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Cancer-related Stigma, Attitudes, and Cultural Beliefs on Intentions to Receive Lung Cancer Screening in African American Female Smokers

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This is to certify that the doctoral dissertation by

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has been found to be complete and satisfactory in all respects,
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the review committee have been made.

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Abstract

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by

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MS, Loyola University, 2016

MS, Barry University, 2000

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

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Abstract

In the United States, lung cancer is responsible for killing more people than prostate, breast, and colon cancer combined. African Americans are at a greater risk of dying from the disease due to the infrequency of early detection achieved through screening. This research focused on African American female smokers (AAFS) in the District of Columbia, Maryland, and Virginia between the ages of 50 and 80 with a 20-year pack history and who were smoking or had quit within the past 15 years. A quantitative correlational research design was employed with a sample of 101 participants to explore the relationship between cancer stigma, attitudes toward screening, and cultural beliefs in AAFS on the intention to screen for lung cancer after controlling for age and smoking history. Ajzen's theory of planned behavior (TPB) served as the theoretical foundation of this study. The psychometrically validated measures employed were the Cancer Stigma Scale, the Lung Cancer Screening Health Behavior Scale, and the Cultural Beliefs Scale. None of the key predictors were significantly associated with intention to screen; however, logistic regression analysis revealed that age was a significant predictor of the intention to screen. The results of this study suggest that demographic factors such as age may play a more significant role in screening intentions than the psychosocial constructs emphasized by TPB. This research supports positive social change by raising awareness of the need to screen for lung cancer in AAFS, advocating for improved access to preventative screening services in AAFS, and consideration of culturally competent healthcare for AAFS, ultimately aiming to reduce lung cancer mortality in underserved communities.

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Dedication

This work is dedicated to my mother, Cinderella Salmon, who passed away from lung cancer in 2011. Despite her sixth-grade education, she instilled in me a profound appreciation for the value of education. A phrase she coined in my childhood has resonated with me throughout my adult life: “Get your education so that you can pick, choose, and refuse.” I also dedicate this work to my husband, Errol Gayle, my steadfast advocate and supporter. His encouragement throughout my journey—earning a BS and two MS degrees—was instrumental in achieving the highest academic honor, a Ph.D. I extend my heartfelt gratitude to both. Additionally, I dedicate this body of research to the lung cancer community, survivors, and advocates who work tirelessly to increase awareness, funding, and research to decrease the mortality rate.

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Chapter 1: Introduction to the Study

Introduction

Lung cancer is the leading cause of all cancerous deaths and is a global concern, killing more Americans annually than breast, prostate, colon, and leukemia combined (Akhtar & Bansal, 2017). Lung cancer affects all cultures but is especially impactful in the African American (AA) community. When lung cancer is diagnosed, it is usually toward the later stage of the disease. A diagnosis of lung cancer means a person has one of two forms, non-small cell adenocarcinoma or small cell adenocarcinoma; of the two, non-small cell adenocarcinoma is most frequently diagnosed, and each form has progression stages from one to four (1a, 1b, 1c up to 4a, 4b, 4c, and 4d). The earlier the diagnosis, the greater the chance of surviving the disease.

The mortality rate of lung cancer is higher among AAs compared to Whites in the United States. According to Siegel et al. (2023), the collective 5-year relative survival rate for all types of cancer has experienced a significant rise since the 1960s. Specifically, the rate has risen from 39% to 69% among individuals of White ethnicity and from 27% to 64% among those of Black ethnicity (Siegel et al., 2023). The estimated lifetime probability of developing lung cancer is 6.2% for men and 5.8% for women, which translates to a 1 in 16 chance for men and a 1 in 17 chance for women throughout their lifetime (Siegel et al., 2023). Nevertheless, the probabilities are derived from the prevalence of lung cancer within the broader population, thus signifying a significantly augmented risk for individuals with a smoking background.

Although the lung cancer community has seen a positive change in treatment options and survival rate, there continues to be disparity within the AA community. The relationships between cancer-related stigma, attitudes, and cultural beliefs on intentions to receive lung cancer screening in African American Female smokers (AAFS) were examined. Few lung cancer patients are diagnosed before metastasis (Simeone et al., 2019). Several of these diagnoses are findings that arise from a chest X-ray or low-dose computerized tomography (CT) scan that is requested for purposes other than screening for lung cancer (Simeone et al., 2019). The low 5-year survival rate of lung cancer may be attributed to the probable absence of timely identification, even among patients with a high susceptibility to the ailment. Besides the possibility for early detection of tumors that can be treated, lung cancer screening may offer advantages based on risk reduction.

In the United States, smoking is identified as the primary contributor to the development of lung cancer. Smoking has been reported to be responsible for 80% to 90% of all reported cases of lung cancer (Schabath & Cote, 2019). Numerous other exposures have been linked to the development of lung cancer; however, their collective impact pales in comparison to that of tobacco/cigarette smoking (Schabath & Cote, 2019). The presence of supplementary causal factors is predominantly associated with environmental and occupational exposures to various agents, including but not limited to nickel, asbestos, arsenic, radon, and chromium. The correlation between smoking and lung cancer is widely accepted; however, there is ongoing debate regarding the potential biological differences between men and women in terms of their vulnerability to lung cancer caused by smoking. According to Davuluri et al. (2021), after controlling for the quantity of smoking, there is limited support for the notion that women smokers are at a higher risk of developing lung cancer compared to male smokers. Furthermore, women who smoke are at a higher risk of lung cancer, even with varying levels of smoking exposure (Davuluri et al., 2021). This suggests that women may have an increased susceptibility to the carcinogenic impacts of cigarette smoking.

This chapter includes the following sections: (a) background of the study, (b) problem statement, (c) purpose of the study, (d) research question and hypothesis, (e) theoretical foundation framework, (f) nature of the study, (g) definitions, (h) assumptions, (i) scope and delimitations, (j) limitations, (k) significance, and (l) summary and transition.

Background

Lung cancer continues to be of global concern, with the AA community disproportionately impacted (Akhtar & Bansal, 2017; Balogh et al., 2019; Boloker et al., 2018; Cardarelli et al., 2017; Carter-Harris et al., 2018; Criswell et al., 2016; Hahn, 2017). The variables, such as the duration required to assess mortality, diverse research approaches, and the swift advancements in medical technology, have resulted in inconsistent outcomes concerning lung cancer screening. Important considerations include the need for tailored interventions to promote access to preventative care, utilization of necessary care, self-care, and disease management once diagnosed (Belgrave & Abrams, 2016). For example, individuals within the age group of 50 – 80 have been established by the United States Preventative Service Task Force (USPSTF) as the recommended age group to screen for lung cancer (Krist et al., 2021). Moreover, nascent technologies are progressively detecting tumors at more microscopic scales, and the handling of incipient-stage ailments is improving. The current development has generated unparalleled hopefulness toward enhancing results for lung cancer. Due to the high fatality rate and significant patient population impacted, it is imperative to approach the multifaceted aspects of this matter with a sense of immediacy.

Although there is extensive research on lung cancer (e.g., Else-Quest & Jackson, 2014; S. Lee et al., 2016; Quaife et al., 2017; Rose et al., 2018), limited studies focus on perceived cancer-related stigma for this population to include their attitudes toward screening, and cultural beliefs about lung cancer screening behaviors (Jonnalagadda et al., 2012). Therefore, further investigation and initiatives are needed to mitigate disparities in lung cancer incidence among African American women (AAW) who smoke.

Factors contributing to AA women's health have been identified in numerous studies. Some of these studies indicate that numerous behavioral factors, such as smoking behavior, impact AA women's health, making them more likely to die from several chronic diseases, including lung cancer (Ahijevych & Parsley, 1999; Balogh et al., 2019; Bazargan et al., 2015; Belgrave & Abrams, 2016; Brown Speights et al., 2017; Lake et al., 2020; T. J. Williamson et al., 2020). For example, according to Banerjee et al. (2021), a significant number of individuals diagnosed with lung cancer report experiencing stigma related to their condition. It is unclear whether the AAFS experience of perceived cancer sigma is associated with screening for lung cancer. Hence, a study of this nature is needed to better understand the implications of screening and provide meaningful statistics to create effective lung cancer awareness promotions and encourage early detection in the AAFS population. Studies on the role of cancer-related stigma, attitudes toward screening, and cultural beliefs are associated with the intention to receive lung cancer screening in AAFS. Additionally, Lake et al. (2020) supported the need for continued exploration of barriers limiting screening utilization among AAs at risk and who are less likely to receive a type of screening that detects the disease in its early stage.

Other key research findings have revealed the need for health professionals and public health systems to understand how the AA community, specifically the AAFS belief system of care and trust, influences health behavior decisions such as intent to screen. For example, S. Lee et al.'s (2016) ethnographic study highlighted that a lack of understanding about care and a lack of trust leads to adverse decision-making outcomes, such as delaying screening or treatment, which would positively impact the mortality rate of diagnosed persons. Quaife et al. (2017) indicated that the perceptions of those in the AA community have not yet been accounted for in existing literature as they have not been well-represented in research studies. Therefore, socioeconomically disadvantaged groups require further study to understand factors associated with low screening rates and gauge perceptions of stigma relating to the disease.

The Gap in the Literature

Some researchers have investigated cancer stigma, attitudes toward cancer of various types, including lung cancer, and the influence of cultural beliefs on screening behaviors (Akhtar & Bansal, 2017; Fripp & Carlson, 2017; González-Sanguino et al., 2019; Hawley & Morris, 2017; C. G. Lee, 2014). The correlation between lung cancer risk, incidence, and mortality in different populations is influenced by sex, race, and smoking habits (Mederos et al., 2020). Gender-based disparities in the incidence of lung cancer are observed across all major racial categories in the United States (Elkbuli et al., 2020). Simultaneously, notable discrepancies are present among racial and ethnic groups. Elkbuli et al. (2020) suggested that AA individuals who smoke are at a notably higher risk of developing the disease in comparison to their White, Hispanic, and Asian American counterparts. It is plausible that variations in behavior may play a role in the observed discrepancies. Understanding the association between the variables influencing the choice to screen is significant. It may inform work to develop interventions and meaningful public policies, health promotions, health information, and other media geared toward increasing lung cancer screening and early detection in AAFS.

Problem Statement

Lung cancer is a significant public health concern in the United States due to its higher mortality rate compared to other cancers, including breast, prostate, and colon cancer combined (Sung et al., 2021). According to Zavala et al. (2021), individuals who identify as AA exhibit lower rates of lung cancer screening in comparison to other ethnic groups. The etiology of these discrepancies remains incompletely comprehended; however, they seem to be influenced by multiple factors, including stigma and cultural factors. Research indicates that AA women are disproportionately affected due to late-stage diagnoses of lung cancer (Bethea et al., 2013; Brown Speights et al., 2017; Hendricks et al., 2014; Erhunmwunsee et al., 2022). As stated above, studies have revealed that 60% die annually from lung cancer; overall, the most significant impact documented is the AA community. The Centers for Disease Control and Prevention (CDC; 2021) report that an estimated 14.9% of the 34.1 million current smokers are AA, of which 13.3% are AA women 18 and older who smoke at least one pack a day. In addition, this group is three times more likely to use mentholated cigarettes, which has been shown to make quitting more complicated and more addictive than traditional cigarettes (Ahijevych & Parsley, 1999; Glasser et al., 2021; Richter et al., 2008). Therefore, AAFS is a group warranting further study to understand factors associated with preventive screening behaviors.

Previous research has established that stigma, whether perceived or societal, may adversely affect the efforts of health organizations to reduce the prevalence of late-stage cancer diagnoses through screening and detection, as many may forego critical preventive care due to such stigma (Hamann et al., 2018; Rankin et al., 2020). Medical professionals recommend annual screening for lung cancer in adults aged 50 to 80 with a 20-year pack history of smoking or having quit within the past 15 years. Cancer detected in its earliest stage increases survival rates considerably while reducing associated morbidity. However, cancer-related stigma may represent a barrier to cancer screening in those at the most significant risk for lung cancer development. Given the known health disparities about cancer and other chronic illnesses in AA (Amuta-Jimenez et al., 2020), cancer-related stigma may be associated with the overall intent to screen.

The same may be true for certain attitudes and beliefs, including perceived risk or threat of lung cancer, fear of screening, and the belief of an unfavorable outcome. For example, Quaife et al. (2017) developed an instrument to assess cancer screening-related attitudes converted from other measures and demonstrated the complexity of smokers' attitudes toward lung cancer screening and the internalization of blame and guilt due to smoking habits. Their study revealed that although smokers were concerned about the loss of respiratory health, some held attitudes that ruled out any benefit of screening, and most participants agreed that early detection proves to be the most beneficial for good outcomes (Quaife et al., 2017). Carter-Harris et al. (2017) comparably developed a psychometric scale measuring lung cancer screening health beliefs scales (LCSHBS), which was adopted in the current study to measure attitudes toward lung cancer screening in the intent to screen for lung cancer in AAFS. The framework examines perceived risk, benefits in the likelihood of screening for the disease, and whether screening participation yields a desired outcome for individuals with high smoking behavior. Cultural beliefs about cancer screening have also been associated with the intention to screen. For example, Russell et al. (2003) developed a scale to measure the impact of AAW's cultural beliefs on intention to obtain breast cancer screening, which suggested factors including locus of control and personal space, temporal health orientation, and personal control in the context of screening may be associated with intent to screen AAW.

Purpose Statement

The purpose of this quantitative study was to examine whether perceived cancer-related stigma, attitudes toward screening, and cultural beliefs were significantly associated with intention to receive lung cancer screening among AAFS.

Research Questions and Hypotheses

RQ1: What are the combined (R2) and relative (sr2) effects of perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about screening in explaining variance in AAFS (between 50 and 80 years) intention to receive lung cancer screening, controlling for relevant sociodemographic characteristics: age range and smoking history?

Null Hypothesis (Ho): Perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about cancer screening do not explain variance in AAFS (between 50 and 80 years) intention to receive lung cancer screening, controlling for relevant sociodemographic characteristics: age range and smoking history.

Alternative Hypothesis (Ha): Perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about screening explain variance in AAFS' intention to receive lung cancer screening, controlling for relevant sociodemographic characteristics: age range and smoking history.

Theoretical Framework

The theoretical framework that guided this research is the TPB (Ajzen, 1991), replicated in numerous studies to examine health-related decisions in the context of various internal and external psychosocial stressors, attitudes, and personality characteristics, including studies of health-related stigma. The TPB framework outlines how individuals make health-related decisions as a function of the following constructs: attitudes toward a behavior, subjective norms, and perceived behavioral control (Akdeniz et al., 2023). Subjective norms pertain to an individual's perception of the expectations of others regarding their actions, which can affect their conduct. An individual may opt for colorectal cancer screening due to perceived social pressure from their network of acquaintances and loved ones. Perceived behavioral control pertains to the extent to which an individual's perception of their ability to regulate a behavior influences their actions. An individual's perception of their ability to undergo colorectal cancer screening may be influenced by their access to healthcare and their capacity to schedule appointments. Several studies have utilized the TPB framework to examine screening intentions for various cancers, including breast, cervical, prostate, and colorectal (e.g., Abamecha et al., 2019; Lucas et al., 2016).

Racism can be considered an extrinsic psychosocial stressor that can influence an individual's attitudes, subjective norms, and perceived behavioral control in relation to health behaviors, including cancer screening. Normative beliefs are akin to subjective norms and pertain to an individual's understanding of socially acceptable conduct (Dhakal et al., 2023). Conversely, stigma can be considered an endogenous psychosocial stressor that can potentially influence attitudes and subjective norms pertaining to health behaviors (Pourmand et al., 2020). Stigma can be incorporated within the attitudes construct of the TPB framework, given its capacity to impact an individual's comprehensive assessment of a particular behavior. For example, Lucas et al. (2016) examined perceived racism and its impact on colorectal cancer screening. They used measures of attitudes, normative beliefs, perceived behavioral control, and intentions to obtain colorectal screening. The TPB constructs were associated with AA screening behaviors. Recent studies suggest that TPB is a viable framework in the current study to examine perceived cancer-related stigma, attitudes toward screening, and cultural beliefs in AAFS as statistical predictors of intention to receive lung cancer screening.

Nature of the Study

The present investigation utilized a quantitative, correlational methodology to examine the associations among various factors about the intention of undergoing lung cancer screening in AA women who are susceptible to lung cancer due to their smoking habits or history. The primary objective of this study was to investigate the predictive efficacy of perceived cancer-related stigma, attitudes toward lung cancer screening, and cultural beliefs about screening to undergo lung cancer screening. The researcher employed a multiple linear regression framework to analyze the data while accounting for significant demographic and socioeconomic variables, including insurance status, healthcare accessibility, and self-reported healthcare usage. This investigation was conducted to understand determinants that affect the intention of lung cancer screening in the susceptible population and to guide interventions to enhance screening rates and mitigate lung cancer disparities.

