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THE GEORGE WASHINGTON UNIVERSITY

Literature Review:

Tobacco Use and Cessation Interventions in Special Populations with Health Disparities

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Background

This literature review informs delivery and evaluation of tobacco cessation programs at Whitman Walker Health (WWH) and their community partners. The review addresses the unique needs of particular groups including people living with HIV; lesbian, gay, bisexual, transgender and queer/questioning (LGBTQ) individuals; homeless people and African Americans. According to the American Legacy Foundation, certain racial/ethnic groups; lesbian, gay, bisexual, and transgender individuals; and people with mental illness are more likely to initiate tobacco use and struggle to quit smoking and these groups often have poorer access to cessation resources. These groups are more likely to suffer from tobacco-related disease and death.¹ The purpose of this review is to improve tobacco cessation interventions for these populations. The methodology for the review is detailed in Attachment A.

Tobacco Cessation Interventions

Smoking cessation methods include self-help approaches, counseling, pharmaceutical monotherapy (e.g., bupropion, nicotine gum, transdermal nicotine, nicotine nasal spray), combined pharmacotherapies, pharmacotherapy and psychological interventions. A 2006 systematic review by Ranney et al. examined these intervention strategies for smoking cessation and found varying rates of success.² Limitations of the studies reviewed included inadequate description of sampling techniques, high refusal and attrition rates among participants, self-selection of intervention, high rates of non-adherence, lack of adverse events reporting, and low generalizability. The authors acknowledged the dearth of studies focusing on special populations, such as minorities, and populations with coexisting conditions like psychiatric disorders and substance abuse problems.³ The least effective strategies were self-help approaches. Combined counseling and pharmacotherapies were more effective. It was unclear from the studies reviewed whether more intensive versus brief counseling was more effective.

A review by Doolan et al. analyzed studies of smoking cessation interventions among special populations including women; older adults; smokers with psychiatric diagnosis; smokers addicted to illicit drugs, alcohol, or both; LGBTQ groups; and African Americans.⁴ Women and African Americans enjoyed statistically significant positive effects from cessation interventions, but only minimal statistical significance. There is insufficient data from randomized control trials specific to African American smokers. Minority groups are less likely than whites to receive and use tobacco cessation interventions.⁵ However, there is consensus that a combination of cessation efforts is beneficial towards achieving success in smoking cessation.

Reinforcement of smoking cessation messages in multiple settings and from multiple health care providers is critical. Withdrawal of reinforcement has been linked to relapse.⁶ Success with most interventions has not been attributed to any novel approach, but rather the consistent and repeated reinforcement of personalized smoking cessation advice and assistance in different forms over the longest feasible period and by multiple persons.

Factors Impacting Tobacco Cessation Program Success

Comorbidities

Comorbidities complicate smoking cessation interventions.⁷ In a review of tobacco-related outcomes in patients with CVD, COPD, asthma, cancer, and HIV/AIDS, Gritz, et al. concluded that spontaneous smoking cessation and quits were more likely to occur in individuals with less nicotine dependence and/or those without co-morbidities.⁸ Individuals with psychiatric and substance abuse disorders typically do not respond as well to cessation treatments and require specialized strategies.^{9,10}

Older adults are likely to have more comorbidities than young adults. The common perception is that older populations are less likely to change their behaviors, but many studies indicate that older individuals are actually more likely to quit smoking because of the accumulation of other comorbidities increases their motivation to do so.¹¹ The AHRQ, National Cancer Institute, and US Public Health Service's 5 A's (ask, advise, assist, and arrange follow-up) guideline for promoting tobacco cessation has been effective particularly in elderly groups above age 50.^{12,13,14,15}

People who smoke and have other health comorbidities are at greater risk of adverse health outcomes in the long-term. Clinicians must show patients how smoking cessation can improve their overall health and how nicotine consumption negatively impacts their individual health conditions.

Nicotine Dependence

A four-country (United States, United Kingdom, Canada, Australia) survey of individual-level predictors of cessation behaviors found that the key individual factors predictive of an attempt to quit were intention to quit, making a quit attempt in the previous year, longer duration of past quit attempts, more negative attitudes about smoking, younger age, and less nicotine dependence, which was the main predictor.¹⁶ Nicotine dependence made sustained abstinence substantially more difficult to achieve.

Readiness for Change

Success of cessation intervention programs often rely on the interest and readiness of smokers to change their behaviors, and therefore it is important to assess the level of readiness of smokers engaged in an intervention.^{17,18,19} Intention to quit is essentially mediated by constructs in the theory of planned behavior and positive attitudes and beliefs that cessation would improve health and longevity.

For smokers who self-report low readiness to change, tailored interventions that are adapted to the stage of change, outcome expectations, self-efficacy, and smoking behavior may be necessary to achieve success.²⁰ The Transtheoretical Model addresses the stages and processes of self-change with respect to quitting smoking: Precontemplation (no intention to change), Contemplation (intending to quit in the next 6 months), Preparation (considering quitting in the next month with at least one quit attempt in the last year), Action (quit smoking for less than 6 months), and Maintenance (quit smoking for at least 6 months).^{21,22,23} Interventions that consider the individual's stage of change and understanding of health risks can be more successful in smoking cessation.²⁴ Furthermore, clinicians must be willing to believe that their patients are interested in quitting to help move patients into the action stage. Assuming that patients are not willing or able to move through the stages of change can be a barrier to cessation efforts.²⁵

Tailored Interventions

The *2008 Clinical Practice Guideline for Treating Tobacco Use* recognizes that certain populations have unique needs and require special consideration in smoking cessation interventions.²⁶ By refining the curriculum to be culturally adequate, the guideline authors state that those administering the intervention may have greater success in sustaining quit rates. According to the 2008 report, no long-term randomized control trials (RCT) had examined effectiveness of cessation interventions in lesbian, gay, bisexual, and transgender populations, or HIV-positive persons. The report indicated that there are no practical clinical guidelines to guide treatment in HIV-positive persons.

