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UNIVERSITY OF CALIFORNIA,
IRVINE

Understanding Smoking Cessation Challenges among People Living with HIV: A Crossroads of
Chronic Disease and Behavioral Health

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Public Health

by

Ngozi Genevieve Nwosisi, MPH

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2021

DEDICATION

To

my family and friends

for their constant love and support;

To Uche, you live on in my heart forever and always.

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ABSTRACT

Understanding Smoking Cessation Challenges among People Living with HIV: A Crossroads of Chronic Disease and Behavioral Health

by

Ngozi Genevieve Nwosisi

Doctor of Philosophy in Public Health

University of California, Irvine, 2021

Associate Professor David Timberlake, Chair

Smoking prevalence among people living with HIV remains disproportionately higher than that of the general population (Diaz & Ferketich, 2018; Sigel et al., 2017). The prevalence of cigarette smoking in PLWH ranges between 47% and 65% (Pool et al., 2016). The extremely high smoking rate among PLWHA, coupled with the additional burden of HIV infection, should make smoking cessation a high priority among HIV/AIDS primary care and medical providers (Tesoriero et. al, 2008). Despite the recommendation to use 5A model, there are very low rates of 5A use among providers. To understand the barriers to smoking cessation among PLWH, the author interviewed 10 participants across two clinics in southern California. In Aim 1, the focus was to uncover unique challenges to the population that may prevent successful intervention strategies and derive targeted interventions for future use. Aim 2 addressed communication assessment from the view of the patient. A sample of the same patients from both aims was selected. While some patients trust providers' authority in offering advice, others held strong beliefs regarding making decisions about their own health. Aim 3 identified key factors associated with 5A use using survey data from HIV providers in the U.S. 5A use did not differ

by sex, provider age, type of outpatient practice, the volume of patients seen. Approximately 60% of surveyed attending physicians did not use 5A. While low numbers do not permit adequate comparison between the different categories of providers surveyed, all the physician assistants and 50% of the NPs used 5A. Providers who received formal training were two times as likely to adhere to 5A use with patients [$p < 0.001$; C.I. 1.45- 4.43]. Implication: Providers should receive proper training regarding the implementation of 5A during a discussion with their patients. These discussions should occur with care and understanding for the patient's specific needs to not be perceived as burdensome or paternalistic and lose the opportunity to make a lasting impact.

CHAPTER 1

INTRODUCTION

Smoking among People Living with HIV

Nearly 1.3 million people in the United States are living with human immunodeficiency virus (HIV), which causes acquired immune deficiency syndrome (AIDS) if left untreated (NIDA, 2020). While annual infections in the U.S. have been reduced by more than two-thirds since the height of the epidemic in the mid-1980s, Centers for Disease Control (CDC) data indicate that the progress has stalled in recent years, at about 38,000 new HIV infections each year between 2014 and 2018 (HIV.gov, 2021). Further, latest estimates indicate that effective HIV prevention and treatment are not adequately reaching those who could most benefit from them (HIV.gov, 2021).

Consequent to treatment advances since the late 1990s (Tseng, Seet, & Phillips, 2015), the number of people living with HIV (PLWH) (i.e., HIV prevalence) has increased dramatically (CDC, 2016), suggesting that PLWH now live long enough to acquire other chronic diseases that could influence antiretroviral therapy. In fact, substance use disorders such as nicotine dependence and HIV infection have been inextricably linked (NIDA, 2020) and evidence suggests that such correlations increase the progression of HIV and susceptibility to chronic conditions like lung cancer (Marshall, McCormack, & Kirk, 2009).

Notably, approximately 20% of Americans smoke cigarettes (CDC, 2020) and cigarette smoking is three times more common among PLWH compared to the general U.S. population (Shuter et al., 2012a). The etiology of smoking is rooted in multiple factors—including social influence, addiction, or as a coping mechanism—and remains a pervasive public health issue (Timberlake & Nwosisi, 2020). While national rates of smoking have declined in recent years,

(Mdodo et al., 2015) the prevalence of smoking among specific vulnerable populations, such as PLWH, continues to grow (Shuter et al., 2012a). Cigarette smoking has immense health implications for the HIV-positive population. In addition to associated suppression of lung function, smokers who are HIV-infected have significantly greater risks of bacterial pneumonia and tuberculosis compared to non-smokers (Diaz & Ferketich, 2018). Smoking is also significantly associated with lung cancer in PLWH (Winston et al., 2013) The development of lung cancer occurs at a younger age in people living with HIV than in the general population and adherence to ART and smoking greatly increases the likelihood of mortality due to lung cancer than traditional AIDS-related complications. In a study evaluating the association between cigarette smoking and virologic suppression, researchers found that moderate to heavy smokers, those who smoked ≥ 10 cigarettes daily reported detectable viral load compared to those who were infrequent to regular smokers, that is, those who smoked less than 10 cigarettes daily (Brown et al., 2017).

There is indeed a challenge to cessation interventions among PLWH (Mdodo et al., 2015). The interventions that have been applied are discussed later in the chapter, and there has been a low quit rate in the HIV population compared to the general population. People living with HIV who smoke are also less likely to quit smoking than people who do not have HIV (32.4% vs. 51.7%) (Mann-Jackson et al., 2019; Mdodo et al., 2015).

Among HIV-positive patients, quitting smoking appears to convey significant health benefits (Ledgerwood & Yskes, 2016). For example, quitting smoking can help people with HIV have a healthier quality of life and fewer HIV-related symptoms (CDC, 2021). When PLWH quit smoking, their risk decreases for many serious health outcomes, including non-AIDS-related death (Helleberg et al., 2013a). Identifying and understanding smoking cessation challenges

faced by members of this population is sparsely researched and is key to identifying specific challenges to overcome in designing targeted interventions for this group. To gain this insight, learning from the perspective of PLWH themselves is vital. Smoking cessation programs specific to this group has valuable implications including a reduction in mortality and morbidity rates among PLWH, as well as a reduction in the healthcare costs connected to care for PLWH (Mdodo et al., 2015).

Several studies indicate the need for the landscape of preventive medicine and targeted, evidence-based interventions for the treatment of PLWH who smoke (Moscou-Jackson et al., 2014; Cropsey et al., 2016; Nahvi & Cooperman, 2009; Gritz et al., 2013). However, these interventions must also adapt and factor in solutions that are sensitive to the unique needs and challenges of the population. Issues such as the physiological impact of smoking and the tolerability of pharmacological cessation therapies together with Highly Active Antiretroviral Therapy (HAART) must be addressed when designing cessation programs for PLWH.

Persistent High Smoking Prevalence among PLWH

As care for HIV has improved over the years (Biggar et al., 2009), people living with HIV are now living longer and acquiring chronic diseases (Silverberg et al., 2015). Particularly, HIV patients are surviving long enough to develop and die from lung cancer caused by tobacco inhalation (Sigel et al., 2012). Smoking prevalence among people living with HIV remains disproportionately higher than that of the general population (Diaz & Ferketich, 2018; Sigel et al., 2017). In the Medical Monitoring Project HIV Surveillance 2018 Cycle Report (June 2018-May 2019) based on a nationally representative sample of PLWH in care, the estimated prevalence of current smoking was 33%, of which 26% of persons smoked daily (CDC, 2020a).

Information gathered in this report reflects the experiences and needs of adults diagnosed with HIV. Others estimate the prevalence of cigarette smoking in PLWH ranges between 47% and 65% (Pool et al., 2016). The extremely high smoking rate among PLWHA, coupled with the additional burden of HIV infection, should make smoking cessation a high priority among HIV/AIDS primary care and medical providers (Tesoriero et. al, 2008).

According to a study evaluating trends in cigarette smoking among adults living with HIV in the U. S. between 2009 and 2014 (Frazier et al., 2018), HIV patients who regularly receive care are more likely to smoke cigarettes and are also less likely to quit compared to the general population.

Rationale for studying smoking cessation challenges among PLWH in California

PLWH have a greater risk of cancer in comparison to the general population, and lung cancer is a leading cause of death among PLWH (Mann-Jackson et al., 2019). PLWH who smoke and are on ART have more years of life lost (YLL) to smoking than to the HIV infection itself (Niaura, Chander, Hutton, & Stanton, 2012; Mann-Jackson et al., 2019). The population of HIV infected who smoke are also predicted to be almost two times less likely to quit smoking than those who do not have HIV but smoke cigarettes (Mann-Jackson et al., 2019).

These data (Mann-Jackson et al., 2019) illustrate that cigarette smoking is a key modifiable risk factor that should be highly prioritized among PLWH, even amid other health care issues. In a national survey on smoking estimates in the U.S., compared to the general population, adults with HIV were twice as likely to smoke (adjusted prevalence difference, 17.0 percentage points [CI, 14.0 to 20.1 percentage points]) but less likely to quit smoking (quit ratio: 32.4% vs. 51.7%) (Mdodo et al., 2015).

Compared to the general population, rates of tobacco use, mainly smoking cigarettes, are higher among men who have sex with men (MSM) (CDC, 2016), who make up the majority of new HIV infections in the United States (Santos, Tan, Turner & Raymond, 2019). Data from the National Health Interview Survey indicated that the current prevalence of smoking was significantly higher in MSM than among heterosexual men (Santos et al., 2019, Agaku, King, & Dube, 2014). In the Multicenter AIDS Cohort Study of MSM from four cities including Los Angeles, Chicago, Pittsburgh, and Washington, DC, 34.1% of the participants were classified as persistent smokers (Akhtar-Khaleel et al., 2016). In the California Health Interview Survey, smoking was statistically significantly higher for MSM (21% for gay men, 29% for bisexual men), compared to heterosexual men (19%) (Max, Stark, Sung, & Offen, 2016). In terms of frequency, gay smokers were also more likely to be daily smokers than heterosexual smokers (Max et al., 2016).

Sampling

Although more men were sampled in this study, based on another study evaluating smoking among HIV smokers, the issue of smoking is more common among men than in women living with HIV (Santos et al., 2019).

Age:

There is an increased risk of cardiovascular disease (CVD) among the HIV-infected population, compared to seropositive non-smokers (Bijker et al., 2017). The elevated risk of CVD may also be due to risk factors unique to the HIV-infected population, namely a compromised immune system (Helleberg et al., 2013b), HIV associated inflammation (Nou, Lo, & Grinspoon, 2016), and receiving ART (Bijker et al., 2017; Zanni et al., 2014).

Cigarette Smoking:

Approximately 60- 80% of the HIV-positive population are smokers, and the prevalence of tobacco consumption is up to three times higher within the HIV-infected population than in the general population (Winston et al., 2013). Cigarette smoking is defined as a lifetime history of at least 100 cigarettes. However, smoking even one cigarette daily may cause harm to persons who are immunocompromised.

Cessation:

The HIV-positive population records an unsuccessful quit rate of 80% (Shuter, Salmo, et al., 2012). While national prevalence of smoking among the general population has continued to decrease in recent years, smoking cessation persists as a challenge for PLWH. With rates up to three times that of the uninfected population, the issue of smoking is disproportionately higher among PLWH than the general population (Mann-Jackson et al., 2019). The adverse effect of smoking for PLWH can also reduce the benefits of antiretroviral therapy (Mann-Jackson et al., 2019).

In a survey to measure biopsychosocial domains related to tobacco use in PLWH conducted by Shuter et al. (2012a) among 60 HIV patients randomly selected from an HIV clinic, T-cell count is thought to be raised by smoking, thus helping fight infections. This misconception (Shuter et al., 2012) is a potential barrier to successful cessation within the HIV-infected population, and a lack of awareness of the dangers of smoking as a person with seropositive status, further increases the risk of adverse health outcomes. The purpose of this study is to understand firsthand the perceptions, attitudes and beliefs about smoking, among people living with HIV, and to design effective, targeted interventions to minimize risk.

Current treatment strategies:

Current research shows that varenicline is a safe medication for smokers with HIV to use as a smoking cessation aid (Ashare et al., 2019). Results from studies show that the medication

has been helpful with achieving short-term abstinence within the population. However, the extent of success with smoking cessation is limited when cessation depends on the use of pharmacotherapy alone. A randomized placebo-controlled clinical trial testing the efficacy of varenicline for smokers living with HIV showed that varenicline is safe for smokers to use as a cessation aid (Jorenby et al, 2006).

Role of medical providers in cessation efforts:

Despite the growing crisis that is brought about by smoking within this population, the need for cessation and the potential health dangers of smoking are not often adequately emphasized to PLWH by health care providers (HCPs), including nurses, physicians, physician assistants (Mann-Jackson et al., 2019). The Public Health Service Clinical Practice Guideline for Treating Tobacco Use and Dependence recommends that time spent in the doctor's office should include smoking cessation counseling (Niaura, Chander, Hutton, & Stanton, 2012). These guidelines prescribe a 5A method for offering brief interventions at clinical encounters to help patients quit smoking, namely: Ask about smoking, Advise cessation, Assess readiness to quit, Assist with motivation and/or cessation, and Arrange follow-up. A survey conducted on a national sample of HIV care practitioners in the U. S. showed an extremely low score of HCPs who utilize the 5A method to address cigarette smoking behavior and cessation with their HIV patient population, despite the national guidelines advising that they do so (Shuter, Salmo, et al., 2012). Studies show that HIV-positive adults receiving medical care are significantly more likely to be current smokers compared with the general population and were also less likely to quit smoking (Brown et al., 2017). In a randomized controlled clinical study, Humfleet et al. (2013) discovered that integrating smoking cessation interventions within HIV clinical treatment settings is feasible and can yield promising results. Thus, the medical providers who care for

HIV patients can seize the opportunity to initiate and suggest smoking interventions during consultations with patients.

In a study that assessed factors related to smoking cessation in a large patient sample consisting of PLWH receiving routine clinical care, patients with current substance use were less likely to quit smoking (Zyambo et al., 2019). This report confirms findings that HIV patients who smoked cigarettes and other substances such as marijuana, reported difficulty with quitting cigarette smoking. d, a participant who smoked marijuana in addition to cigarettes, reported that he used marijuana to wean off cigarettes.

Theoretical Frameworks

The Transactional Stress and Coping Method (TSCM) is the framework for this dissertation research (Chapter 2). Grounded Theory (Charmaz, 2014) will be used for Chapter 3, which discusses patient-physician health communication surrounding cessation. Statistical analysis will be used to address Chapter 4.

Transactional Stress and Coping Method:

Interventions are an important part in the continuum of care for people living with HIV (PLWH). However, even before interventions can be tried and tested, more needs to be known about the characteristics and circumstances of PLWH and their relationships with others as it relates to their smoking behavior. Personal health behavior decisions that affect health outcomes are complex and multifactorial. Consequently, theories to guide this study must not only focus on the intricacy of each individual, but also on other relationships, such as the patient-provider relationships, that affect these health behavior decisions. Providers play a vital role in cessation behavior (Shuter et al., 2012). Few health behavior theories incorporate the patient-provider interaction, and limited studies exist on tobacco cessation among PLWH, particularly related to

patient perspectives on providers' roles in fostering smoking cessation attempts (Shuter et al., 2012; Graham, 2015).

Furthermore, living with a positive HIV diagnosis is a life-impacting event that requires daily medication, as well as regular interaction with health care providers in order to manage the chronic illness, the experience of living with an illness, medical treatment, a positive HIV diagnosis, can incite stressful reactions (Glanz & Schwartz, 2008). Sadly, the stress of managing such a diagnosis may not only promote the progression of HIV in a disease that already attacks the immune system (Leserman, 2008), but also lead to the adoption of coping behaviors such as smoking. Thus, the integration of theoretical constructs into research that focuses on stress and coping is essential. However, no one model has broadly described the complexity of individual characteristics in the context of stress and coping on health behavior and outcomes. Fortunately, the Transactional Model of Stress and Coping (TMSC) (Lazarus & Folkman, 1984), in synthesis provides a comprehensive framework to guide coping behaviors such as smoking in HIV. TMSC is a combination of aspects of the Social Cognitive Theory and the Health Belief Model. Linking theories across disciplinary lines supports an interdisciplinary approach to cessation.

Two current models, Cox's Interaction Model of Client Health Behavior, and Lazarus and Folkman's Transactional Model of Stress and Coping have both guided research with PLWH, although not related to cigarette smoking cessation. Given that the Cox model is given to quantitative research and will not apply to the current qualitative research, the latter model will be adopted. Integration of the TSCM model may more comprehensively inform tobacco cessation research and practice in wholistic medical care as it incorporates not only intra- and inter-personal characteristics and relationships but also the stress and coping experiences inevitable when living with a chronic illness such as HIV.

The TSCM framework combines the Social Cognitive Theory and Health Belief Model to address health issues and appraisal of risky health behavior and is best suited for this study. Data will be modeled according to The Transactional Model of Stress and Coping (TMSC). Focusing on the interactions that exist between psychosocial functioning and environment, stress and coping models have been used in the literature to study the intersection of chronic illness and health behaviors including smoking (Gold, Treadwell, Weissman, & Vichinsky, 2008; Hocking & Lochman, 2005).

The primary constructs of the TSMC are primary appraisal, secondary appraisal, and coping efforts. Appraisals are how an individual mediate the stressor and their behavior based on environmental resources to them. Stressful experiences, such as diagnosis with HIV, and the stigma experienced as a result of positive diagnoses, are deemed as person-environment *transactions* in which the effect of an external stressor is mediated by a person's appraisal of the stressor and the psychological, social, and cultural resources that are available to him or her (Lazarus & Cohen, 1977). Some of these resources include practitioners, and counseling services.