For this research's design, I gathered primary data using validated questionnaires on perceived cancer-related stigma, attitudes toward screening, cultural beliefs about screening, and intention to receive lung cancer screening as described. Participants who were AAFS at risk for lung cancer with a history of smoking behavior between the ages of 50 and 80 were recruited through convenience sampling in various venues, including but not limited to congregational settings and social media platforms.

Study Rationale

The rationale for choosing a quantitative prediction model design for this study was based on several factors. First, the study involved examining the associations among multiple variables (perceived cancer-related stigma, cultural beliefs about screening, attitudes toward screening, and healthcare system-related factors) in a specific population (AAFS at risk of lung cancer based on smoking status/history). A quantitative design was well-suited for testing hypotheses and examining relationships between variables using statistical analyses (Dewasiri & Jayarathne, 2021).

According to Shipe et al. (2019), using a prediction model allows the examination of the predictive power of the independent variables on the dependent variable (intention to receive lung cancer screening) while controlling for important demographic/SES factors. This approach is helpful in identifying which variables have the strongest impact on the outcome variable. It can inform the development of interventions to increase lung cancer screening uptake in AAFS.

Operational Definitions

Attitudes. Attitude is a disposition of belief, implicit and explicit adaptations that include emotions about how one feels about a subject or situation, such as cancer, which influences action or behavior to screen for the disease (Nipher et al., 2020). In the current study, lung cancer health screening behavior scale scores were defined as the predictability of a person's attitude toward healthy behavior.

Cancer-related stigma. Stigma refers to individuals' adverse perceptions of a person or object they deem unacceptable or undesirable. Cancer-related stigma entails negative labels and stereotypes based on lifestyle choices, such as smoking behavior (Esser et al., 2018). In the current study, this was defined as scores on the cancer stigma scale (CSS) that measure the predictability of cancer stigma to influence health behavior and screen for lung cancer.

Cultural beliefs. Cultural beliefs incorporate internalized learned experiences from ethnic, religious, social, and family customs influencing perception and health care decisions. Cultural beliefs refer to those imparted, reinforced, endorsed, and prioritized within a given culture, frequently to preserve their legacy. In the current study, this was defined as scores on the cultural belief scale (CBS) that measure the predictability of cultural beliefs to influence health behavior and screen for lung cancer.

Cultural sensitivity. Cultural sensitivity, synonymous with cultural competence, is the ability of healthcare providers to demonstrate cultural awareness when providing care (Govere & Govere, 2016).

Health disparities. Health disparities refer to avoidable variations in the incidence and prevalence of illness, injury, violence, or access to resources that promote optimal health among different populations (Assari, 2018).

Health temporal orientation. Health temporal orientation is the processing or memory of previous health experiences referencing the past, present, and future by which a person draws a conclusion to influence health behaviors (Carl et al., 2021).

Locus of control. Locus of control pertains to an individual’s perception of the extent to which they possess agency over the consequences of events in their life instead of attributing them to external factors (Keenan, 2020).

Lung cancer screening. Lung cancer screening is taking a picture of the lungs using a low-dose CT scan or X-ray to detect cancer nodules (Barta et al., 2021).

Subjective norms. Subjective norms pertain to an individual's perception of the social influence exerted on them to either engage in or refrain from engaging in a specific behavior, which is based on their social network's beliefs and expectations (Manning et al., 2020)

Perceived behavior control. Perceived behavior control is defined as one's feeling of how much control one has over a behavior (Khani Jeihooni et al., 2021)

Smoking-related stigma. Smoking-related stigma is closely related to lung cancer stigma, as most people believe that lung cancer results in people choosing to smoke. Due to the strong correlation between smoking and lung cancer, individuals afflicted with the disease may be perceived as culpable for their condition, leading to a potential lack of empathy compared to those affected by other fatal ailments (T. J. Williamson et al., 2020).

Social stigma. Social stigma is a determinant factor that negatively influences healthcare choices because they are discredited and blemished in their environment (Pakseresht et al., 2021).

Assumptions

I collected data using valid and reliable instruments. I assumed the tools would be adaptable to the research study and that the participants met USPTF requirements of 50 to 80 years who have a 20-year history of tobacco exposure, as indicated via self-report, and who were smoking or had quit within the past 15 years. Another assumption was that participants provided accurate answers to the cancer-related stigma scale, attitudes toward cancer screening, and cultural belief scales adapted for the study. The participants were not patients receiving any cancer treatment for lung cancer. I also assumed the participants had the basic computer knowledge to complete the surveys.

Scope and Delimitations

The scope of the study focused on AAFS to provide new information on intent to screen for lung cancer. The study concentrated exclusively on AA women between the ages of 50 and 80 who have a smoking history of 20 packs a year and are currently smoking or have quit within the last 15 years. The study's findings may exhibit limited generalizability to other populations, such as non-AA individuals and men. The study was dependent on self-reported data from participants, which could introduce response bias or measurement error. The study solely focused on the assessment of perceived cancer-related stigma, attitude toward screening, healthcare system-related factors, and cultural beliefs regarding screening as determinants of the intention to undergo lung cancer screening. This study did not incorporate additional variables, such as health literacy and physician recommendations, which may also impact screening behavior. A cross-sectional design was used, thereby constraining the capacity to establish causal inferences or evaluate alterations in screening behavior over a period. The study's limitation lies in its sole focus on a specific geographic area, potentially constraining the applicability of its results to other regions with distinct healthcare accessibility or cultural variables.

Limitations

Numerous limitations deserve mention. Lack of access to technology might have been a limitation for some participants. Considering this, I provided a paper form to complete the study measures. Another limitation was access to participants. However, through the Baltimore-Washington Conference of Methodist churches, I have connections to 603 churches, which provided a sufficient pool of participants based on the typical demographics of regular attendees. I am also connected with numerous social media and websites focusing on AAW health and wellness. Finally, the possibility of socially desirable responses exists because I gathered information regarding attitudes toward the intention to receive screening. However, the fact that these issues have been addressed in previous studies suggests that such attitudes can be reliably captured without significant misrepresentation.

Significance

This study is significant because its outcomes may provide additional information regarding cancer-related stigma in this context. It may be valuable to public health practitioners and healthcare providers in developing and delivering appropriate care for AAFS at risk of lung cancer. This study addressed the lack of research targeting AAFS cancer-related stigma beliefs, attitudes toward and cultural beliefs regarding preventive screening behavior, and whether such stigma, attitudes, and beliefs are associated with the intention to receive lung cancer screening. As aforementioned, the lung cancer community advocates an increase in screening to detect the disease early, especially in the AA community that has been disproportionately and adversely affected by lung cancer. Additionally, and more generally, this research may educate the community and those delivering healthcare to create positive social change that aligns with the Department of Health and Human Service Healthy People Initiatives (Henley et al., 2020), of which lung cancer is a disease of interest.

Summary

Chapter 1 included the foundation for the research through an overview of the global health issue of lung cancer and the problem statement addressing the lack of research to address late-stage diagnosis and high mortality rate in AAFS with the context of the investigated variables. Considerable research supports the need for further investigation into AAFS at risk for lung cancer. Chapter 1 highlighted the need for current research and its implication for social change, which may assist in creating programs, policies, and health information to increase positive lung cancer screening behavior amongst AAFS, the targeted population.

Chapter 2 focuses on the study's relevance through the various peer-reviewed articles on the theoretical framework, its application, and its rationale. In addition to the theoretical framework, other categories were developed to establish the gap in research and its significance to other studies. I expanded the subtopics to include lung cancer among AAs, the role of cancer screening and prevention, social stigma surrounding cancer, and health-related attitudes and cultural beliefs, which further ground the theoretical framework.

Chapter 2: Literature Review

Introduction

This study centered on cancer-related stigma, attitudes, cultural beliefs, and intentions to receive lung cancer screening among AAFS. Researchers have investigated the relationship between cancer-related stigma, attitudes, cultural beliefs, and intentions to receive lung cancer screening among smokers (Akhtar & Bansal, 2017; Fripp & Carlson, 2017; González-Sanguino et al., 2019; Hawley & Morris, 2017; C. G. Lee, 2014); however, studies focusing on AAFS and whether the stigma around smoking, attitudes toward screening, and cultural beliefs may be associated with intention to receive lung cancer screening are lacking. Thus, this study aimed to examine perceived cancer-related stigma, attitudes toward screening, and cultural beliefs in AAFS as statistical predictors of intention to receive lung cancer screening.

Literature Search Strategy

The research databases used to locate articles for this review were Google Scholar, EBSCOhost, PsycINFO, CINAHL, MEDLINE, and PubMed. The following list of keywords and phrases were used to search and identify relevant existing research: *lung cancer and African American*, *lung cancer stigma*, *cancer stigma*, *African American health disparities*, *African American treatment-seeking behavior*, *cancer diagnosis disparities*, *lung cancer screening*, *lung cancer prevention*, *cancer stigma*, *smoking stigma*, *cancer-related health beliefs*, *cancer-related attitudes*, *cancer-related cultural beliefs*, *lung cancer screening intentions*, *predictors of cancer screening*, *determinants of cancer screening*, *African American women smokers*, and *theory of planned behavior*.

Although a limited number of past theoretical and seminal works were included due to their relevance, most included publications were written 5–10 years ago.

The theoretical framework is discussed first in this review. A brief overview of smoking's impact on the AA population is discussed first, followed by lung cancer among African Americans (AAs), including a subsection on the role of lung cancer screening and prevention. Subsequently, a discussion on the social stigma surrounding cancer is included, followed by a section on health-related attitudes and cultural beliefs about cancer. A summary concludes with the chapter.

Theoretical Framework

The TPB guided this study. Used in numerous studies to examine the influences of health-seeking behavior (e.g., Abamecha et al., 2019; Hamdiui et al., 2018; C. G. Lee, 2014; Quinn et al., 2011), Ajzen (1991) developed the theory to explain and predict human behavior and how premeditated behaviors are enacted. According to the TPB:

> Intentions to perform behaviors of different kinds can be predicted with high accuracy from attitudes toward the behavior, subjective norms, and perceived behavioral control, and these intentions, together with perceptions of behavioral control, account for considerable variance in actual behavior. (p. 179)

The social scientist's early work on TPB originated during the 1980s, emphasizing significant empirical evidence of associations of salient normative, control, and behavior-related beliefs with perceived control, attitudes, and subjective norms. However, the researcher noted that the nature of these associations remained unclear, suggesting rescaling value and expectancy measures to address limitations associated with using the theory to guide measurements.

Several researchers have utilized the TPB framework to predict screening intentions for various cancers, including breast, cervical, prostate, and colorectal (e.g., Abamecha et al., 2019; Lucas et al., 2016). For example, Lucas et al. (2016) applied TPB to examine perceived racism in the context of colorectal cancer screening; they used measures of attitudes, normative beliefs, perceived behavioral control, and intentions to obtain colorectal screening referencing how a loss or gain frame message impacts the perception of racism to predict the behavior of screening. The researcher determined that, in line with past research findings, loss-framed messages were more effective for White Americans, while gain-framed messages were more effective among AAs.

Rutter (2000) also used TBP as a model to predict breast cancer screening utilization and reutilization after 3 years. The researcher used data from a sample of 1,215 women who participated in a prospective longitudinal study and completed several questionnaires. Analysis of the questionnaire data revealed that participants' plans to attend, actual attendance, and reattendance several years later (3 years) were a function of attitudes toward these behaviors as predicted by TPB to distinguish them from those who would not participate. The researchers concluded by emphasizing improved outreach and intervention efforts to increase regular breast cancer screening attendance.

Wang et al. (2019) used the TPB and the health belief model to guide the exploration of factors that affect health behaviors. Specifically, the researchers sought to understand factors that predict women's intentions to participate in breast cancer screening. The researchers used cross-sectional methods to administer a questionnaire to 422 women. Analysis of the questionnaire data revealed that the factors that significantly predicted behavioral intentions to receive breast cancer screening were clinical examination, career, screening costs accepted, X-ray examination, behavioral attitudes, perceived behavioral benefit, subjective norms, self-efficacy, and perceived behavioral control. Further, a model integrating both theories that guided the study was more effective for predicting screening intentions than each of the theories individually. These studies suggest that TPB is a suitable framework for this study. Therefore, understanding AAFS's intent to screen using TPB provides the foundation for the variables explored, cancer stigmas, attitudes, and cultural beliefs on screening for lung cancer.

Literature Review Related to Key Variables

Lung Cancer among African Americans

Lung cancer is discussed in this section regarding how it impacts AAs, with a brief general review of smoking behavior, disparities in diagnoses, and the perceptions and experiences of AAs diagnosed with lung cancer. A subsection focuses on the significant role of lung cancer screening and other preventive measures. A summary concludes the section.

Lung cancer is a global concern and kills more Americans annually than many other cancers, more so than all cancerous deaths from breast, prostate, colon, and leukemia combined (Akhtar & Bansal, 2017). The impact of lung cancer can be seen in a cross-cultural context, especially in the AA community. Sin (2017) chronicled on average that of the estimated 220,000 people diagnosed with lung cancer, 60% die annually, with the highest impact in the AA population due to late-stage diagnosis. Moreover, these deaths occur despite research documenting decreased smoking behavior within this population (DeSantis et al., 2019). However, even with a decline in smoking behavior, AAs are disproportionately affected, specifically among AAFS compared to White women (Mickens et al., 2010), resulting in a higher percentage of mortality for this population due to late-stage screening (Bazargan et al., 2015).

Lung cancer disparities among AA in comparison to other racial subpopulations have gained increased research attention in recent years to find solutions (Annangi et al., 2019; Dalwadi et al., 2019; Haddad et al., 2020; Japuntich et al., 2018; Landrine et al., 2017; Maxwell et al., 2020; Mitchell et al., 2020; Ryan, 2018; Soneji et al., 2017; Watson et al., 2020). The CDC (2021) estimated that 14.9% of the 34.1 million current smokers are AA, of which 13.3% are AA women 18 and older who smoke at least one pack a day. In addition, this group is three times more likely to use mentholated cigarettes, which have been shown to make quitting more difficult and are more addictive than traditional cigarettes (Glaser et al., 2020). Therefore, there is a clear need for additional studies into the role of cancer-related stigma, attitudes toward screening, and cultural beliefs associated with screening on intention to receive lung cancer screening in AAFS within the age group of 50 and 80 established by the USPSTF to screen for lung cancer given AAFS elevated prevalence of smoking behavior and resultant risk of lung cancer.

The Role of Lung Cancer Screening

Enhancing cancer screening and other preventive health behaviors has been a prominent topic in recent medical research (Aldrich et al., 2019). Early lung cancer detection during lung cancer screenings significantly increases an individual's likelihood of survival (Al Mohammad et al., 2017; Becker et al., 2020; Chabon et al., 2020; Crosbie et al., 2019; Duong et al., 2017; Henschke et al., 2021; Jonas et al., 2021; Pastorino et al., 2019; Tammemagi et al., 2017; Yang et al., 2022). Thus, increasing screening and other preventive health behaviors is essential to reducing late-stage cancer diagnoses and mortality rates, particularly among populations disproportionately impacted by cancer.

Some evidence suggests that screening eligibility criteria and other barriers make cancer screening and other health behaviors more difficult for some populations. Aldrich et al. (2019) sought to determine whether the USPSTF guidelines for lung cancer screenings could be improved by enhancing the equitability of screening eligibility and clinical validity for AAs. The researchers studied a cohort of 48,364 adult smokers under observation for 12 years. Their observation and health data analysis revealed that among smokers eventually diagnosed with lung cancer, significantly fewer AA smokers met the USPSTF screening guidelines compared to White smokers. The researchers concluded that the current USPSTF guidelines are more conservative for AA smokers than for other population groups. To address the discrepancy, making smoking pack-per-year eligibility race-specific was suggested as a potential solution. This study highlighted barriers and factors that lead to lung cancer screening and diagnosis disparities among AAs.

It is important to note that among Black and AA women in the United States, additional factors make some AA women more unlikely than others to seek cancer screening and other preventative measures. Amuta-Jimenez et al. (2020) studied patterns and characteristics associated with cervical cancer prevention among AA and Black immigrant women who live in the United States. They noted that although disparities between Black and White women's screening and prevention behaviors are known, it is unclear whether disparities exist between different subpopulations of Black women living in the United States. The researchers used cross-sectional methods to survey 450 women. The data analysis revealed that AAW were significantly more likely to see a gynecologist, have well-woman exams regularly, and have more knowledge of cervical cancer than Black immigrant women. Fear and lack of overt symptoms were common reasons to avoid preventive measures for Black immigrant women. By contrast, inconvenience, inaccessibility, or lack of trust in healthcare professionals were the primary reasons AAW avoided preventive care. The results of this study highlight the importance of an intersectional approach to understanding the screening behaviors and intentions of specific populations, such as AAW.