Comorbidities, nicotine dependence, and readiness for change are also cited as factors impacting success within tailored interventions. These factors are interrelated when it comes to program success. Research in the focus populations is outlined below with a discussion of prevalence, perceptions of the population, unique smoking-related challenges, known successes from evidence-based research, and recommendations for clinic-based intervention.

Special Populations

People Living with HIV

Prevalence

Endemic cigarette consumption among the HIV-positive population is associated with disproportionately high morbidity and mortality.²⁷ The first nationally-representative study of tobacco use in HIV-infected persons receiving care was published in 2013. This study found HIV-positive persons to smoke at twice the rate of the general population.²⁸ The CDC estimated 42% of HIV-positive adults receiving care are smokers. The overall prevalence rate of smoking among HIV-positive populations is estimated to be between 50% and 70%. More than 85% of HIV infected individuals in the United States have a history of smoking.^{29,30} Overall prevalence adjusted for gender, race/ethnicity, education level, and poverty level was comparable to that of the general population. However, in an unadjusted analysis, smoking prevalence was 2.1 times greater in HIV-positive people compared to the general population in the United States. These numbers do not reflect those who are not receiving care or those who are unaware of their HIV status.³¹

Perceptions of Population

Qualitative studies have assessed HIV-positive patients' perception of risk. Analysis of a focus group of HIV-positive men published in 2004 indicated that HIV-positive smokers are under the impression that smoking would not have a negative impact because they would not live long enough to experience the adverse consequences that would come from smoking.³² While, this may not be true for all HIV-positive men, understanding these perceptions can improve delivery of behavioral cessation interventions. In a state-wide study of HIV-positive smokers in New York, the vast majority of respondents were aware of the risk of lung cancer and heart attacks, and over half recognized that smoking cessation was beneficial for long-term health.³³

Known Challenges

Smoking is associated with HIV and AIDS-related diseases such as pulmonary infections, oral diseases, cardiovascular disease (CVD), and cancer malignancies. HIV positive smokers are at greater risk for developing bacterial pneumonia, oral lesions, and AIDS dementia complex than nonsmokers.^{34,35} Rates of CVD have increased among people living with HIV, partly due to the metabolic changes induced by the highly active antiretroviral therapy (HAART) treatments which may result in increased bad cholesterol, triglycerides, insulin resistance and decrease in good cholesterol.³⁶ Smoking has resulted in greater lung cancer and head and neck cancer incidence in the HIV-positive smoking population.^{37,38} Cigarette smoking has been found in at least 75% of cancer-related deaths in HIV/AIDS patients. Decreasing smoking prevalence could increase survival time for individuals with HIV.³⁹

Other barriers such as access, transportation, and unstable housing also contribute to decreased success with cessation interventions. People living with HIV are at higher risk for depression, poor quality of life, and diminished social support, which may make sustained cessation and abstinence more difficult.⁴⁰ This instability lends itself to relapse. There is evidence that shows that smoking cessation self-efficacy varies across racial/ethnic

groups with HIV which suggests a need to increase motivational and behavioral support to improve successful quit rates for those who may have low self-reported self-efficacy.^{41,42} Many HIV-positive smokers have also failed at smoking cessation efforts in the past and may require a different approach that goes beyond just first line treatments like nicotine replacement patches.⁴³ Another study by Fuster, et al (2009) assessing the rate of success and associated factors also found that motivation level of the patient was a predictor of cessation success.⁴⁴

Given the unique psychosocial profile common to people living with HIV who may have high rates of psychiatric comorbidity, drug and alcohol use, and low levels of social support, tobacco cessation has been found to be a challenge.⁴⁵ Co-occurring behavioral risk factors such as illicit drug use, limited socioeconomic resources, and diminished access to health care make smoking cessation more difficult. The interplay of complex factors that impact the ability to quit suggest that HIV-specific health benefits should be discussed in conjunction with interventions that also address the psychosocial barriers to cessation.⁴⁶

The CDC recommends that smoking cessation efforts be prioritized for HIV-infected persons receiving care. Clinical awareness is currently inadequate to address the endemic rates of smoking among HIV-positive persons.⁴⁷

Known Successes from Evidence-Based Interventions

The research that is currently available is based on small pilot tests with clinic-based interventions that combine counseling, written educational materials, Nicotine Replacement Therapy (NRT), motivational enhancement, brief counseling, and telephone counseling. Though there have not been any major RCTs conducted examining the effects of cessation interventions with people living with HIV, there are pilot studies that indicate that proven treatments can also work with HIV-positive populations and that telephone counseling is promising.^{48,49}

One randomized control trial (n=444, mean cigarettes per day=18) found that motivationally enhanced treatment and NRT did not improve cessation rates above standard treatment with NRT in HIV-positive smokers.⁵⁰ Providers who delivered the interventions varied. For example, one intervention included an HIV-positive ex-smoker who had been trained by advanced practice nurses to deliver the counseling.⁵¹ This pilot study had a small sample size but achieved a high smoking abstinence rate among the intervention group. Another similar study also concluded that the motivation to quit and a low drop-out rate would improve chance of success in cessation programs targeting HIV-positive smokers.⁵²