Primary appraisal describes a person's evaluation of potential threats or harms of an event or stimulus (Glanz, Rimer & Viswanath, 2008). The construct comprises two main components, from the Health Belief Model (HBM), namely, perceived susceptibility and perceived severity. In perceived susceptibility, we describe a patient's perceived likelihood of contracting a disease or condition. For example, an HIV-positive smoker's perception about potentially getting cancer or impeding the effect of anti-retroviral therapy from smoking will influence their smoking cessation seeking from the practitioners. In perceived severity, we describe a patient's feeling concerning getting a disease or condition (Glanz et al., 2008). For

example, a smoker feeling badly about the adverse effect of smoking could impact their cessation seeking and success.

Secondary appraisal describes his or her ability to change the situation and manage negative emotional reactions. This construct borrows components from Coping Theory, perceived control, which describes how a smoker feels that he or she can quit smoking; and perceived emotional control which describes one's control over their feelings toward smoking cessation, such as feeling conflicted (Glanz & Schwartz, 2008).

The actual *coping efforts* are actions directed at problem management and emotional regulation. This is important to look at as coping mechanisms are vital to human existence and survivorship (O'Connell, Hosein, Schwartz & Leibowitz, 2007), and these include strategies to decrease urges to smoke. These coping efforts function as the mediators between the primary and secondary appraisals (Lazarus & Folkman, 1984). The two primary strategies are problem management and emotional regulation. In problem management, we describe an active coping strategy focusing on seeking information to use to address the potential stressor, in this case smoking. For example, a person attempting to quit smoking seeks advice from his or her practitioner on cessation methods.

Emotional regulation comprises moderating one's feelings and thoughts about a stressful situation. For example, when an HIV-positive smoker receives a diagnosis with adverse health outcomes related to smoking, and they seek out support groups to help them cope. At this point, the problem or stressor cannot be changed, but can be coped with. Coping methods can either be engaging or disengaging. Engaging methods are linked to improved health outcomes and include problem solving, information seeking, culture, and social support (Carver et al, 1993).

Psychosocial variables such as Disengagement belief may arise as a barrier faced by PLWH to

quitting smoking. The literature shows that smokers with strong disengagement were more likely to unsuccessfully achieve long term cessation (Kleinjan, van den Eijnded, Dijkstra, Brug & Roijackers, 2006). Given that PLWH experience different forms of stress daily, it is important to develop an understanding of the transactional nature of the stress and how it is handled in order to give insight into smoking cessation programs for PLWH.

This model has previously been applied in other PLWH populations (Brown et. al, 2019; Graham, 2015), and the current study extends its application to a new population of HIV-positive smokers living in southern California.

Gap in Smoking among PLWH Literature and Innovation of Dissertation Research.

Despite the high prevalence of cigarette smoking among the HIV-infected population, the research to examine smoking cessation research among people living with HIV is sparse (Diaz & Ferketich, 2018).

The research studies proposed as part of this dissertation contribute to the existing literature relating to the challenges of smoking cessation among people living with HIV, and scientific knowledge concerning the epidemiology of cigarette smoking behaviors and cessation efforts among people living with HIV, an area of research that has gained increasing attention, and has expanded in recent years. Furthermore, cigarette smoking among people living with HIV has largely focused on the examination of characteristics associated with current smoking status. Although this research has yielded some valuable insights, the aspect of understanding the difficulties experienced by the population in successful cessation has not been well understood.

This dissertation research aims to describe the role of medical providers who care for patients living HIV who smoke, in initiating and facilitating cessation techniques among their HIV smoker patient population. HIV patients routinely receive care from medical providers. The

time spent during a consultation session provides an opportunity for health issues to be addressed including cigarette smoking. Thus, physicians, nurses, and other healthcare providers, are uniquely positioned to discuss cigarette smoking cessation strategies with patients who smoke. Research shows that HIV patients or members of the general population, or patients who were advised by their healthcare practitioners to quit smoking were successful, compared to those who were not advised by an HCP. To facilitate the discussion, the national public health guideline recommends that healthcare providers adopt the 5A method to initiate smoking cessation counseling between providers and patients. However, there has been low records of physicians using this method in practice. A study done by Shuter et al. (2012) through the use of survey evaluating provider beliefs and practices around smoking cessation among people living HIV shows that only 8% of providers agree to the use of the 5A model as guide when they discuss smoking with their HIV-infected patients.

In addition to exploring barriers to quitting, the current research sheds light on the self-admitted risk of smoking to their seropositive status. Previous studies have failed to address the effect of smoking on their seropositive status from the perspective of the patient which is an aspect of HIV health that has not been highlighted from a first-hand perspective of HIV smokers themselves in previous research. Although half of patients claim to be asked about quitting, only a third of them were assessed for their motivation to quit smoking (Williams et al., 2014). Furthermore, the present research extends previous work by considering the role of physicians in enhancing cessation among patients.

The importance of the study is understood that individual-level characteristics such as demographic characteristics, and other substance use, as well as social environmental characteristics, such as having close friends or family smoking in one's physical environment,

the influence of a significant other who smokes, the opinions of friends or family about the smoking behavior, in playing a role in influencing smoking behaviors (Alexander et al., 2001). This finding describes an ecological or multi-level or multi-phase approach (Collins et al., 2011). However, little is known about the medical practitioners who see such patients who smoke; this work elucidates their preparedness and process in consulting with this vulnerable population considering their cigarette smoking behavior.

Dissertation Components

The first study of this dissertation entitled “*Attitudes and Perception of People Living with HIV Regarding Cigarette Smoking Behavior and Smoking Cessation,*” employed semi-structured in-depth interview research methodology to bridge this gap. The theory of Transactional Model of Stress and Coping was utilized to understand how people living with HIV conceptualized their diagnosis, cigarette smoking habits and the perceived impact of smoking on their overall health. The research questions evaluated in this study were as follows.

Overall AIM 1: Understand the challenges of smoking cessation experienced by people living with HIV who smoke.

Research question 1a: Why do people living with HIV smoke knowing they are ill?

Research question 1b: What are their perceptions about the importance of quitting smoking?

Research question 1c: What challenges do they face with quitting smoking as people living with HIV?

In the second study of this dissertation entitled “*HIV Smokers’ Understanding of Cessation Messaging from Medical Providers: A Qualitative Assessment,*” adopted one-on-one interview research methodology to assess the perception that HIV patients had towards physicians and medical care providers regarding cessation advice from the providers. Codes

were examined for extent to which providers cessation efforts are perceived to help bridge this gap. The research questions that were addressed were:

Overall AIM 2 will assess health communication surrounding smoking cessation counseling between provider and patient, as understood from the perspective of the patient.

AIM 2: To assess patient understanding of doctor recommendation about smoking cessation in patient-physician encounter.

Research question 2: What meaning do patients ascribe to provider recommendations about smoking cessation?

In the third study of this dissertation entitled “*Adherence to clinical guidelines for smoking cessation among HIV medical providers: A national survey,*” I analyze a survey of members of the HIV Medical Association (HIVMA) that captured provider attitude, beliefs and practices regarding smoking cessation among HIV positive patients. Quantitative research methods such as regression analyses were utilized to discover trends in physician response to key components of cessation advice practice. The goal of identifying these trends is to determine the provider groups that would most benefit from future interventions.

AIM 3: To assess medical providers’ adherence to public health guidelines to use the 5A method for smoking cessation discussion with patients who smoke.

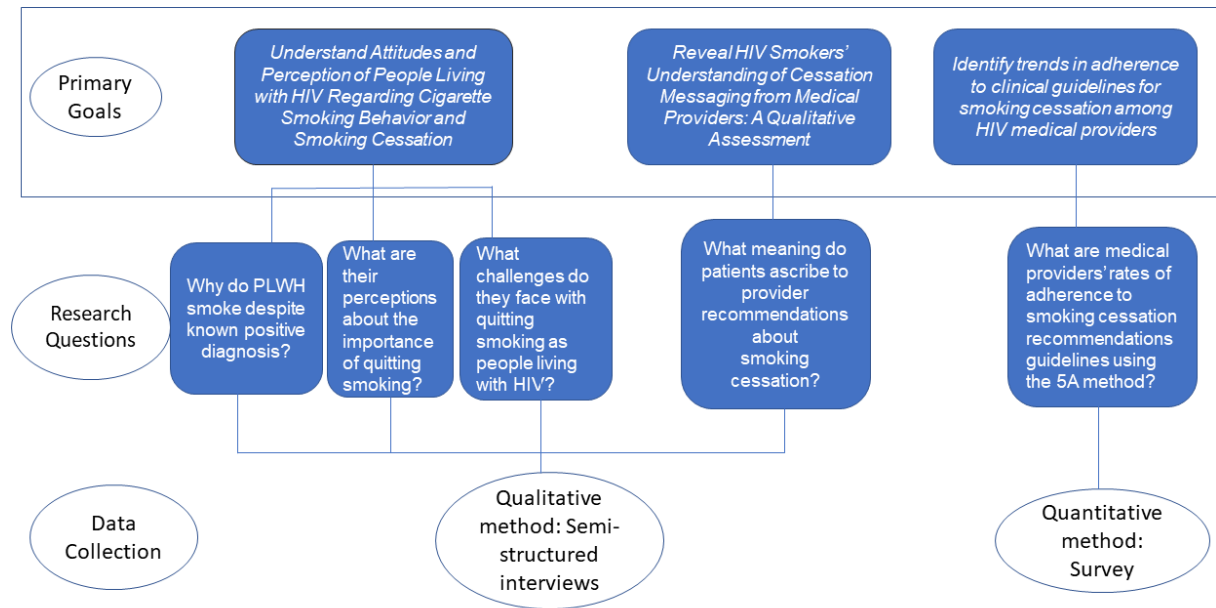
Research question 3: Do the medical providers adhere/What are the medical providers’ rates of adherence to smoking cessation recommendations guidelines using the 5A method?

This dissertation consisted of collaborating with the OASIS HIV Medical clinic in Los Angeles, and the UCI Medical Center in Orange, in California to conduct in-depth interviews with patients from both clinics. The patient population in both clinics vary. While the nature of the populace at OASIS is fully HIV, the UCI medical center caters to a diverse patient group

consisting of both HIV and non-HIV patients. Both clinics however regularly see HIV patients, making them strong sources for study participants. Findings from this study may contribute to the understanding of why PLWH choose to continue smoking, which can be key to intervention design. To address AIM 3, the data was provided by Dr. Shuter, a physician and HIV research professor at the Albert Einstein College of Medicine in Bronx, New York.

Figure 3, below, provides an overview of the research methods utilized in this dissertation, including an illustration of how each component and corresponding research questions are integrated to accomplish the primary objectives of this study. The study protocol was submitted to and approved by the University of California Irvine’s Institutional Review Board (see Appendix A).

Figure 1. Research Plan: Primary Goals and Research Questions



CHAPTER 2

METHODS AND RESULTS FROM AIM ONE: HIV PATIENT PERSPECTIVES ON SMOKING BEHAVIOR ON HEALTH AND VIEWS ON SMOKING CESSATION.

Introduction

Patients' perceptions of smoking behavior and viral load.

Cigarette smoking has immense health implications for the HIV-positive population. In addition to the suppression of lung function associated with cigarette smoking, people who are HIV-infected who smoke have a significantly greater risk of bacterial pneumonia and tuberculosis than those who do not smoke (Diaz & Ferketich, 2018). Smoking is also significantly associated with lung cancer in PLWH (Winston et al., 2013) and worse COVID-19 outcomes (HIV.gov, November 9, 2020). The development of lung cancer occurs at a younger age in people living with HIV than in the general population, and adherence to ART and smoking dramatically increases the likelihood of mortality due to lung cancer than traditional AIDS-related complications. In a study evaluating the association between cigarette smoking and virologic suppression, researchers found that moderate to heavy smokers, those who smoked ≥ 10 cigarettes daily reported detectable viral load compared to those who were infrequent to regular smokers, that is, those who smoked less than ten cigarettes daily (Brown et al., 2017).

RESEARCH DESIGN AND METHODS

PARTICIPANTS AND RECRUITMENT PROCEDURE

Recruitment Strategy and Setting:

The author utilized purposive sampling to recruit 13 HIV patients who smoke cigarettes. HIV positive smokers were purposively sampled to be interviewed about the perceptions of smoking risk and the challenges of quitting. For this study, 13 participants were included. A sample of the same patients from AIM 1 (~N= 10) was selected. The author asked questions

about both aims were asked in the same session. To maintain the focus of each of the research aims, the author described to the participants the distinct nature of the questions the author would ask them that pertained to the different aims, AIMS 1 and 2. For AIM 1, the Transactional Model of Stress and Coping theory guided the main questions to reveal patient perceptions around tobacco cessation. These questions incorporated not only intra- and inter-personal characteristics and relationships but also the foreseen stress and coping experiences when living with a chronic illness such as HIV. The overarching areas of the main questions included stress, perceived severity, perceived susceptibility, and coping mechanisms. The full text of the interview guide is included in Appendix C.

In discussion, this researcher anticipated that participants might bring up commentaries about AIM 2 during the participants' conversation about AIM 1. Thus, the author decided to retain the same patient sample for both aims, with the primary goal of attaining rich data from the interviews. In addition, the author established a relationship with the medical directors of both clinics in Los Angeles and Orange County, Drs. W. Jordan and C. Diamond, respectively, whose partnership supported recruiting more eligible HIV patient smokers for the study (see Appendices F and G for a copy of the letters of support). The author also collaborated with case managers of both clinics. Finally, the author provided information on the research to disperse to patients who met the criteria for study participation.

Prior to clinic, the researcher contacted the medical administrator and nursing teams to pre-screen the upcoming week's patient panel. Once in clinic, the clinical team, including the attending physicians, nurse practitioners, and social workers, informed patients whose medical records indicated a current status of tobacco usage of the study. Once aware, each patient chose whether they would like to be included in the study. If interested, the clinical team introduced the

researcher to the patient, at which point the patients completed the consent process, and the researcher began collecting data.

Snowball sampling, the method of expanding the sample by asking one informant or a research participant to recommend others to be included in the study (Groenewald, 2004), was also utilized to recruit HIV patients. At the end of the interview with participants from the listed clinics, this researcher asked if they knew and were willing to recommend anyone they knew who was also HIV positive who also smoked that they could refer for the study. Recruitment continued until we attained saturation. Saturation is attained when participants introduce no new themes on the research topic (Glaser & Strauss, 1967; Groenewald, 2004).

Small (2009) claims that case logic and sequential interviewing can lead to saturation in 10-12 interviews. Also, Guest et al (2006) conclude that “if the goal is to describe a shared perception, belief, or behavior among a relatively homogeneous group,” then a sample of twelve will likely be sufficient. Given that saturation was attained, for this study, 10 participants were included.

Participants

Inclusion criteria:

We purposively sampled individuals aged 18 years or older who tested positive for HIV and currently smoke cigarettes (at least one cigarette a day). These include patients who recently had a medical visit with their physician or other practitioner or who have been seen at least once by the practitioner.

As part of the eligibility pre-screening process when recruiting participants, the author ensured that each of the HIV patients verbally responded that their practitioners discussed smoking cessation with them. When recruiting patients, this researcher confirmed that patients

acknowledge that smoking cessation had been raised in the medical encounters. The institutional review board of the University of California, Irvine, approved the study.

Exclusion criteria:

HIV-negative patients, and HIV-positive patients who smoked cigarettes in the past and have quit were excluded from the study.

Statement on COVID-19 Impact on Research/Data Collection amid COVID-19 Crisis

Despite the recruitment challenges, the author recruited 13 people living with HIV in California. Before COVID-19, each interview was conducted face-to-face. Given the rise of COVID and the impact that national lockdowns had on in-person gathering, interviews were moved remotely as a result. Interviews were conducted via the phone. Recruitment was considerably lengthened as a result of the challenges experienced due to the unprecedented pandemic. The recruitment process continued for nearly six months. Interviews began in October 2019, and the author conducted the last interview in May 2020.

Table 2.1: Participant Identification Rubric

Participant Number	Gender	Age
1	M	50
2	M	35
3	M	53
4	M	42
5	M	55
6	M	44
7	M	53
8	F	52
9	M	27
10	M	55

A total of approximately 90- 100 hours was spent recruiting, interviewing, and analyzing the data. Four out of ten were living on disability, two were unemployed, and the only person who had attained a bachelor’s degree was a retired veteran who had been smoking since he was

18. All participants smoked daily, and nearly all participants smoked a pack of cigarettes every day.

Procedures:

All in-person interviews were scheduled and held in an agreed-upon location convenient for both the interviewer and interviewee. Interviews lasted about 30 minutes and 30 seconds on average, with some lasting up to 64 minutes. The interviews were audio-recorded with the participant's consent, and transcribed verbatim by the researcher. Given the sensitivity of the topic, it was vital that the participants chose the locations and that the author conducted interviews where both parties felt most comfortable so participants could respond as openly as possible. This arrangement was ideal because the topic of this inquiry is personal and possibly not openly discussed due to stigma. Interviews commenced using an interview guide that included open-ended questions about the interviewees' smoking history, HIV diagnosis, relationships family members and friends, and descriptions of any health issues related to smoking. Responses to the initial queries prompted follow-up questions (see Appendix C for the interview guide).

Participants were compensated with \$20 for their time.

