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Philadelphia College of Osteopathic Medicine
Graduate Program in Biomedical Sciences
School of Health Sciences

**A Review of the Social Determinants of Health Concerning Cancer-Related
Outcomes Among Hispanics/Latinos in the United States**

A Capstone in Public and Population Health Leadership Concentration by
Christina Elizabeth Gareis
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Submitted in Partial Fulfillment of the Requirements for the Degree of
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ABSTRACT

Cancer is one of the leading causes of death among Hispanics/Latinos because they are more likely to be diagnosed with advanced stages of cancer than non-Hispanic Whites (Yanez et al., 2016). Additionally, Hispanics/Latinos are more likely to experience a poor quality of life after receiving a cancer diagnosis (Yanez et al., 2016). Cancer-related outcomes are influenced by several aspects such as social, cultural, behavioral, and biological factors. Oncology research is limited with regard to understanding and addressing the underlying factors that can impact cancer-related outcomes for Hispanics/Latinos because much of the research has focused on non-Hispanic Whites. Therefore, it is imperative that future research and interventions focus on the various determinants of health that affect cancer outcomes among Hispanics/Latinos.

The Social Determinants of Health (SDOH) can be defined as the non-medical factors that can influence an individual's quality of life. Aspects include an individual's social environment, physical environment, and access to health services (NCHHSTP Social Determinants of Health, 2019). For example, an individual's overall health can be impacted depending on where the individual lives, their income, education level, and whether or not they have access to healthcare. Research suggests that there are several SDOH factors that affect the Hispanic/Latino communities. By implementing public health interventions that specifically target the Hispanic/Latino communities and address the SDOH, it is expected that they will be able to access quality healthcare more easily. Additionally, better cancer related outcomes and health equity among this population will be achievable.

INTRODUCTION

In the United States, Hispanics/Latinos have become the largest ethnic minority (Velasco-Mondragon et al., 2016). Hispanics/Latinos living in the United States can either be native-born or foreign-born (Velasco-Mondragon et al., 2016). If Hispanics/Latinos are foreign-born, they are identified as originating from Latin America, the Caribbean, or Spain (Velasco-Mondragon et al., 2016). The quality of life for Hispanics/Latinos are being disproportionately affected by a variety of structural, social, and economic factors, which are known as the Social Determinants of Health (SDOH) (NCHHSTP Social Determinants of Health, 2019).

Cancer has surpassed cardiovascular disease and is now the leading cause of death among the Hispanic/Latino population. Additionally, Hispanics/Latinos are more likely to wait longer for a definitive diagnosis and initiation of treatment, which can lead to poor outcomes (Yanez et al., 2016). For Hispanic men, prostate cancer is the most common type of cancer (Velasco-Mondragon et al., 2016). The second and third most common cancers for Hispanic men are colorectal and lung cancer (Velasco-Mondragon et al., 2016). Breast cancer is the most common cancer in Hispanic women, followed by thyroid, colorectal, and uterine cancer (Velasco-Mondragon et al., 2016). For Hispanic men, the most frequent cause of cancer death is lung cancer (Velasco-Mondragon et al., 2016). For Hispanic women, the most frequent cause of cancer death is breast cancer (Velasco-Mondragon et al., 2016). Cancer morbidity and mortality rates can depend on a variety of factors such as country of origin and ethnicity (Velasco-Mondragon et al., 2016).

Hispanics that are living in the United States are four times more likely to not have completed high school, two times more likely to be experiencing poverty, and 20 times less likely to have the ability to speak proficient English compared to non-Hispanic Whites (Velasco-Mondragon et al., 2016). Additionally, according to the Reserve Capacity Model and the Lifespan Biopsychosocial model of Cumulative Vulnerability and Minority health, ethnic minorities may have a risk of poor health outcomes due to the lack of socioeconomic resources, increase in stress exposure, and being at a social disadvantage (Yanez et al., 2016). Compared to other ethnic groups, Hispanics have less access and utilization of health care and preventative care services (Velasco-Mondragon et al., 2016). Before the Affordable Care Act, 30% of Hispanics reported that they did not have insurance compared to 11% non-Hispanic Whites (Velasco-Mondragon et al., 2016). To that end, Hispanics are incredibly vulnerable and susceptible to cancer and death.