Some AAW may not seek screening or other forms of prevention due, in part, to a perception that these health services and preventive efforts are more suitable for patients of different cultural backgrounds. Belgrave and Abrams (2016) summarized existing psychological, epidemiological, sociological, and medical reviews that address cultural disparities that impact health interventions. The researchers identified factors that contribute to AAW's health and found indicators that AAW are more likely to die from several chronic diseases than the general populace. The study also emphasized the need for tailored interventions to promote health quality and disease management efficacy. This article served to contribute an explanation of the impact of health disparities experienced by the target population on health outcomes.

Carter-Harris et al. (2018) studied lung cancer screening rates based on race, gender, and geographic region. The researchers noted that accessible lung cancer screening is a relatively new phenomenon for long-time smokers. Using a cross-sectional, descriptive approach, the researchers collected health data from 438 Indiana participants eligible for lung cancer screenings. Race, geographic area of residence, income, health insurance, and family history of lung cancer were studied as potential sources of disparities. Carter-Harris et al. found, "Of the variables generally reflective of disparities, key differences noted by race and geographic area of residence with total knowledge scores as well as screening behavior, respectively" (p. 49). The researchers noted the need for enhanced equity in screening procedures and patient outreach programs. This study highlights the nature of disparities in lung cancer screening rates based on race and gender.

Among AAs and individuals from other racial backgrounds, stigma can be a barrier to screening and prevention efforts. Kirby (2020) explored the association between early lung cancer screening and the health-related stigma associated with smoking. The researcher provided a biographical account of a 74-year-old lung cancer survivor, focusing on the screening process and how early detection can significantly improve survival rates. The research's subject described more community-based resources in terms of outreach and early screening procedures for individuals who do and do not have a smoking history. The researcher noted existing guidelines that "screening recommended is for people aged 50–80 years with a smoking history of 20 packs per year. For ex-smokers, they need to have stopped smoking only in the last 15 years" (p.

140). These guidelines do not include screening for those who stopped smoking many years ago or those who have never smoked. Kirby concluded by highlighting the subject's recommendation that the shame and stigma associated with smoking need to be addressed for screening effectiveness to improve (2020). This article highlighted ways of decreasing lung cancer stigma and improving the screening process, outreach, and guidelines (Kirby, 2020).

Based on existing research, Kitts (2019) examined patients' perspectives of the lung cancer screening process and the cause of health-related disparities among different populations. Issues and challenges that affect the screening process are awareness of screening options, race-related stigma, smoking-related stigma, access to screening and healthcare, nihilism associated with lung cancer diagnoses, underestimating the risk of lung cancer, and shared decision-making. Kitts noted that AAs have the highest lung cancer mortality rate among racial subpopulations in the United States, partly due to late-stage diagnoses and treatment refusal once cancer is detected. Further, the researcher noted that AAs are less likely than Whites to meet the criteria for lung cancer screening eligibility due to decreased smoking behavior and diagnosis age. Kitts concluded by calling for enhanced outreach programs and efforts targeting AAs and other demographics disproportionately affected by lung cancer mortality and late-stage diagnoses. This article explains the sources of disparities in lung cancer screening, diagnosis, and mortality rates.

Magnan and McCaul (2019) examined models and theoretical explanations of screening rates and ways to improve screening rates. They noted the significance of screening recommendations by health professionals as a salient factor across multiple models. Factors highlighted as social-cognitive determinants included perceived risk, public perceptions, and social norms. Value-expectancy models are referenced as a means of examining screening decisions based on considering the threat of cancer with the extent of the expectation that being screened will increase the likelihood that they will avoid a cancer diagnosis or catch the disease early. The TPB was also discussed as an approach to understanding how behavioral intent, subjective norms, and related factors shape screening decisions. Also, discreet decision-making models describe screening decisions as multi-stage processes that may or may not result in a patient being screened. This article lent insight into theoretical approaches, models, and factors that explain or predict cancer screening decisions.

R. M. Williams et al. (2020) studied how AA smokers develop their decisional values toward lung cancer screenings. The researchers specifically sought to underscore the factors (positive and negative) of treatment and the benefits of using screening to influence the decision model interviews with nine participants. Value statements were given to 119 current and former smokers. Analysis of their responses revealed that the final list of values statements, which primarily described the benefits and disadvantages of screening, was an effective value measure to gauge AAs' acceptance of lung cancer screenings. These findings highlighted an existing research instrument developed to evaluate AAs' perceptions of the benefits and disadvantages of lung cancer screenings.

L. B. Williams et al. (2021) analyzed the Cancer-Community Awareness Access Research and Education Project results to determine how the project improved outreach to disparate populations. They noted the disproportionate lung cancer mortality rate among racial minorities compared to Whites. Further, they stated that although new screening technologies could address the disparity, utilization of screening services among eligible people is very low (approximately 4%). To address the issue, the researchers used an educational intervention designed to influence participants' knowledge, attitudes, and beliefs about cancer risk factors. A survey of 481 participants suggested that those who took part in the project demonstrated increased knowledge of lung cancer screenings and participants perceived increased benefits associated with lung cancer screenings. Further, perceptions of the severity of lung cancer and barriers to treatment decreased. Of those who were smokers at the time of the project, 54% sought smoking cessation options, and 38% decided to receive lung cancer screening. The findings of this study highlight the outcome of a project that effectively improved lung cancer screening rates and preventative behaviors in a specific population.

In summation, disparities in lung cancer diagnosis rates among AAs compared to other racial subpopulations have become an increasingly prominent research topic in recent years, as the need for effective solutions is apparent. Globally, lung cancer is a significant health concern due to the mortality rate associated with lung cancer in comparison to other forms of cancer. The disproportionately high rate of lung cancer and other medical conditions and forms of cancer among AAs is attributed to numerous factors in the existing literature. Differences in screening rates and other preventative health behaviors contribute to higher lung cancer rates among AAs. Further, although the influence of genetic and hereditary factors is still not entirely clear, researchers have presented limited evidence that specific genetic and hereditary variants make some populations disproportionately more likely to be diagnosed with lung cancer. Racial disparities are apparent not only in different cancer rates but also in how cancer is perceived and experienced by different populations. Intersectionality is a concept and theoretical perspective that many researchers have utilized to explore how intersections between race, gender, religion, sexual orientation, gender identity, ability, socioeconomic status, and other demographic factors affect marginalized populations' cancer risk levels, decisions about cancer screenings, and how cancer and treatment are experienced following a diagnosis.

Although enhanced cancer screening and other preventative health behaviors have been frequently discussed in recent medical research, screening eligibility criteria and other barriers make cancer screening and other health behaviors less likely among some populations. Further, within the Black and AA people in the United States, certain factors make some women more likely to seek screening or be diagnosed with lung cancer. In part, some racial and ethnic minorities may not seek screening or other forms of prevention because these health services and preventative efforts are perceived as more suitable for patients of other cultural backgrounds. Stigma is also a universally prominent barrier to screening and prevention efforts.

Causes of Lung Cancer Among African Americans

Smoking

In comparison to their White counterparts, AA smokers exhibit a tendency to consume a lesser number of cigarettes per day and possess a relatively low cumulative tobacco exposure history. According to the National Cancer Institute Tobacco Control Monograph, a greater proportion of adult racial minority groups exhibit light smoking behavior, which is typically characterized as smoking fewer than 10 cigarettes per day, in comparison to their White counterparts (Seaman et al., 2022). Stram et al. (2019) reported that AA smokers exhibit a higher susceptibility to lung cancer in comparison to their white counterparts, especially among the men population, despite smoking a smaller number of cigarettes per day and exhibiting a lower tobacco exposure background. Despite smoking the same number of cigarettes per day, AA smokers have a higher likelihood of developing lung cancer and dying from it compared to White smokers, after controlling for personal-level socioeconomic status and other risk variables

Causes of Health Disparities for Lung Cancer

Researchers have attributed the disproportionately high rate of lung cancer among AA to multiple factors. Kitts (2019) compiled a review of existing studies using the National Comprehensive Cancer Network guidelines for screening criteria to examine the care trajectory connecting structural equality, socio-economic status, provider biases, and insufficient health coverage factors. Their findings suggested a general lack of confidence and trust in healthcare providers to gauge cultural sensitivity among diverse populations. Their review interpreted and expanded on existing knowledge of how stigma, implicit bias, nihilism, and other factors are barriers to beneficial health behaviors. This review highlighted factors that influence screening behaviors for lung cancer and healthcare disparities that disproportionately affect AAs.

Recent data indicates that AAs are disproportionately affected by other medical conditions and forms of cancer. DeSantis et al. (2019) reviewed recent statistics on the risk and prevalence of cancer among AAs. They noted that AAs are disproportionately affected by cancer-related mortality compared to other racial demographics in the United States. DeSantis et al. estimated, “In 2019, approximately 202,260 new cancer cases and 73,020 cancer deaths expected to occur among Blacks in the United States” (p. 211). A 2.4% decrease in cancer rates occurred among Black men between 2006 and 2015, primarily due to decreased lung cancer rates.

Another factor that may exacerbate higher lung cancer rates among AAs is differences in understanding and trust around screening and care for lung cancer. S. Lee et al. (2016) conducted an ethnographic study to examine the relationship between AAs’ perceptions of care and treatment in managing lung cancer. The researchers found a significant lack of understanding of care and care processes provided to treat lung cancer and a lack of trust in healthcare providers to the extent that it negatively impacted their decision-making processes related to care and treatment. Further, the findings clarified the lived experience of navigating a chronic disease with a high mortality rate that affects AAs disproportionately. This study highlights AAs’ health-related experiences and lung cancer outcomes.

Disparities are apparent in different cancer rates among different racial demographics and in how individuals perceive and experience cancer diagnosis (Webb & McDonnell, 2018). Sin (2017) explored lung cancer disparities among AAs. The research discussion highlighted that AAs are likelier to experience lower lung cancer survival rates, late-stage diagnoses, and less timely access to healthcare than White Americans. The researchers positioned low-dose computerized tomography, a recently developed cancer screening technology, as a potential solution to addressing screening disparities if awareness of the technology increases. Sin urged public health nurses to enhance their understanding of low-dose computerized tomography and encourage all eligible candidates to receive screening, particularly AAs and other disproportionately affected populations. This article highlights lung cancer disparities among AAs and the role of cancer awareness.

Webb and McDonnell (2018) used descriptive qualitative methods to explore the perspectives of AA women who have been diagnosed with lung cancer. A sample of 18 AA women diagnosed with stage I–III lung cancer participated in the study by completing a questionnaire and participating in focus groups. Thematic analysis of the focus group and questionnaire data revealed four key themes in the participants' perspectives. The researchers concluded the need for more culturally appropriate communication and support toward AA patients. Further research is necessary to improve interventions designed to increase lung cancer survival rates and health behavior changes among AA women diagnosed with lung cancer. These findings lend insight into AA women's perspectives on lung cancer treatment and healthcare providers.

Detrimental Effects of Cancer-Related Stigma on Screening, Prevention, and Treatment-Seeking Behavior

The social stigma that surrounds cancer is discussed in this section. A particular emphasis is placed on the social stigma associated with cancers that are primarily caused by stigmatized behaviors. A summary is provided at the end of the section.

The social stigma surrounding cancer, particularly forms of cancer that are socially perceived to be preventable, can deter individuals from seeking screening or treatment (Banerjee et al., 2021; Bhattacharyya et al., 2018; Ettridge et al., 2018; Hamann et al., 2018; Myrick, 2017; Ostroff et al., 2019; Riley et al., 2017; Tripathi et al., 2017; Yılmaz et al., 2017). Social stigma describes broad societal disapproval of a phenomenon, action, characteristic, or group of people (Else-Quest & Jackson, 2014). Some people aim to avoid stigmatization by avoiding stigmatized behavior and remarks. However, when stigmatization is aimed at an entire group of people or is based on misinformation, social stigma can be highly detrimental and unavoidable (Else-Quest & Jackson, 2014).

In the case of cancer-related stigma, the stigma primarily surrounds factors and actions that are known to cause cancer. Else-Quest and Jackson (2014) wrote a chapter establishing the importance of studying cancer stigma. The researchers addressed how stigma is experienced and affects the behavior of lung, cervical, colorectal, and breast cancer patients. Else-Quest and Jackson highlighted notable findings from existing research and noted that cancer stigma is related to fear of disease and has a physical component due to negative side effects or outcomes associated with aggressive treatment.

Public opinion often denotes blame placed on people who are diagnosed due to perceptions that the cancer was preventable. Lung cancer and cervical cancer carry the most blame and stigma among cancer diagnoses due to the perception that they are "self-induced" diseases. This chapter provided an overview of the nature of the stigma associated with cancer diagnoses.

Aside from the negative emotional implications of experiencing stigmatization, stigmatization also detrimentally affects rates of cancer screening, prevention, and treatment-seeking behavior. Quaife et al. (2017) studied attitudes toward lung cancer screenings that are prevalent in socioeconomically deprived and heavy-smoking communities. They noted that lung cancer screening implementation has gained increased research attention; however, perceptions and attitudes among high-risk groups can limit screening program effectiveness. The researchers conducted a comparison based on survey responses collected from socioeconomically disadvantaged and heavy-smoking communities and interviewed 21 current or former smokers. Their data analysis revealed that although participants supported the idea of screening in theory, they doubted a screening program could effectively improve the health and well-being of heavy smokers. They largely perceived lung cancer as uncontrollable and expressed awareness of perceived social stigma and blame surrounding lung cancer diagnoses. This study highlighted how perceptions of lung cancer screenings and stigma impact screening utilization.

Rose et al. (2018) provided a focused perspective from newly diagnosed patients with lung cancer regarding perceived stigma and patients' assumptions associated with treatment expectations. Participants in the study had been diagnosed with lung cancer within the past 4 months and were actively receiving treatment in respiratory outpatient clinics. This cross-sectional study produced additional evidence for the gap in the lung cancer stigma literature. The researchers concluded, contrary to previous research, that patients' perceived lung cancer stigma was experienced infrequently; however, perceived stigma scores were significantly higher for younger participants with a history of smoking. This study is instrumental on a practical level as it illustrates the role of health care providers, social workers, counselors, and patient advocates in a key position to provide support by communicating empathically with patients diagnosed with lung cancer. Rose et al. suggested that compassionate and sensitive communication with patients can potentially minimize stigma experiences. This study lends insight into perceived stigma among lung cancer patients.

Though limited, some research instruments and scales have been developed as tools to evaluate cancer stigma, attitudes, and perceptions. Vrinten et al. (2019) provided a quantitative examination of stigmatization in a healthy population measuring cancer stigma using the well-validated CSS. The researchers conducted a population-based survey in England to explore the central phenomenon. The researchers determined that stigma discourages cancer screening and ascertained a quantifiable pattern of screening attendance based on the prevalence of different sociodemographic factors within the population. The researchers also found that specific subgroups are less likely to associate cancer screening appointments with positive outcomes. Vrinten et al. concluded that social scientists could identify and examine such patterns to address and reduce cancer stigma over time in specific subpopulations. This study highlighted the relationship between cancer stigma and cancer screening utilization, as well as the utility of the CSS.

T. J. Williamson et al. (2020) examined lung cancer stigma among smokers and nonsmokers to determine the extent to which a history of smoking affects the stigma associated with lung cancer diagnoses. They noted that stigma is an experience commonly associated with lung cancer diagnoses due to the association with smoking, which is known to cause cancer. Participants were 266 men and women who had been diagnosed with lung cancer. Participants completed a questionnaire, the results of which were analyzed through multivariable regression modeling. The researchers found that in comparison to participants who did not smoke currently or had never smoked, total internalized and perceived lung cancer stigma was higher among participants who continued to smoke, and stigma was lowest among those who had never smoked. Constrained disclosure was similar among participants regardless of their history of smoking. These results lent insight into factors that contribute to stigma among individuals diagnosed with lung cancer.

Previous research has established that social and perceived forms of stigma are detrimental to the efforts of health organizations, which aim to reduce the prevalence of late-stage cancer diagnoses and other diseases that can be lessened through screening and detection. Unfortunately, many patients avoid essential preventive care and procedures due to such stigma. Current lung cancer screening recommendations on an annual basis apply to adults aged 55 to 80 years who have a 30-year pack history and who were smoking or had quit within the past 15 years. Cancer that is detected in its earliest stage is associated with significantly higher survival rates and reduced associated morbidity tremendously. Despite the promise and evident value of cancer screening and prevention efforts, cancer-related stigma has remained a prominent and steadfast barrier to lung cancer screening that is particularly harmful to those who are at the greatest risk of developing lung cancer. Troublingly, those who engage in stigmatized behaviors such as smoking that are known to contribute to cancer are particularly likely to avoid screening due to social stigma, despite being among the subgroup of individuals that are the most likely to benefit from screening (Quaife et al., 2017; Vrinten et al., 2019; T. J. Williamson et al., 2020). Given the ample evidence of known health disparities around cancer and other chronic illnesses among AAs, gaining a clearer understanding of cancer-related stigma and its association with the overall intention to screen is an important step in addressing pervasive inequity in the U.S. healthcare system.