INTERVIEW AND CONSENTING PROCEDURES

Development of Interview Guide

The interview guide was adapted from previous research (Wells, 2016) and tailored to the research participants in this study (see Appendix C). The author read the consent to them and asked if they had any questions, and then proceeded to, with permission, record the interview. The author was careful to refrain from mentioning their name and informed them ahead of time that she would do so.

Interviews with participants addressed both AIMS. For the HIV-positive patients who smoke, the flow of the interview guide from AIM 1 transitioned into the AIM 2 Part 2 for patients (see Appendix). First, the author asked questions that addressed smokers' perceptions regarding their smoking behavior, such as, "*How long have you been smoking cigarettes and why?*" The interview also probed further to understand the perceptions that PLWH held and believed regarding their smoking behavior and HIV drug adherence.

Participants were then asked to describe situations that led them to smoke/

The interview also probed further to understand what strategies could be used by practitioners regarding quitting their smoking behavior. An example of such a question was,

"What are some strategies that could motivate you to quit smoking? (Relevant constructs: problem management)." Also probed for what strategies they believed worked to assist them to quit:

"What has worked for you? (Relevant constructs: social support, perceived control)"

"What hasn't?" (Relevant constructs: coping, perceived severity, perceived susceptibility)."

Incorporation of Theoretical Orientation

The major research question of this dissertation was to provide insight into the dilemma, "Why do people living with HIV infection smoke"? Choosing themes associated with the experience of cigarette smoking, and determining if smoking emerges as a coping mechanism, were specific areas of interest.

The interview guide solicited information from each participant concerning their personal history of smoking, perception of the impact smoking can have on health and their interest in smoking cessation programs. We addressed these topics by exploring the role of stress and its compounded effects on patients living with chronic conditions such as HIV. The author used individual codes to identify constructs during the data analysis (see Appendix J).

To answer research questions 1a, 1b, and 1c (see Table 4) the sub-constructs of perceived severity, psychosocial stress, coping, disengagement beliefs, coping, and coping efforts (see Table 2) were used to explore themes associated with smoking amongst people living with HIV (PLWH). For example, to further examine how a participant coped with daily stress, the researcher posed the question, “What do you do when you feel stressed?”

Disengagement beliefs (see Table 2.2) were used to explore themes relating to the thought processes that PLWH adopt to justify their sustained usage of tobacco. Smoking is a known carcinogen; therefore, it is curious to learn how PLWH justify their use of tobacco. What factors do they consider or existing variables that they experience in life that create barriers to successful quitting?

Table 2.2: Research Questions in Reference to the Theoretical Framework

Primary Aim	Research Questions	TSMC Constructs
Understand the continued smoking behavior of people living with HIV despite known health harms.	1) How do people living with HIV continue to smoke knowing they are ill? a. Why do PLWH smoke knowing they are ill? b. What are their perceptions about the importance of quitting smoking?	Coping Perceived susceptibility Psychosocial stress Emotional regulation
Understand the challenges of smoking cessation experienced by people living with HIV who smoke.	2) What challenges do they face with quitting smoking as people living with HIV? a. What roles do psycho-socio-economic issues such as personal, social, and financial strain, stress and stigma have on PLWH’s decision to initiate a smoking cessation attempt?	Coping efforts Psychosocial stress Social support Coping
Role of interventions in encouraging quitting	3) What interest do PLWH who smoke have in engaging in cessation programs? a. Will smoking cessation programs specifically for PLWH influence their decision to stop smoking?	Social support

These constructs are essential to provide insight into the cognitive processes experienced by PLWH when they decide to smoke. Further, this cluster of constructs is complements research

with adults living with HIV, where low adherence to disengagement beliefs is associated with low quitting activity and negative coping strategies such as smoking (Dijkstra, 2009).

Constructs derived from the TMSC at the primary (the direct effects of smoking: how harmful, harmless, or irrelevant smoking is), and secondary (how well are HIV+ patients prepared to handle the burden of smoking with living with a chronic disease) appraisal levels provided the theoretical orientation for the research question. The author summarizes example questions under each central construct as they reflected in the interview questions (Table 2.3). For example, to further evaluate the level of influence a participant’s social group has on their decision to smoke, the author used the following question as a probe. “How frequently do you choose to smoke or not to smoke when you are out with friends or family?”

Table 2.3: Theoretical Model of Stress and Coping (TMSC) Constructs

TMSC Constructs	Definition
Perceived susceptibility	The likelihood a person perceives himself or herself as getting a disease or adverse health condition
Perceived severity	One’s thoughts and feelings about getting a particular disease or adverse health condition
Psychosocial stress	Challenging conditions that exceed the behavioral resources of a person
Social support	The various forms of assistance or support that a person receives from others
Coping	How a person handles internal or external stimuli or stressors
Perceived control	A person’s belief that they can impact or influence the outcome of a situation
Problem management	A coping strategy that emphasizes on information seeking as an effort to address the cause of stress
Disengagement beliefs	Thoughts or beliefs about a behavior that separate the individual from potential adverse effects of said behavior
Emotional regulation	Moderating one’s feelings about a stressful situation

Interpretive Rigor

Rigor was attained through transcripts verbatim, member checking with other researchers, thick description, integration of probes and prompts in the interview guide to clarify vague responses. First, the author used two clinical sites for sample sources and triangulated findings through member checking with two other researchers, integration of probes and prompts in interview guide to clarify vague responses. As phenomenological data analysis is typically applied to interview data, I witnessed and interpreted thick descriptions of cessation challenges from the perspective of people living with HIV by asking open-ended questions. There were shared participant demographics between both sites: both had a low level of education, and the majority were unemployed and smoked as a longstanding habit to cope with stress. One notable measure of rigor is that the author asked each participant to expound on the meaning of phrases or expressions relevant to the research question that were unclear. An example is when a patient said, "smoking makes me feel 'woosah,'" motioning with their hands over their faces to signify a calming effect. Probing further also provided an opportunity to facilitate dialogue about their experiences, leading to a more accurate interpretation of the data.

Data Analysis:

Interview recordings were transcribed verbatim after each session by the author and research assistants. Interview transcripts were then analyzed using interpretive phenomenological analysis (Groenewald, 2004). To ensure confidentiality on the interview responses, the author de-identified transcripts when transcribed and coded for recurrent themes using the theoretical framework of the Transactional Model of Stress and Coping (TMSC) (Lazarus & Folkman, 1984).

Primary level descriptive coding was conducted with line-by-line reading of the transcripts and tagging segments of the data with labels describing phenomena (Charmaz, 2014).

Some examples of descriptive codes include stressful life situations, social triggers, lack of awareness of smoking medication ineffectiveness due to seropositive status. Based on the responses from the interview, data was then deductively reviewed for identifying descriptive codes related to constructs from the theoretical model of Transactional Model of Stress and Coping (TMSC). The data included expressions of stress triggers, including personal, financial, and social stressors. These triggers lead PLWH to smoke as a means of coping.

Secondary level interpretative coding consisted of organizing the descriptive codes into higher order themes arched on the constructs of the theoretical model. Secondary level analysis consisted of revisiting research questions and answering RQs. Coding continued until thematic saturation was attained. Saturation is defined as the point where additional data produces no new emergent themes (Saunders et al., 2017). I maintained an analytical memo throughout the process that will help identify properties of categories and connections between categories.

Furthermore, having a second researcher analyze the results from the in-depth interviews provided triangulation. Triangulation is the comparison of the results between a first coder and a second coder (Morse, 2015). To further achieve rigor, the researcher consulted with two other trained qualitative researchers including a distinguished professor on my committee, for their assessments. We discussed our interpretations for divergence until we reached a joint decision to agree (Eisikovits & Koren, 2010).

Ethical considerations:

Research approval was obtained from the University of California, Irvine Institutional Review Board. Names of research participants, including HIV-positive smokers, were withheld for privacy reasons. Informed consent was delivered before administering each interview. At the beginning of each interview session, informed consent was administered to the participants for

their verbal approval. Research participants were permitted to drop from the research at any time before or during the interviews. Interviewees were each compensated \$20 for participating.

Reflexive Memo:

This study also utilized qualitative methods to assess the rigor of the current research. As in quantitative studies, researchers use conventional means such as internal validity, reliability, and external validity (Forero et al., 2018; Jones et al., 2012). To establish trustworthiness, Lincoln and Guba in the 1980's developed stringent, four-dimension criteria in qualitative research, namely credibility, confirmability, dependability, and transferability (Guba, 1981; Lincoln & Guba, 1989).

Although all may not be applicable within a given study, **Creswell (2012)** recommends that qualitative researchers should apply at least two of them in each study (Morse, 2015).

Results

Respondent Sociodemographics

The participants (N= 10) had a mean age of 46.6 years old, ranging from 27- 55. Interview length ranged from 17 to 60 minutes. The average time spent interviewing was 30 minutes and 30 seconds. The participants' level of education was high school educated or were Associate's degree, a two-year degree.

Smoking behavior ranged from smoking an average of 17 cigarettes a day, with most participants smoking 20 -30 cigarettes daily. The range of time that participants had been smoking cigarettes was from 9 years to 49 years. Two of the participants reported having used Chantix in the past but were not currently taking any medication for their smoking habits. Only three of the study participants received a positive HIV diagnosis before initiating smoking, meaning that PLWH have been smoking, in some cases, for 9 – 36 years. Regardless of the date

of smoking initiation or HIV diagnosis, participants had smoked and lived with HIV for an average of 20 years. Participants had also been in medical care for the same period since their diagnosis. In all cases, participants have been eligible for interventions based on their smoking profile and health status.

Most participants had been smoking for over five years, and majority smoked at least one pack of cigarettes daily. Quit attempts had been made by three informants. Two participants had turned to other substances to wean off cigarettes. One quit suddenly on a bet with a friend, highlighting the importance of social support. Another quit temporarily by using marijuana to wean off cigarettes. Among the participants, two also reported receiving a prescription for and using Chantix, which they used for a month. During that time, they felt that the medication helped them reduce their smoking habits. One participant had attempted several times to quit, using Chantix, at intervals for three weeks and at another time for nine months. Describing the experience, he said, “I’ve taken Chantix before... and it really does make you not want to smoke because when you take these pills. It basically makes you when you smoke, it makes you feel sick so that you don’t want to smoke.” (P3. 53, M)

He was successful and optimistic until a significant, negative life event prevented him from maintaining a smoke-free lifestyle.

Table 2.4: Codebook for AIM 2

Theme	Code	Subcategory
Smoking behavior as Coping Mechanism	High smoking frequency	“I smoke like a ² half pack a day”
	Smoking to deal with stress and social triggers	"I smoke to relieve myself of financial stress" “People make me feel annoyed, so I smoke to deal with it”
	Smoking for pleasure	“ it’s ³⁶ hard to walk because I have a walker... and I can only go so far”
		“Smoking makes me feel good”

Low Perceived Susceptibility of Health Risk from Smoking	Bad for health No bearing on health Not connected	“It shortens my life” “(Smoking) has nothing to do with it (HIV),” “They have nothing to do with each other.”
Varying levels of awareness about Smoking Risk to HIV Status	Unaware Speedy destruction	“That has nothing to do with it either” “Oh, I don't really know how it affects my CD4.” “From what I've been told, it's killing me faster”
Maladaptive Coping	Conflicting knowledge of harm and continued smoking	“smoking is bad for my health but it makes me feel ‘woosah,’”
Undesired alternatives to smoking	Denial of suitable alternatives to cope with stress	“Oh, there’s nothing!” “Chewing on some gum is horrible. It’s nasty. I spit it out and light a cigarette”
Social network support and smoking messages	Family and loved ones influence	“My partner encourages me to quit smoking” “... I'm just trying to stay away from cigarettes and stay away from smokers” “ ⁰ they smoke uh just as much as I do” “My son and grandkids encourage me to stop smoking. I don’t think about smoking when I’m with them.” ⁴⁵ Maybe later after I’m separated from them but I cannot smoke around them.”
Facilitators for Cessation	Significant other Alternative substance	“Maybe a wife, because she’d be like, ‘stop smoking!’.” “I like a stress-free environment so usually I’m lighting up some good smells instead of a cigarette.” “I light weed (marijuana)”
Smoking Cessation Program Design Features	Cessation enhancing substances	“taking some sort of a pill, whether it be Wellbutrin, is still something that I think some people take for it.”

Themes related to Smoking Risk Perceptions

Smoking behavior as Coping Mechanism

When asked about why they smoked, all 10 participants said it was a means of coping with stressors, for pleasure, or as an addiction. Multiple factors make them feel stressed, such as relationships with others or adverse life events. A patient illustrated this theme, “My 22-year marriage ended, and I started smoking.” (P10/M-55)

Besides those, others smoke as a result of the feeling that they derive from smoking.

Patients and physicians do not view this behavior in the same way. For example, when asked how they thought living with HIV was related to their smoking, one participant responded, “If you ask me, it’s fine, but if you ask my doctor, uhm, I get a lecture every time I go in.”

Low Perceived Susceptibility of Health Risk from Smoking

The author asked the participants whether they were currently on medication for HIV. Participants were then asked to describe their understanding of how their smoking habit interacts with their HIV medication. While some of them acknowledged that smoking was bad for their health, other respondents could not express the impact of smoking on their overall HIV health. As illustrated in the following, when asked: Tell me what you know about the impact smoking has on your health. One respondent said, “Oh, it has a great impact on my health, a negative one... (it) shortens my life. I know it makes hard to breathe. I'm risking getting respiratory failure. Uh, it affects my blood pressure.” (P1/M-50)

Smoking is not good and if I think about it, I should not do it ...it's expensive, and you smoke it's really expensive, because it depends on how much you smoke and it depends on how much other people take cigarettes from you as well. (P3/M-53)

Indicating that there was no impact of smoking on their overall HIV health long term, three participants said, “(Smoking) has nothing to do with it,” referring to their positive HIV diagnosis. Other similar statements were, “I don't really know how it affects my CD4.” (P1/M-50) A patient who at the time was attending an Alcoholics Anonymous group.

“Oh, well, that has nothing to do with it either,” “They have nothing to do with each other.” (P9/M-27)

Varying levels of awareness about Smoking Risk to HIV Status

“I really don't know.” (P3/M-53) While another responded, “They have nothing to do with each other.” (P9/M-27) Other examples of participants being fully aware of the risks associated with smoking and taking their HIV medication include responses such as:

Well, from what I've been told, it's killing me faster, but I haven't seen the medical proof of that...Man, I still smoke. And use my HIV antiretrovirals. And for those two years, I was off of meds*, I still smoked. And there was no real severe negative impact that they could show me from the smoking on that. So, I don't know. (P4/M-42)

“Oh, I don't really know how it affects my CD4.” (P1/M-50)

“It's like hell on my lungs... I wouldn't say anything positive.” (P10/M-55).

Maladaptive Coping

At this point, we have understood that, while others are unaware, some people living with HIV are conscious of two key points: their chronic illness and the unfavorable nature of smoking. Next, this set of questions also provided insight into how negative coping strategies influence PLWH to continue smoking. One significant theme related to maladaptive coping strategies emerged in analyzing the data: resignation.

Resignation: Participants expressed resignation by feeling as though there is no other option or outlet when stressed or happy. Some participants were able to link the idea of smoking to impact them individually negatively, and some were in a state of ambivalence. One example of this is where a participant discussed the immediate impact smoking has on him/her but then touts cigarette usage as a calming mechanism. An example is when a patient said, “smoking makes me feel ‘woosah,’” motioning with their hands over their faces to signify a calming effect. (M-27)

When we asked participants if there was anything that would prevent them from quitting, a respondent seemed to resign and say, “*Is there anything out there? No. I’m going to die with a cigarette in my hand. (laughs)*”—(P6-M/44)

Coping Strategies

When asked about alternative modes of dealing with a stressful besides smoking, responses included:

Oh, there’s nothing! ... It’s like, Oh yeah, it’s something in there that caused our brain to say smoke cigarettes. So, we got to figure out the solution is: what’s in the cigarette that’s making me have that urge. *Now we’ve got to figure out something that we could give to smokers and they get that fix. So, I want urge that I’d be like, Oh, I’m gonna eat this little thing. And then I eat that little piece of paper or whatever’s in it and then I don’t have to smoke.*

P6/M-44

He went further to state the following about chewing gum as a cessation effort.

You see what I’m saying? But chewing on some gum. It’s horrible. It’s nasty. I spit it out and light a cigarette or put a patch on and then I’m still got the patch on *and* ⁸⁰*I’m smoking with the patch on.* It says, don’t do that. But now I’m smoking with the patch and it says, or, you give me the pill, ⁸¹*take the pill and my mouth tastes like chalk and the cigarette tastes like horrible.* So now I’m gonna stop taking the pills so I can enjoy my cigarette. It’s like everything that’s out there is not working for the normal people.

Social network support and smoking messages

Participants revealed having a supportive social circle. When asked about how their circle of family and friends impact their decision to smoke, one patient said that their circle did not,

and that the decision to quit would ultimately come from them, echoing other findings of self-efficacy. They did also mention staying away from other smokers as a means of achieving better quit efforts. For example, a patient expressed, “Umm... I'm just trying to stay away from cigarettes and stay away from smokers” (P9/M-27)

Another participant indicated that the health messaging surrounding smoking is a scare tactic wielded to instill unwarranted fear into smokers. The following statement underscores a gap in public knowledge about the dangers of smoking. The need for clearer messaging around cigarette use and its effect on one’s health is important.