BACKGROUND

The Definition of the Social Determinants of Health

The Social Determinants of Health (SDOH) are non-medical factors that have the ability to influence an individual's quality of life (NCHHSTP Social Determinants of Health, 2019). The SDOH have the potential to add chronic stress to an individual's life (Velasco-Mondragon et al., 2016). Specifically, an individual who has an increase in stress, may experience a variety of health issues (Velasco-Mondragon et al., 2016). Additionally, the SDOH usually targets individuals in specific socioeconomic, ethnic, and gender populations (Velasco-Mondragon et al., 2016). There are specific SDOH factors that affect the cancer-related health outcomes of the Hispanic/Latino population such as socioeconomic factors, environment, culture, language, occupation, and documentation status (Velasco-Mondragon et al., 2016).

Socioeconomic Determinants

Socioeconomic factors have the potential to limit access to care among Hispanics/Latinos. On average, Hispanics are more likely to face economic adversity and have a lower socioeconomic status compared to non-Hispanic whites (Yanez et al., 2016). The socioeconomic status of a Hispanic/Latino can negatively affect their health outcomes. For example, Hispanics/Latinos are more likely to be living in poverty and may have limited work that lacks the option for medical leave (Yanez et al., 2016). Therefore, Hispanics/Latinos may not have access to healthcare and health insurance, which may restrict their access to preventative care, cancer screening, and cancer treatment options (Yanez et al., 2016). Consequently, they may have low adherence to

treatments, which would negatively affect cancer morbidity, mortality, and quality of life among Hispanics/Latinos (Yanez et al., 2016).

Environment

The environment where an individual resides can increase their risk of cancer and other diseases. According to Velasco-Mondragon et al., (2016), 28.3% of Hispanics/Latinos live near major highways that have high volumes of traffic, which is linked to several diseases and complications. Moore et al., (2018) suggested that there are hot spot areas where breast cancer mortality is high. These hot spot areas consist of the majority of the population having lower education, low income, high unemployment, and high uninsured rate (Moore et al., 2018). Also, Hispanics/Latinos are more likely to live in areas with high industrial pollution and hazardous waste sites (Velasco-Mondragon et al., 2016). Hispanics/Latinos that live near these sites have an increased risk for adverse health effects, which could lead to cancer (Fazzo et al., 2017). Furthermore, Hispanics/Latinos tend to live in households that have higher indoor pollutants that create a risk for cancer (Velasco-Mondragon et al., 2016).

Culture

Hispanic/Latino culture can shape cancer outcomes because the culture can influence the decision-making process regarding preventative care and treatment of cancer. Allocentrism, familism, simpatia, and fatalism are the Hispanic/Latino cultures that have the ability to influence cancer-related health outcomes. Additionally, Hispanic/Latino gender roles can play a part in cancer-related health outcomes in a negative way.

Allocentrism and familism can be defined as the needs and goals of the family that are more important than the needs of the individual (Yanez et al., 2016). Familism stresses the importance of support and comfort of the family (Hernandez & Bámaca-Colbert, 2017). Specifically, familism emphasizes that the family is a source of emotional support, and the individual has an obligation to meet the needs of the family (Hernandez & Bámaca-Colbert, 2017). Research has suggested that familism is passed through generations (Hernandez & Bámaca-Colbert, 2017). Additionally, *simpatía* is when interpersonal conflict is avoided because there is a desire towards non-confrontational social interactions (Yanez et al., 2016). Hispanics/Latinos also rely heavily on their faith and consider religion as an incredibly important source of support when facing health obstacles (Yanez et al., 2016). Furthermore, Hispanics/Latinos believe in fatalism, which is when the situation is determined by fate and an individual cannot control what will happen (Yanez et al., 2016). Therefore, these cultural beliefs can be detrimental to an individual's cancer-related health outcomes because the individual may put the family's values, non-confrontational interactions, and faith before their health.

Hispanic/Latino culture also fosters traditional gender roles. *Machismo* is known as male dominance and *marianismo* is known as female obedience (Yanez et al., 2016). Specifically, *machismo* can be defined as a set of values, attitudes, and beliefs about masculinity (Nuñez, et al., 2017). *Machismo* includes positive and negative factors of masculinity such as bravery, honor, dominance, aggression, sexism, sexual prowess, and reserved emotions (Nuñez, et al., 2017). Research suggests that negative cognitions and emotions such as depression, anxiety, anger, and cynical hostility are linked to *machismo* and *marianismo* (Nuñez et al., 2017). Additionally, negative cognitions and

emotions have been connected to different diseases such as cardiovascular disease, diabetes, and cancer (Nuñez, et al., 2017).