HIV-related outcomes vary across different ethnic groups and interventions should be targeted to racial minorities and/or men who have sex with men (MSM). Tobacco use is a health-compromising behavior that contributes to health disparities among African Americans living with HIV/AIDS.⁵³ Project Exhale is a culturally-tailored smoking cessation treatment for HIV-positive African American smokers.⁵⁴ The participants in this study had high nicotine dependency scores, co-occurring alcohol and substance abuse behaviors, and depressive symptoms. Measures used to evaluate participant outcomes were: Fagerstrom Test for Nicotine Dependence, readiness to quit, Brief Questionnaire of Smoking Urges, Minnesota Nicotine Withdrawal Scale, cigarettes smoked per day, carbon monoxide reading, seven-day point prevalence quit rate, and a Beck Depression Inventory reading. At one month post intervention follow-up, readiness to quit scores improved significantly from baseline, and dependency and withdrawal symptoms had decreased. At one month and three months post-intervention, the number of cigarettes smoked per day, Beck Depression Inventory scores, and smoking urge scores were also significantly reduced from baseline. The results of this study are limited by the fact that there was no control group and that the study was conducted with a small urban population and thus may not be generalizable. The authors agreed that further research is needed to improve adherence to NRT and to discover novel approaches to relapse prevention, especially among HIV-positive African American MSM smokers. A study by Vidrine, et al indicated that smoking abstinence was related to a decrease in HIV-related symptom burden.⁵⁵

Recommendations

- Advocate for smoking cessation to improve overall health and reduce symptoms related to HIV.
- Address psychosocial barriers to cessation.
- Routinely assess smoking status and readiness to quit among HIV-infected patients and link those patients to care.
- Continue to monitor the progress of patients attempting to quit to prevent relapse.
- Increase clinical education on tailored interventions for HIV+ smokers.

Lesbian, Gay, Bisexual, Transgender, Queer/Questioning (LGBTQ) Populations

Prevalence

The 2013 National Health Interview Survey assessed health disparities in sexual minority groups. The study found that there were a higher percentage of people who identify as gay/ lesbian (27.2%) or bisexual (29.5%) who smoke compared to their straight counterparts (19.6%).⁵⁶ While there were no significant differences among men aged 18-64, LGB women were found to have higher cigarette smoking prevalence compared to their straight counterparts. The American Cancer Society estimates that over 30,000 LGBT people die each year of tobacco-related diseases.⁵⁷

Perceptions of Population

A study conducted by Ward et al. (2014) found no differences between sexual orientation and health status indicators (excellent, very good health) in LGB groups except among women. Women who identified as gay or lesbian indicated lower health status compared to straight women. Higher percentages of bisexual adults, especially bisexual women, experienced psychological distress. A higher percentage of LGB groups also did not have a usual place to go for medical care or were not able to obtain medical care because of cost compared to straight groups. Interestingly, there were no differences in health insurance coverage between groups. Lack of insurance, frequent attendance at LGBT bars, and fewer perceived deterrents to smoking were associated with greater odds of smoking for sexual minority women.⁵⁸ Non-smoking sexual minority women also experience higher exposure to second hand smoke compared to nonsmoking heterosexual women. Clinicians should be aware of these population-specific challenges to better tailor their cessation efforts.

In a review of tobacco use among sexual minorities, within each sexual minority group those with bisexual identity, behavior, or attraction had an elevated prevalence of smoking.⁵⁹ Sexual orientation is not a cause of smoking status but rather a marker of health risk caused by interactions with the socio-ecological environment.^{60,61} The spaces that LGBT communities consider safe are areas that have tobacco-friendly environments, which thereby encourage smoking behaviors.⁶² Convincing people to not frequent these environments can be difficult because they play a large role in establishing their identity. There are studies that suggest the need to research the pathways and linkage between sexual minority social spaces; initiation of smoking due to violence, stress, and discrimination; and barriers to healthcare treatment.^{63,64}

Known Challenges

There are many unique challenges that LGBT groups face. For example, LGBT groups have been targeted by the tobacco industry's media campaigns and marketing strategies.⁶⁵ The American Legacy Foundation discovered that tobacco companies had a project titled the Sub-Culture Urban Marketing campaign that was specifically aimed at gay and homeless people.⁶⁶ The Mautner Project conducted a survey of lesbians in DC and found that most respondents had never seen nor heard any anti-smoking messages or public education awareness messages aimed

at sexual minorities.⁶⁷ *The Disparities in Lung Health Series* found that there were little to no anti-smoking messages or programs that were sensitive to these minority populations.⁶⁸ In addition to teaching tobacco users about the adverse consequences of smoking, efforts must also be made to decrease the influence of these messages.

In addition to excessive marketing, psychosocial stress that LGBT groups experience makes it more difficult to change smoking behaviors. The minority stress model suggests negative experiences such as discrimination, stigma, violence victimization, and hegemonic devaluation contribute to poor mental health. These stressors are different from those experienced by others in the general population because they are greater, chronic, and socially based instead of just existing at the individual level.⁶⁹ Minority, or gay-related stress and sexual stigma play a role in negative emotions and stress that lead to smoking and relapse.⁷⁰ Other studies indicate that smoking appears to increase this stress, resulting in greater anxiety and depression.⁷¹ There is also an association between smoking and sensation-seeking and impulsivity among these groups.⁷² There may be a relationship between minority stress, mental health (distress, depression, anxiety) and risk behaviors like smoking.⁷³

Known Successes from Evidence-Based Interventions

No long-term RCTs have been conducted in this group resulting in a lack of data regarding cessation in LGBT groups. However, there have been smoking cessation classes that have been adapted for the LGBT community. Adapted programs, such as “The Last Drag,” were found to be successful.⁷⁴ There were limitations, however, that prevented the program from achieving success across racial and socioeconomic groups. The authors concluded that empowerment components that were incorporated into these classes may not have been as effective because of lack of diversity of the participants. Because there was not a diverse representation of people in the program, the authors speculated that some participants felt uncomfortable with the intervention because there were not others like them in the group. The majority of participants in this intervention were white and male, a population that has been a predominant focus of LGBT research. In another study, the authors adapted the American Lung Association’s Freedom from Smoking program to reflect LGBT culture, norms, and beliefs, which the authors concluded was successful.⁷⁵ Matthews, et al (2013) organized the cessation events at LGBT-friendly community spaces to gain increase trust and acceptance. The cultural-specific content discussed HIV/AIDS, hormone use among transgender smokers, role of smoking in LGBT culture, stress due to homophobia as triggers for smoking and relapse, how to increase social support for nonsmoking, relationships between bar culture and smoking, how the tobacco industry targets LGBT groups, and specific statistics and rates for the LGBT communities. This program was rebranded as “Call It Quits,” then “Bitch to Quit” and “Put it Out” with the hopes that the program would be more successful at reaching this population.