To summarize this section, social stigmatization that surrounds cancer, especially when forms of cancer are socially perceived as preventable, can deter individuals from seeking health screening or treatment. Concerning cancer-related stigma, stigma is primarily associated with factors and actions that can lead to or exacerbate cancer. Social stigmatization detrimentally affects rates of cancer screening, prevention, and treatment-seeking behavior, in addition to broader negative emotional implications, including feelings of isolation. Healthcare providers can decrease patients' perceptions of stigma through compassionate and sensitive communication. The CSS and other validated research instruments and scales are useful tools that have informed empirical evaluations of cancer stigma, attitudes, and perceptions, revealing the significant negative impact of stigma.

The Influence of Health-Related Attitudes

The influence of health-related attitudes and cultural beliefs about cancer are discussed in this section. The impact of health-related attitudes and cultural beliefs on health behaviors, treatment-seeking behavior, and cancer prevention are discussed. A summary concludes the section.

Similar to social stigma, individuals' own health-related attitudes and cultural beliefs can influence their decisions in regard to cancer screening and treatment (Hann et al., 2017; Harrison et al., 2018; Hewitt et al., 2018; Hong et al., 2018; Islam et al., 2017; Jensen et al., 2021; S. Lee et al., 2016; Licquirsh et al., 2017; Simon et al., 2017; Yedjou et al., 2019). Chalian et al. (2018) examined demographic, social, and behavioral determinants of perceived lung cancer risk among adults living in the United States, and the implications of perceived lung cancer risk. They noted that although many researchers have examined how health behaviors are related to subjective perceptions of risk, determinants of lung cancer risk perceptions have not been studied frequently. Chalian et al. used a cross-sectional approach to gather and analyze a data sample representing 2,777 American adults, which was sourced from the Health Information National Trends Survey (HINTS) 2017. The researchers found that "ever smokers" who had been smoking for a significant portion of their life without breaks perceived their risk of lung cancer to be the highest and were the most likely to worry about their risk of lung cancer. Across groups at low and high risk for lung cancer, Black adults expressed the lowest worry and perceived risk of lung cancer. The researchers concluded that perceived lung cancer risk predictors vary based on their actual risk level. These findings provided evidence of the association between perceived and actual risk of lung cancer.

Attitudes and beliefs about cancer and preventive medicine can influence the likelihood that someone will seek screening. Earl et al. (2021) explored barriers and facilitators of colorectal cancer screening among AA men. Their research was necessitated by high rates of colorectal cancer mortality, low rates of screening, and 5-year survival following a colorectal cancer diagnosis among AAs. The researchers conducted semi-structured interviews with 32 AA men and conducted a cross-sectional survey of 103 AA men. The process of analyzing the interview data revealed that masculinity-related attitudes and beliefs prevented many participants from being screened or discussing screening options with their providers. The process of analyzing the survey data revealed that only 16% of respondents passed a basic assessment of colorectal cancer knowledge, and 48% indicated their provider did not recommend a colorectal cancer screening. High masculinity index scores were more common among men who had been screened before in comparison to those who had not been screened. These findings highlight the association between identity-related beliefs and health behaviors related to cancer screenings.

Cultural Beliefs About Cancer

Lucas et al. (2016) conducted a preliminary examination of how culturally targeted messaging and perceived racism impact how colorectal cancer screening information and outreach are received by AAs. The researchers recruited 132 AAs and 50

White Americans who were split into groups, with some taking part in a colorectal cancer education module and others watching targeted media messages about colorectal cancer prevention and screening. They subsequently responded to a survey based on measures included in the theory of planned behavior. Analysis of the survey data revealed that loss-framed messages were most effective among White Americans, whereas gain-framed messages were the most effective among AAs. The different effects of loss-framed messaging among AAs were mediated by perceived racism in the media messages they were shown. Including a culturally targeted prevention message served to mitigate their negative response to loss-framed messaging. These findings lend insight into how the framing of cancer prevention and screening-related media can influence different racial subpopulations in the United States.

Powell et al. (2019) examined mistrust, racism, and delayed preventive health screenings among AA men. They noted that although medical mistrust has gained increased research attention as a factor that influences healthcare utilization, there is a lack of research on the association between medical mistrust and healthcare utilization among AA men. The researchers used a cross-sectional approach to analyze data from 610 AA men who were 20 years old or older. Barbershops were used to find relevant participants. Multiple logistical regression analyses revealed that participants with higher medical mistrust had a significantly higher likelihood of delaying blood pressure screenings. Further, participants who had been exposed to everyday racism more frequently also had a significantly higher likelihood of delaying blood pressure screenings and routine checkups. Higher levels of perceived racism in healthcare were also significantly associated with a higher likelihood of delayed cholesterol screenings. Medical mistrust was not found to have a significant mediating effect on the association between screening delays and experiences of everyday racism. These findings provided insight into factors that contribute to delayed screenings among AAs.

Sacks (2018) conducted a qualitative study to connect previous research findings to evidence of racial disparities in healthcare. The researchers found a significant association between poor health outcomes and treatment to socioeconomic status and perceived racial inferiority. Such determinants pose a threat in the form of stereotype biases that prevent middle-class AA women that are predisposed to poverty from accessing quality care. Further, the findings highlight AAWs' keen awareness of provider-related and structural inequalities not experienced by White women. This research highlighted AAW's perceptions of healthcare providers, settings, and services.

Tonge et al. (2019) studied ever-smokers' decisions to take part in lung cancer screenings. Their study specifically centered on a lung cancer screening pilot service being offered in a region of the United Kingdom with a high prevalence of lung cancer. The service was modeled after a program that was offered in the United States. The researchers gathered data on the pilot programs' effectiveness based on qualitative focus groups with 33 current or former smokers. Thematic analysis of the focus group revealed that participants largely accepted lung cancer screenings and saw them as a measure of reassurance about their lung health that could result in early detection if cancer was present. Interest in lung cancer screenings was predicted by participants' perceptions of screening benefits, which is demonstrative of worrying about disease and survival, and whether they have access to screening and treatment, as well as the perception of risk and stigma. These findings highlighted factors that influence lung cancer screening intentions and utilization.

The same may be true for certain attitudes and beliefs, including perceived risk or threat of lung cancer, fear of screening, and the belief of an unfavorable outcome. Specifically, attitudes and beliefs associated with screening have been a recent focus and were measured in the current study. Quaife et al. (2017) study demonstrated the complexity of smoker's attitudes toward lung cancer screening and the internalization of blame and guilt due to smoking habits. The study revealed that although smokers indicated a concern about the loss of respiratory health, some held attitudes ruling out any benefit of screening, even though most of the participant smokers and former smokers agreed detecting the disease early is important. The psychometric scale used in this study provided further validity into the complexities of long-term smoker's belief (attitude) influencing decisions to screen and its usefulness to effectively provide statical data to health organization's approach to screening interventions on perceived thoughts in the intent to screen (Carter-Harris et al., 2017).

Cultural beliefs about cancer screening have also been associated with the intention to screen. Russell et al. (2003) developed a scale to measure the impact of AAW cultural beliefs on the intention to obtain screening for breast cancer. The researchers' findings suggested that factors including locus of control and personal space, health temporal orientation, and personal control in the context of screening may be important for AAW.

In summation, as is the case for social stigma, individuals' own health-related attitudes and cultural beliefs can influence their decisions to seek cancer screening or treatment from a healthcare provider. Cancer-related attitudes and beliefs about preventative medicine and cancer can influence an individual's likelihood of seeking screening or treatment. Further, the way cancer prevention and screening are presented in media imaging and messages can influence different racial subpopulations in the United States, thus providing a potential pathway to address detrimental health-related attitudes and cultural beliefs about cancer. Among ethnic and racial minorities, experiencing or perceiving racism during healthcare experiences can also significantly influence the likelihood of scheduling or delaying screenings, perceived risk or threat of lung cancer, fear of screening, the belief in the likelihood of unfavorable health outcomes, and perceptions of the U.S. healthcare system in general. Additional factors including locus of control, personal space, health temporal orientation, and personal control in the context of screening may influence the health-related attitudes and cultural beliefs of AAW.

Summary

To summarize, this research was intended to address the lack of such studies that center on AAFS and how the stigma about smoking, attitudes toward screening, and cultural beliefs may be associated with the intention to receive lung cancer screening. In response to this gap in the literature, the purpose of this study was to quantitatively examine whether perceived cancer-related stigma, attitudes toward screening, and cultural beliefs in AAFS are statistical predictors of intention to receive lung cancer screening. The theoretical foundation that guided this study is the TBB, which was developed by Ajzen (1991) to explain and predict human behavior and the nature of premeditated human behavior. Namely, the theory emphasizes significant empirical evidence of the associations between salient normative, control, and behavior-related beliefs with perceived control, attitudes, and subjective norms.

Disproportionately high lung cancer diagnosis rates among AAs in comparison to other racial subgroups have been emphasized by researchers more frequently in recent years as they have sought to develop effective solutions and interventions. Numerous factors have been cited in existing literature as contributors to the disproportionately high rate of lung cancer and some other medical conditions and forms of cancer among AAs. Further, differences in rates of cancer are not the only disparity that has been emphasized by researchers, as cancer is also perceived and experienced differently by different populations and demographics.

Screening eligibility criteria and other barriers are known to influence the outcomes of cancer screening and other health behaviors being less common among some populations; however, the need for enhanced cancer screening and other preventative health behaviors has also been emphasized in recent medical research. Further, some health services and preventative efforts are perceived as more suitable for nonethnic minority patients, thus leading some racial and ethnic minorities to be less likely to seek screening or other forms of prevention. Stigma is also a significant barrier to screening and prevention efforts that affect all populations and demographics.

Stigmatization associated with cancer that is perceived as preventable can deter individuals from seeking vital health screening procedures or treatment. Social stigmatization is detrimental to rates of cancer screening, prevention, and treatment-seeking, and has broader negative emotional implications that are detrimental to mental health. Perceived stigma can be lessened by healthcare providers who communicate compassionately and sensitively, particularly when they are regarded as a valid source of knowledge and have a trusting relationship with their patients.

Another significant factor that influences individuals' decisions to seek cancer screening or treatment from a healthcare provider is their health-related attitudes and cultural beliefs. Regarding patients who are ethnic and racial minorities, racism that is experienced or perceived during healthcare experiences can also be a deterrent that leads patients to avoid scheduling or delay screenings. Racialization or racism during interactions with healthcare providers also negatively affects perceived risk or threat of lung cancer, fear of screening, the belief in the likelihood of unfavorable health outcomes, and perceptions of the U.S. healthcare system in general. Locus of control, personal space, health temporal orientation, and personal control in the context of screening are additional factors, which might influence the health-related attitudes and cultural beliefs of AAW.

The results and outcomes of this research are intended to provide additional information regarding cancer-related stigma in this context that may guide the decisions of public health practitioners and healthcare providers as they develop and provide care for AAW smokers at risk of lung cancer. This study was also intended to address the research gap concerning AAW's cancer-related stigma beliefs, attitudes, and cultural beliefs regarding cancer and screening and whether these factors significantly impact their intentions to receive lung cancer screening. Broadly speaking, research such as the current study intended to educate the community and healthcare providers may contribute to positive social change that aligns with the Department of Health and Human Service Healthy People Initiatives, an agency that has identified lung cancer as a disease of interest.

Broad research addresses patient and nonpatient cancer stigma, attitudes, and beliefs in intent to screen but is not specific to the AAFS population (Akin-Odanye & Husman, 2021). In using a correlational analytical approach, I sought to bridge the research gap impacting the lack of research that addresses the phenomenon of perceived cancer-related stigma in AAF smokers and how stigma, attitudes toward screening, and cultural beliefs are associated with the intention to receive lung cancer screening. In addition, the study provides health-related information to inform AAFS of risk factors and benefits of screening, provider care, policies, and procedural interventions to possibly positively impact the mortality rate in this population (Rivera et al., 2020).

Chapter 3 discusses the methodology and rationale in detail. Subsequent chapters discuss key details and facets of the methodology, including the research methods and design, target population, sampling strategy, data collection and analysis approaches, and ethical considerations. A summary concludes with the chapter.

Chapter 3: Research Method

Introduction

The literature review in Chapter 2 provided considerable peer-reviewed evidence to support the need to add to existing research within the identified subpopulation, AAFS. The purpose of the study was to examine whether perceived cancer-related stigma, attitudes toward screening, and cultural beliefs in AAFS are significantly associated with receiving lung cancer screening. In Chapter 3, I discuss the components of the research design to analyze the relationship between independent variables (IVs) and dependent variables (DV). The topics discussed in this chapter include the description of the population, sampling size, method and recruitment, the survey instruments, the data collection process, data analysis, and ethical treatment of participants.

Research Design and Rationale

A quantitative correlational research design was used to examine whether perceived cancer-related stigma, attitudes toward screening, and cultural beliefs in AAFS are significantly associated with intention to receive lung cancer screening. A quantitative correlational design was appropriate to investigate, observe, describe, give an explanation, and draw conclusions about a phenomenon void of variable manipulation (Kozicki, 2022). In this study, I attempted to quantify the association, if present, between the IV and DVs to answer the following research question:

RQ1: What are the combined (R2) and relative (sr2) effects of perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about screening in explaining variance in AAFS's intention to receive lung cancer screening, controlling relevant sociodemographic characteristics: age range and smoking history?

H0: Perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about screening do not explain variance in AAFS's intention to receive lung cancer screening, controlling for relevant sociodemographic characteristics: age range and smoking history.

H1: Perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about screening explain variance in AAFS's intention to receive lung cancer screening, controlling for relevant sociodemographic characteristics: age range and smoking history.

A quantitative methodology was utilized in the study to provide an objective approach to examining potential relationships between variables. The IVs of interest were perceived cancer-related stigma, attitudes toward lung cancer screening, and cultural beliefs about screening. In contrast, the DV of interest was the intention to receive lung cancer screenings. The variables involved in this study were measured numerically using the following survey questionnaires: (a) Marlow and Wardle's (2014) CASS measures stigma in nonpatient populations (IV), (b) Carter-Harris et al. (2017) Attitudes Toward Lung Cancer Screening(IV): Lung Cancer Screening Health Behavioral Scales (LCSHBS), (c) Russell et al.'s (2003) Culturally-Related Belief Scales (CRBS; IV), and (d) Bui et al.'s (2018) intention to screen (DV) visual analog scale (VAS) for lung cancer screening.

A correlational design was deemed most appropriate for the study because the focus was to examine associations or relationships between identified variables without implementing an intervention or the ability to randomize to conditions. A multiple logistical regression, often used in social science research, examined the associations among perceived cancer-related stigma (IV), attitudes toward lung cancer screening (IV), cultural beliefs about screening (IV), and intention to receive lung cancer screening (DV). Participants were AAF smokers who were at a disproportionately high risk of lung cancer based on their smoking status and history. According to Frankfort-Nachmias and Leon-Guerrero (2018) and Cohen et al. (2014), multiple logistical regression allows a statistical analysis of the association of two or more IVs with the DV.

I used a survey data collection method, collecting data using convenience sampling. Convenience sampling is regarded in the social sciences platform for novice researchers as the most efficient in time and cost and the most acceptable data collection form for a correlational study (Cohen et al., 2014). The method chosen had limitations, which are described in the next section.

Population

Current or former AAFS ages 50 to 80 were surveyed to better understand the statistical relationship of the factors influencing the intent to screen for lung cancer. The population sample comprised AAFS residing in the District of Columbia, Virginia, and Maryland (DMV) area of various socioeconomic backgrounds that met the lung cancer screening guidelines outlined by the USPSTF. As aforementioned, the guidelines for screening required current or former smokers who quit smoking within the past 15 years, whose age ranged between 50 and 80 ages, and who had a 20-year history of smoking. Access to the target population came from the Baltimore/Washington United Methodist Congregation, social media groups, AAW's health organizations, and email lists. The utilization of various entities facilitated maximum enrollment to meet the study's targeted participation and completed survey.

Sampling and Sampling Procedures

The sampling plan for this study was formulated using a nonprobability sampling technique called convenience sampling. It involves gathering potential participants based on availability and willingness to participate. All available participants were included in the study. Participants included AAFS from the DMV area. The benefits of choosing this sampling plan as opposed to the other sampling plans relate to the ease and low cost of accessing the respondents/participants. The disadvantage of using convenience sampling is that it increases the likelihood of sampling biases; therefore, having a large sample size decreases the probability of erroneous assumptions and invalidity of the conclusion drawn by the researcher.