Language

The differences in patient-provider language can contribute to poor cancer outcomes among Hispanics/Latinos. Over the years, English proficiency and educational attainment have increased; however, the level of education an individual has received is still low for foreign-born Hispanics (Velasco-Mondragon et al., 2016). Hispanics are underrepresented in a variety of different fields such as science, technology, engineering, and mathematics. Additionally, there is an incredible shortage of Hispanic health care professionals (Velasco-Mondragon et al., 2016). Research has shown that Hispanics/Latinos have expressed difficulties regarding the language barrier with their healthcare provider (Edward & Hines-Martin, 2016). Furthermore, a lack of interpreter services and culturally competent healthcare providers have resulted in a significant barrier for Hispanics/Latinos regarding access to healthcare (Edward & Hines-Martin, 2016).

A study conducted among immigrant Hispanic adults in California suggested that Hispanics living in poverty, not having consistent health insurance, and having English language barriers had a greater chance of developing a low health literacy (Becerra et al., 2017). A study conducted by Becerra et al., (2017) presented that Black and Hispanic women were discovered to have less health knowledge on breast cancer, compared to Whites. Low health literacy is associated with lower access and utilization of healthcare services, less patient-physician communication, and lack of preventative care and disease management services (Becerra et al., 2017). All of these factors

mentioned can contribute to poor cancer-related health outcomes among the vulnerable Hispanic/Latino population.

Occupation and Health Insurance

Hispanic workers are more likely to be employed in unskilled, high-risk jobs compared to non-Hispanic Whites (Escare & Kapur, 2006). Hispanics/Latinos have been disproportionately working in construction, maintenance and repair services, manufacturing, and personal and household services (Escare & Kapur, 2006). Since Hispanics/Latinos tend to work in these types of occupations, they lack employer-based insurance (Sohn, 2017). Therefore, they have a higher rate of being uninsured (Sohn, 2017). Additionally, African American and Hispanic workers are less likely to work in white-collar jobs that provide benefits such as sick leave and flexibility with work schedule (Pisu et al., 2015). These benefits would be beneficial during cancer recovery; however, because they are more likely to lack these types of benefits due to their occupation, worse cancer-related outcomes can be expected (Pisu et al., 2015). Furthermore, Hispanics/Latinos that lack insurance have to overcome several barriers such as language barriers and immigration status to access health services (Sohn, 2017).

Since Hispanics/Latinos are more likely to be working in occupations that lack employer-based health insurance, they may have a greater chance of experiencing financial toxicity if they have cancer. Financial toxicity is related to the incredibly high cost of cancer drugs, therapies, and treatments that individuals must pay for when undergoing cancer treatment and it can result in devastating outcomes as many patients are left to manage the burden on their own (Carrera et al., 2018). Financial toxicity can be

anticipated; however, the financial burden due to the costly cancer treatments is unintended (Carrera et al., 2018).

Studies suggest that individuals belonging to a racial/ethnic minority may be more likely than whites to experience economic hardship after being diagnosed with cancer (Pisu et al., 2015). Minority survivors are more likely to experience cancer-related financial problems compared to their counterparts (Pisu et al., 2015). A study was conducted by Pisu et al., (2015) to measure and compare the economic hardships regarding cancer treatment among Hispanics, African Americans, and Whites. The study aligns with literature and according to their research, two-thirds of African Americans and more than half of the Hispanics reported economic hardship regardless of the type of cancer that was presented, compared to 50% or less of whites (Pisu et al., 2015).

Research by Ko et al., (2020) discussed health outcomes among breast cancer individuals. The research suggests that individuals that have adequate health insurance may be more likely to obtain an earlier diagnosis, faster treatment, and a better prognosis than individuals that do not have health insurance (Ko et al., 2020). Since Hispanics/Latinos may not have health insurance because of their occupation, they may not be able to afford or have access to cancer treatment or preventative care services.

Documentation Status

In the United States, about 18% of Hispanics/Latinos are undocumented (Cabral & Cuevas, 2020). There are significant health disadvantages among undocumented Hispanics/Latinos compared to documented individuals (Cabral & Cuevas, 2020). Undocumented individuals are more likely to have a variety of health

issues such as high blood pressure, hypertension, depression, anxiety, post-traumatic stress, and overall higher levels of stress compared to documented Hispanics/Latinos (Cabral & Cuevas, 2020). Additionally, undocumented Hispanics/Latinos have a greater chance of developing advanced-stage diseases such as breast cancer than documented Hispanics/Latinos (Cabral & Cuevas, 2020). The reason that undocumented immigrants may have a greater risk of advanced-stage diseases is because they have limited access to healthcare (Cabral & Cuevas, 2020).