Intention and readiness to quit are predictors of smoking cessation. Among the few initial studies done to measure impact of intention to quit, no sociodemographic or LGBT-specific variables related to intention to quit had any impact.⁷⁶ Further, a community-based treatment cessation program for LGBT smokers found that the baseline levels of nicotine dependence, use of any stop-smoking medications, and the number of program sessions attended were highly associated with quit status.⁷⁷

Recommendations

- Clinic-based interventions should incorporate strategic communications strategies to counteract the abundance of targeted smoking advertisements.
- Incorporate culturally-specific content for LGBT populations such as HIV/AIDS, the impact of hormone use among transgender smokers, role of smoking in LGBT culture, stress due to homophobia as triggers for smoking and relapse, how to increase social support for nonsmoking, relationships between bar culture

and smoking, how the tobacco industry targets LGBT groups, and specific statistics and rates for the LGBT communities.

- Reinforce smoking cessation messages that address key issues faced by LGBT persons, such as stress related to homophobia, lack of social support, and the overabundance of tobacco advertisements
- Maintain sensitivity towards culturally-specific challenges when having discussions about tobacco cessation.

Homeless

Prevalence

Severely disadvantaged groups like homeless individuals also experience significantly higher rates of tobacco use. Smoking prevalence among homeless persons is greater than 70% versus approximately 20% in the general population.⁷⁸ While it is difficult to obtain an accurate measure of smoking prevalence among the homeless population, approximately 70% to 80% of the homeless adult population in the United States smoke tobacco.^{79,80} Homeless adults smoke approximately 18.3 cigarettes per day.⁸¹ While homeless persons are three times more likely to smoke compared to the general population, a similar proportion indicate a readiness to change their smoking behavior.^{82,83,84}

Perceptions of Population

In a qualitative study of smoking cessation in disadvantaged groups, including individuals struggling with homelessness, the clients indicated that although they did not want to be pestered, they appreciated extra encouragement, and preferred personalized quit support from a familiar person over an extended period of time.⁸⁵ Many indicated that they did not prefer telephone support or the quit lines.⁸⁶ Clients expressed desire to have a relationship with a social worker or someone else who could give them serious advice and support them in person, not over the phone. Although homeless smokers report motivation to quit, many have low perceived self-efficacy, suggesting the need for greater social support for this population.

Known Challenges

Lack of insurance, poor hygiene, unstable housing, food insecurity, and risky behaviors put homeless adults at greater risk of tobacco-related medical conditions like cancer, respiratory illness, and CVD.⁸⁷

Homeless individuals face many barriers to successful smoking cessation including lack of access to health care resources and lack of transportation to attend programs. Many homeless persons who attend community clinics and request cessation help are unable to afford NRT supplies and are not aware of the cessation programs offered in the community. Improving awareness of available treatment options may increase uptake of smoking cessation behaviors. In an on-site pharmacist-led smoking cessation service, Connor et al. found no differences between homeless and housed adults' receipt of advice to quit smoking.⁸⁸ However, homeless patients still struggled to attend the smoking cessation program. The authors suggest incorporating special assistance for homeless smokers to reduce barriers.

Tobacco advertisements promote smoking as a way to reduce stress and cope with depression and mental illness. In reality, nicotine addiction can exacerbate anxiety and mental health issues.^{89,90} Combatting false messaging remains a challenge.

Known Successes from Evidence-Based Interventions

A cross-sectional study looked at the prevalence of smoking, readiness to quit, and preference for smoking cessation treatments in homeless adults (n=236) at nine different sites serving homeless persons. The study found that 37% of the current smokers reported readiness to quit within the next six months.⁹¹ Many homeless adults express concern related to short-term effects versus long-term consequences. However, reasons for wanting to quit include health risks, lack of ability to pay for health care, effect of second-hand smoke on children, the cost of cigarettes, and the potential for smoking to re-initiate prior substance abuse problems. Individuals were more likely to indicate that they were ready to quit if they had past quit attempts and had social support to quit. The preferred assistance method was NRT, and the study found that self-efficacy to quit was higher if assistance was available.

Behavioral counseling interventions, non-pharmacological methods, and pharmacological therapy have been tried in the homeless population. Clinicians have used behavioral counseling models to encourage smoking cessation. Weekly formal patient education directed towards stages of change have been found to have a dose-response relationship that shows increased quit rates with increased intensity and frequency of counseling. Introducing problem-solving guidance in the counseling session can help to overcome barriers. In a pilot clinical trial among homeless adults, the combination of counseling and medication was found to be more effective than either treatment alone.⁹²

Recommendations

- When possible, use both counseling and medication to assist with tobacco cessation for homeless patients.
- Some homeless patients have indicated a preference for NRT.
- Homeless smokers may have low self-efficacy to quit. Relationship-based approaches to tobacco cessation may be more helpful than phone-based services.
- Continuous in-person engagement to assist patients who are contemplating quitting may be more effective than solely prescribing NRT.
- Consistency in the time and place that the individual or group counseling sessions are offered is helpful.
- Transportation assistance may be needed to help homeless individuals access in-person cessation services.
- Partner with case managers, existing programs and transitional shelters.
- Incentives for completing the cessation program may reduce attrition.
- Empower patients by providing them with knowledge regarding the true impact of smoking on their well-being so that they are not influenced by heavy-handed marketing efforts.⁹³
- Present information to homeless smokers in a way that is relevant to their lifestyle.