To have a large enough sample size, I conducted a power analysis to establish an appropriate number of respondents for data collection (described below). I also adhered to all required ethical protocols related to sampling and data collection to protect research participants, including detailed informed consent, permission from church leaders to solicit their congregations, and thorough debriefing. The respondents had access to the survey materials after reading the consent page and clicking an acceptance button, acknowledging they understood the purpose of the survey. It was clarified that respondents may choose to stop participation at any time.

Target Population

The target population comprised AAFS in the DMV to explore factors associated with the intent to screen for lung cancer. The DMV provided an excellent selection pool. Within this geographical area, the United Methodist Baltimore Washington Conference provided the foundational data collection source, which was convenient and low-cost. The Baltimore Washington Conference district encompasses approximately 603 churches within the area of Maryland's Chesapeake Bay, Washington D.C., Baltimore, the Allegheny Mountains, Western Maryland, and areas of West Virginia, with additional participants accessed from social media and other local organizations with which the researcher has established contacts.

Power Analysis and Minimum Sample Size

Grice et al. (2020) reported on the importance of the effect size in scientific research to robustly establish and examine the statistical significance between the chosen predictor and outcome variables. Furthermore, to minimize the possibility of type 2 error, it is essential to set the probability where the significance level is 5% to allow the alternative hypothesis likeliness to be accurate and the power set at .80 or 90% (Kang, 2021). A conservative effect size for multiple logistical regression was set to .15, which aligns with previous research examining stigma in the context of cancer screening (Correll et al., 2020). The G*Power tool was used to calculate the number of participants needed given the chosen predictor and outcome values (Laken, 2022). When using the G*Power tool, the hypothetical value entered calculates the effect size, in this case, .15.

The three predictor variables used in the calculation were perceived lung cancer stigma, attitudes toward lung cancer screening, cultural beliefs related to the outcome variable, and the intent of AAFS to screen for the disease. Based on G*power analysis considering multiple logistical regression with three predictors, a significance of .05, a power of 80%, and an effect size of .15, the minimum number of participants necessary for the study was 77 participants. Therefore, at least 77 completed responses were included in the analysis for this study. However, to account for the potential of missing or otherwise incomplete data, an *N* of 85 was set as the target goal.

Procedures for Recruitment, Participation, and Data Collection

I recruited survey participants from the DMV areas. Within these geographical areas, I focused on churches, social media connections, hospital affiliations that screen for lung cancer, and health organizations. The targeted population was AAW smokers aged 50 and 80 as established by the USPSTF to screen for lung cancer with a 30-year pack history of current use or who had quit smoking within the past 15 years, excluding respondents already diagnosed with lung cancer. Participants who had received a diagnosis of lung cancer were excluded from the study, as this was a nonpatient survey of AAFS. Participants self-reported the following demographic data included in the survey: age, education level, marital status (yes or no), socioeconomic status, and smoking status indicated by current smokers; former smokers quit within 15 years or never smoke answers. Also, participants were required to indicate their state of residence, DMV. The respondents needed essential reading and computer skills to complete a web-based survey. All three scales provide the basis for collecting the demographic data listed above. These generalized demographic data are collected using a standard cross-survey and measured using nominal or ordinal units.

After gaining permission to conduct the study in the recruitment site from the existing church network and then obtaining institutional review board (IRB) approval, a recruitment email or flyer was provided for each church and posted on the social media platforms of churches and social media groups which include older adult AAW. The participants accessed the survey from a hyperlink provided to them using email and/or various social media platforms, such as Facebook or Instagram (Singh & Sagar, 2021).

Web-based or online surveys are acceptable for collecting data and are congruent with a convenience study (Ritter & Sue, 2007). Therefore, access to a computer or smartphone is necessary. A public announcement flyer was created to spark interest and distributed to various sources, such as Facebook pages, LinkedIn, Instagram, lung cancer organizations, and churches. It was essential to ensure the respondent’s confidentiality, ensuring the information collected was used for statistical purposes only, as detailed in the consent document. According to Nayak and Narayan (2019), it is vital to protect and de-identify to prohibit any privacy statutes governing the data collection for research. To do so, a randomly determined 5-digit code was assigned to each participant in the database.

The respondents only had access to the survey materials after reading and checking the agreement box on the consent page. Once the survey was completed, the data was downloaded to SPSS v27.0 for analysis. A debriefing narrative in which the participant was thanked and provided information about the purpose of the study was included after completion. The data collected was password-protected, and only the researcher had access. The researcher monitored the response rate until the completed survey reached the minimum number of participants necessary for the study. The instruments for the study provide the foundation for collecting the respondent's demographics and the questions that were analyzed to answer the research question of whether to reject or accept the null hypothesis.

Instrumentation, Operationalization, and Measurement

Four measurement tools were utilized in this study, including Marlow and Wardle (2014) CASS, which measures stigma in nonpatient populations (IV), Carter-Harris et al., (2017) lung cancer health belief scales (LCHBS; IV), Russell et al.'s (2003) culturally related belief scales (CRBS; IV), and Bui et al.'s (2018) intention to screen (DV) VAS.

Cancer Stigma Scale. The CASS was developed to address the void in available instruments to measure cancer stigma in the nonpatient population (Marlow & Wardle, 2014). The CASS consists of 26 questions assessing (a) awkwardness, (b) severity, (c) avoidance, (d) policy opposition, (e) personal responsibility, and (f) financial discrimination. Questions required response options using a 6-point Likert scale ranging from disagree strongly, disagree moderately, disagree slightly, agree slightly, agree moderately, and agree strongly. Four items are reversed scored so that all items with higher scores indicate more stigma. Scores are calculated using the mean score for each construct. Example items include, "I would feel at ease around someone with cancer" and

"A person with cancer is liable for their condition." The CASS is a robust and appropriate instrument tested in two separate studies assessing internal reliability, test-retest reliability, and construct validity (Marlow & Wardle, 2014). Cronbach's alpha (α) ranges from .72 to .82 (Marlow & Wardle, 2014). Cronbach's α for each factor was satisfactory, ranging from .81 to .91. The internal correlation coefficients were above .70, except for policy opposition. Takeuchi et al. (2021) and Vrinten et al. (2019) research further validated the usefulness of the CASS instruments to measure cancer stigma in nonpatient and cross-culture population. The measure is not subject to copyright, does not require a license, and is freely available for public use.

Lung Cancer Screening Health Belief Scales. The LCSHBS (Carter-Harris et al., 2017) was developed to measure constructs of the health belief model via four scales: (a) perceived risk of lung cancer, (b) perceived benefits of, (c) perceived barriers to, and (d) self-efficacy. The developers used existing framework from breast and colorectal screening to measure individual's perceived attitudes in lung cancer screening health behaviors (Carter-Harris et al., 2017). All four scales form a 35-item questionnaire created to evaluate LCSHBS using a 4-point Likert scale (1 = *strongly disagree* to 4 = *strongly agree*); items in the self-efficacy subscale use the 4-point Likert scale of 1 = *not at all confident* to 4 = *very confident*. Example of items include, "It is likely that I will get lung cancer sometime in my lifetime", "Having a lung scan will help find lung cancer early", "I might put off having a lung scan because I worry about finding something wrong," and "How confident are you that you can make an appointment to have a lung scan?" Items are summed up to create a total score for each scale. Previous studies have demonstrated adequate reliability; Cronbach's α ranges from .80 to .92 for the scales (Carter-Harris et al., 2017). The measure is not subject to copyright, does not require a license, and is freely available for public use.

Culturally-Related Belief Scales. The third measure employed in this study was the CRBS (Russell et al., 2003), which contains two scales developed to capture AAW's cultural beliefs in the context of mammography screening: space beliefs (physical space, interpersonal space, and health temporal orientation), and personal control (internal control of early detection and external control of early detection). These scales were adapted to the present context of lung cancer screening, requiring only a handful of items to be altered, a prevalent practice in numerous literatures. Space consists of 27 items that deal with the sensitivity to control external stimuli relating to cultural influences. Personal control consists of 12 items that deal with how an individual exercises their autonomy to control and direct what happens within an environment.

Russell et al. (2003) examined how cultural influences differ in AA and Caucasian women within the constructs. The subscales each use a 5-point Likert-type response scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Items are summed within scales for scoring. Cronbach's α coefficients range from .76 to .88. Examples of items include: "I have little influence over the things that happen to me; finding health problems early is a matter of chance" (Russell et al., 2003). The measure is not subject to copyright, does not require a license, and is freely available for public use.

Intention to Screen Visual Analog Scale. Bui et al. (2018) provided the parameters to assess the DV intention to screen for lung cancer. The study was developed from the health belief model (HBM) constructs (perceived susceptibility, perceived severity, perceived benefits, and perceived barriers), smoking status, and others to assess the lung cancer screening intentions. To assess the intent to screen, I provided an image of low-dose computed tomography (LDCT) screening, a description of the test, and a visual of the LDCT to the AAFS participant in my study. The benefits and risks were explained along with the recommendation of who was eligible to screen. An example of questions asked was, “Do you want to undergo lung cancer screening through LDCT every year?” Based on the risk factors as explained in the study, the next question assessed, “Do you want to undergo lung cancer screening via LDCT every year?” The responses ranged from 4 possible choices “Definitely yes,” “Yes,” “No,” and “Never” with further categorization of intent to screen “(1) strong intention, respondents who answered “Yes” or “Definitely yes” for both questions and (2) weak/no intention, respondents who answered “No” or “Never”. The measure is not subject to copyright, does not require a license or open access, and is freely available for public use.

Data Analysis Plan

The collected data were analyzed using SPSS v27. An α level of .05 for statistical significance was used in the statistical test. Therefore, when the *p*-value is less than or equal to the stated α, the null hypothesis is rejected, accepting the alternative hypothesis. Likewise, if the *p*-value is greater than the α, the null hypothesis is accepted, and the alternative hypothesis is rejected. The research questions and hypotheses for analysis were stated as follows:

RQ1: What are the combined (R2) and relative (sr2) effects of perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about screening in explaining variance in AAFS's intention to receive lung cancer screening, controlling for relevant sociodemographic characteristics: age range and smoking history?

Ho: Perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about screening do not explain variance in AAFS's intention to receive lung cancer screening, controlling for relevant sociodemographic characteristics: age range and smoking history.

Ha: Perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about screening explain variance in AAFS's intention to receive lung cancer screening, controlling for relevant sociodemographic characteristics: age range and smoking history.

A multiple logistical regression analysis was conducted to analyze the collected data (Frankfort-Nachmias & Leon-Guerrero, 2018). The test's assumptions were evaluated before conducting the multiple logistical regression analysis. Shapiro-Wilk's test of the residuals was used to determine whether the residuals of the data followed a normal distribution. Scatterplots of unstandardized predicted values and studentized residuals were used to determine the data's linearity and homogeneity. Boxplots were used to determine whether there was an outlier in the IVs and the DVs. The IVs are perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about screening, whereas the DV is the intent to screen for lung cancer.

To test for multicollinearity, the variance inflation factor (VIF) was used. A VIF value of 10 and below indicates that the multicollinearity assumption is met. For the assumption of independence, the Durbin-Watson statistic of 1.5 to 2.5 indicates that the assumption is met. Once all assumptions are met, the multiple logistical regression analysis was conducted considering the variables of perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about screening as predictors and the intent to screen for lung cancer as the DV. The beta coefficients and *p*-values were used to determine whether the individual predictor variables are associated with the DV. A *p*-value less than .05 implies that the predictor is significantly associated with the DV.

Threats to Validity

There are threats to the internal and external validity of this study. Internal validity is the extent to which the study results can establish cause-and-effect relationships between variables. The correlational design is not focused on identifying cause-effect relationships between variables. However, the study focused on assessing the relationship between identified variables. The convenience sampling of participants increased the potential bias for the study. However, all participants interested in the study were included. Thus, a large sample strengthens the validity of the study. Moreover, the timeliness of data, which includes the newly collected data from the participants, ensures that the study findings are relevant to current practices.

External validity was key for the current research. For this study, the focus was on AAFS in the DMV geographic area. The study's results may not be generalized to other settings, such as the United States. The results of this study may also be limited to using measures of the IV and DVs based on prevalidated survey questionnaires.

Ethical Procedures

Five specific ethical principles guided the researcher's ethical concerns for this study: (a) minimizing the risk of harm to participants, (b) obtaining informed consent, (c) protecting participant anonymity and confidentiality of participants, (d) avoiding deceptive practices such as involuntary participation, and (e) providing the right for participants to withdraw from the study at any time without any punishments or negative implications (Mantzorou, 2019). These principles were adhered to and addressed during the recruitment of participants, before any data collection in the consent procedure, and before participants agreed to respond to questions. Permission and IRB approval was obtained prior to commencing the data collection procedures.

The data gathered in the study were anonymous. The researcher did not know the identity of the participants in the study. Although identification (ID) numbers were assigned to each participant in the online survey, no names were associated with the ID numbers. For the survey participants, interested participants who qualified with the inclusion criteria were asked to read and agree to the informed consent form on the first page of the survey. Participants were required to click "I agree" to proceed to the survey items. Participant identity was protected by the deidentification of survey responses. No personally identifiable information was collected in the study. After the completion of the surveys, the researcher downloaded and saved the dataset in a password-protected folder on their personal laptop. This file was saved and stored for 3 years and then permanently deleted through a data wipe-out application from the researcher's laptop.

Summary

The purpose of this quantitative, nonexperimental, correlational study was to examine whether perceived cancer-related stigma, attitudes toward screening, and cultural beliefs in AAFS were significantly associated with intention to receive lung cancer screening. AAFS from the geographic location of DMV were asked to respond to a survey questionnaire to measure perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about screening as predictors and the intent to screen for lung cancer. A sample of at least 77 participants was conveniently sampled to respond to four measurement tools: Marlow and Wardle (2014) CASS measures stigma in nonpatient populations (IV), LCSHBS (Carter-Harris et al., 2017) assesses attitudes toward lung cancer screening (ATLS; IV), Russell et al. (2003) CRBS (IV), and Bui et al. (2018) intention to screen (DV) VAS. Participants' responses were summed up to measure the constructs of the study. Multiple logistical regression analysis was used to address the RQs posed in the study. A significant level of .05 was used for the analysis. Chapter 4 includes the presentation of the results of statistical analyses.

Chapter 4: Results

Introduction

The purpose of this quantitative correlational study was to investigate the factors influencing the behavior of screening for lung cancer among AAWs between the ages of 50 and 80 with a history of smoking 20 packs per year or having quit within the past 15 years. The geographical area of the study was originally for the DMV. However, the survey was social media driven, so some of the participants included in the study may have lived outside the stated area. The sample size provided sufficient power to examine the relationships between the IV's cancer stigma, attitudes, and cultural beliefs and the DV's intention to screen for lung cancer in alignment with my research question and hypotheses.

RQ1: What are the combined (R2) and relative (sr2) effects of perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about screening in explaining variance in AAFS (aged between 50 and 80 years) intention to receive lung cancer screening after controlling for relevant sociodemographic characteristics: age range and smoking history?

Ho: Perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about cancer screening do not explain variance in AAFS (aged between 50 and 80 years) intention to receive lung cancer screening, controlling for relevant sociodemographic characteristics: age and smoking history.

Ha: Perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about screening explain variance in AAFS' intention to receive lung cancer screening, controlling for relevant sociodemographic characteristics: age and smoking history.

The RQ was answered using multiple logistical regression analyses (Frankfort-Nachmias & Leon-Guerrero, 2018). This statistical analysis approach explained the association between the IV and DV. In this chapter, I present the descriptive analysis of the variables, correlations among key measures, and the results of the logistical regression analyses, which examined the potential for statistical significance of the IV to the DV. I also establish whether the hypothesis was retained or rejected.

Descriptive Analysis

SurveyMonkey was active from October 16, 2023, to May 7, 2024, and circulated through social media, lung cancer charities, church affiliations, and community health fairs. Data was collected from 131 participants. Of that number, (N = 101) participants were valid, meeting the minimum sample size of 77 as calculated by the G*power analysis, adhering to parameters of a multiple logistical regression significance of .05, power of 80%, and an effect size of .15. Thirty individuals who clicked on the survey link but provided no data were excluded from the analysis because they stopped participating either before completing consent or after consenting but failed to complete any survey questions, thereafter, yielding no data. The final sample size for the research study was (N = 101) AAF smokers aged between 50 and 80, averaging 20 packs a day or who had quit within the past 15 years. The frequency distribution of the seven demographic variables in the population study: education, marital status, employment, insurance, income, smoking, and age, presented as a range given the target population age of 50 to

80 are summarized in Table 1. The descriptive data collected from the study indicates that (*n* = 49, 48.5%) have quit within 15 years and thus are former smokers, and (*n* = 43, 42.6%) are current smokers, all of whom were averaging 20 packs a year.