An individual's documentation status can lead to poor cancer-related outcomes because undocumented Hispanic/Latino immigrants are not able to access healthcare. The lack of healthcare prevents them from receiving preventative services and treatments for cancer. A factor that prevents undocumented Hispanic/Latino immigrants from receiving healthcare is that they are ineligible for Medicaid in certain states (Cabral & Cuevas, 2020). To that end, most undocumented Hispanic/Latino immigrants rely heavily on community health centers and clinics for their care so they may not be able to receive cancer treatment at these locations (Cabral & Cuevas, 2020). A second factor that prevents undocumented Hispanics/Latinos from gaining access to healthcare is that they lack proof of residency, which is a legal requirement when attending the doctor's office (Cabral & Cuevas, 2020). A third factor that limits healthcare in this population may be the spillover effect. The spillover effect is affiliated with the overall status of undocumented immigrants. The status of being undocumented may spill over to future generations, which will burden their health as well (Cabral & Cuevas, 2020).

Lastly, physicians may hold negative stereotypes about undocumented Hispanics/Latino immigrants, and this may affect the care that the patient receives

(Cabral & Cuevas, 2020). Discrimination of Hispanics/Latinos can be based on multiple factors including race, ethnicity, language, and health insurance, which can lead to the formation of negative stereotypes (Edward & Hines-Martin, 2016). For example, physicians may believe that undocumented Hispanics/Latinos are criminals and may become violent (Cabral & Cuevas, 2020). Negative stereotypes and attitudes can lead to physician implicit bias, which can prevent access to quality healthcare among this incredibly vulnerable population (Cabral & Cuevas, 2020). Therefore, these various factors make the cancer screening and treatment process very challenging for undocumented Hispanics/Latino immigrants.

Example of Intervention regarding Colorectal Cancer

According to Moralez et al., (2012) about 67% of Hispanics that are 50 years and older have reported they have never had a colonoscopy screening. Several barriers prevent Hispanics/Latinos from being screened for cancer. Barriers include cost, lack of health insurance, the anticipation of pain, fear, lack of awareness, and embarrassment (Moralez et al., 2012). These barriers are more prominent in Hispanics who are poor and live in underserved rural and border communities (Moralez et al., 2012). Moralez et al., (2012) research focus on Hispanics/Latinos in Yakima Valley, Washington. The study discusses interventions that address these barriers in the vulnerable Hispanic/Latino population that live there. The interventions previously discussed in the study were the use of promotoras and home-based educational interventions (Moralez et al., 2012). The purpose of the interventions was to increase awareness and knowledge of screening for colorectal cancer among Hispanics/Latinos and improve access to cancer screening (Moralez et al., 2012).

Existing literature states that promotoras can be knowledgeable resources and leaders among the Hispanic/Latino population (Moralez et al., 2012). Promotoras, also known as community health workers, can work with providers and community residents to encourage retention and participation in interventions (Moralez et al., 2012). Additionally, promotoras work almost exclusively in community settings (O'Brien et al., 2010). Specifically, promotoras are trained bilingual, lay health promoters that help increase knowledge and awareness about the specific health issue (Moralez et al., 2012).

Promotoras strive to address health disparities (Roland et al., 2017). They improve cancer outcomes by educating, connecting, and navigating patients through the healthcare system (Roland et al., 2017). Also, they support patients with screening and diagnostic services (Roland et al., 2017). Lastly, promotoras provide social support and linkages to financial and community resources (Roland et al., 2017). They can improve and expand access of information and services to underserved Hispanic/Latino populations (Moralez et al., 2012). Most importantly, promotoras can potentially eliminate racial and ethnic disparities (O'Brien et al., 2010). Promotoras can provide culturally appropriate information for addressing health disparities in underserved populations (Moralez et al., 2012).

The research and evidence base for promotora interventions among Hispanics is weak (O'Brien et al., 2010). However, many stakeholders have advocated for promotoras so that healthcare costs can remain low and racial and ethnic health disparities can be reduced (O'Brien et al., 2010). Promotoras can provide support, comfort, and culturally tailored information to the vulnerable Hispanic/Latino population (Moralez et al., 2012).

RESEARCH STRATEGIES

The background section in the manuscript discussed specific social determinants of health that are relevant to the vulnerable Hispanic/Latino communities regarding access to healthcare and cancer-related health outcomes. Furthermore, a promising colorectal cancer intervention for the Hispanic/Latino community was discussed. The information presented in the manuscript was found on several databases and search engines such as the PCOM library database, Thomas Jefferson University library database, Google Scholar, and PubMed. The data that is presented is mostly qualitative.