I mean, they've drawn correlations to so many health problems, but they won't even say themselves that it's caused by cigarettes. It's more certain kinds of cancers causing this problem. So, it's not that I don't think cigarettes are bad for you. I just think that there are a lot more scare tactics to make it look more severe than it really is. I've had family members that smoked their entire lives and never had a problem.

(P4/M-42)

To buttress his point, in downward comparison (Ekwonye, Ezumah, & Nwosisi, 2021), this participant discussed other family members suffering severe health issues but did not smoke. “I've had some family members that have picked up a cigarette and they have cancer three years from now, you know.” P4/M-42

Cessation

When we asked participants if there was anything that would help them abstain (facilitators), a subject responded, saying, “Maybe a wife, I don’t know.” We probed further: “Because she’d be like, ‘stop smoking!’.” This report is indicative of a perceived need for social support in aiding cessation. “I try not to [smoke at home].” P6/M-44

Sub-theme: Using alternative substances as a means of curbing cigarette smoking.

In times when a person chooses not to smoke, they may turn to other options to cut back on cigarette use. For example, creating the immediate physical environment where one is in, has been raised as a way that smokers living with HIV cope with stress. Additionally, they may use marijuana, as illustrated in the statement below.

I light candles... essential oils, and air diffusers... weed, sage. Umm, I mean if I'm at home like I'm in a ²⁶stress free environment so usually I'm lighting up some good smells instead of a cigarette. P9/M-27

We now continue to the topic of cessation program designs; it was essential to gain patients' views about the design and their participation in a tailored smoking cessation program.

The outcome was as follows.

Smoking Cessation Program Design:

When asked about their thoughts about designing a program to assist HIV smokers in quitting, Accessibility, affordability, and social support were indicated as paramount.

So, taking some sort of a pill, whether it be Wellbutrin, is still something that I think some people take for it. Yeah. If Chantix works really good, it's something that's completely different. You know, the gum and the patch is (sic) something that's good. And then you need to have some sort of, you know, go to person to talk you off that ledge. You know what I mean? If you need that.

Having a person to talk to provides a source of allyship and solace in stressful times.

Participants generally thought that such a program should come at no cost to the patient to motivate them to quit. However, despite this suggestion, several participants also mentioned that no such program would help them or work if they were not willing or ready to quit.

“Well, the program would have to be free for anyone to wanna quit. Because I mean,

people don't want to pay for a disease that they have which is addiction smoking. So, it would have to be you know umm a NPO or something like that... so I feel like it would solve a lot of problems for people if the services were offered for free. *But if you don't want to quit then it's not gonna work"* (P9/M-27)

When asked what type of interest they would have in an online stop-smoking program, a patient stated, "Online would be easier for me, but I mean if I had to, I'd go to a person." (P1/M-50)

Asked about an interest in an online program, a participant said: "Ummm... not right now in my life... Cause right now I'm just living, and I'm ready to smoke, and so I smoke." (P9/M-27)

Other patients were less enthusiastic.

Some people need the "Oh, my God, you're doing such a great job." Blah, blah, blah, blah, blah, blah. They need that that.. that praise. You know, letting somebody know that they're doing a good job in every day really just depends on the person. And, you know, generationally speaking, you know, I am I don't need all that warm, fuzzy crap because I this is not the way I'm wired. You know what I mean? P3/M-53

However, they would go if there was a tangible benefit attached to it, such as receiving medication for cessation.

But. I mean, ...you know, if I had [to,] if it was the only way I could get the pills to help me quit because I had to go to some support group or whatever, then I would do it otherwise. P3/M-53

Discussion

The unawareness of smoking risk was high among the participants, as certain informants believed that smoking did not affect their CD4 cell count. This notion contrasts with previous research. A study tracking CD4 cell count in women living with HIV who smoke, before

initiating HAART, evaluated trends in CD4+ lymphocyte counts and viral loads among smokers and nonsmokers starting at the visit before HAART and studied over five years, after adjustment for age and race. Feldman (2006) posits that, compared to before initiating HAART, the higher CD4+ lymphocyte counts initially observed among smokers actually became lower than the mean CD4+ lymphocyte counts of nonsmokers (Feldman et al., 2006).

The cognitive dissonance generated by the discrepancy between smoking-related health harm beliefs and continued smoking was a motivator to quit (Naughton, Eborall, & Sutton, 2013). However, difficulty in quitting led participants to resolve this dissonance by employing disengagement beliefs, which modulated the threat of smoking. An interesting point in this study is how HIV patients who smoked cigarettes and other substances such as weed reported difficulty quitting cigarette smoking. A participant who smoked weeds in addition to cigarettes reported using weed to wean off cigarettes. Our findings are confirmed by a study that assessed factors related to smoking cessation in a large patient sample consisting of PLWH receiving routine clinical care. Like the participant population in this dissertation research, patients with current substance use were less likely to quit smoking (Zyambo et al., 2019).

Despite recommendations to do so, physicians routinely advising smokers to quit can have an unintended adverse impact on doctor-patient relationships. In situations where doctors intervene, the author recommends a patient-centered approach that considers how individual patients perceive themselves as smokers and their likely reaction to different intervention styles.

Patients who were not ready to quit identified a lack of willpower as the barrier preventing smoking cessation intervention received from their health care practitioners.

Participants communicated the belief that quitting was a ‘matter of the mind’ and that quitting is ‘best done when one was ready’.

Healthcare practitioners view tobacco smoking as an addiction. On the other hand, HIV patients who smoke view smoking as a self-determined lifestyle choice (Breitling et al., 2009). Such discrepancy emerges in this dissertation research study. Nicotine addiction is an established major cause of failure in smoking cessation. Nicotine can be as addictive as heroin, cocaine, or alcohol (Henningfield, Cohen, & Slade, 1991; Stolerman & Jarvis, 1995) and, as a result, efforts to quit smoking are often unsuccessful because of withdrawal symptoms, including stress (Cohen, Pickworth, & Henningfield, 1991).

Nevertheless, our participants did not perceive addiction as the significant factor of failure. Instead, they expressed that quitting smoking is a matter of the mind.’ Smokers blamed themselves for having a flawed conviction in the sense that stopping smoking is how they control their minds. This finding is consistent with several quantitative studies (Hughes, 2009; Cooley et al., 2011; Hughes & Naud, 2016) and a qualitative research study (Papadakis et al., 2020), showing that most smokers believe willpower is necessary or sufficient for quitting. Such belief in one’s will as the mechanism to quit smoking undermines the use of formal cessation assistance.

A few patients thought that interventions should be free and accessible, while others mentioned that they would not be open to any programs whatsoever unless they were ready. Studies on smoking cessation intervention development posit that programs could involve cessation support groups to aid in smoking behavior change with an emphasis on smoking relapse influences (i.e., stressors), and integrating mental health content (i.e., depression,

anxiety), elements of spirituality, and depictions of the effects of cigarette smoking on the body (Fletcher et al., 2019).

Strengths and Limitations of this study

The current study is not without its faults. A limitation of this study is that the researcher conducted only in-depth interviews and no focus groups. We did not organize any focus group interviews because of the ongoing COVID-19 pandemic, conflicting schedules among participants, and lack of access to virtual web-based video call platforms due to the phone models of participants. While the opportunity to observe the interaction among the participants passed, the author successfully gained a more in-depth, detailed account of HIV smokers' experience within a more personalized one-on-one interview setting. A strength of this research is that, as a qualitative study from the HIV smokers' perspective, this paper contributes to the limited literature available on the lived experiences of smokers living with HIV and their attempts to quit smoking.

Additionally, the author recruited a diversity of participants from different races and age groups. The author also utilized in-depth qualitative research methods, which allowed a detailed account of smokers' experience in smoking behavior and cessation. However, a limitation of this study is its non-generalizability of findings due to the sample size.

Another possible limitation is selection bias. The highest education grade completed by the majority of the participants was either high school or 2- year college education, and this could have resulted in a 'less-educated population. However, the author considers that the data obtained in this study are sufficiently robust to describe reasons contributing to failures in smoking cessation in this community.

CHAPTER 3

PATIENT-PHYSICIAN COMMUNICATION SURROUNDING SMOKING CESSATION FROM THE PERSPECTIVE OF HIV PATIENTS WHO SMOKE: METHODS AND RESULTS FROM AIM TWO.

Background

Gathering informative data focusing on communication between the provider and patient can help identify where knowledge gaps of smoking cessation among PLWH lie, shape the development of effective interventions in these healthcare settings and advance HIV/AIDS care (Simmons et al., 2013). Limited research so far exists on the perceptions and attitudes about physician-administered cigarette smoking counseling for PLWH. To help bridge this gap, this researcher investigates the patient-provider communication of smoking cessation therapies (AIM 2) in mid-size multiple-site HIV Clinics in LA and Orange County. Even though most providers are not likely to recommend treatment (Niaura et al., 2012), a small patient population receives such cessation advice when their physicians provide counseling and treatment. When they do

recommend, the researcher will examine how patients communicate with their physicians about smoking cessation as part of their continuum of care.

Doctors' advice effectively promotes cessation (Stead et al., 2013; Butler, Rollnick, & Stott, 1996). Based on the assumption that repeated interventions will yield an increase in quit rates (Sesney et al., 1997), providers are encouraged to advise smokers at each visit (Butler et al., 1996). However, while some doctors believe that this routine repetition is frustrating and ineffective, a previous qualitative study of health promotion showed that patients resent doctors instructing them about lifestyle change (Stott & Pill, 1990). The stages of change model of behavior change show that action-oriented advice for those who are not ready to change is unhelpful and could even engrain unhealthy behavior (Butler et al., 1996).

To maximize opportunities for smoking intervention that arise during routine clinic visits, the author deemed it essential to understand patients' perceptions of the receptivity towards the advice they have received. Few studies have examined patients' experiences of opportunistic antismoking interventions. Since judging receptivity involves understanding patients' feelings, ideas, perceptions, and unique experiences, we believed that qualitative research methods would be best suited to this purpose (Fitzpatrick & Boulton, 1994). Therefore, we planned to explore smokers' in-depth accounts of their interactions with their healthcare providers about smoking for evidence of possible unintended effects of cessation counseling and ideas about interventions that patients might find acceptable.

A growing body of literature assesses the effectiveness of smoking cessation interventions, and the dilemma for many health professionals is what to say to patients who habitually smoke. This topic is crucial when the patient, such as one with HIV, has an

established chronic illness. Patient motivation becomes more complex when quitting smoking may alleviate symptoms but not reverse the underlying condition (Burrows & Carlisle, 2010).

Studies on patient perspectives show that recurrent interventions by doctors deter patients from seeking help (Butler et al., 1996). While it is recommended (CDC, 2016), smoking cessation advice can have an unintended opposite effect if delivered without considering the individual (Irvine et al, 1999). This notion is especially relevant as smokers tend to underestimate personal risk due to smoking while experiencing internal emotional discomfort (also known as ‘cognitive dissonance’) due to knowing that smoking worsens their health condition (Chapman et al., 1993).

While much research exists about effective smoking cessation strategies for ‘healthy smokers,’ more research is needed to determine what intervention techniques would be most effective for different types of patients (van der Meer et al., 2003). This study, therefore, is intended to be developmental and gather data to help shape the content of tailored interventions that could be formed and tested in future studies. Thus, it investigates the perceptions of patients living with HIV about the association between smoking and their illness. The study also evaluates their experiences with and attitudes toward health professionals who raise their smoking status, encourage the decision, or offer advice to make a quit attempt.

Methods

Section on data source, sampling strategy, and data analysis is found in [Chapter 2](#).

Participants

Ten HIV positive smokers were purposively sampled to speak to how they ascribe meaning to the smoking cessation messages they receive from healthcare providers. Inclusion

criteria: Eligibility criteria included individuals aged 18 years or older, tested positive for HIV, and currently smoke cigarettes (at least one cigarette a day). Recruits included patients who recently had a medical visit with their physician or other practitioner or have been seen at least once by the practitioner.

Snowball sampling, the method of expanding the sample by asking one informant or a research participant to recommend others to be included in the study (Groenewald, 2004), was also utilized to recruit HIV patients. At the end of the interview with participants from the listed clinics, the author asked if they knew and were willing to recommend anyone whom they knew who was also HIV-positive who also smoked that they could refer for the study. Recruitment continued until saturation was attained. Saturation is reached when participants introduce no new themes on the research topic (Glaser & Strauss, 1967; Groenewald, 2004).

Data Collection

Virtual interviews were conducted that lasted between 17 to 60 minutes. As part of the eligibility pre-screening process when recruiting participants, the author ensured that each of the HIV patients verbally responded that their practitioners discussed smoking cessation with them. When recruiting patients, the author ensured that patients acknowledged that they discussed smoking cessation in the medical encounter. The institutional review board of the University of California, Irvine, approved the study. Each participant received \$20 for study participation.

All in-person interviews were scheduled and held in a private room at the clinic and lasted up to 60 minutes. The interviews were audio-recorded with participants' consent. Given the sensitivity of the topic, it was vital that the participants chose the locations and that the interviews were conducted where they felt most comfortable to respond as openly as possible. This arrangement was done because the topic of this inquiry is personal and possibly not openly

discussed due to stigma. The author also collaborated with case managers of both clinics and provided information on the research to disperse to their patients who met the criteria for study participation.

Small (2009) claims that case logic and sequential interviewing can lead to saturation in 10-12 interviews. Also, Guest et al (2006) conclude that “if the goal is to describe a shared perception, belief, or behavior among a relatively homogeneous group,” then a sample of twelve will likely be sufficient. Given that saturation was attained, for this study, 10 participants were included.

Table 3.1: Participant Identification Rubric

Participant Number	Gender	Age
1	M	50
2	M	35
3	M	53
4	M	42
5	M	55
6	M	44
7	M	53
8	F	52
9	M	27
10	M	55

Development of Interview Guide

The interview guide was formulated by the author and pilot tested for revisions prior to the study. The author read the consent to them and asked if they had any questions, and then proceeded to, with permission, record the interview. The author was careful to refrain from mentioning their name and informed them ahead of time that she would do so.

Interviews commenced using an initial guide that included open-ended questions about the interviewees' smoking history, HIV diagnosis, relationships with family members and friends, and descriptions of any health issues related to smoking. Responses to the initial queries triggered follow-up questions illustrated in Table 3.2.

Participants were first asked to describe the conversations they had with their healthcare practitioner during their recent visit regarding smoking and smoking cessation attempts or recommendations. Examples of such a question are listed in the table below (See Appendix C for the interview guide).

Table 3.2: Interview Guide from Aim 2

<i>Interview Guide</i>	
Topic	Question
Patient cessation discussion history with physicians	<ul style="list-style-type: none"> • Tell me about your conversations about smoking cessation with your practitioner. • Tell me about the last conversation you had with your practitioner or with your patient in the last two weeks.
Perceived intent	<ul style="list-style-type: none"> • What was your perceived intent in your practitioner delivering the cessation message to you? • How do you feel that he/she conveyed that message to you? (Associated relevant constructs: <i>perceived severity, perceived susceptibility, problem management</i>) • How does your provider (nurse, physician, physician assistant) motivate you to quit smoking?
Strategies	<ul style="list-style-type: none"> • What are strategies that they use to motivate you to quit smoking? (Relevant constructs: <i>problem management</i>) • What has worked for you? (Relevant constructs: <i>social support, perceived control</i>) • What hasn't? (Relevant constructs: <i>coping, perceived severity, perceived susceptibility</i>) • What were/are some challenges that prevent(ed) you from quitting?
Cessation challenges	<ul style="list-style-type: none"> • What are some stressors that affect your ability to quit smoking? Probe: Please expand on them. • How do the practitioners engage with you when communicating the cessation smoking cessation message? Please describe the effect it had on you.

Data Analysis

Interview recordings were transcribed manually by the author and research assistants following each session. Interview transcripts were then analyzed using interpretive phenomenological analysis. Interpretive analysis is the study of constructs of consciousness, that describe experiences from a firsthand perspective (Groenewald, 2004). The author de-identified responses when transcribed and coded for recurrent themes using Grounded Theory (Charmaz, 2014). Primary level descriptive coding was first conducted with a careful line-by-line reading of the transcripts and a “constant comparison” method in an iterative, reflexive process of testing and retesting theoretical ideas using the data. In this way, the text is deconstructed (by sentence or phrase) and grouped with thematically similar sentences or phrases to form categories known as emergent themes (Charmaz, 2014).

Second level, interpretative coding then organized descriptive codes into higher order themes and to answer research questions. Codes were organized and informed by TMSC and Codebook development.

Examples of primary level codes were advice rejection, regulating the conversation with physicians, medication as treatment. The main themes that are relevant to patients’ interactions with providers are presented as follows. First, cessation counseling acceptance, and secondly, cessation counseling rejection.

Results

Sociodemographics of Participants:

The mean age of participants (N= 10) was 46.6 years old, ranging from 27- 55 years old. The average time spent interviewing was 30 minutes and 30 seconds. Most participants had been smoking for over 5 years, and all smoked at least one pack of cigarettes daily. Three had thought

about quitting smoking in the past but did not alter their behavior. To quit smoking, two participants turned to other substances to wean off cigarettes. Four out of ten were living on disability, two were unemployed, and the only person who had attained a bachelor’s degree was a retired veteran who had been smoking since he was 18. All participants smoked daily, and nearly all participants smoked a pack of cigarettes every day.