The age of the respondents was organized into three ranges for presentation, given the narrow target of women aged 50 to 80, with the first range labeled 50 to 59 years (*n* = 54, 53.3%). The second range was labeled 60 to 69 (*n* = 35, 34.7%), and the third was labeled 70 to 80 (*n* = 10, 9.9%). Most respondents were between 50 and 59 years (*n* = 54, 53.3%), whereas only 10 (9.9%) were between 70 and 80. The target population criteria are focused on smoking history and age of the respondents, meeting the USPSTF guidelines for screening (Bandi et al., 2024; Potter, Bajaj, and Yang, 2021). However, I included other demographic variables to assess whether they factor in understanding the DV outcome and intent to screen for lung cancer, which is a dichotomous variable (i.e., yes/no). Education has six categorical identifiers: Less than high school (*n* = 8, 7.9%); high school (*n* = 24, 23.8%); bachelor's (*n* = 30, 29.7%); master's (*n* = 14, 13.9%); PhD *n* = 15, 14.9); and technical school (*n* = 10, 9.9%), respectively. Of the total educational status respondents, most reported receiving their bachelor's degree, with a small percentage having less than high school and having received a technical degree.

The frequency distribution of the other demographics is as follows: Employment statuses were identified as either employed (*n* = 72, 71%) or unemployed (*n* = 29, 28.7%). The employment frequency established that 71% of the respondents are employed people with incomes ranging from less than 19,000 (*n* = 11, 10.9%) to over 200,000 (*n* = 5, 5.0%). Most employed income ranged between 35,000 and 49,999 (*n* =

20, 19.9%) of the total responses in this category. The final two demographic characteristics, marital and insured status, are as follows. Most respondents reported being married (*n* = 57, 56.4%), with the single respondents (*n* = 20, 19.8%) being the next highest frequency. Insurance status was measured as either having insurance or being uninsured. Over 80% of the respondents reported having insurance (*n* = 89, 88.1%), with approximately 11% uninsured (*n* = 11, 10.9%) of the total respondents.

In addition, the descriptive analysis of the continuous IVs, CSS, LCSHBS measuring attitudes, and CBS provided information on the distribution of the predictor valuables by examining mean, minimum, maximum range, and standard deviation (SD) values. The information allowed me to understand the varying degrees of the participants' answers and range of normality. The first predictor, participants' perceptions of lung cancer stigma measured using the CSS, had scores ranging from 1.00 to 4.60 with a mean score of *M* = 2.31(*SD* = .932), indicating the participants' perceived cancer stigma was moderate. The second predictor value, LCSHBS, measuring attitudes toward screening, ranged from 52 to 124 with a mean score of M = 87.20 (SD = 11.52), suggesting an overall positive attitude toward lung cancer screening among the participants. Lastly, the third predictor, CBS, ranged from 1.72 to 4.54, with a mean score of M = 3.03 (SD = .554), suggesting participants held moderately strong cultural beliefs about lung cancer screening.

Table 1

Descriptive Characteristics of Sample Characteristics

	Number (*n*)	Percentage (%)
Education Status		
Less Than High School	8	7.9
High School/GED	24	23.8
Bachelors	30	29.7
Masters	14	13.9
Doctorate	15	14.9
Technical School	10	9.9
Employment Status		
Employed	72	71.3
Unemployed	29	28.7
Marital Status		
Single	20	19.8
Married	57	56.4
Divorced	13	12.9
Widowed	6	5.9
Separated	4	4.0
Insurance Status		
Yes	89	88.1
No	11	10.9
Income Range	11	10.9
Less than 19,999	18	17.8
20,000 to 34,999	20	19.8
35,000 to 49,999	15	14.9
50,000 to 74,999	16	15.8
75,000 to 99,999	9	8.9
100,000 to 149,999	4	4.0
150,000 to 199,999	5	5.0
200,000 or More	3	3.0
Missing Responses		
Smoking Status		
Current Smoker	49	48.5
Former Smoker	43	42.6
Missing Responses	9	8.9
Age (Range)		
50 to 59	54	53.5
60 to 69	35	34.7
70 to 80	10	9.9
Missing Responses	2	2.0

Note. N = 101.

Correlational Analyses

The correlations among the study and demographic variables, the IVs and the DV, illustrated positive and negative correlations, as summarized in Table 2. Significance was found between some pairs of instruments. The bivariate correlation between CSS and LCSHBS measuring the variable attitudes was $r = .61$, $p = .001$, and between the CSS and CBS was $r =. 62$, $p = .001$. A significant correlation was also found between LCSHBS and the CBS $r = .51$, p .001.

A significant negative correlation was also found between the predictor variables (IV) and the covariates of age and smoking status. Cancer stigma significantly negatively correlated with age range ($r = -.246$, $p = .013$) and smoking status ($r = -.235$, $p = .024$). Also, there was a negative correlation between the CBS and smoking status ($r = -.205$, $p = .042$). These observations indicate that as age increases, the levels of cancer stigma decrease, and the same is also true for smoking status. Age also negatively correlated with smoking status ($r = -.259$, $p = .013$), such that the negative correlation indicates that as the age increases, smoking status decreases, suggesting that older individuals in the sample tend to have a lower frequency of smoking behavior compared to younger individuals, which aligns with overall trends in smoking behavior that older individuals may be somewhat more likely to quit. The inverse relationship could reflect age-related factors, such as health concerns or cessation efforts, leading to reduced smoking in the population.

I ran a bivariate correlation analysis that revealed no significance with the predictor variable CSS and the outcome variable intention to screen for lung cancer, where *p* = .626. Also, a second bivariate correlation found no significance with the predictor variable LCSHBS measuring attitudes and the outcome variable intention to screening for lung cancer where *p* = .790. Lastly, the bivariate correlation analyses revealed no significant link between the predictor variable CBS and the outcome variable, the intention to screen for lung cancer *p* = .238. Although there are moderate to strong correlations between the IVs, the correlation matrix indicates no association between the predictor variables and outcome measure, suggesting no statistically significant relationship between the key predictors and the outcome variable in this sample.

In addition to these bivariate correlations between the key predictor variables and potential covariates presented in Table 2 and above, the potential for multicollinearity was also examined by assessing VIF. The multicollinearity of variables is problematic in regression analyses because it may lead to unstable estimates of regression coefficients. As presented in Table 2, none of the bivariate correlations among the key predictor variables and/or covariates reached a critical level, which determined a priori to be r = .80 or higher, indicating no issue with multicollinearity. VIF values also suggest no such issue, with VIFs ranging from approximately 1.0 or less to no greater than 5.0, also used as a priori threshold to determine moderate multicollinearity. Because of the nature of the key predictor variables, some degree of relationship was expected. However, note that each key predictor variable was examined in a separate regression, so multicollinearity was only a potential issue among each key predictor variable and the covariates, respectively. Thus, the assumptions for logistic regression were met.

Table 2

Correlation Coefficients of Predictor Variables and Outcome Variable

	Age	Smoking Status	Cancer Stigma	LCHSBS	Cultural Belief Scale	Intention to Screen
Age	1 99		-			
Smoking Status	-.259* .013 91	1 92				-
Cancer Stigma	-.246* .014 99	-.235* .024 92	1 101			
Lung Cancer Health Screening Behavior Scale	-.137 .178 101	-.180 .086 92	.613** <.001 101	1 101		
Cultural Belief Scale	-.205* .042 99	.031 .771 92	.623** <.001 101	.505** <.001 101	1 101	
Intention to Screen	-.098 .334 99	-.042 .693 92	-.049 .626 101	-.027 .790 101	-.119 238 101	1 101

Note. **. Correlation is significant at the .01 level (2-tailed).*. Correlation is significant at the .05 level (2-tailed).

Logistic Regression Part 1

Three separate multiple logistical regressions were conducted to examine the relationship between each of the predictor variables: perceived lung cancer stigma (CSS); the LCHSBS, measuring attitudes toward lung cancer screening; cultural beliefs about screening (CBS); with the DV, the intention to receive lung cancer screening, controlling for relevant sociodemographic characteristics age range, and smoking history among AAF smoker aged 50 to 80 years. All regression assumptions for logistic regression were met. As can be seen in Table 3, CSS was not a significant predictor for intention to screen for lung cancer (OR = .710, 95% CI = .435 – 1.20, p = .170) controlling for age range (OR = .550, 95% CI = .279 – 1.10, p = .084) controlling for smoking status (OR = .823, 95% CI = .337 – 2.01, p = .667). The results of the regression are shown in Table 4, where the LCHSBS, measuring attitudes toward lung cancer screening, was not a significant predictor of intention to screen for lung cancer (OR = .969, 95% CI = .931 – 1.01, p = .116) controlling for age (OR = .571, 95% CI = .293 – 1.11, p = .099) and smoking status (OR = .827, 95% CI = .340 – 2.01, p = .676). Finally, the results of the regression are shown in Table 5, where the CBS was not a significant predictor of intention to screen for lung cancer (OR = .787, 95% CI = .361 – 1.72, p = .547) controlling for age (OR = .588, 95% CI = .298 – 1.20, p =.126), and smoking status (OR = .941, 95% CI = .394 – 2.30, p = .891).

The research revealed that none of the key IVs—perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about screening—predicted the intention to screen for lung cancer in the sample of AAF smokers aged 50 to 80 years. These findings suggest that other factors not captured by the models may explain the variance in screening intentions.

Table 3

Regression Analysis of the Association Between Predictor Variables age, Smoking and Perceived Cancer Stigma and the DV Intention to Screen for Lung Cancer

		B	S.E.	Wald	df	Sig.	Odds Ratio	95% CI for EXP(B) Lower	Upper
Predictor	Age	-.598	.347	2.982	1	.084	.550	.279	1.084
	Smoking Status	-.195	.455	.185	1	.667	.823	.337	2.005
	Mean CSS	-.343	.250	1.879	1	.170	.710	.435	1.159

Table 4

Regression Analysis of the Association Between Predictor Variables age, Smoking and Lung Cancer Screening Behavior (Attitudes) and the DV Intention to Screen for Lung Cancer

		B	S.E.	Wald	Df	Sig.	Odds Ratio	95% CI for EXP(B) Lower	Upper
Predictor	Age	-.561	.340	2.722	1	.099	.571	.293	1.111
	Smoking Status	-.189	.454	.174	1	.676	.827	.340	2.013
	Sum Lung Cancer Screening Health Behavior Scale	-.032	.020	2.466	1	.116	.969	.931	1.008

Table 5

Regression Analysis of the Association Between Predictor Variables Age, Smoking and Cultural Beliefs and the DV Intention to Screen for Lung Cancer

		B	S.E.	Wald	df	Sig.	Odds Ratio	95% CI for EXP(B) Lower	Upper
Predictor	Age	-.531	.346	2.347	1	.126	.588	.298	1.160
	Smoking Status	-.061	.444	.019	1	.891	.941	.394	2.249
	Mean Cultural Belief Scale	-.240	.398	.363	1	.547	.787	.361	1.716

Logistic Regression Part 2

As a follow-up to the logistic regressions part 1, smoking status was selected to investigate additional possibilities of predicting the outcome variable through subgroup analyses, the intention to screen for lung cancer controlling for age. The analysis was conducted to understand better whether current or former smokers who are at increased risk for lung cancer differ in their intention to screen for lung cancer. All regression assumptions for logistic regression were met.

In the analysis of current (n = 49) or former smokers (n = 43), logistic regressions were conducted to determine whether perceived lung cancer stigma (CSS); the LCHSBS, measuring attitudes toward lung cancer screening; or cultural beliefs about screening (CBS) predicted the intention to receive lung cancer screening (DV), controlling for age in AAW smokers aged 50 to 80 years. Three separate multiple logistical regressions were conducted by smoking status (current and former) using the predictor variables (CSS, LCHSBS, and CBS) and outcome variable intention to screen for lung cancer, controlling for age.

When examining the subgroup of current smokers (N = 49), none of the three key predictor variables were statistically significant. The first regression examined the CSS (OR = .701, 95% CI = .353 – 1.39, p =.312.), controlling for age (OR = .188, 95% CI = .054 – .656, p = .009), indicating that cancer stigma does not significantly predict the intention to screen for lung cancer in current smokers. Age, however, was a significant predictor, such that older age was associated with increased intent to screen in current smokers in all three regressions (OR = .188, 95% CI = .054 – .656, p = .009; note that the outcome variable was coded such that an OR less than 1.0 indicates a greater likelihood of screening).

The second regression examined the LCHSBS measuring attitudes toward lung cancer screening (OR = .980, 95% CI = .927 - 1.04, p = .484), controlling for age (OR = .203, 95% CI = .060 – .695, p = .011), indicating that lung cancer screening health behavior does not significantly predict the intention to screen for lung cancer. However, age was a significant predictor of intention to screen in current smokers such that younger age was associated with greater intent to screen (OR = .203, 95% CI = .060 – .695, p = .011; note that the outcome variable was coded such that an OR less than 1.0 indicates a greater likelihood of screening). Lastly, the third regression examined the CBS (OR = .561, 95% CI = .197 – 1.6, p = .279), controlling for age (OR = .172, 95% CI = .046 – .639, p =.009), indicating that cultural beliefs do not significantly predict the intention to screen for lung cancer. Age again, however, was a significant predictor of intent to screen (OR = .172, 95% CI = .046 – .639, p =.009; note that the outcome variable was coded such that an OR less than 1.0 indicates a greater likelihood of screening).

When examining the subgroup of former smokers (N = 43), none of the three key predictor variables were statistically significant. The first regression examined the CSS, controlling for age. The CSS score did not significantly predict the intention to screen for lung cancer (OR = .790, 95% CI = .377 – 1.70, p =.533). Age did not predict the intention to screen for lung cancer (OR = 1.15, 95% CI = 460 – 2.87, p = .768). The second regression examined the LCSHBS score measuring attitudes on lung cancer screening, controlling for age. The LCSHBS score did not significantly predict the intention to screen for lung cancer (OR = .966, 95% CI = .912 - 1.02, p = .245) and age did not predict the intention to screen for lung cancer (OR = 1.11, 95% CI = .456 – 2.74, p = .812). Lastly, the CBS, controlling for age did not significantly predict the intention to screen for lung cancer (OR = 1.38, 95% CI = .365 – 5.20, p = .637). Age did not predict the intention to screen for lung cancer in former smokers (OR = 1.38, 95% CI = .551 – 3.45, p = .493.

The results of this series of logistic regression analyses suggest that neither perceived lung cancer stigma, attitudes toward lung cancer screening, nor cultural beliefs were significant predictors of intention to receive lung cancer screening in these subgroups by smoking status even when controlling for age, and age did not predict either. The overall model did not explain a substantial proportion of the variance in screening intention. These findings indicate that other unexamined factors may influence lung cancer screening behaviors in this population. Age was a significant predictor in several analyses, which are discussed in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to examine the relationship between cancer-related stigma, attitudes toward lung cancer screening, and cultural beliefs about lung cancer screening in predicting the intention to receive lung cancer screening in AAFS aged 50 to 80 years, which is the recommended age of screening by USPSTF. The purpose of the research was to answer the following research question: What are the combined (R2) and relative (sr2) effects of perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about screening in explaining variance in AAFS (between 50 and 80 years) intention to receive lung cancer screening controlling for relevant sociodemographic characteristics: age range and smoking history?

Contrary to expectation, the overall outcome of the logistic regression analyses demonstrated that none of the predictor variables, (a) cancer stigma, (b) attitudes toward lung screening, and (c) cultural beliefs, were statistically significant predictors of lung cancer screening behavior in this sample. However, age showed predictive value in the intention to screen for lung cancer. In this chapter, I explain the outcomes relative to the existing literature and Ajzen's TPB theoretical framework and how such information could inform future research regarding these key variables' access to health services and public policies.

Interpretation of Findings

This study investigated AAFS' self-reported cancer stigma, attitudes on lung cancer screening, and cultural beliefs as predictors of the intention to screen for lung cancer. These primary predictors were not statistically significant in this study but were still insightful, mainly because of the failure to reject the null hypothesis. The null hypothesis stated that perceived lung cancer stigma, attitudes toward lung cancer screening, and cultural beliefs about cancer screening do not explain variance in AAFS (between 50 and 80 years) intention to receive lung cancer screening, controlling for relevant sociodemographic characteristics: age range and smoking history. This hypothesis was further underscored by the results indicating that the independent variables did not have any bivariate association with screening intention, so it is not surprising that there was no significant association in multivariate analyses. Nevertheless, age remained a predictor in specific subgroup analyses, which provides some additional understanding of the determinants of screening practices in this population.