African Americans

Prevalence

In 2008, African Americans accounted for 12% of the 46 million adults who identified as current smokers in the United States.⁹⁴ Current cigarette smoking data from the Centers for Disease Control and Prevention (CDC) shows that the percentage of African Americans who smoke is slightly less than other groups, including White Americans, Multiple Race Americans, and American Indian groups.⁹⁵ Approximately 21.3 % of non-Hispanic black adults smoked compared to 22 % of non-Hispanic whites. However, while the smoking rates of African American men and women are similar to rates in the general population, African Americans experience greater health consequences associated with smoking, such as lung cancer and CVD.^{96,97} While African American men smoke less compared to non-Hispanic white men, African American men are 34% more likely to develop tobacco-related lung cancers.⁹⁸

Perceptions of Population

African Americans are less likely to receive cessation interventions, are less informed about health consequences of smoking, make more attempts to quit, and are less likely to quit successfully when compared to non-Hispanic white smokers.⁹⁹ Despite the frequent, more serious quit attempts, African Americans experience lower short-term success rates compared to other groups, and higher smoking-related mortality.¹⁰⁰ While African Americans smoke fewer cigarettes per day and initiate smoking later in life, they have more difficulty quitting and experience a higher smoking-related disease mortality.^{101,102,103,104,105}

Known Challenges

African Americans are also more likely to smoke mentholated cigarettes that are higher in tar and nicotine. One in five African Americans over the age of 12 smoked menthol cigarettes each year. The use of these cigarettes is disproportionately higher among African Americans with almost 19.1% in 2010 reporting use of mentholated cigarettes compared to 6.5 % of Caucasians and 7.8 % of Hispanics.¹⁰⁶

Cigarette advertising and intensive merchandising targeting African Americans may counteract clinical smoking cessation efforts.¹⁰⁷ Mentholated cigarette advertising targeting African Americans has increased substantially, yielding greater uptake of menthol cigarette consumption among young African Americans. Overall declines in tobacco consumption among African Americans should not disguise the increasing rate of menthol cigarette use among this population.

Known Successes from Evidence-Based Interventions

There have been RCTs that have examined and verified the effectiveness of the following cessation programs in African American groups: Bupropion SR, in-person motivational counseling, nicotine patches, clinician advice, counseling, biomedical feedback, tailored self-help manuals and materials, and telephone counseling.^{108,109,110,111,112} The combination of self-help materials with brief telephone counseling, like that delivered by the National Cancer Institute-supported Cancer Information Service, has also been found to be effective.¹¹³ Again, these studies show the benefit and value of population-tailored interventions, but none have been able to establish a causal relationship between tailored messages and smoking cessation.

Recommendations

- Increase health education targeted to African American smokers to improve awareness of the negative health impacts of smoking.
- Combine self-help with brief telephone counseling for cessation.
- Recommend prevention and cessation options that address the addictive effect of menthol.

The Bottom Line

- ✓ Certain racial/ethnic groups; lesbian, gay, bisexual, and transgender individuals; and people with mental illness are more likely to initiate tobacco use and struggle to quit smoking and these groups often have less access to cessation resources.
- ✓ Use the *Treating Tobacco Use and Dependence: 2008 Update* guidelines (Attachment B).
- ✓ Interventions may be tailored by readiness to quit and/or by an age, racial/ethnic, or sexual orientation population focus. Interventions can also be tailored based on a comorbid condition such as HIV.
- ✓ It is strongly encouraged that clinicians recommend combination treatments.
- ✓ Extended reinforcement is important to avoid smoking relapse.
- ✓ Older individuals are more likely to quit smoking because of the accumulation of other comorbidities increases their motivation to do so. The Five A's have worked with older adults.
- ✓ Key indicators of successful cessation are intention to quit, making a quit attempt in the previous year, longer duration of past quit attempts, more negative attitudes about smoking, younger age, and less nicotine dependence (main predictor).
- ✓ HIV-positive smokers may believe they will not live long enough to experience the adverse consequences that would come from smoking. However, HIV-positive smokers have a higher symptom burden than non-smokers. Depression, poor quality of life and diminished social support may make sustained cessation difficult.
- ✓ Lack of insurance, frequent attendance at LGBT bars, and fewer perceived deterrents to smoking increase the likelihood of smoking for sexual minority women. Non-smoking sexual minority women experience higher exposure to second hand smoke compared to nonsmoking heterosexual women.
- ✓ Clinic-based interventions should incorporate strategic communications strategies to counteract the abundance of targeted smoking advertisements.
- ✓ Incorporate culturally-specific content for LGBT populations such as HIV/AIDS, the impact of hormone use among transgender smokers, role of smoking in LGBT culture, stress due to homophobia as triggers for smoking and relapse, how to increase social support for nonsmoking, relationships between bar culture and smoking, how the tobacco industry targets LGBT groups, and specific statistics and rates for the LGBT communities.
- ✓ Lack of insurance, poor hygiene, unstable housing, food insecurity, and risky behaviors put homeless adults at greater risk of tobacco-related medical conditions like cancer, respiratory illness, and CVD. Homeless individuals benefit from more personalized support and may require transportation assistance to access in-person tobacco cessation programs. Counseling and NRT may yield the best results.
- ✓ African Americans are more likely to smoke mentholated cigarettes that are higher in tar and nicotine. Recommend cessation options that address the additive effect of menthol.
- ✓ Effective interventions for African Americans are Bupropion SR, in-person motivational counseling, nicotine patches, clinician advice, counseling, biomedical feedback, tailored self-help manuals and materials, and telephone counseling and combination of self-help materials with brief telephone counseling.