Themes

Table 3.3: Cessation Counselling Narratives Codebook

Theme	Code	Subcategory
Cessation advice rejection	Patient interception	Impatience: I couldn’t take it anymore and I said, “Spare me the lecture today I don’t want to hear it.
	Dislike of advice approach	"He's just going to really, really harp on me. "
	Dismissal of medical provider's role	"We don’t talk about that... That has nothing to do with what they specialize in." "I don't need a doctor to tell me that I shouldn't smoke cigarettes"
Cessation advice reception	Up to the individual	"That’s just something that I wanna do, and I’m not ready to do that yet.”
	Trust doctor's advice	Personal extreme health experience: "you know I had to knock on death’s door before I listened.”

Patients' perceptions of patient–provider communication around smoking
Unreceptiveness of patients towards cessation advice from providers

When asked to describe the last time that they had a conversation with their doctor about their smoking, participants believed that physicians did not have the time, nor was it their role, to

address cigarette smoking behavior and cessation plan in the context of HIV care (Horvath et al., 2012). For example, a patient stated:

Uhm [my doctor] would take about 10 minutes out of my visit every time to tell me all the bad things about smoking... Until- until I couldn't take it anymore and I said, "Spare me the lecture today I don't want to hear it."

-P10/M-55

Another patient added, "All right. When he was just going to really, really harp on me. I mean, you know, take it like it's a back to that question."

Adding to the discussion, another patient said, "I'm not motivated to quit smoking and my practitioner, we don't talk about that... That has nothing to do with what they specialize in."

P9/M-27

However, participants perceived physicians' approach in giving cessation advice as looking out for their own health and wellbeing.

For example, a patient, who is also a military veteran, said, "I don't need a doctor to tell me that I shouldn't smoke cigarettes, because it's not healthy. I already know that. What do you perceive that?" P3/M-53

This patient-physician communication approach is described as the paternalistic model (Emanuel & Emanuel, 1992). In the paternalistic model, the physician, acting as a guardian to the patient, articulates and implements what is best for the patient by focusing on the patient's best interest. This model assumes a shared objective for determining what is best; thus, the physician can determine what recommendations are in the patient's best interest with limited participation from the patient. Hence, the concept of patient autonomy is current or future assent. As illustrated in this statement made by a patient in response to an inquiry about an ideal

cessation strategy, “I’m just a patient I don’t know... We go see doctors... they know what they’re going to do” (P6).

Medication as a cessation strategy

According to the patients, practitioners mainly prescribed medications or provided a quit line to call. As succinctly illustrated by one patient, “[My doctor] prescribed Chantix.” P7/M-53

Just that it’s bad for my health and uhm I’ve already been through it with I mean I see you with my lungs collapsing and why would I still do it.

The patient went further to describe the strategies used by his doctor as well as the challenges and complexities that emerged as a result, saying:

Uhm, he offered to prescribe uhm Chantix I think?... Which I took and had an adverse reaction to and I almost committed suicide and so then he tried to just give me a prescription for the patches but I didn’t have the money to pay for the patches so I couldn’t do that and then I heard about 1-800-NO-BUTTS where they paid for the patches [and] they helped me through it and so that’s what that’s why it went that way... because I couldn’t afford, I couldn’t afford the prescription ones. (P10/M-55)

Sub-theme: Providers adapt advice to disease severity.

At first, a physician was calmer about offering advice, encouraging the patient not to smoke. However, as the patient’s health declined after contracting pneumonia, the doctor’s concerns were raised. For example,

You know what in the beginning he didn’t really say a whole lot of anything. He just merely mentioned it but he was like “if that makes you feel better you do whatever you want to do” and so he never hounded me, uhm, my doctor now hounds me about it way more.

-P10/M-55

Perceived effectiveness of cessation strategy, and physicians' influence on their health behavior.

Cessation advice reception

While patients trust the authority of physicians in offering advice, others held strong beliefs regarding making decisions about their own health. Although medical advice can be beneficial, patients also strongly indicated that they would first have to be willing to change for any advice to be effective. The following subthemes emerged.

Sub-theme: Self-efficacy

When asked about what methods were more effective or did not encourage them to quit, patients said that most believed that quitting smoking was down to the individual.

Overall, the HIV smokers had already made their evaluations about their smoking. Participants were doubtful about the power of doctors' words to influence their smoking, as most believed that quitting smoking relied upon the individual. When asked about the effect of their physician's advice about cessation, a patient stated,

"I understand what he is saying about my health. That's just something that I wanna do, and I'm not ready to do that yet." M-27

While this cuts across multiple themes, including self-will, the quote's sentiment speaks powerfully to participants' belief in their ability to handle their health concerns themselves.

Sub theme: Self-will and willpower

Despite the efforts of physicians, some patients decline to adhere to advice while suffering adverse health outcomes due to smoking. For example, when asked about the effectiveness of their doctor's prescribing things to them or talking to them, a patient reported, "If it takes a major impact on my health and maybe I'll take it more seriously" M-27. Relatedly,

one participant described extreme health situations as intensifying deterrence from physician's advice. "You know- you know I had to knock on death's door before I listened." P10/M-55.

Discussion

While some patients deferred to the doctor for guidance with cessation, many subjects were skeptical about the power of the doctor's words to influence smoking habits. These patients point out that the harmful effects of smoking were already well known to smokers and wagered that the benefits outweighed the risks. In such cases, advice from their medical practitioner was at best ignored, and at other times verbally rejected. These findings are similar to a published report (Butler et al., 1996). Most subjects felt that forfeiting smoking was ultimately down to the individual, a finding that also emerged from Papadakis and colleagues' (2020) study on perceptions of very brief advice in smokers in Greece.

This patient-physician communication approach is described as the paternalistic model (Emanuel & Emanuel, 1992). In the paternalistic model, the physician, acting as a guardian to the patient, articulates and implements what is best for the patient by focusing on the patient's best interest. This model assumes a shared objective for determining what is best; thus, the physician can determine what recommendations are in the patient's best interest with limited participation from the patient. Hence, the concept of patient autonomy is current or future assent. As illustrated in this statement made by a patient in response to an inquiry about an ideal cessation strategy, "I'm just a patient I don't know... We go see doctors... they know what they're going to do" (P6).

In situations where smoking was addressed, some participants believed that physicians had minimal influence over their smoking habits (Butler, Pill, & Stott, 1998). An unexpected

finding was that some participants interpreted their provider's push for them to stop smoking as a reflection that their provider did not understand them and as a sign of their provider crossing the line. They informed their physician that, unless the patient themselves brought up the topic of smoking cessation, they did not want to discuss smoking during their HIV care visit. An example of such a statement is as follows. "... I couldn't take it anymore and I said, 'Spare me the lecture today I don't want to hear it.' She spared me the time and didn't give me the lecture again" -

P10/M-55

The intent in advice-giving may diminish given the opposite perspectives of the patients and the physician, and the patient may feel a lack of autonomy when asked about their smoking behavior and advised to quit.

Patients who were not ready to quit anticipated that they would be advised to do this by doctors. When this happened, they responded with delayed adherence, often until they suffered additional health risks on top of HIV, such as pneumonia. At that point, they would refer to quit lines or take Chantix to suppress their appetite for nicotine. Two participants shared accounts of putting their health in danger by not seeking medical help because they feared the doctor would talk to them about stopping smoking. While it is vital to make the most of opportunities for effective health promotion during a consultation, doctors should not assume that repeating cessation advice over and over again for all smokers will continue to be advantageous. The dilemma is that doctors are exhorted to consistently advise their patients to stop smoking whenever they see them, and this directive deserves careful reconsideration. Considering the unique stress that people living with HIV endure, it is important to consider their particular needs in communicating cessation interventions to them. Patients found acceptable interventions for their receptiveness; physicians delivered the message in a respectful tone; avoided preaching;

demonstrated care and support; and endeavored to understand them as unique persons. These findings are consistent with those of a similar study of participants in a randomized trial of antismoking interventions: they most appreciated doctors who provided a caring, personalized approach.

Conclusion

While physicians see smoking as a harmful behavior that should stop, patients smoke as a coping mechanism and quit smoking when they feel ready to. Patients rely on their willpower as a significant determinant of cessation. Thus, advice from physicians, although well-meaning, may not be received with the same intent by the HIV-positive smoker, and this approach may yield to unsuccessful intervention.

Overall, while some PLWH expressed a definite lack of interest in quitting smoking, others noted that they were aware that they should quit but did not feel ready to do so. Some PLWH expressed delaying treatment until they had a serious health issue. This disclosure may suggest that PLWH, who have yet to experience a smoking-related severe illness, may not precisely understand the risk of smoking and the importance of quitting. Interestingly, research has shown that HCPs also tend to advise patients with smoking-related illness more frequently than otherwise healthy patients. It is unknown if the higher frequency of practitioner advice to patients with a smoking-related illness is independent of patients' beliefs about risk or an association. Given the importance of smoking cessation in improving health outcomes, especially among those already coping with chronic diseases, exploring simple strategies for enhancing the impact of brief advice interventions among individuals who have not yet developed a major smoking-related illness may increase the reach of this intervention among healthy smokers. This motion is critical, as most of the PLWH who smoke and who participated

in the study did not have a smoking-related illness but did report heavy smoking over an extended period.

Limitations:

This study has limitations, including the small sample size and recruitment of PLWH accessing HIV-related care in southern California, who were heavy smokers. Results may not be generalizable to PLWH in other geographical regions and those not seeking HIV care, and who smoke fewer cigarettes than those in this study, otherwise considered as light smokers. Future research should explore the experiences of people not engaged in HIV-related care to understand other lived experiences and barriers to cessation and intervention preferences. Despite limitations, this study represents a key step in informing future intervention development and assessment given a lack of targeted smoking cessation interventions for PLWH.

CHAPTER 4

MEDICAL PROVIDER PERSPECTIVE AND PRACTICES ON CIGARETTE SMOKING AND SMOKING CESSATION AMONG PATIENTS LIVING WITH HIV IN THE U.S.

Background and Supporting Evidence

This chapter will describe the research methodology, data analysis, and results from the survey evaluating the association of provider beliefs and attitudes around smoking cessation among PLWH and their adherence to 5A guidelines. The study design, sampling strategy, data collection methods, and analysis are included.

Medical providers' perceptions can influence how they practice (Shuter et al., 2012) and provide cessation counseling. Despite the frequent patient-provider contacts in the management of HIV, there is evidence to suggest that physicians spend a short amount of time discussing smoking behavior and cessation options with HIV-positive patients (Helleberg, 2015). Such options include smoking cessation counseling services, nicotine replacement therapy, or medications. This informational gap presented as a missed opportunity between patients and their providers increases the challenge in smoking cessation efforts such as nicotine replacement

therapy. Although smoking has been found to expedite the decline in health among HIV-infected individuals (Helleberg et al., 2015), medical care providers treat smoking as a secondary priority to HIV conditions such as CD4 count and viral load within that population. Providers assume that their primary concern should be to control HIV, and therefore, leave little time to address smoking behavior. The Public Health Service Clinical Practice Guideline for Treating Tobacco Use and Dependence has recommended that time spent in the doctor's office should include smoking cessation counseling (Niaura, Chander, Hutton, & Stanton, 2012). These guidelines prescribe a 5A method for offering brief interventions at clinical encounters to help patients quit smoking: Ask about smoking, Advise cessation, Assess readiness to quit, Assist with motivation or cessation, and Arrange follow-up. The 5A model has been described as the national standard for tobacco treatment and is considered one of the most critical evidence-based guidelines in preventive health care (Hazlehurst et al., 2005).

Therefore, health practitioners are in a unique position to help patients quit smoking, and most patients in the general population attribute their quit success to advice received from doctors (Vijayaraghavan et al., 2017). However, time constraints (Horvath, Eastman, Prosser, Goodroad, & Worthington, 2012) and high patient volume limit the amount of time physicians can spend on treating issues beyond HIV (Helleberg et al., 2015; Huber, 2012). Furthermore, there are concerns that relatively few studies in the literature have examined cessation treatment efforts in this population (Ledgerwood & Yskes, 2016). These few studies suggest that there is limited evidence of behavioral and pharmacological treatments for smoking among people living with HIV, even though nearly 66% of HIV-positive smokers have expressed the desire to quit smoking (Mamary, Bahrs, & Martinez, 2002; Shuter, Bernstein & Moadel, 2012; Tesoriero, Gieryc, Carrascal, & Lavigne, 2010). Life stressors further complicate smoking cessation among

PLWH (Rosarios, Schrimshaw, & Hunter, 2011), mental health issues (Aralis et al., 2018), history of substance abuse (Chew, Steinberg, Thomas, Swaminathan, & Hodder, 2014), and social interactions within their community, and beliefs about their life expectancy (Herek & Garnets, 2007; Bockting, Winer, Romine, Hamilton, & Coleman, 2013; Conron, Mimiaga, & Lander, 2010). Given the lack of studies that show the effectiveness of smoking cessation therapies in PLWH and the role that practitioners play in facilitating quit efforts, part of the objective of AIM 3 was to assess the decision-making process used by practitioners in delivering smoking cessation counseling. Significant barriers common to primary care providers were lack of time and low priority of smoking habit.

Limited research so far exists on provider perceptions, beliefs, and practices about cigarette smoking counseling for PLWH, and intervening with HCPs may be a critical piece in improved HIV care (Higa et al., 2012). To help bridge this gap, this author investigated the perceptions of HIV care providers about smoking cessation (AIM 2). Limited evidence for the efficacy of treatments within the population exists in the literature (Niaura et al., 2012). To compound the scarcity of research, HIV care providers fail to provide even the standard of care for smoking cessation because of the previously mentioned challenges. Even though most providers agree that smoking is a crucial issue in PLWHA, they report low levels of cessation-promoting activities (Shuter et al., 2012). Niaura (2012) posits that lack of evidence for efficacy in PLWH may contribute to providers' perception that available cessation treatments do not work well or are not well tolerated and are therefore not likely to be recommended. This researcher examined how both patients and providers communicate about smoking cessation as part of their continuum of care.

HIV patients routinely receive care from medical providers. The time spent during a consultation session provides an opportunity to address health issues, including cigarette smoking. Thus, physicians, nurses, and other healthcare are uniquely positioned to discuss cigarette smoking cessation strategies with patients who smoke. Research shows that HIV patients or members of the general population, or patients who were advised by their healthcare practitioners (HCP) to quit smoking, were successful compared to those who were not advised by an HCP. The national public health guideline recommends that healthcare providers adopt the 5A method to initiate smoking cessation counseling between providers and patients to facilitate the discussion. However, there have been low records of physicians using this method in practice. An evaluation of U.S.-based HIV provider beliefs and practices around smoking cessation among people living with HIV shows that only 8% of providers in the United States agree to use the 5A model as a guide when they discuss smoking with their HIV-infected patients (Shuter et al., 2012).

Some respondents in that study expressed that they had not heard of or were unfamiliar with the 5As, which mean, Ask about patient tobacco use, Advise to quit, Assess their willingness to attempt to quit, Assist in making a quit attempt, Arrange follow-up visits (Figure 1). In a study that assessed documentation of the 5As among primary care providers, low adherence to the components of the 5A model was reported. For example, although half of the patients claim they were asked about quitting, only a third of them were assessed for their motivation to quit smoking (Williams et al., 2019). This study advances the Shuter et al. (2012) study by characterizing which providers are more likely or less likely to adhere to 5A use. This study's outcomes will help identify and develop targeted smoking cessation methods. The literature shows that such cessation modalities can be effective when applied to HIV-infected

patients, assuming that adapting is done to address the issues unique to PLWHA (Tesoriero et al., 2010).

Dissertation Research Opportunity:

In their article, Shuter et al. addressed a broad scope of variables relating to provider beliefs and practices around smoking among PLWH. They revealed that the lowest response rate was for the variable regarding 5A use among the respondents. However, they did not clarify which providers were most impacted. Therefore, in my project, I further characterize the breakdown of provider types that report such low adherence to 5A.