Data from the logistic regression analyses revealed perceived cancer stigma, attitudes toward lung cancer screening, and cultural beliefs. However, key constructs associated with TPB were not significant predictors of screening intentions. Pearson correlation matrix analysis showed no significant correlation between CSS, LCSHBS, or CBS scores and intention to screen for lung cancer. Logistic regression provided results similar to those of a follow-up test. For instance, cancer stigma yielded an OR of 0.710, 95% CI = [0.435, 1.20], $p = 0.170$; attitudes towards screening yielded an OR of 0.969, 95% CI = [0.931, 1.01], $p = 0.116$; and cultural beliefs yielded an OR of 0.787 (95% CI = [0.361, 1.72], $p = 0.547$). However, some of the analyses revealed that age showed significance in some respects, although the differences were insignificant. For instance, when comparing current smokers, older respondents had a higher likelihood of reporting intentions to screen for lung cancer (OR = 0.188, 95% CI = [0.054, 0.656], $p = 0.009$), which shows that age is a determinant of screening.

The theoretical model underlying this study was the TPB, which posits that attitudes, subjective norms, and perceived behavioral control influence behavioral intentions (Ajzen, 1991). Even though the major predictors did not have significant relationships in the given study, the results concur with other research literature showing that utilizing the TPB is not always appropriate when considering different groups of people. For example, Abamecha and Tena (2020) employed the TPB to examine cervical cancer screening intention among Ethiopian women, revealing that subjective norms and perceived behavioral control positively influenced the screening intentions while the impact of attitudes was much lower (beta = 0.11, $t = 2.92$, $p < 0.014$). This argument aligns with the current study, where measures representing elements of perceived control did not directly predict the intention to undertake lung cancer screening, highlighting that there are cultural and contextual factors moderating the effects of TPB constructs.

Moreover, the findings suggest a general need to incorporate external variables into TPB-based models more effectively. For example, Wang et al. (2019) added the Health Belief Model to TPB in the context of breast cancer screening and concluded that including extrinsic factors such as cost, and accessibility improves prediction. Likewise, this study's non-significance of stigma, attitudes, and cultural beliefs may promote systemic healthcare disparities or socioeconomic issues that disproportionately impact AAFS. This limitation highlights the need for future research to consider structural characteristics in addition to TPB constructs when studying health behaviors.

These findings also concur with other studies focusing on factors influencing cancer screening practices among vulnerable groups. In a study of all non-Latino African Americans by Lucas et al. (2016), culture-based approaches were crucial to understanding medical mistrust. In their study on colorectal cancer screening, they established that gain-framed messaging across the equity system was useful in managing negative perceptions concerning systemic unfairness. Similarly, although cultural beliefs in the current study did not influence screening intentions, it is clear that there is still a need for cultural and structurally informed interventions. Williamson et al. (2020) noted that stigma was a multifaceted phenomenon that influenced healthcare utilization and discussed how lung cancer stigma reports differed among smokers. This nuanced understanding of stigma's impact may explain why it does not play a role in this study's level of

socioeconomic status (LOS), especially as other broader cultural issues may be more critical for AAFS in this context.

Given that age emerged as a significant predictor in this study, it corroborates the work of Smith et al. (2021), who posited that older adults view screening as a way of retaining control over their health despite potential benefits not being useful in everyday existence. These findings underscore efforts to include older smokers in interventions aimed at lung cancer screening. Furthermore, the study aligned with the work of Abamecha and Tena (2020), where the researchers established that TPB constructs have fluctuations from one population to another. In their study, Ethiopian women were significantly influenced by perceived behavioral control derived from access to health care and culture that Ethiopian women encompass, but AAFS in this study may have systematic barriers that mute other notable determinants such as stigma and attitude.

In their studies, Carter-Harris et al. (2018) and Quaife et al. (2017) also described the structural factors hindering healthcare access. In a study on stigma and blame among socioeconomically disadvantaged smokers, Quaife et al. (2017) demonstrated that patients' perceptions acted as a barrier to health care. When discussing the barriers to lung cancer screening, Carter-Harris et al. (2018) also pointed out geographical and systematic disparities. These studies imply that lung cancer stigma and attitudes might only predict screening intentions but with interventions geared towards access. Kirby (2020) also echoed this suggestion, arguing that expert and persistent efforts are needed to decrease stigma and improve the quality of life of marginalized communities.

Although the null hypothesis was not rejected, this study was beneficial in understanding lung cancer screening among AAFS. The importance of age provides insight into one possible demographic variable; however, the absence of substantial correlations concerning stigma, attitudes, and cultural beliefs suggests that additional variables need consideration rather than only TPB when used in isolation. These findings highlight the need to improve health behavior models by including structural and systemic factors. For example, Gwadz et al. (2022) found that structural and systemic factors are essential when guiding health behavioral models/interventions for African American/Black and Latinos persons living with HIV. Further establishing, although the health model used in their study justified the psychosocial barriers, the participants presented with other factors that determined their health behavior such as resilience, personal values and a safe space for treatment.

Cancer-Related Stigma and Lung Cancer Screening Intentions

The TPB framework suggests that perceived behavioral control reflects an individual's belief in their ability to influence their behaviors, which is shaped by internal and external factors. One significant potential factor affecting perceived behavioral control is cancer-related stigma. Increased stigma may diminish a person's sense of control over their health choices and discourage them from undergoing screening (Rogers, 2017). Previous research confirms that stigma harms society and is a barrier to healthcare measures aimed at early detection and preventive care (Mederos et al., 2020).

Although the regression model did not reveal statistical significance, Hamann et al. (2021) provided a conceptual understanding of how lung cancer stigma has evolved alongside advancements in medical treatment and tobacco control. Their findings indicated that, despite greater awareness, improved detection capabilities for early-stage lung cancer, enhanced treatment options, and reductions in stigma do not align with these medical advancements (Hamann et al., 2021). This discrepancy highlights the need for further investigation into the relationship between stigma and the intention to undergo screening for health issues.

Previous research suggests that cancer-related stigma is negatively associated with the intention to screen for lung cancer. Vrinten et al. (2019) concluded in their study about cancer stigma and cancer screening attendance that although the degree of cancer stigma was low and differed across the studied population subgroups, it impacts specific subgroups differently and negatively affects cancer screening. However, the current study found no significant relationship in this area. When comparing these findings with previous research, it becomes clearer that in the specific population of AAFS, lung cancer stigma plays a critical role in promoting increased screening behaviors. Nonetheless, other factors—such as access to healthcare, financial status, shifting public opinions, feelings of self-blame, and cultural influences—may take precedence over stigma when influencing screening intentions. Korn et al. (2023) found in their study on social determinants of health and screening interventions a systemic review of marginalized groups that have a better understanding of how social determinants limit screening behaviors and provide necessary solutions to reduce or eliminate structural barriers will have a positive effect on screening. This variation points to a potential gap in understanding how stigma impacts different populations, which necessitates further exploration of additional variables that govern the role of stigma in health-seeking behavior.

Attitudes Toward Lung Cancer Screening Intention

Contrary to my study's hypothesis, the findings that another critical factor, attitudes toward lung cancer screen, were not significantly associated with screening intentions require further exploration. For the present study, the hypothesis that another factor exists, the attitudes towards lung cancer screening, which may significantly impact screening intentions, was not supported. These results need to be examined in greater detail. Nonetheless, prior findings affirm that there is a strong relationship between attitudes and screening intentions and that pleasant attitudes have a positive impact on health-related behaviors. For example, Kregting et al. (2020) explored the link between health-related attitudes and cancer screening, revealing that if the present attitude is positive, it will predict the use of preventive measures, such as mammograms or colonoscopies. In this context, Kregting et al.'s (2020) study offered an understanding of how belief about cancer prevention can affect behavioral intentions, although my results did not support this notion.

Likewise, Lucas et al. (2016) supported my premise, observing that the African American women participants who had positive attitudes towards cancer-related preventative measures had a higher likelihood of being screened for breast/cervical cancer. Even though these studies support the role of attitudes in predicting certain behaviors in some settings, the results of this study fail to reveal any correlation between attitudes toward lung cancer screening and actual screening practices in the AAFS population aged 50 to 80 years. However, it is important to note that while there was a slight positive change in attitudes among the participants in this study, such change was not statistically significant enough to warrant the conclusion that attitudes alone are a strong predictor of screening intentions among this specific population.

Statistical insignificance does not equal lack of effect; it means there is no sufficient evidence for an association given the gathered data, therefore failing to reject null. These results could be attributed to random variation or other unnoticed factors that may affect the screening behavior in this population. Contrary to other TPB-based phenomena like Hann et al. (2017) and Yedjou et al. (2019) and related studies like Lucas et al. (2016) and Kregting et al. (2020) where attitude constructs were established to be significant predictors of health behaviors, my study did not show similar effects. This difference highlights the inconsistency of the attitudes-intentions relationship across populations and underscores the importance of other factors, such as systematic, cultural, and sociodemographic factors, for understanding discrepancies.

Cultural Beliefs on Intention to Screen for Lung Cancer

Powell et al. (2019) argued that cultural beliefs and mistrust of AAs' health behavior can be attributed to historical and social factors. These factors have influenced cultural messaging and structural racism in terms of screening practices and utilization of required services and treatments (Lucas et al., 2016). Previous research also shows that smokers, in general, may understand the value of maintaining lung health but still do not fully believe in the procedures of screening. For instance, Carter-Harris et al. (2017) and Russell et al. (2003) also observed that cultural values, especially those associated with fatalism or religion, determine whether screening is viewed as a gain or loss. Based on the findings of this research, fatalistic perception is a common reason why lung cancer is perceived as unavoidable, hence minimizing the enthusiasm to take proactive measures like getting screened.

In this study, cultural beliefs were not observed to have any influence on the intention to undertake lung cancer screening in this study. This is contrary to previous studies where cultural beliefs predicted screening intentions (Lucas et al., 2016; Stacy et al., 2008). For instance, Stacy et al. (2008) pointed out that cultural fit induces people to engage in health checkups due to group pressure. In this study, however, cultural beliefs did not emerge as a significant factor, though a positive weak relationship signifying that cultural beliefs can affect screening behavior under other circumstances exist. These results highlight the nuances and mixed perceptions about the role of culture in health intentions. Foremost, the non-significance means that the presence of cultural beliefs might be contingent upon the ways in which they interact with systemic processes and other cultural factors.

The lack of significance underscores how the results convey a slight positive trend merely and thus it is important not to overemphasize the findings. Since the results obtained were not statistically significant, the observed trend cannot be seen as definitive support of a correlation. This observation concurs with the increased variation in how cultural norms affect health behavior; therefore, other factors, including accessibility and socioeconomic factors, may temper cultural beliefs within African American women populations. This aligns with Garrett et al. (2024), who underscored that cultural factor, including religious beliefs or generational beliefs, are not always mutually exclusive from structural factors, thus determining composite health outcomes. Hence, it can be argued that cultural beliefs on their own can be relatively weak in their ability to predict intentions within these groups.

Therefore, the findings of this study support the notion that ‘culture’ may be shaped more by the experiences that participants and their families have had within the context of the healthcare delivery system rather than by the broad cultural beliefs system. Earlier studies using the TPB model reveal that cultural standards, in most cases, facilitate behavioral intentions if they are closely associated with self-identity (Ajzen, 1991). Nevertheless, in AAFS populations, a lack of general trust in physicians and other healthcare professionals poses challenges to this appraisal. For example, Garrett et al. (2024) proposed that skepticism can erode the connection between culture and utilization of healthcare services among minorities. In addition, AAFS populations' cultural beliefs are complex and multidimensional including religious, socio-economic status, and generational systemic disparities, among other aspects. For instance, a recent dissertation explored multidimensional factors (racism, poverty, lack of access to resources) affecting African American women (Clements, 2024). The study examined health behaviors through the lens of intersectionality and emphasized the need to address social and structural sexism and racism, factors deeply intertwined and can contribute to adverse health outcomes (Clements, 2024). Consequently, these factors may reduce cultural norms' predictive ability as a stand-alone independent variable but may impact screening intentions. In future studies, the exploration of these dimensions in more detail might provide a clearer picture of how cultural beliefs interact with the system and internal factors affecting health behavior.

Age and Smoking Status on the Intention to Screen for Lung Cancer

The American Lung Association also acknowledges the USPSTF as the source of the guidelines for lung cancer screening. The guidelines specify that participants must be between the ages of 50 and 80 years, with a 20 packs per year history current or former, or who quit within the past 15 years. This study used logistic regression analyses to adjust for sociodemographic characteristics; specific subgroup analysis entailed the current smokers (n=46) and former smokers (n=43). Literature evidence proves that smoking behavior plays an important role in the development of lung cancer, with women who smoke having 80% higher chances of being diagnosed with the disease than non-smoking women. This association plays an important role in the relationship to the given population in this study (Ahijevych & Parsley, 1999; Balogh et al., 2019; Bazargan et al., 2015; Belgrave & Abrams, 2016; Brown Speights et al., 2017; Lake et al., 2020; T. J. Williamson et al., 2020). However, it is also crucial to underline that lung cancer can also affect non-smoking people. The authors also pointed out that there are many factors that contribute to lung cancer.

The findings established that there was a weak but significant correlation between age and the intention to undergo lung cancer screening tests at a $p < 0.01$ level. This significance means that age is a very sensitive parameter when it comes to exposing the level of screening within the AAFS, as the higher the age of the participant, the higher the chances are that they will be inclined to screen. This trend was even more pronounced in the current smoker group, who showed a significantly higher level of screening intention than the former smokers. Parallel to these findings, Cataldo (2016) demonstrated that older women who currently smoked demonstrated an enhanced perception of the severity of cancer and a higher degree of acceptance regarding the advantages of screening for cancer illnesses. These findings are consistent with the TPB, which states that with enhanced health knowledge and awareness, the perceived attitudes of an individual and their desire or predisposition to undertake healthy behaviors are likely to be more positive.

In existing literature, researchers revealed that there is an increased engagement in preventive behaviors in older age because older people use healthcare facilities more often and are thus more aware of health issues (Carter-Harris et al., 2018). Such understandings reveal that age should not merely be considered as a simple demographic parameter; rather, it is a significant predictor of health behavior. The findings of this study thus support the need to target age differences in lung cancer screening in AAFS populations when developing public health interventions. The previous literature supports this finding by showing that individuals who are older are willing to participate in screening initiatives, as observed in this study by the chi-square test for age and screening intention. Smith et al. (2021) also noted that older adults often look at screening as a way of preventing the loss of independence and developing unhealthy lifestyles, which corroborates this work.

However, when only former smokers are taken into consideration (n = 43), the results were non-significant, implying that age cannot predict screening behavior for this category. Other factors of concern may include previous health experiences, risk perception after quitting smoking, or availability of resources among former smokers. Educational and motivational elements should be considered in detail, as gender and age differences were not identified as significant factors affecting former smokers.

Theory of Planned Behavior and the Research Findings

As previously indicated, the TPB (Ajzen, 1991) encompasses core concepts: attitudes, subjective norms, and perceived behavior control. These core concepts of the TPB framework were the foundation of examining the strength of the relationship between cancer stigma, attitudes toward lung cancer screening, cultural beliefs, and cultural beliefs, which predict the intention to screen for lung cancer in AAFS. As stated, the findings provided limited evidence for the TPB framework in this study.

Perceived behavioral control describes an individual's confidence to act shaped by internal and external constraints guiding their behavior (Khani Jeihooni et al., 2021; Lim & Weissmann, 2023). The study explored cancer stigma as a parameter of perceived behavioral control with the expectation that increased levels of internal and external cancer stigma negatively affect screening behaviors in this population. As such, the participant's stigma would significantly reduce their sense of control to make health choices, specifically to screen for lung cancer. However, as stated before, the study found no significance in accepting that assumption. Also, according to TPB subjective norms, an individual's attitude is sufficient to influence their intentions to carry out a particular behavior, such as the intention to screen for lung cancer in AAFS regardless of perceived risk or benefit. Finally, cultural beliefs are also considered a subjective norm for predicting screening behavior in AAFS. TPB suggests that the AAFS cultural suggestive norms are the same as attitudes to predict screening behaviors. In addition, as with cancer stigma and attitudes, no significance was found and therefore contradicts previous research. Although these findings show no statistical significance when examining TPB's influence on health behaviors in AAFS, the study points to the need for a broader investigation of the other factors using the TPB model. Mirzaei-Alavijeh et al. (2024) provided additional insight that points to other factors influencing an uptake in cancer screening outside of the TPB variables in exploring how AAFS assimilate to act concerning preventative health behaviors.