Appendix A: Methodology

The purpose of this review was to identify what is known pertaining to smoking cessation in specific population groups facing tobacco related-health disparities to inform the delivery and evaluation of the WWH smoking cessation program.

Medline and SCOPUS were used for this review. Systematic analyses and Cochrane reviews were included where relevant. A list of keywords and MeSH (Medical Subject Headings) that were used are included.

The following combination searches were performed: Smoking Cessation, Clinical Intervention, Cigarette, Nicotine, and Barriers to Access. To further refine the searches the specific sub-populations of interest were included in the search; (AND) African-American (Black), Homeless, Hispanic/Latino, LGBT (Lesbian, Gay, Bisexual, Transgender, Sexual Minorities) and HIV-positive (HIV-infected). The SCOPUS Search Results are summarized below.

Search Key Word	# of Articles
Smoking Cessation	45,503
Smoking Cessation AND Clinical Intervention	15,460
Smoking Cessation AND Clinical Intervention AND Barriers to Access	318
Smoking Cessation AND Clinical Intervention AND Barriers to Access AND Cigarette	200
Smoking Cessation AND Clinical Intervention AND Barriers to Access AND Cigarette AND Community	157

General Key Words Included	Sub-Population	# Of Articles
Smoking Cessation AND Clinical Intervention AND Barriers to Access AND Cigarette AND Community	AND Homeless	15
	AND Hispanic, Latino, Spanish	34, 21, 22
	AND African American, African-American, Black	55, 59, 48
	AND LGBTQ, LGBT, Sexual Minority	0, 4, 6

Peer-reviewed literature was included if the results could be generalized to the specific sub-groups identified for focus in this literature review: Homeless, people living with HIV, African-American, and LGBTQ individuals. Studies were excluded if smoking cessation was not included as a desired outcome or if the studies were not relevant to the specified populations. Only interventions that focused on decreasing tobacco consumption rates among these specific population groups were considered.

The purpose of this review was to determine what has been shown to be most effective in reducing tobacco consumption among identified target populations. Because the review was focused on determining best practices and methods that would be successful in the groups specified, searches were not therapy-specific. Initial searches did not include words that specified intervention type; for example, pharmacotherapy, nicotine replacement therapy, or phone-based counseling. The initial searches were broadly defined so that all potentially relevant research could be included. Searches were further refined to include the specific sub-populations.

Citations listed in the relevant studies were also assessed and reviewed and included if relevant to this literature review.

Appendix B

The *Treating Tobacco Use and Dependence* report was updated in 2008. More than 8,700 research articles were reviewed and a consortium of eight Federal Government and nonprofit organizations collaborated to create the updated Guideline. Ten key guideline recommendations for clinical practice are summarized below.

Table 1: AHRQ Guidelines for Treating Tobacco Use and Dependence (2008)¹¹⁴

1. Tobacco dependence is a chronic disease that often requires repeated intervention and multiple attempts to quit. Effective treatments exist, however, that can significantly increase rates of long-term abstinence.

2. It is essential that clinicians and health care delivery systems consistently identify and document tobacco use status and treat every tobacco user seen in a health care setting.

3. Tobacco dependence treatments are effective across a broad range of populations. Clinicians should encourage every patient willing to make a quit attempt to use the counseling treatments and medications recommended in this Guideline.

4. Brief tobacco dependence treatment is effective. Clinicians should offer every patient who uses tobacco at least the brief treatments shown to be effective in this Guideline.

5. Individual, group, and telephone counseling are effective, and their effectiveness increases with treatment intensity. Two components of counseling are especially effective, and clinicians should use these when counseling patients making a quit attempt:

- Practical counseling (problem solving/skills training)
- Social support delivered as part of treatment

6. Numerous effective medications are available for tobacco dependence, and clinicians should encourage their use by all patients attempting to quit smoking—except when medically contraindicated or with specific populations for which there is insufficient evidence of effectiveness (i.e., pregnant women, smokeless tobacco users, light smokers, and adolescents).

Seven first-line medications (5 nicotine and 2 non-nicotine) reliably increase long-term smoking abstinence rates:

- Bupropion SR
- Nicotine gum
- Nicotine inhaler
- Nicotine lozenge
- Nicotine nasal spray
- Nicotine patch
- Varenicline

Clinicians also should consider the use of certain combinations of medications identified as effective in this Guideline.

7. Counseling and medication are effective when used by themselves for treating tobacco dependence. The combination of counseling and medication, however, is more effective than either alone. Thus, clinicians should encourage all individuals making a quit attempt to use both counseling and medication.

8. Telephone quit line counseling is effective with diverse populations and has broad reach. Therefore, both clinicians and health care delivery systems should ensure patient access to quit lines and promote quit line use.

9. If a tobacco user currently is unwilling to make a quit attempt, clinicians should use the motivational treatments shown in this Guideline to be effective in increasing future quit attempts.

10. Tobacco dependence treatments are both clinically effective and highly cost-effective relative to interventions for other clinical disorders. Providing coverage for these treatments increases quit rates. Insurers and purchasers should ensure that all insurance plans include the counseling and medication identified as effective in this Guideline as covered benefits.