Table 4.1. The 5A’s brief tobacco interventions for patients ready to quit

5A’s	Action	Strategies for implementation
Ask - Systematically identify all tobacco users at every visit.	<ul style="list-style-type: none"> • Ask ALL your patients at every encounter if they use tobacco and document it. • Make it part of your routine. 	<ul style="list-style-type: none"> • Tobacco use should be asked about in a friendly way – it is not an accusation. • Keep it simple, some sample questions may include: <ul style="list-style-type: none"> – “Do you smoke cigarettes?” • Tobacco use status should be included in all medical notes.
Advise - Persuade all tobacco users that they need to quit	<ul style="list-style-type: none"> • Urge every tobacco user to quit in a clear, strong and personalized manner. 	Advice should be: <ul style="list-style-type: none"> • Clear – “It is important that you quit smoking now, and I can help you.” • Strong – “As your doctor, I need you to know that quitting smoking is the most important thing you can do to protect your health now and in the future. We are here to help you.” • Personalized – Tie tobacco use to: <ul style="list-style-type: none"> – Demographics – Health concerns – Social factors
Assess - Determine readiness to make a quit attempt	<ul style="list-style-type: none"> • Ask two questions in relation to “importance” and “self-efficacy”: <ol style="list-style-type: none"> 1. “Would you like to be a nontobacco user?” 2. “Do you think you have a chance of quitting successfully?” 	<ul style="list-style-type: none"> • Any answer in the shaded area indicates that the tobacco user is NOT ready to quit. In these cases, you should deliver the 5 R’s intervention (not covered in this dissertation). <p>Q.1 Yes Unsure No</p> <p>Q.2 Yes Unsure No</p>
		<ul style="list-style-type: none"> • If the patient is ready to go ahead

5A's	Action	Strategies for implementation
Assist - Help the patient with a quit plan	<ul style="list-style-type: none"> • Help the patient develop a quit plan • Provide practical counseling • Provide intra-treatment social support • Provide supplementary materials, including information on quit lines and other referral resources • Recommend the use of approved medication if needed 	<p>with a quit attempt you can move on to Assist and Arrange steps</p> <ul style="list-style-type: none"> • Use the STAR method to facilitate and help the patient to develop a quit plan: <ul style="list-style-type: none"> – Set a quit date ideally within two weeks. – Tell family, friends, and coworkers about quitting, and ask for support. – Anticipate challenges to the upcoming quit attempt. – Remove tobacco products from the patient's environment and make the home smoke free. • Practical counseling should focus on three elements: <ul style="list-style-type: none"> – Help the patient identify the danger situations (events, internal states, or activities that increase the risk of smoking or relapse). – Help the patient identify and practice cognitive and behavioral coping skills to address the danger situations. – Provide basic information about smoking and quitting
Arrange - Schedule follow-up contacts or a referral to specialist support	<ul style="list-style-type: none"> • Arrange a follow-up contact with your patient either in person or by telephone. • Refer the patient to specialist support if needed 	<ul style="list-style-type: none"> • Make sure you have a list of existing local tobacco cessation services (quit lines, tobacco cessation clinics and others) on hand for providing information whenever the patient inquires about them. • The support given to the patient needs to be described positively but realistically • When: The first follow up contact should be arranged during the first week. A second follow up contact is recommended within one month after the quit date. • How: Use practical methods such as telephone, personal visit and mail/ email to do the follow up. Following up with patients is recommended to be done through teamwork if possible. • What: <ul style="list-style-type: none"> For all patients: <ul style="list-style-type: none"> – Identify problems already encountered and anticipate challenges. – Remind patients of available extra-treatment social support. – Assess medication use and problems. – Schedule next follow up contact. For patients who are abstinent: <ul style="list-style-type: none"> – Congratulate them on their success.

For patients who have used tobacco

5A's	Action	Strategies for implementation
		again: – Remind them to view relapse as a learning experience. – Review circumstances and elicit recommitment. – Link to more intensive treatment if available.

Adapted from WHO Toolkit for delivering the 5A's and 5R's brief tobacco interventions in primary care. [Linked here](#)

Overall, the 5A method has been shown to be effective, especially if done with a combination of counseling (Quinn et al., 2009). However, evidence suggests low 5A methods adoption among providers. As shown in the Shuter et al. (2012) paper on provider beliefs and attitudes related to smoking cessation counseling among PLWH, low provider familiarity with the 5A method suggests a huge opportunity to identify and train providers of PLWH.

Evidence shows training has been effective in a certain population but not in HIV. PLWH can stand to benefit from provider infused techniques. This dissertation paper advances the discussion on the benefits of the 5A guidelines by leveraging well-collected data with 74.6% medical provider response rate.

Research Questions and Hypotheses

In the third study of this dissertation entitled “*Adherence to clinical guidelines for smoking cessation among HIV medical providers: A national survey,*” I analyze a survey of members of the HIV Medical Association (HIVMA) that captured provider attitudes, beliefs and practices regarding smoking cessation among HIV positive patients. Quantitative research methods such as regression analyses were utilized to discover trends in physician response to key components of cessation advice practice. The goal of identifying these trends is to determine the provider groups that would most benefit from future interventions.

AIM 3: To assess medical providers' adherence to public health guidelines to use the 5A method for smoking cessation discussion with HIV patients who smoke.

Hypothesis a: Medical providers who report time constraint adhere less to 5A than those who do not.

Research question 3a: Do the medical providers who report time constraint adhere less to 5A than those who do not?

Hypothesis b: Lack of provider cessation counseling training is associated with low adherence to 5A method.

Research question 3b: Are providers who receive cessation counseling training more likely to adhere to 5A method than those who do not?

Research Design/Methods

Data Collection/Instrumentation (survey)

Survey Design:

This cross-sectional survey was collected in July 2008 and assessed demographics and professional characteristics, such as age, gender, care setting, provider category, years of experience caring for HIV patients, and HIV patient volume. The questionnaire probed into topics relating to the providers' position on the efficacy of cessation counseling, and the use of the 5A method, and their current practices.

A series of questions addressed characteristics of the provider's primary practice site, including its geographic location (state), whether it provides mostly primary HIV care or specialty care, and whether it has an affiliation with an academic institution or another outpatient clinic. Providers were also asked to estimate the proportion of patients seen in their practices

who were HIV-infected. Other questions addressed the prescription of cessation treatments such as Chantix.

Provider knowledge, attitudes, and beliefs related to cigarette smoking cessation were assessed based on the degree to which the respondent agreed or disagreed (using a 5-point Likert scale) with a series of statements designed to assess negative or prejudicial attitudes toward cigarette smoking.

The statements were drafted by a research team led by an HIV physician, Dr. Shuter, based in Albert Einstein College of Medicine, Bronx, New York, who developed a questionnaire that addressed various aspects of providers' beliefs and practices related to cigarette use and smoking cessation in PLWH. The survey was administered to members of the HIV Medical Association (HIVMA) in the U.S. HIVMA is an organization of medical professionals who are actively practicing the field of medicine and a member of the Infectious Diseases Society of America (IDSA). IDSA currently represents over 11,000 infectious diseases physicians and other healthcare professionals. As of 2012, HIVMA has more than 3,600 members from 49 of the United States and 36 other countries (Shuter et al., 2012). Currently, there are approximately 5200 HIVMA members (A. Weddle, personal communication, September 16, 2020).

Inclusion criteria: *Physicians, nurse practitioners, and physician assistants who serve HIV-positive patients who smoke were included in the study.*

Exclusion criteria: *Physicians, nurse practitioners, and physician assistants who do not serve HIV-positive patients who smoke were excluded from the study.*

For analysis, a few open-ended questions were included in the survey to extract demographic information about providers. Some of these questions inquired about the providers' length of

years of medical practice, work environments, HIV-positive patient populations, and other questions measured their interest level in receiving formal training in smoking cessation.

Survey Measures:

The survey included measures of provider perspectives in four overarching subscales. The first subscale was the Provider role subscale, which measured the provider-perceived role in smoking cessation. Statements such as “Cigarette smoking is a patient’s personal choice, and it is not my job to question his/her choice.” and “It is the nurse’s job to urge his/her HIV-infected smokers to quit” were used to evaluate this subscale. Other measured subscales include Provider attitudes about efforts to promote smoking cessation, which measured constructs such as difficulty promoting cessation, the ineffectiveness of counseling, and counterproductive efforts. Others include the Belief subscale, measuring providers’ belief in harm of smoking and benefits of quitting; and the Action subscale, measuring smoking cessation promoting activities including, statements such as “When I discuss smoking with my HIV-infected patients, I use the “5 A’s” as a guide.” This last statement assessed whether providers used the recommendation to initiate smoking cessation counseling using the 5A’s. The survey also included demographic information (for example, gender, education, age, race, type of practice, years of practice, number of HIV patients seen).

Most questionnaire items probed for providers’ beliefs and practices that were characteristic of the value of reducing tobacco use in PLWH. For example, “An HIV-infected smoker who quits is likely to experience important long-term health benefits.” Another example is Action measures such as ‘I prescribe Chantix (varenicline) frequently.’ However, some statements expressed a lack of belief in the importance of this issue, for example, “The time that I spend discussing cigarette smoking with my HIV-infected patients could be better spent on

other health concerns” and, more explicitly, “Discussions about smoking and smoking cessation with HIV-infected patients are usually a waste of time.” The impact of the social environments of PLWH as it relates to providers’ attitudes about cessation effort was also probed using statement, “The social environments of most of my HIV-infected patients make smoking cessation efforts hopeless.”

Study Measures:

Lack of formal training, demographic variables, and a report of time constraint were the primary independent variables in this study. The outcome variable was the use of the 5A method.

Previous formal training was assessed via the item: Have you ever participated in formal training or clinician education on tobacco treatment and counseling methods? Possible responses were “Yes,” “No,” “Don’t know/Not sure.” Responses were coded to create a dichotomous outcome variable for formal training, such that “Yes” (coded 1) indicated a previous formal training in cessation counseling, while “No” or “Don’t know/Not sure” (coded 0) indicated no previous formal training in cessation counseling.

Demographic Variables:

Demographic variables such as age, gender, care setting, provider category, years of experience caring for HIV patients, and HIV patient volume, were used were used in the analysis as predictors of 5A adherence. Age was re-grouped into three levels, 1= <40 years old, 2= 40-50, and 3= 50+ closely matching a similar study that examined provider and clinic-level correlates of antiretroviral therapy deferral for HIV drug injectors (Westergaard et al., 2012).

A series of questions addressed characteristics of the provider's primary practice

site, including its geographic location (state), whether it provides mostly primary HIV care or specialty care, and the providers have received formal training in cessation counseling.

Time constraint:

Provider attitudes about efforts to promote smoking cessation, particularly that such efforts were too time consuming, were assessed using the following statement.

“I do not have enough time to adequately address cigarette smoking with my HIV-infected patients.”

The statements were adapted from the inefficiency subscale of the questionnaire originally used by Shuter and colleagues (2012) to assess providers beliefs and attitudes towards smoking cessation and were presented with a five-point Likert scaled response option (Shuter et al., 2012). Possible responses were 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, and 5 = Strongly agree. To be consistent with other positive statements, the responses of questionnaire items were reverse coded to determine the internal consistency of the questionnaire items. To evaluate time as a variable, a dichotomous outcome variable for time was created, such that “Agree” or “Strongly agree” (coded 1, from 4-5 on the survey response) indicated a report of time constraint, while “Disagree”, “Strongly disagree,” and “Neither agree nor disagree” (coded 0) indicated no report of time constraint. A key question on the data collection sheet measured interest in receiving a brief training to learn how to facilitate smoking cessation counseling with their patients living with HIV. “Would you be interested in attending a brief training session to learn how to conduct smoking cessation counseling with your patients? (Yes, Maybe, No). Results were re-categorized into two answers and, thereby, dichotomized to Yes/Maybe (indicative of possible or definite interest) and No (indicating no interest).

Higher scores indicated that the participant reported more time constraint. The inefficiency scales exhibited good internal consistency (Cronbach's $\alpha = 0.8280$). The full text of all questionnaire items is available in *Appendix E*.

Data Cleaning:

Questions were reordered in a different order in the survey. Data from the survey were imported to STATA 15 (STATA Corp, College Station, TX), for analysis. Missing data that were most relevant to the four key variables of interest were deleted. These four key variables are the main outcome variable (5A use), two primary predictor variables (time constraint and previous formal training), and one variable of interest to the researcher (patient volume). For analysis, I created a new outcome variable, recoding a five-point scale questionnaire item, "When I discuss smoking with my patients, I use the 5A method," by re-categorizing the responses into three groups.

Statistical analysis

Descriptive statistics related to demographic, provider and clinic characteristics were analyzed using Chi-squared test of association for categorical data. After sensitivity analyses of potential categorizations, Likert scale variables related to provider attitudes and beliefs were categorized into "agree" (strongly agree and agree), "neutral" (neither agree nor disagree), and "do not agree" (disagree or strongly disagree). Attitude and belief items that showed significant bivariate association with implementation of 5A ($p < 0.05$) were included in subsequent analyses.

The best single predictor models, two-variable models, and so on, were compared using the corresponding R^2 statistic for each model. A final representative model was selected by balancing model information (maximum R^2 value), interpretability, and parsimony.

Regression:

Ordinal logistic regression models as used in similar studies (Westergaard et al., 2012; Shuter et al., 2012; Jradi, 2016) were constructed to identify variables that were independently

associated with deferring 5A adherence in the setting of any active HIV patient medical visit as determined by respondents who practiced in primary HIV care settings.

Results

Healthcare Provider Characteristics

Overall, all US-based respondents practiced in 42 different states, with the greatest number coming from California at 10.8%, New York at 8.6%, and Pennsylvania at 6.8%.

Demographic, professional and clinical site characteristics are displayed in Table 2. The average patient volume was 210.8037 ± 220.62 and a median of 150.

After reviewing data for relevant variables to the study, 324 of observations left were used for analysis as observations that were missing data were eliminated from the dataset. Most observations had a response rate exceeding 98% for all items in the questionnaire. The questionnaire item with the lowest response rate was “When I discuss smoking with my HIV-infected patients, I use the ‘5A’s as a guide.” Only 95.3% of participants submitted a valid response to this item. According to Shuter (2012) some text entries on returned surveys indicated participants’ lack of familiarity with the term 5A’s. Variables were selected based on previous research studies that evaluated medical providers attitudes and beliefs towards smoking cessation in patients (Martinez et al., 2017).

Table 4.2. <about here>

5A use did not differ by sex, provider age, type of outpatient practice, or volume of patients seen, or years of practice. 5A use differed among those who complained of time constraint and those who received formal training compared to those who did not ($p < 0.05$). Approximately 60% of surveyed attending physicians did not use 5A. While low numbers do not

permit adequate comparison between the different providers surveyed, all the physician assistants and 50% of the NPs used 5A.

Table 4.3 illustrates the response distribution across select questions from the survey. The data indicate high levels of belief in the importance of smoking among PLWH, the health benefits of quitting, moderate levels of confidence in their ability to counsel HIV smokers properly, and low levels of cessation promoting actions, including very low levels of adherence to published national guidelines for cessation counseling according to the 5 A method, the basis for this chapter of the dissertation.

Table 4.3. Frequency distribution of responses to selected questionnaire items

Subscale	Questionnaire item	Strongly disagree (%)	Somewhat agree (%)	Neither agree nor disagree (%)	Somewhat agree (%)	Strongly agree (%)
<i>Provider belief in the harm of smoking and benefits of quitting</i>	Cigarette smoking worsens the course of HIV infection.	6.1	11.7	28.5	34.4	19.0
	An HIV-infected smoker who quits is likely to experience important long-term health benefits.	0.3	0.3	1.23	27.0	71.2
<i>Provider attitude about cessation promoting efforts: Ineffectiveness</i>	I am not confident in my ability to properly counsel my patients to quit smoking	30.4	36.8	13.5	15.3	3.99
	My efforts to get HIV-infected smokers to quit are unlikely to succeed	13.8	37.7	20.3	25.5	2.5

Action	I prescribe Chantix (varenicline) frequently.	19.0	18.4	19.6	29.8	12.9
	When I discuss smoking with my HIV-infected patients, I use the “5 A’s” as a guide.	41.4	18.4	31.9	6.1	2.2

A test of association indicates that the statement about confidence in one’s ability to provide cessation counseling is statistically significant with the outcome variable ($p < 0.001$). The relative lack of evidence for efficacy in PLWHA may contribute to providers’ low belief that the effectiveness of current cessation recommendations impacts providers’ decision to do so (Niaura et al., 2012). In the full model, we include interest in training and first test for correlation with formal training. The correlation coefficient between both variables was less than 5%.

Unadjusted Model:

Logistic regression models were run separately for the two main predictors. The results are illustrated in Table 4.4a below.

Table 4.4a: Regression results for cessation counseling

Table 4.4a: Regression results for cessation counseling				
Covariate	OR	95% CI	AOR	95% CI
		Unadjusted		Adjusted
Formal training				
No	ref		ref	
Yes	2.07	1.24, 3.48	2.53	1.45, 4.43**
Time constraint				
No	ref		ref	
Yes	0.51	0.31, 0.82	0.46	0.27, 0.76*

* $p < .05$ ** $p < .01$

The following table illustrates the results of the regression analysis with the reduced model containing the main predictors and the covariates, except interest in training.

Reduced Model:

When excluded from the model, increase in age, the variables, previous receipt of formal training, and having reported time constraint, were statistically significantly associated with the use of 5A at the 95% level. Providers who reported time constraints were 50% less likely to use the 5A method than those who do not [C.I.: 0.3- 0.82]. Meanwhile, older aged providers were nearly 2.5 times as likely to use 5A than those younger than 40 years [C.I.: 1.18-5.13]. As providers become seasoned (assuming a positive correlation with years in practice), this result may suggest that they learn the importance of smoking cessation and include cessation intervention discussions in their patient meetings.

Table 4.4b: Model excluding interest in training.

Use of 5A (reduced model)	AOR	p-value	95% C. I.	
Gender				
Female	Ref			
Male	0.67	0.131	0.40	1.13
Age group (years)				
<40	Ref			
40-50	1.91	0.089	0.91	4.01
>50	2.46	0.016*	1.18	5.13
Previous formal training				
No	Ref			
Yes	2.23	0.004**	1.29	3.84
Patient volume				
<75	Ref			
75-150	0.92	0.81	0.46	1.83
150-300	1.36	0.378	0.68	2.71
>300	1.22	0.562	0.62	2.43
Time constraint				
No	Ref			

	Yes	0.50	0.006**	0.30	0.82
Type of outpatient practice					
	Primarily HIV	Ref			
	HIV and Other	1.40	0.208	0.83	2.35
	Other and unspecified	1.46	0.340	0.67	3.15
* <i>p-value</i> <0.05 ** <i>p-value</i> <0.01 *** <i>p-value</i> <0.001					

The following table (Table 4.5) illustrates the results of the regression analysis with the reduced model containing the main predictors and the covariates, except interest in training.