DISCUSSION

The vulnerable Hispanic/Latino population is being disproportionately targeted for poor cancer-related health outcomes. Cancer is the most frequent cause of death among Hispanics (Yanez et al., 2016). Poor cancer outcomes are influenced by various factors based on culture, behavior, and biology (Yanez et al., 1026). This manuscript highlights specific social determinants of health that affect the cancer-related health outcomes of the Hispanic/Latino population. Research suggests that several direct pathways affect the cancer outcomes for Hispanics/Latinos such as socioeconomic status, environment, occupation, and documentation status; however, several indirect pathways that affect cancer outcomes for Hispanics/Latinos such as culture and language (Yanez, et al., 2016.).

In the United States, the Hispanic/Latino population has become the largest ethnic minority (Yanez et al., 2016). Therefore, it should be a public health goal to create culturally tailored cancer interventions that target Hispanics/Latinos (Yanez et al., 2016). Cancer outcomes among this population can be improved by considering the social determinants of health that were discussed in the manuscript and applying public health models and theories to guide interventions.

A basic intervention that may be beneficial to vulnerable Hispanics/Latinos could be creating public service announcements about the importance of cancer screening and where to find a free screening. Public service announcements can be a strong influential factor for stressing the significance of cancer screening (Wittich et al., 2019). The public service announcements should be in the appropriate reading level and in Spanish (Yanez

et al., 2016). Since many Hispanics/Latinos rely heavily on their faith, different community or religious leaders can distribute the public service announcement to Hispanic/Latino communities (Yanez et al., 2016). A more complex intervention that can be considered is the use of promotoras (community health workers) and educational-based information. Briant et al., (2018) found that Hispanics living in rural environments were given a free stool-based test along with culturally tailored colorectal cancer education by community health workers. The use of promotoras had an increase in awareness and knowledge about the importance of colorectal cancer screening.

In conclusion, there continues to be racial and ethnic disparities in cancer outcomes (Yanez et al., 2016). The number of Hispanics that have access to the U.S. health care system due to the Affordable care Act is considerable (Yanez et al., 2016). Therefore, it is imperative to improve cancer outcomes among Hispanics (Yanez et al., 2016). Lastly, since Hispanics/Latinos are vulnerable to cancer, there is an urgent need to create public health interventions that take the SDOH factors into account so that health equity can be achieved.

RECOMMENDATIONS FOR FUTURE STUDIES

Future studies should take into account other SDOH factors that affect the cancer outcomes of Hispanics/Latinos. Additionally, literature must compare cancer outcomes between Hispanics/Latinos and non-Hispanic whites as more studies continue to explore cancer-related outcomes among Hispanics/Latinos (Yanez et al., 2016).

Since promotoras have the potential to increase awareness and knowledge on important health issues among the Hispanic/Latino communities, future research must evaluate promotora programs on a larger scale because current research is weak in this area (O'Brien et al., 2010). Another future study that researchers should focus on is to conduct more studies on cancer-specific biological factors among Hispanics (Yanez et al., 2016). Most of the research on biological differences in cancer types has primarily focused on African American women because they are more likely to be diagnosed with aggressive tumors when compared to non-Hispanic whites (Yanez et al., 2016).

Regarding breast cancer, there have been fewer studies that have recorded biological differences among Hispanic women (Yanez et al., 2016). Lastly, future studies should require an additional period of time to include a representative sample of Hispanics because there are differences in cancer outcomes by Hispanic subgroups (Yanez et al., 2016). Hispanic subgroups have not been well documented and cultural variations exist across the subgroups, which influences cancer outcomes in different ways (Yanez et al., 2016). For the future, researchers need to be more attentive to Hispanic heterogeneity (Yanez et al., 2016).

The research that is presented in this manuscript contains several determinants that are associated with poor cancer outcomes among Hispanics/Latinos; however, the research in this manuscript is based on cross-sectional studies, or that data was collected at a certain point in time. Therefore, for future research, longitudinal studies will be critical as data is collected over a period of time (Yanez et al., 2016).

Since cancer is the leading cause of death among Hispanics/Latinos it is critical that public health officials take action on this incredibly urgent issue. There are several future research opportunities and existing challenges to oncology research that need to be addressed so that Hispanics/Latinos can have better cancer-related outcomes (Yanez et al., 2016).

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