References

- ¹ American Legacy Foundation. (2014). Tobacco-Related Health Disparities. Retrieved from: <http://www.legacyforhealth.org/Our-Issues/Tobacco-Related-Health-Disparities>
- ² Ranney, L., Melvin, C., Lux, L., McClain, E., Lohr, K.N. (2006). Systematic review: Smoking cessation intervention strategies for adults and adults in special populations. *Annals of Internal Medicine*, 145, 845-856.
- ³ Ranney, L., Melvin, C., Lux, L., McClain, E., Lohr, K.N. (2006). Systematic review: Smoking cessation intervention strategies for adults and adults in special populations. *Annals of Internal Medicine*, 145, 845-856.
- ⁴ Doolan, D.M. (2006). Efficacy of smoking cessation intervention among special populations: Review of the literature from 2000 to 2005. *Nursing Research*, 55 (4), S29.
- ⁵ Cokkinides, V. E., Halpern, M. T., Barbeau, E. M., Ward, E., & Thun, M. J. (2008). Racial and ethnic disparities in smoking-cessation interventions: Analysis of the 2005 National Health Interview Survey. *American Journal of Preventive Medicine*, 34(5), 404-412.
- ⁶ Kottke, T.E., Battista, R.N., Defriese, G.H., Brekke M.L. (1988). Attributes of successful smoking cessation interventions in medical practice: A meta-analysis of 39 controlled trials. *JAMA*, 259(19), 2883-2889.
- ⁷ Hall, M.S. (2007). Nicotine interventions with comorbid populations. *American Journal Of Preventive Medicine*, 33,(6), Supplement.
- ⁸ Gritz, E.R., Vidrine, D.J., Cororve Fingeret, M. (2007). Smoking cessation: A critical component of medical management in chronic disease populations. *American Journal of Preventative Medicine*, 33(6),S414-S422.
- ⁹ Dani, J. A. & Harris, R. A. (2005). Nicotine addiction and comorbidity with alcohol abuse and mental illness. *Nature Neuroscience*, 8(11), 1465-1470.
- ¹⁰ Prochaska, J. J., Delucchi, K., & Hall, S. M. (2004). A meta-analysis of smoking cessation interventions with individuals in substance abuse treatment or recovery. *Journal of Consulting and Clinical Psychology*, 72(6), 1144.
- ¹¹ Bellizzi, K. M., Rowland, J. H., Jeffery, D. D., & Mcneel, T. (2005). Health behaviors of cancer survivors: examining opportunities for cancer control intervention. *Journal of Clinical Oncology*, 23(34), 8884-8893.
- ¹² Glynn, T.J. & Manley, M.W. (1989). *How To Help Your Patients Stop Smoking: A National Cancer Institute Manual For Physicians*. Washington: USDHHS; NIH Publication No. 89:3064.
- ¹³ Glynn, T. J. (1989). Physicians, cancer control and the treatment of nicotine dependence: Defining success. *Health Education Research*, 4(4), 479-487.
- ¹⁴ Andrews, J.O., Heath, J., Graham-Garcia, J. (2004). Management of tobacco dependence in older adults: Using evidence-based strategies. *Journal of Gerontological Nurse*, 30,13-24.
- ¹⁵ Boyd, N.R. (1996). Smoking cessation: A four-step plan to help older patients quit. *Geriatrics*, 51, 52-57.
- ¹⁶ Hyland, A., Borland, R., Li, Q., Yong, H. H., Mcneill, A., Fong, G. T., ... & Cummings, K. M. (2006). Individual-level predictors of cessation behaviours among participants in the International Tobacco Control (ITC) four country survey. *Tobacco Control*, 15(Suppl 3), Iii83-Iii94.
- ¹⁷ Biener, L. & Abrams, D. B. (1991). The contemplation ladder: Validation of a measure of readiness to consider smoking cessation. *Health Psychology*, 10(5), 360-365.
- ¹⁸ Diclemente, C. C., Prochaska, J. O., Fairhurst, S. K., Velicer, W. F., Velasquez, M. M., & Rossi, J. S. (1991). The process of smoking cessation: An analysis of precontemplation, contemplation, and preparation stages of change. *Journal of Consulting and Clinical Psychology*, 59(2), 295-304.
- ¹⁹ Diclemente, C. C., Prochaska, J. O., Fairhurst, S. K., Velicer, W. F., Velasquez, M. M., & Rossi, J. S. (1991). The process of smoking cessation: An analysis of precontemplation, contemplation, and preparation stages of change. *Journal of Consulting and Clinical Psychology*, 59(2), 295-304.
- ²⁰ Dijkstra, A., De Vries, H., & Roijackers, J. (1999). Targeting smokers with low readiness to change with tailored and nontailored self-help materials. *Preventive Medicine*, 28(2), 203-211.
- ²¹ Diclemente, C. C., Prochaska, J. O., Fairhurst, S. K., Velicer, W. F., Velasquez, M. M., & Rossi, J. S. (1991). The process of smoking cessation: An analysis of precontemplation, contemplation, and preparation stages of change. *Journal of Consulting and Clinical Psychology*, 59(2), 295-304.
- ²² Prochaska, J. O. & Diclemente, C. C. (1982). Transtheoretical therapy: Toward a more integrative model of change. *Psychotherapy: Theory, Research & Practice*, 19(3), 276-288.
- ²³ Prochaska, J. O., Velicer, W. F., Diclemente, C. C., & Fava, J. (1988). Measuring processes of change: Applications to the cessation of smoking. *Journal of Consulting and Clinical Psychology*, 56(4), 520-528.
- ²⁴ De Vries, H., Mudde, A. N., Dijkstra, A., & Willemsen, M. C. (1998). Differential beliefs, perceived social influences, and self-efficacy expectations among smokers in various motivational phases. *Preventive Medicine*, 27(5), 681-689.
- ²⁵ Himelhoch, S., Riddle, J. & Goldman, H. H. (2014). Barriers to implementing evidence-based smoking cessation practices in nine community mental health sites. *Psychiatric Services*, 65(1), 75-80.