Table 4.5: Ordinal logistic regression model: full model

Use of 5A	AOR	p-value	95% C. I.	
Gender				
	Female	Ref		
	Male	0.60	0.061	0.35 1.02
Age group				
	<40	Ref		
	40-50	2.16	0.046*	1.02 4.61
	>50	3.09	0.004**	1.44 6.62
Previous formal training				
	No	Ref		
	Yes	2.53	0.001**	1.45 4.43
Patient volume				
	<75	Ref		
	75-150	0.91	0.78	0.45 1.82
	150-300	1.36	0.39	0.68 2.74
	>300	1.25	0.53	0.62 2.51
Time constraint				
	No	Ref		

	Yes	0.46	0.003**	0.27	0.76
Interest in receiving brief training					
	No	Ref			
	Yes	2.01	0.006**	1.23	3.48
Type of outpatient practice					
	Primarily HIV	Ref			
	HIV and Other	1.47	0.152	0.87	2.50
	Other and unspecified	1.79	0.152	0.81	3.98
* <i>p-value</i> <0.05 ** <i>p-value</i> <0.01					

The R^2 of the model is 0.08. Male providers are 43% less likely than female counterparts to adhere to 5A method [C.I. 0.336 – 0.989]. Compared to those who did not participate in formal training or clinician education on tobacco treatment and counseling methods, those who did receive formal training were nearly three times more likely to adhere to 5A method [C.I. 1.45- 4.43]. As providers advanced in age, they became more likely to use 5A than the younger counterparts. Compared to those younger than 40 years old, providers above the age of 50 years were three times as likely to adhere to 5A guidelines [C. I. 1.44-6.62]. This full model contains the variable, interest in training, because it is important to assess whether providers who have an interest in formal training already currently use 5A.

Table 4.6: Multivariate regression model with outcome: Interest in training

Table 4.6: Multivariate regression model with outcome: Interest in training				
Interest in receiving brief training	OR	p-value	95% C. I.	
Gender				
Female	Ref			
Male	1.58	0.135	0.87	2.87
Age group (years)				
<40	Ref			
41-50	0.55	0.094	0.27	1.11
>50	0.33	0.002**	0.16	0.68
Previous formal training				
No	Ref			
Yes	0.63	0.162	0.33	1.20
Patient volume				
<75	Ref			
75-150	0.78	0.543	0.36	1.72
150-300	0.98	0.954	0.46	2.07
>300	0.72	0.404	0.34	1.55
Time constraint				
No	Ref			
Yes	1.71	0.043*	1.02	2.87
Type of outpatient practice				
Primarily HIV	Ref			
HIV and Other	0.86	0.587	0.49	1.49
Other and unspecified	0.17	0.002**	0.06	0.51

* $p < .05$ ** $p < .01$ *** $p < .001$

In the secondary analysis shown in Table 4.6, the outcome variable is interest in training. The researcher used the same covariates in the primary analysis, with the exception of years caring, which was used in place of age. Most associations were not found to be statistically significant. However, the patient volume, providers with a higher number of HIV-positive patients indicated interest in attending a brief training session to learn how to conduct smoking cessation counseling with their patients. This result is encouraging in that it reflects that the providers in this bracket are willing to provide quality care despite their high patient volume.

Table 4.7: Adjusted odds ratios for provider cessation counseling versus main predictors and covariates; secondary analysis of interest in training

Characteristics	Model 1		Model 2		Model 3	
	AOR	95% CI	AOR	95% CI	AOR	95% CI
Gender						
Female	ref				ref	
Male	0.67	0.40, 1.13	0.6	0.35, 1.02	1.58	0.87, 2.87
Age group (years)						
<40	ref		ref		ref	
40-50	1.91	0.91, 4.01	2.16	1.02, 4.61*	0.55	0.27, 1.11
>50	2.46	1.18, 5.13*	3.09	1.44, 6.62**	0.33	0.16, 0.68**
Previous formal training						
No	ref		ref		ref	
Yes	2.23	1.29, 3.84*	2.53	1.45, 4.43**	0.63	0.33, 1.20
Patient volume						
<75	ref				ref	
75-150	0.92	0.46, 1.83	0.91	0.45, 1.82	0.78	0.36, 1.72
150-300	1.36	0.68, 2.71	1.36	0.68, 2.74	0.98	0.46, 2.07
>300	1.22	0.62, 2.43	1.25	0.62, 2.51	0.72	0.34, 1.55
Time constraint						
No	ref		ref		ref	
Yes	0.5	0.30, 0.82*	0.46	0.27, 0.76*	1.71	1.02, 2.87*
Type of outpatient practice						
Primarily HIV	ref		ref		ref	
HIV and Other	1.4	0.83, 2.35	1.47	0.87, 2.50	0.86	0.49, 1.49
Other and unspecified	1.46	0.67, 3.15	1.79	0.81, 3.98	0.17	0.06, 0.51*
Interest in training						
No			ref			
Yes			2.01	1.23, 3.48		

¹ Sample sizes vary due to missing data

² Formal training coded 0= no, 1= yes

³ Time constraint coded 0= no, 1= yes

⁴ Age coded 1= <40, 2= 40-50, 3=>50

⁵ Gender coded 1= Female, 2= Male

* $p < .05$ ** $p < .01$ *** $p < .001$

The model 4.7 contains only the two primary explanatory variables, time constraint and previous receipt of formal training. Based on the outcome, the two variables have a statistically significant association with the outcome, 5A use. This result summarily answers the research as to whether the medical providers who report time constraint adhere less to 5A than those who do

not? (Hypothesis a: Medical providers who report time constraint adhere less to 5A than those who do not) and if providers who receive cessation counseling training more likely to adhere to 5A method than those who do not. (Hypothesis b: Lack of provider cessation counseling training is associated with low adherence to 5A method.) *The summary of all three major models are included in Table 4.7*

Discussion and Recommendations for future research

The greater odds of adhering to 5A use among providers who received training shows that it is essential to provide adequate formal counseling training for healthcare providers. Earlier evaluation of providers' beliefs about the effectiveness of their efforts showed a statistically significant association with 5A use. This finding supports the claim that a seeming lack of evidence for efficacy in PLWH contributes to providers' perception that available cessation options are not effective and therefore are not likely to be recommended (Niaura et al., 2012). Furthermore, based on the results that indicate higher use rates of the 5A method in the older-aged provider population, it would be helpful to target future formal training courses toward the younger population aged 40 and below.

This preliminary study demonstrated that current smoking cessation delivery following national clinical practice guidelines recommendation is inadequate. The researcher identified barriers to adherence to smoking cessation therapy and counseling using the 5A guidelines, contributing to the literature on this topic. Formal physician training is likely to improve compliance with implementing smoking cessation counseling and therapy based on the guidelines. Even online training was shown to positively impact the implementation of the intervention (Martinez et al., 2018) and can be an excellent fit for providers with a high patient volume. Online education on smoking cessation is feasible and effective in improving smoking

cessation interventions in various countries (Martinez et al., 2018; Martinez et al., 2017) and could be adopted in the U.S.

Although I have reason to argue for its representability to the U.S. population of HIV providers based on a parallel study by McNaghten et al. (2013), the national survey was not weighted. The study utilized the Medical Monitoring Project Provider Survey to sample HIV providers in the U. S. pertaining to their knowledge, attitudes, and beliefs regarding HIV patient health. The similar age range distribution that emerged from the study was similar to that from the present study, leading to a probable cause for generalizability. For reference, the age range distribution of the physicians in the McNaghten et al. (2013) sample was as follows. <39: 78, or 15%; 39-49: 189 or 38%; >/ 50years 234 or 47%. This age range is comparable to those in this study.

Limitations

Limitations of the dissertation study include self-reported data, in that the accuracy of smoking status could not be verified. The survey mainly gathered physicians' responses and did not adequately capture nurses', although nurses also have first-hand encounters with HIV patients and provide counseling. Future studies should evaluate nurses' beliefs and attitudes regarding smoking cessation counseling for people living with HIV.

Table 4.2: Demographic characteristics of HIV providers, % (n) unless otherwise noted

Characteristics	Total %(N)	Cessation counseling			p-value	
		Yes	No	Maybe		
Gender						
	Female	72.1 (89)	8.99	57.3	33.7	0.802
	Male	27.9 (230)	7.83	61.3	30.9	
Age						
	<40	18.5 (60)	8.33	73.3	18.3	0.098
	41-50	36.0 (117)	5.98	58.1	35.9	
	>50	45.5 (148)	10.1	56.1	33.8	
Provider category						
	Attending physician	98.8 (321)	7.48	60.8	31.8	0.003
	Nurse practitioner	0.6 (2)	50	0	50	
	Physician assistant	0.3 (1)	100	0	0	
	PharmD	0.3 (1)	0	0	100	
Type of outpatient practice						
	Primarily HIV	38 (124)	8.1	62.1	29.8	0.924
	HIV and Other	47 (152)	9.2	57.9	32.9	
	Other or unspecified ^b	15 (48)	6.3	58.3	35.4	
Patient volume						
	<75	26.1 (85)	8.24	62.4	29.4	0.812
	75-150	20.9 (68)	4.4	63.2	32.4	
	150-300	26.9 (87)	9.2	55.2	35.6	
	>300	26.4 (86)	10.5	59.3	30.2	
Years caring for persons living with HIV (PLWH)						
	<6	7.4 (24)	8.33	66.7	25.0	0.735
	6-10	17.5 (57)	10.5	68.4	21.1	
	11-15	15.1 (49)	8.2	55.1	36.7	
	16-20	17.5 (57)	8.8	57.9	33.3	
	>20	42.5 (138)	7.3	57.3	35.5	
Time constraint						
	No or Neutral	65.3 (213)	8.9	54.0	37.1	0.011
	Yes	34.7 (113)	7.1	70.8	22.1	
Ever received formal training on tobacco treatment and counseling methods						
	Yes	21.5 (70)	15.7	47.1	37.1	0.011
	No	78.5 (256)	6.25	63.3	30.5	
Interest in receiving brief training						
	Yes	30.5 (99)	8.1	52.5	39.4	0.160
	No	69.5 (226)	8.4	62.8	28.8	

Note: ^aFrequencies do not add to total n because of missing data.

^bIncludes non-HIV, non-ID, and undisclosed categories

CHAPTER 5

DISCUSSION AND CONCLUSION

People living with HIV experience life situations that pose a unique challenge to successfully surmounting the issue of smoking. Some of these situations include social and economic challenges, associated with a high risk of smoking and low success with smoking treatment (Humfleet et al., 2009). The majority of the participants in the middle two chapters of study were unemployed, living on benefits, or living in government housing projects. In addition, a substantial proportion of the sample reported current alcohol and illicit drug use, which have been correlated with smoking treatment failure (Humfleet et al., 2009).

Although conflicting studies show that there is no association between cigarette smoking and clinical AIDS, there exists an increased risk of contracting community-acquired pneumonia (Conley et al. 1996), and other lung diseases among HIV-infected smokers compared to non-smokers (Do et al., 2016).

However, of the many interventions that could reduce the risk of cardiovascular disease, coronary heart disease, and myocardial infection in minority HIV-positive populations, smoking cessation is estimated to be the most influential (Do et al., 2016).

Limitations of AIMS 2 and 3.

This study inadvertently focused primarily on male smokers living with HIV as efforts to recruit more female participants were unsuccessful. However, compared to males, the literature on smokers living with HIV suggests that females are more likely to smoke to control multiple life stressors (Fletcher et al., 2019), thus, may require more intensive counseling that is (Cepeda-Benito et al., 2004; Smith et al., 2015; Weinberger, Mazure, Morlett, & McKee, 2012). Overall,

this dissertation research highlights the value of a deeper understanding of tobacco use among PLWH in order to develop targeted interventions for cessation.

AIMS 1-3.

Because PLWH who smoke tend to come into contact with providers regularly due to HIV-related medical care, clinic-level interventions are especially promising for members of this population (Mann-Jackson et al., 2019). Studies have found that care provider recommendations for smoking cessation increase attempts; however, cessation has not been found to be a priority among HIV care providers. Based on findings from this dissertation research that show that providers who have received formal smoking cessation counseling training to more likely adopt 5A and initiate counseling, healthcare providers may need additional training to understand smoking cessation for PLWH and the unique cessation challenges that this population faces.

Smokers with HIV wish to quit smoking (Mamary, Bahrs, & Martinez, 2002). Health care providers should work with HIV patients to support and encourage smoking cessation. For PLWH, who regularly receive care, providers have a unique advantage to promote smoking cessation interventions during visits (Timberlake & Nwosisi, 2020; Vidrine et al., 2017). Discussions initiated by providers about smoking cessation and documented in clinical records, cessation counseling, and prescribed smoking cessation medications have been shown to be effective in promoting successful quitting for some smokers with HIV (Mdodo et al., 2015). Smoking substantially reduces the benefits of effective antiretroviral treatment (Mdodo et al., 2015). Provider-initiated quitting discussions and expanded adoption of evidence-based smoking cessation interventions for smokers living with HIV may help increase quit rates and decrease morbidity and mortality rates associated with cigarette smoking in that population (Mdodo et al., 2015).

RACIAL DISPARITY:

The author noted health disparities by demographic subgroups for HIV-positive adults in care, including racial, educational level, and poverty level (Frazier et al., 2018).

The high proportion of African-American men in this dissertation research who smoke is concerning. Their reported challenges with quitting smoking, including the low-risk perception of the dangers of smoking to their HIV health, especially coming from men with less than high school education, indicate prevalent health disparities within the HIV population. This dissertation research confirms findings showing that non-Hispanic blacks and those with less than high school education were more disadvantaged than their non-Hispanic white counterparts and were more likely to be current smokers and less likely to quit smoking than their non-Hispanic white counterparts. To decrease smoking-related causes of morbidity and mortality and to decrease HIV-related disparities in populations, smoking cessation interventions are vital as part of routine care with HIV-positive persons.

This research on HIV patients has several limitations. The sample size limits the generalizability of the findings and indicates the need to examine these learnings in additional study samples. Because the participants were recruited through medical health care settings, the results may not generalize to all HIV-positive smokers, especially those employed and who have private health insurance. However, studies have shown that about 80% of HIV-positive individuals in the United States have public health insurance or no insurance (Humfleet et al., 2009). Thus, the results of this dissertation research may be generalizable to a significant proportion of HIV-positive smokers in the United States.

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APPENDIX

APPENDIX A. Patient Recruitment Letter and Study Information Sheet

For patients:

Hello,

My name is Ngozi Nwosisi, and I'm a fifth-year doctoral student of public health at University of California, Irvine. I am contacting you as a potential participant in a study on smoking among HIV-positive patients. My research area focuses on the challenges of quitting smoking that you may experience as a person living with HIV.

I'm looking to learn from patients who have seen a health care practitioner: nurse, physician assistant, physician and been advised to quit smoking. My goal is to learn about the challenges of quitting smoking that you may experience as a person living with HIV. The information gathered in this study will help us create interventions that can make cessation feasible for people living with the burden of HIV.

If you're a patient who smokes cigarettes and you're interested in participating, all you need to do is text or call: 949-████-1269 or contact the Case Manager.

You will be asked questions about your cigarette use and quitting efforts, challenges you have encountered related to quitting smoking. We estimate the interview will take no longer than 30 minutes. And your personal information will not be associated with your answers and will be fully deleted after the study is complete.

If you have any questions or concerns, please contact me at nnwosisi@uci.edu or 949-4██████████

Thanks so much for your time,

Ngozi Nwosisi, MPH

Program in Public Health

University of California, Irvine

APPENDIX B: Study Information Sheet

Research Information for Patients:

Understanding Quit Challenges among HIV-Infected Patients Who Smoke Cigarettes in Southern California

Lead Researcher

Ngozi Nwosisi, Doctoral Student

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The purpose of this study is to understand challenges surrounding tobacco cessation among people living with HIV (PLWH) who smoke. The study will assess the perceptions of health care providers about cigarette smoking cessation within HIV-positive patients and the communication experience in consultation using the 5A technique for smoking intervention among PLWH in OASIS Clinic, Los Angeles, CA. Participation will involve a one time, face-to-face 30 - 45-minute semi-structured interview. As part of the interview, you will be asked to discuss smoking behaviors, quit attempts if any, and communication you have received from your provider surrounding quitting tobacco use. In order to ensure this research accurately reflects your thoughts, this interview will be audio-recorded. Risks associated with this research are minimal. There are no known harms or discomforts associated with this interview beyond those encountered in normal daily life. A benefit of this research would be to expand knowledge on smoking behavioral research, and potentially lung cancer research. Your participation in this research is confidential. Only I will have access to the data, to read a transcript from this interview where all identifiers will be removed. Anyone else who may be exposed to this data will be permitted for strictly academic reason and be ethically certified to do so. Your decision to be in this research is voluntary. You do not have to answer any questions you don't want to. This interview is being conducted as part of a class assignment for a doctoral degree program in public health at UCI. The data from this interview will be transcribed with all identifiers removed. Should you have any follow up questions please contact:

Ngozi Nwosisi, Doctoral Student

Department of Public Health

xxx-xxx-xxx| xxxxxx@uci.edu

APPENDIX C: Interview Guide

Introduction:

Thank you for taking time to participate in this interview about Smoking & HIV.

The purpose of this interview is to ask about your smoking behavior and some other questions related to your HIV diagnosis. Thank you for participating in today's interview and for providing the non-identifying demographic information. There are no right or wrong answers and your input is important.

*Ice breaker: How was your day?

Interviewer's Question List

(The relevant constructs that these questions are designed to uncover and explore are included in parenthesis)

Aim 1 (extended): To further assess the challenges that PLWH experience with quitting smoking.