Limitations of the Study

Several limitations of this study warrant consideration. As stated in Chapter 1, technology barriers may have affected some participants' ability to engage with the study, excluding participants without technology, such as a smartphone or access to a computer, and those who were not technologically savvy, limiting the number of participants. Another limitation was a diverse participant pool. However, connections with 603 churches through the Baltimore-Washington Conference of Methodist Churches and engagement with various social media platforms focused on AAW's health and wellness offered a robust avenue for recruitment. Lastly, to address the risk of socially desirable responses, the sensitive nature of attitudes, cultural norms, and intentions toward lung cancer screening were acknowledged with an effort to appear aware of the subject matter but in reality, responses may be biased with the potential to influence the results and the study's conclusions (Larsen et al., 2020). However past research indicates that attitudes can be reliably captured, implying this limitation may not significantly compromise the study.

Other limitations included the generalizability of the findings to other groups. The specific focus on AAW smokers aged 50 to 80 in the DMV area provided valuable insights into this demographic but may limit the broader application of the results to other populations. The cultural, socioeconomic, and healthcare access factors unique to this group may not reflect the experiences of different demographics. Furthermore, utilizing church networks and social media platforms for participant recruitment, though effectively reached a targeted audience, may have contributed to a sampling bias (Rocha et al., 2017). Participants connected to these networks might share similar characteristics or beliefs outside the wider population of AAW smokers. Similarly, the reliance on self-reported data introduces the potential for response bias. Although measures were taken to mitigate socially desirable responses, the inherent nature of self-reporting on attitudes and intentions can affect the authenticity of the data. This factor, combined with the specific demographic focus, may influence the ability of these findings to be generalized to other groups or settings.

Another limitation to consider from this study is the cross-sectional design, which provides a snapshot of data at one point in time, which limits the ability to establish causality or observe changes over time (Chirico, 2023). This design restricts the understanding of correlations between variables, without the ability to infer temporal sequences or causal relationships. Hence, the limits of a cross-sectional include unmeasured confounding variables that may influence the association between the measured variables (Zhang et al., 2020).

Possible unmeasured variables, such as healthcare access, socioeconomic status, health literacy, or prior experiences with the healthcare system might also influence screening intentions but were not included in the analysis. It is challenging to account for factors that could evolve or vary over time, potentially impacting the generalizability of the findings. To adjust for this cross-sectional limitation, longitudinal data were recommended to account for factors that could evolve. This limitation underscores the need for caution when extrapolating results beyond the specific context and timeframe of the study. In summary, although cross-sectional studies offer valuable insights, the inherent limitations in establishing causality and controlling for confounding factors should be acknowledged when interpreting the study's results and considering their generalizability.

Many respondents were recruited from social media with a small incentive of a Starbucks USD5 gift card, which was a driving force in quickly increasing the participant's number above the minimum sample size of 77. The study's dependence on social media might have introduced recruitment bias. The potential for recruitment bias increases because characteristics, behaviors, or access to resources are unreflective of those who do not use social media (Benedict et al., 2019). Also, the logarithm of whom saw the survey often caters to specific demographics, which could skew and limit the diversity, impacting the generalizability of the findings to specific demographic area.

Selection bias based on participants' interest or engagement in the topic factors in the limitations of the social media recruitment process. The possibility of selection bias becomes problematic to the broader population's attitudes or behaviors differing from the actual response (Iacus et al., 2020). Furthermore, the researcher identified the cost-effectiveness of using social media to recruit participants. However, a potential for decreased engagement or rate of participation compared to other traditional methods was observed in the data collection, evident by the missing data. The total number of people who started the survey was 137 but only 101 responses were applicable for the data analysis. Therefore, the quality and reliability of the data collected may have an impact due to the respondent's motivation to be committed and attentive to the questions.

Limitations Related to Validity, Reliability, and Trustworthiness Validity

Self-reported data may impact on the study's internal validity. Participants might provide socially desirable responses, especially given the sensitive nature of stigma and cultural beliefs related to lung cancer screening. Although validated measures were used, this inherent limitation of self-reporting could influence the accuracy of the findings. Likewise, external validity is constrained by the demographic and geographic focus specificities. Because the sample included AAW smokers aged 50 to 80 in the DMV area, the findings may not be generalized to other populations or settings with different cultural or socioeconomic contexts.

Reliability

The reliability of the study instruments was established through prior research (e.g., using scales validated in similar populations). However, cultural nuances specific to AA communities might influence participants' interpretation of some items, potentially affecting consistency. The potential for response variability based on recruitment methods (e.g., social media versus church networks) might also introduce inconsistency, as different platforms attract individuals with varying levels of engagement or awareness of health behaviors.

Trustworthiness

Regarding the trustworthiness of recruitment biases, individuals who chose to participate may already have stronger beliefs or intentions toward lung cancer screening, skewing the results toward more favorable attitudes. Recruitment relied heavily on digital methods, such as social media and church networks, which could have excluded individuals with limited access to or familiarity with technology. Whereas these methods of reaching the target population were effective, they may have inadvertently limited participation from less tech-savvy individuals, potentially introducing a sampling bias. Cross-sectional design limits the study's ability to establish causal relationships, which may affect the trustworthiness of interpretations regarding the influence of stigma, attitudes, and cultural beliefs on screening intentions.

Implications of Findings, Positive Social Change, and Recommendations

The study provides an extended look at Ajzen's TPB by focusing on the impact of how cancer stigma, attitudes toward screening, and cultural beliefs with respect to demographic factors and age associations to predict health behaviors in AAW smokers. Again, although TPB constructs have proven to influence health behaviors and intention to screen, this study's findings provided a different path to the significance that age is a motivating factor in some populations driving the intention to screen for lung cancer. Therefore, rethinking how to adapt TPB for older adults or at-risk populations with age-related health concerns is warranted and deserves attention in future research.

Magnan and McCaul (2019) highlighted the need for health providers to increase their awareness in cultivating individualized treatment to incorporate creative and strategic accounts for life expectancy, and the benefits and risks in how often cancer screening is done in the aging population. Furthermore, providers should educate their patients to include any misconceptions about screening, with an integrated approach aligning with the individual's overall health goals (Magnan & McCaul, 2019). As a result, these accounts for older adults should be considered to foster a comprehensive approach that would properly assess the impact of lung cancer screening.

Practical

This study's findings underscore the need for additional research in AAFS of this age range. There is a need for enhanced integrated target interventions that promote lung cancer screening in AAFS, highlighting the need for public health initiatives focusing on age-specific messaging and disease management in current and former smokers, specifically in older smokers. The intervention should also include the younger smokers' populations to address cancer stigma and cultural beliefs in younger smokers and those who may be at risk for the diagnosis. Additionally, the lack of significance in former smokers around cancer stigma and cultural beliefs points to a shift from attitudinal concepts to practical approaches supporting accessibility to screening services. What then is required is a comprehensive look at health education programs addressing the barriers to screening, misconceptions, and lack of awareness in this population about lung cancer for every age group, specifically those with fatalistic beliefs, and thinking that it will not happen to them.

Public Health and Social Change

The study also has other implications. Some of those implications include healthcare providers' roles, policies addressing access to screening services, and expanding research beyond screening intention. It is important to train health providers to be culturally sensitive to the plight of the AAFS to improve communication so that this population can have a better understanding and awareness of lung cancer and the importance of screening. The study outcomes suggest that addressing stigma, mistrust, culturally rooted misconceptions, and ambivalence toward screening can foster trust in screening practices to have a positive health outcome and potentially reduce lung cancer mortality rates in underserved communities. Some creative ways of addressing these concerns are tailoring epidemiological data using storytelling, and personal testimonies as pathways to enhance participation among AAFS, given that storytelling is a culturally adaptive and respected way within many communities (Smellie, 2023).

Positive Social Change

Overall, positive social in the context of this study provides a potential path forward to reshape change around reducing lung cancer mortality and health equity for AAF, specifically for those who have a smoking history. Lung cancer remains one of the leading causes of cancerous death, and this population’s dispositional, despite being a high-risk group, faces many barriers and experiences limited access to and participation in early detection screening. Therefore, in the identification and outline of the factors affecting screening in this group, the study contributes to the broader social change in the following ways:

First, because medical research has expanded how to treat the disease, such as targeted gene therapy, it is important to have tailored interventions for AA female smokers and consider age-related risk factors, with an emphasis on culturally sensitive health communication material. By encouraging screening behavior within this population, the current study aimed to continue providing increased attention and awareness on lung cancer disparities and outcomes that lead to increased healthcare equity to access and potentially save lives through early detection.

Second, empowering communities through knowledge and awareness aims to promote culturally relevant health education to influence health screening behavior for the AA community, and women with a smoking history. As recommended before, culturally sensitive communication can encourage and empower AAW to be more informed about their lung cancer risk and the importance of early screening. These initiatives may increase trust, reduce stigma, and empower their ability to make better-informed health decisions.

Third, the researcher recommends that healthcare providers adopt culturally competent practices as shown in other studies. Providers should be aware of the demographics they serve and develop the best communication practices to create trust, support, and encouragement for the populations served to engage in preventative care. Therefore, culturally sensitive practitioners aware of cultural beliefs and historical mistrust are more entuned and prepared to motivate at-risk patients to screen for the disease, which adds to the bottom line of healthier communities, such as AA communities.

Lastly, the researcher recommends that future researchers consider various factors guiding inclusive health intervention. Based on the study findings, age is a significant predictor of screening intention. With the understanding that cancer stigma, attitudes, and cultural beliefs were not significant in determining screening intention, more research is needed to expand the knowledge on other factors impacting screening behavior in the

AAW population and the broader community. Additional research, both qualitative and quantitative longitudinal studies geared to the impact of real-world challenges, such as socio-economic status, healthcare access, and closer examination of screening behavior in needed. All of this will add knowledge and help shape the future of more inclusive, less disparity, and disproportionate access to preventative screening. Advocates in the lung cancer community have stated that the only requirement for lung cancer is to have lungs, and that lung cancer is not a smoker's disease; smoking increases the risk (Arrieta et al., 2024). Ultimately, the research is intended to improve lung cancer outcomes in AAW smokers through advocacy, policy changes, community engagement, and culturally competent healthcare. The study may address some of the healthcare gaps in preventative care and raise the ceiling where AAW, whether current or former smokers are considered and supported in a more meaningful way in their health journey to reduce lung cancer morbidity and mortality.

Conclusion

The study explored the relationship between cancer stigma, attitudes toward lung cancer, and cultural beliefs on the intent to screen for lung cancer in AAW smokers aged 50 to 80 years. The study revealed no significant relationships between cancer stigma, attitudes, cultural beliefs, and the intention to screen; however, age was found to be a statistically significant predictor to influence screening behavior. The results of the findings suggest that demographic factors, such as age may be more influential over screening intentions than originally anticipated from the psychosocial constructs within the study's population. Furthermore, the study's contribution to the body of research surrounding Ajzen's TPB raised the bar to question the theoretical application in predicting lung cancer screening intentions among AAW smokers. The researcher proposed reexamining the relative weight of attitudes, subjective norms, and perceived behavioral control compared to demographic factors such as age and designing health interventions to include specific needs and attributes of underserved populations. The fact remains that lung cancer is a disease of interest on the public health platforms and AAW as a high-risk risk group, contending with many barriers to preventative screening. Based on the understanding of the impacts of these factors on screening intentions, the researcher endorses the continual social science efforts to improve lung cancer outcomes in this community.

Finally, the research has implications for the broader Healthy People Initiatives stipulated by the Department of Health and Human Service Healthy People (Henley et al., 2020) through advocacy and public health policies to create innovative health information and systems for targeted intervention that encourage screening in this population. In conclusion, the study contributes twofold to the literature, highlighting the critical importance of aging in influencing health behaviors. Also, the study challenges researchers and practitioners to reconsider theoretical frameworks such as TPB when applied to specific populations. These findings could inform the health field on strategies to reduce health disparities and increase health equity to access life-saving preventative screening for early detection. Screening interventions continue to play a major role in reducing cancer mortality among high-risk individuals.

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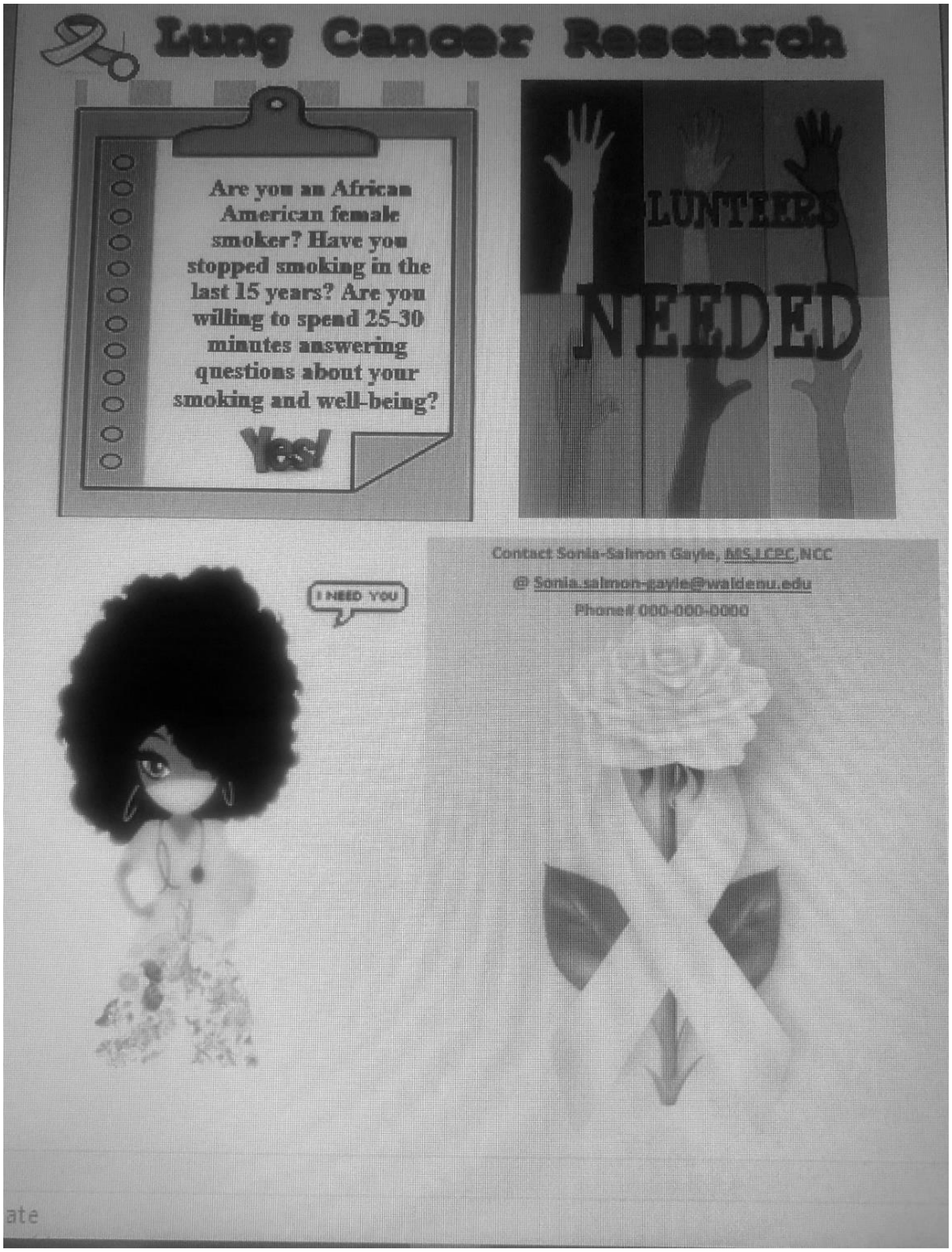
Appendix A: Lung Cancer Screening Research Flyer



THERE IS A NEW STUDY ABOUT CANCER STIGMA, ATTITUDES, AND CULTURAL BELIEFS ON THE INTENT TO SCREEN FOR LUNG CANCER IN AFRICAN-AMERICAN FEMALE SMOKERS.

YOU ARE INVITED TO COMPLETE A 20-MINUTE ANONYMOUS SURVEY.
SEEKING VOLUNTEERS THAT MEET THESE REQUIREMENTS:

BETWEEN 50 AND 80 YEARS OLD

AFRICAN AMERICAN FEMALE SMOKERS, CURRENT AND FORMER

20 PACKS A YEAR OR HAVE QUIT WITHIN 15 YEARS

THIS STUDY IS PART OF THE DOCTORAL PROGRAM FOR SONIA SALMON-GAYLE, A DOCTORAL STUDENT AT WALDEN UNIVERSITY. THIS SURVEY WILL BE OPEN UNTIL THE END OF APRIL. QUESTIONS SHOULD BE DIRECTED TO:

[redacted]

WWW.SURVEYMONKEY/R/LUNGCANCERSCREENING

Sonia Salmon-Gayle [redacted]