develop a culturally appropriate palliative care program for rural, southern-based African American and white elders. Developed in rural South Carolina, with full participation from the community, this program reflects the cultural norms and preferences of both African American and white rural community groups.

Immigrants, Homeless Populations, Members of Sexual Minorities, and those with Physical and Intellectual Disabilities

Within these diverse, highly vulnerable groups, the lack of access to palliative and hospice care is evident, as is the lack of research that would create palliative care programs that meet the unique needs of each of these groups. If we as a society are indeed committed to providing palliative care to all individuals diagnosed with cancer,^{137,138} we need to initiate, develop, and implement: 1) policies that reduce barriers to palliative and hospice care for these groups; 2) systems that may not conform to the current medical care model; 3) other ways of delivering palliative care in rural areas, such as through telehealth or the training of local physicians and nurse practitioners in primary palliative care; 4) collaborative partnerships with unique groups to develop palliative care programs that meet their unique needs; and 5) creation of an inclusive hospice and palliative care environment so that all groups are welcomed. These efforts should include cultural diversity and sensitivity training programs for all palliative care professionals, as well as hiring of diverse staff or lay health advisors who have a deep understanding of the population being cared for.^{139,140} The need for in-depth research of each of these underserved groups, particularly using a mixed-methods and participatory approach, is a priority.

Conclusion

To achieve health equity in access to and receipt of quality palliative care, funding of research that focuses on the unique needs of underserved populations and innovative methods to overcome current barriers must become a priority, and along with the development and implementation of policies that provide equitable access to such care. Without such prioritization and policies, inequities in palliative care utilization will persist and potentially widen, and the divergence between oncology patients who continue to needlessly suffer and those who do not will increase. Palliative care organizations and leaders in the palliative care field can take a lesson from the parallel field of cancer health disparities, and organizations such as the National Cancer Institute, American Cancer

Society, and the American Association for Cancer Research and in effective collaborative strategies to, achieve cancer health equity.⁶

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Rubric of Evidence of Research Describing the Provision of Palliative Care to Medically Underserved or Vulnerable Populations Diagnosed with Cancer

Domains of Cancer Disparity Populations	At Time of Diagnosis	During Treatment and/or Survivorship	At End of Life
Race, ethnicity		Fishman et al, 2011 ²³ Payne et al, 2003 ²⁰	Fishman et al, 2011 ²³ , Mack et al, 2010 ²² , Hardy et al, 2011 ¹⁹ , Payne et al, 2003 ²⁰ , Bell et al, 2011 ²⁶ , Ngo-Metzger et al, 2008 ²⁷ , Smith et al, 2009 ²⁸ , Ramey et al, 2012 ¹¹ , Sharma et al, 2015 ²⁴ , LoPresti et al, 2016 ¹⁰ , Lackan et al, 2004 ²⁹ , Koroukian et al, 2017 ⁴⁷ , Fairfield et al, 2012 ⁴⁵ , Wright et al, 2014 ⁴⁴ , Wright et al, 2014 ⁴³ , Virnig et al, 1999 ³⁷ , Miesfeldt et al, 2012 ³³ , Saito et al, 2011 ⁴⁶ , Keating et al, 2008 ⁴⁸ , Check et al 2016 ²¹
Socioeconomic status			Bergman et al, 2009 ³¹ , Bergman et al, 2010 ³⁰ , Lyckholm et al, 2010 ³² , Hardy et al, 2011 ¹⁹ , Koroukian et al, 2017 ⁴⁷ , Fairfield et al, 2012 ⁴⁵ , Lackan et al, 2004 ²⁹ , Nayyar et al, 2014 ⁴⁴ , Virnig et al, 1999 ³⁷ , Keating et al, 2008 ⁴⁸
Insurance status			Lackan et al, 2004 ²⁹ , Fairfield et al, 2012 ⁴⁵ , Lackan et al, 2004 ⁴² , Virnig et al, 1999 ³⁷ , Keating et al, 2010 ⁴⁸ , McCarthy et al, 2003 ³⁶ , Wang et al, 2016 ³⁵ , Sheffield et al, 2011 ³⁴ , Miesfeldt et al, 2012 ³³ , Morden et al, 2012 ³⁸
Age			Koroukian et al, 2017 ⁴⁷ , El-Jawahri et al, 2015 ³⁹ , Fairfield et al, 2012 ⁴⁵ , Keating et al, 2008 ⁴⁸ , Keim-Malpass et al, 2014 ⁵² , Rosenberg and Wolfe, 2013 ⁴⁹ , Mack et al, 2015(1) ⁵¹ , Mack et al, 2015(2) ⁵³ , Lackan et al, 2003 ⁴¹ , Lackan et al, 2004 ⁴² , Nayyar et al 2014 ⁴⁴ , Wright et al, 2014 ⁴³ , Sharma et al, 2016 ²⁴ , Wittenberg-Lyles and Sanchez-Reilly, 2008 ¹³⁶ , Mack et al, 2013 ⁴⁰ , Saito et al, 2011 ⁴⁶ , Miesfeldt et al, 2012 ³³
Rurality	Bakitas et al, 2009 ⁷²⁻⁷⁵		Hardy et al, 2011 ¹⁹ , Lackan et al, 2004 ⁴² , Bakitas et al, 2015 ² , Wang et al, 2016 ³⁵ , Keating et al, 2008 ⁴⁸ , Lackan et al, 2004 ²⁹ , Nayyar et al, 2014 ⁴⁴ , Saito et al, 2011 ⁴⁶
Immigrant status			Jaramillo and Hui, 2016 ⁸⁰ , Gray et al, 2017 ⁸¹ , Fernandes et al, 2010 ⁵⁰ Harding et al, 2012 ⁹⁶ , Cartwright, 2012 ⁹⁷ , Cartwright et al, 2012 ⁹⁸ , June et al, 2012 ⁹⁹ , Clark et al, 2010 ¹⁰⁴ , Hash and Netting, 2007 ¹⁰⁹ , Boehmer et al, 2010 ¹¹⁰ , Boehmer and Elk, 2015 ¹³⁹ , Elk and Boehmer, 2016 ¹⁴⁰ , Maingi et al, 2017 ¹¹⁶ , Griggs et al, 2017 ¹¹⁹ , Acquaviva, 2017 ¹¹⁷ , ASCO, 2017 ¹¹⁹ , Katz, 2009 ¹⁰⁰ , Price, 2010 ¹⁰¹ , Boehmer and Case, 2004 ¹⁰² , Boehmer et al, 2005 ¹⁰³ , Clark et al, 2010 ¹⁰⁴ , Fobair et al, 2001 ¹⁰⁵ , Curtis et al, 1999 ¹⁰⁶ , Matthews et al, 2002 ¹⁰⁷ , Averett et al, 2011 ¹⁰⁸ , Fenge, 2013 ¹¹² , Smolinski and Colón, 2006 ¹¹³ , Rondahl et al, 2003 ¹¹⁴ , Vermette and Godin, 1996 ¹¹⁵ ,
Physical and intellectual disabilities			Stein and Kervin ¹²⁰ , Tuffrey-Wijne et al, 2007 ¹²² , Blackman and Todd, 2005 ¹²⁴ , Ahmed et al, 2004 ¹²³ , Black and Hyde, 2004 ¹²⁵ , Bosch et al, 1997 ¹²⁶