❖ **Construct- Smoking behavior:**

- *Key question:* To gain a better perspective on how you feel about smoking, I wanted to ask why do you smoke and how frequently do you smoke?
- *Key question:* Can you think of a time when you felt **stressed** and did not decide to smoke afterward? Tell me more about this situation and how you coped with it.
- How is living with HIV related to you smoking?

Probe: reasons?

❖ **Construct- Perceived Susceptibility**

- *Key question:* I am interested in knowing more about how you feel smoking impacts you. Are you on medication for it? If yes, please tell me what you know about how your medication is helping you?
- *Key question:* Tell me what you know about the impact smoking has on your health. Do you know of any potential side effects of smoking while taking your prescribed medications, if so describe them to me?
- *Key question:* What did you think about while you were smoking? Are these thoughts only brought up when smoking? [**stressors vs. pleasurable thoughts**]
- *Key question:* Can you think of a time when you felt smoking might have caused you discomfort? Tell me about this experience.

- *Key question:* Are there any situations in which you feel smoking has helped you to feel better? Please tell me about these experiences and what specifically did smoking help with.

❖ **Construct- Perceived Severity**

- *Key question:* I am also interested in knowing more about how you feel about the potential impact of smoking on your overall health. How do you feel about the thought of smoking impacting your CD4 count?
- *Key question:* What impact do you think smoking can have on your health in the future? What bad things can happen from smoking long-term?
- *Key question:* When you're feeling down what helps make you to feel emotionally better? If you're feeling down and smoke does it make you feel physically better? If not, please describe to me the tradeoff between smoking helping you to feel emotionally better but making you feel physically worse.

❖ **Construct- Coping:**

- *Key question:* I would like to talk with you more about how you handle **stress**. Please describe to me some situations that cause you to feel stressed.

Probe: When **stressed** how long does this typically last and what do you do to help when you feel stressed? Can you describe what some of these stressors are?

- *Key question:* Think about a time when something **good** happened, what feelings did you experience?

Probe: Did you smoke after this experience?

- *Key question:* Now think about a time when something **bad** happened, what feelings did you experience?

Probe: Did you smoke after this experience?

- *Key question:* What do you do when you're feeling stressed? Please provide me with some examples.

Probe: How does this make you feel?

❖ **Construct- Coping Strategies:**

- *Key question (Emotional Control):* When you're stressed, what type of **thoughts** do you have when working through a **stressful situation**? Please provide me with some examples. In addition to hearing more about what you think when resolving stressful situations, I would also like to know more about potential solutions that result from brainstorming.

- When you're stressed after receiving bad news, what are some things you can do to help deal with the stress?
- *Key question: **(Disengagement Beliefs):*** I would also like to know more about potential solutions that result from brainstorming. What is a situation that you feel is not easily resolved? When faced with an issue that is not easily resolved what strategies do you use to approach a solution?

❖ **Construct- Network/peer support messages:**

- *Key question:* I also would like to know more about the people around you (family, friends etc.) and their impact on how you handle stress. Are there people in your life that influence whether or not you smoke? If so, please tell me about them.

Probe: which of these people is the most influential/ important?

- *Key question:* Think about a time when you were out with friends or family. What positive or negative experiences contribute to smoking when out with peers or family?

Probe: which of these is the most influential/ important?

❖ **Construct- Cessation:**

- *Key question:* What would make it easier or more difficult for you to abstain from smoking?
- *Key question:* What types of programs would you be interested in to help you stop smoking?
- *Key question:* Describe some things that would prevent you from being interested in a stop smoking program. In your opinion what could be done to help with these barriers?
- *Key question:* Would type of interest would you have in an online stop smoking program?

What type of interest would you have in an in-person stop smoking program?

- *Key question:* Think about alternative activities to smoking. Describe which could be most beneficial for you and why?
- *Key question:* Who can you think of that would be a good person to help with not smoking and why?

Probe: anything that would prevent you from abstaining (barriers)?

Probe: anything that would help you abstain (facilitators)?

AIM 2

- Tell me about your conversations about smoking cessation with your practitioner
- Tell me about the last conversation you had with your practitioner or with your patient in the last two weeks.
- What was your perceived intent in your practitioner delivering the message to you?
- How do you feel that he/she conveyed that message to you? (Associated relevant constructs: *perceived severity, perceived susceptibility, problem management*)
- How does your provider (nurse, physician, physician assistant) motivate you?
- What are strategies that they use to motivate you to quit smoking? (Relevant constructs: *problem management*)
- What has worked for you? (Relevant constructs: *social support, perceived control*)
- What hasn't? (Relevant constructs: *coping, perceived severity, perceived susceptibility*)
- What were/are some challenges that prevent(ed) you from quitting?
- What are some stressors that affect your ability to quit smoking?

Probe: Please expand on them.

- How do the practitioners engage with you when communicating the cessation smoking cessation message? Please describe the effect it had on you.
- In your opinion, what would be a good smoking cessation strategy?

Summary question: Is there anything else you would like to share that we haven't discussed today?

Conclusion: We have now reached the end of the interview. Thank you for participating

Interviewer decides when to ask the question according to rapport

APPENDIX D: Demographic Information Sheet

The information collected will be used for study purposes only and the data will be analyzed anonymously.

- 1) What is your gender?
- 2) What is your age?
- 3) What is your highest level of education?
- 4) Are you currently employed?
- 5) At what age were you diagnosed with HIV?
- 6) When did you start smoking cigarettes?
- 7) How many cigarettes do you currently smoke?

APPENDIX E: Survey Questionnaire Subscale

A. Provider role subscale: (Provider-perceived role in smoking cessation)

Cigarette smoking is a patient's personal choice, and it is not my job to question his/her choice.b

It is the nurse's job to urge his/her HIV-infected smokers to quit.b

It is the primary care provider's job to urge his/her HIV-infected smokers to quit.

I don't feel it is my role to counsel HIV-infected patients on smoking cessation.b

B. Provider attitudes about efforts to promote smoking cessation:

B1. Difficulty subscale: (Too time-consuming)

I do not have enough time to adequately address cigarette smoking with my HIV-infected patients.b

Cigarette smoking is just one item in the long list of health concerns that every HIV-infected patient has.b

The time that I spend discussing cigarette smoking with my HIV-infected patients could be better spent on other health concerns.b

B2. Ineffectiveness subscale: (Not, or unlikely to be, effective)

My efforts to get HIV-infected smokers to quit are unlikely to succeed.b

My smoking cessation efforts are hampered by not having trained counselors or a formal program onsite.

b

The social environments of most of my HIV-infected patients make smoking cessation efforts hopeless.

Many HIV-infected patients who request nicotine patches sell them rather than use them.b

Discussions about smoking and smoking cessation with HIV-infected patients are usually a waste of time.b

My previous attempts to convince HIV-infected patients to quit have met with little success.b

I am not confident in my ability to properly counsel my patients to quit smoking.b

B3. Counterproductivity subscale: (Efforts may be counterproductive)

I am concerned that drugs used for smoking cessation may interact with drugs used to treat HIV infection.b

Cigarette smoking helps my HIV-infected patients cope with stress.b

I am concerned that prescribing additional pills for smoking cessation may decrease adherence to HAART.b

For my stable HIV-infected patients, I am concerned that an attempt at quitting cigarettes could “upset the apple cart.” b

For patients with drug/alcohol histories, I am concerned that quitting cigarettes may interfere with their abstinence from these harder substances.b

C. Belief subscale: (Belief in harm of smoking and benefits of quitting)

Many of my HIV-infected patients have cardiovascular disease attributable to cigarette smoking.

An HIV-infected smoker who quits is likely to experience important immediate health benefits.

For the average HIV-infected patient in the US in 2009, smoking is more likely to kill him/her than complications of HIV infection.

Many of my HIV-infected patients have chronic respiratory disease.

The life expectancies of HIV-infected patients who adhere to HAART and quit smoking are similar to the general population.

I believe that smoking cessation is important for the health of my HIV-infected patients who smoke.

Many of my HIV-infected patients have respiratory disease attributable to cigarette smoking.

An HIV-infected smoker who quits is likely to experience important long-term health benefits.

Cigarette smoking is one of the major health issues facing the HIV-infected population of this country.

Cigarette smoking has become a more important issue for persons with HIV since the HAART era began.

Cigarette smoking worsens the course of HIV infection.

D. Action subscale: (Smoking cessation promoting activities)

I frequently advise HIV-infected smokers to call a quitline.

I prescribe Zyban (Wellbutrin, bupropion) frequently for smoking cessation purposes.

I prescribe nicotine replacement therapy frequently.

When I discuss smoking with my HIV-infected patients, I use the “5 A’s” as a guide.

I frequently give smoking cessation brochures to my HIV-infected patients who smoke.

I prescribe Chantix (varenicline) frequently.

APPENDIX E2: Survey Questionnaire Form

PROVIDER QUESTIONNAIRE

This questionnaire is part of a study to understand attitudes and practices relating to cigarette smoking and smoking cessation in persons living with HIV infection. The investigators will keep all responses confidential and will make no attempt to identify the providers who complete the questionnaire. By completing this questionnaire, you are consenting to participate in a study entitled, "A Survey of Provider Attitudes, Beliefs, and Practices Relating to Cigarette Smoking in Their HIV-Infected Patients" The Principal Investigator is Jonathan Shuter, MD (718-920-7845), and the study has been reviewed and exempted by the Montefiore Medical Center Institutional Review Board (718-920-4151). Your participation in the study is strictly voluntary, and there is no penalty for choosing not to participate.

Please circle the appropriate answer:

What is your age? <36 36-40 41-45 46-50 >50 What is your gender?
M F

What category of medical provider are you? MD/DO (attending) MD/DO (fellow) PA
NP

In what state do you practice? _____ Appx. how many HIV-infected *patients* do you follow? _____

In what setting do you deliver most of your care?

Teaching hospital clinic Non-teaching hospital clinic Private office Freestanding clinic
Other _____

What is the nature of your outpatient practice?

Primarily HIV HIV and internal medicine or fam. practice Primarily internal medicine or
fam. practice Other _____

How long have you been providing care to persons with HIV infection?

<6 years 6-10 11-15 16-20 >20 years

Have you ever participated in formal training or clinician education on tobacco treatment and counseling methods? Yes No Don't know/Not sure

Have you smoked more than 100 cigarettes in your entire life? Yes No Don't know/Not sure

Do you now smoke cigarettes every day, some days, or not at all? Every day Some days
Not at all

How many cigarettes per day do you smoke? _____

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
1. Cigarette smoking is a patient's personal choice, and it is not my job to question his/her choice.	1	2	3	4	5
2. I frequently advise HIV-infected smokers to call a quitline.	1	2	3	4	5
3. Many of my HIV-infected patients have cardiovascular disease attributable to cigarette smoking.	1	2	3	4	5
4. My efforts to get HIV-infected smokers to quit are unlikely to succeed.	1	2	3	4	5
5. I am concerned that drugs used for smoking cessation may interact with drugs used to treat HIV infection.	1	2	3	4	5
6. Cigarette smoking helps my HIV-infected patients cope with stress.	1	2	3	4	5
7. My smoking cessation efforts are hampered by not having trained counselors or a formal program on-site.	1	2	3	4	5
8. It is the nurse's job to urge his/her HIV-infected smokers to quit.	1	2	3	4	5
9. The social environments of most of my HIV-infected patients make smoking cessation efforts hopeless.	1	2	3	4	5
10. I am not confident in my ability to properly counsel my patients to quit smoking.	1	2	3	4	5
11. Many HIV-infected patients who request nicotine patches sell them rather than use them.	1	2	3	4	5
12. An HIV-infected smoker who quits is likely to experience important immediate health benefits.	1	2	3	4	5

13. I am concerned that prescribing additional pills for smoking cessation may decrease adherence to HAART	1	2	3	4	5
14. I do not have enough time to adequately address cigarette smoking with my HIV-infected patients.	1	2	3	4	5
15. Discussions about smoking and smoking cessation with HIV-infected patients are usually a waste of time.	1	2	3	4	5
16. For the average HIV-infected patient in the US in 2009, smoking is more likely to kill him/her than complications of HIV infection.	1	2	3	4	5
17. Many of my HIV-infected patients have chronic respiratory disease.	1	2	3	4	5
18. It is the primary care provider's job to urge his/her HIV-infected smokers to quit.	1	2	3	4	5
19. Cigarette smoking is just one item in the long list of health concerns that every HIV-infected patient has.	1	2	3	4	5
20. The life expectancies of HIV-infected patients who adhere to HAART and quit smoking are similar to the general population.	1	2	3	4	5
21. I prescribe Zyban (Wellbutrin, bupropion) frequently for smoking cessation purposes.	1	2	3	4	5
22. The time that I spend discussing cigarette smoking with my HIV-infected patients could be better spent on other health concerns.	1	2	3	4	5
23. I believe that smoking cessation is important for the health of my HIV-infected patients who smoke.	1	2	3	4	5
24. Many of my HIV-infected patients have respiratory	1	2	3	4	5

disease attributable to cigarette smoking.					
25. An HIV-infected smoker who quits is likely to experience important long-term health benefits.	1	2	3	4	5
26. I prescribe nicotine replacement therapy frequently.	1	2	3	4	5
27. Cigarette smoking is one of the major health issues facing the HIV-infected population of this country.	1	2	3	4	5
28. I don't feel it is my role to counsel HIV-infected patients on smoking cessation.	1	2	3	4	5
29. For my stable HIV-infected patients, I am concerned that an attempt at quitting cigarettes could "upset the apple cart."	1	2	3	4	5
30. Cigarette smoking has become a more important issue for persons with HIV since the HAART era began.	1	2	3	4	5
31. When I discuss smoking with my HIV-infected patients, I use the "5 A's" as a guide.	1	2	3	4	5
32. I frequently give smoking cessation brochures to my HIV-infected patients who smoke.	1	2	3	4	5
33. My previous attempts to convince HIV-infected patients to quit have met with little success.	1	2	3	4	5
34. For patients with drug/alcohol histories, I am concerned that quitting cigarettes may interfere with their abstinence from these harder substances.	1	2	3	4	5
35. Cigarette smoking worsens the course of HIV infection.	1	2	3	4	5
36. I prescribe Chantix (varenicline) frequently.	1	2	3	4	5

When you counsel an HIV-infected patient about smoking cessation, how much time do you usually spend?

N/A (haven't counseled them) <1 minute 1-2 minutes 3-5 minutes >5 minutes

When you counsel an HIV-infected patient about smoking cessation, at what point in the visit do you usually perform the counseling?

Beginning Middle End It Varies

Would you be interested in attending a brief training session to learn how to conduct smoking cessation counseling with your patients?

Yes No Maybe

THANK YOU FOR YOUR PARTICIPATION

APPENDIX F: UCI Medical Center Letter of Support

UNIVERSITY OF CALIFORNIA, IRVINE

BERKELEY • DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO



SANTA BARBARA • SANTA CRUZ

Department of Medicine
Division of Infectious Diseases
UC Irvine Medical Center

101 The City Drive South
City Tower, Suite 400
Orange, CA 92868
(714) 456-7612

June 11, 2019

To Whom It May Concern:

It is with great pleasure that I offer my support for the research proposal by Ngozi Nwosisi titled "Cigarette Smoking Cessation among HIV Patients: A Crossing of Behavioral Health and Chronic Disease." I am the medical director of the Infectious Diseases Clinic at University of California Irvine Medical Center in Orange, California and agree to serve as a community partner for the purpose of participant recruitment. I will permit the distribution of an IRB-approved recruitment letter to all HIV-infected clinic patients who smoke tobacco, which as of today totals up to 100 potential subjects. I will participate in the IRB application and will encourage eligible patients from our clinic to enroll in this study. I also am enthusiastic about supporting recruitment for future studies. I strongly believe in the need for exploratory research on the challenges of smoking cessation among the HIV-infected and thus am eager to support high-quality, impactful research as described in Ms. Nwosisi's proposal.

Sincerely,

A handwritten signature in cursive script that reads "Catherine Diamond".

Catherine Diamond, MD, MPH
Professor of Clinical Medicine
Division of Infectious Diseases
Department of Medicine
University of California, Irvine
diamondc@uci.edu

APPENDIX G: OASIS HIV Medical Clinic Letter of Support



HIV & AIDS PROGRAMS

"Where First Class People are Treated First Class"

March 13, 2019

To Whom It May Concern:

It is with great pleasure and enthusiasm that we write this letter of support for the research proposal by Ngozi Nwosisi entitled "Cigarette Smoking Cessation among HIV Patients: A Crossing of Behavioral Health and Chronic Disease." The executive board and medical team of OASIS Clinic at Charles R. Drew University in Los Angeles has unanimously agreed to serve as a community partner for the purpose of participant recruitment. We have agreed to distribute an IRB-approved recruitment letter to all HIV-positive patients who smoke in our clinic, which as of today totals about **300**.

We will participate in an IRB application and would be pleased to see eligible patients from our clinic enroll in this study. We are enthusiastic about supporting recruitment for future studies.

At OASIS, we deeply believe in the need for exploratory research on the challenges of smoking cessation among the HIV-positive patients and are eager to support high-quality, impactful research as that described in Ms. Nwosisi's proposal.

Sincerely,

A handwritten signature in black ink, appearing to read "Wilbert C. Jordan".

Wilbert C. Jordan, M.D., MPH, Director
OASIS Clinic, Los Angeles

/v