-
- ²⁶ U.S. Department of Health and Human Services. (2008). *Treating Tobacco Use and Dependence: 2008 Update: Clinical Practice Guideline*. Darby, PA: DIANE Publishing Co.
- ²⁷ Pacek, L. R., Harrell, P. T., & Martins, S. S. (2014). Cigarette smoking and drug use among a nationally representative sample of HIV-positive individuals. *The American Journal on Addictions*, 23(6), 582-590.
- ²⁸ Mascolini, M. (2013). Smoking rate twice higher with than without HIV in first national US study. Conference Reports for NATAP. Retrieved from: http://www.natap.org/2013/CROI/croi_21.htm
- ²⁹ Burkhalter, J. E., Springer, C. M., Chhabra, R., Ostroff, J. S., & Rapkin, B. D. (2005). Tobacco use and readiness to quit smoking in low-income HIV-infected persons. *Nicotine & Tobacco Research*, 7(4), 511-522.
- ³⁰ Pacek, L. R., Harrell, P. T., & Martins, S. S. (2014). Cigarette smoking and drug use among a nationally representative sample of HIV-positive individuals. *The American Journal on Addictions*, 23(6), 582-590.
- ³¹ Mdofo R, Frazier E, Mattson C, Sutton M, Brooks J, Skarbinski J. Cigarette smoking among HIV+ adults in care: Medical Monitoring Project, US, 2009. 20th Conference on Retroviruses and Opportunistic Infections. March 3-6, 2013. Atlanta. Abstract 775.
- ³² Reynolds, N. R., Neidig, J. L., & Wewers, M. E. (2004). Illness representation and smoking behavior: A focus group study of HIV-positive men. *Journal of the Association of Nurses in AIDS Care*, 15(4), 37-47.
- ³³ Tesoriero, J. M., Gieryc, S. M., Carrascal, A., & Lavigne, H. E. (2010). Smoking among HIV positive New Yorkers: Prevalence, frequency, and opportunities for cessation. *AIDS and Behavior*, 14(4), 824-835.
- ³⁴ Mamary, E., Bahrs, D. & Martinez, S. (2002). Cigarette smoking and the desire to quit among individuals living with HIV. *AIDS Patient Care and STDs*, 16(1), 39-42.
- ³⁵ Wallace, J. M., Hansen, N. I., Lavange, L., Glassroth, J., Browdy, B. L., Rosen, M. J., ... & Hopewell, P. C. (1997). Respiratory disease trends in the pulmonary complications of HIV infection study cohort. *American Journal of Respiratory and Critical Care Medicine*, 155(1), 72-80.
- ³⁶ Palella, Jr, F. J., Baker, R. K., Moorman, A. C., Chmiel, J. S., Wood, K. C., Brooks, J. T., ... & HIV Outpatient Study Investigators. (2006). Mortality in the highly active antiretroviral therapy era: Changing causes of death and disease in the HIV Outpatient Study. *Journal Of Acquired Immune Deficiency Syndromes*, 43(1), 27-34.
- ³⁷ Tirelli, U., Spina, M., Sandri, S., Serraino, D., Gobitti, C., Fasan, M., ... & Vaccher, E. (2000). Lung carcinoma in 36 patients with Human Immunodeficiency Virus infection. *Cancer*, 88(3), 563-569.
- ³⁸ Singh, B., Balwally, A. N., Shaha, A. R., Rosenfeld, R. M., Har-El, G., & Lucente, F. E. (1996). Upper aerodigestive tract squamous cell carcinoma: The Human Immunodeficiency Virus connection. *Archives of Otolaryngology-Head & Neck Surgery*, 122(6), 639-643.
- ³⁹ Nahvi, S., & Cooperman, N. A. (2009). Review: The need for smoking cessation among HIV-positive smokers. *AIDS Education And Prevention: Official Publication Of The International Society For AIDS Education*, 21(3 Suppl), 14-27.
- ⁴⁰ Reynolds, N. R. (2009). Cigarette smoking and HIV: More evidence for action. *AIDS Education and Prevention: Official Publication of The International Society For AIDS Education*, 21(3 Suppl), 106-121.
- ⁴¹ Lloyd-Richardson, E.E., Stanton, C.A., Papandonatos, G.D., Betancourt, R.M., Stein, M., Tashima, K., ... Niaura, R. (2008). HIV-positive smokers considering quitting: Differences by race/ethnicity. *American Journal of Health Behavior*, 32, 3-15.
- ⁴² Ingersoll, K. S., Cropsey, K. L., & Heckman, C. J. (2009). A test of motivational plus nicotine replacement interventions for HIV positive smokers. *AIDS and Behavior*, 13(3), 545-554.
- ⁴³ Niaura, R., Chander, G., Hutton, H., & Stanton, C. (2012). Interventions to address chronic disease and HIV: Strategies to promote smoking cessation among HIV-infected individuals. *Current HIV/AIDS Reports*, 9(4), 375-384.
- ⁴⁴ Fuster, M., Estrada, V., Fernandez-Pinilla, M. C., Fuentes-Ferrer, M. E., Tellez, M. J., Vergas, J., ... & Fernandez-Cruz, A. (2009). Smoking cessation in HIV patients: Rate of success and associated factors. *HIV Medicine*, 10(10), 614-619.
- ⁴⁵ Nahvi, S. & Cooperman, N. A. (2009). Review: The need for smoking cessation among HIV-positive smokers. *AIDS Education and Prevention: Official Publication of the International Society for AIDS Education*, 21(3 Suppl), 14-27.
- ⁴⁶ Burkhalter, J. E., Springer, C. M., Chhabra, R., Ostroff, J. S., & Rapkin, B. D. (2005). Tobacco use and readiness to quit smoking in low-income HIV-infected persons. *Nicotine & Tobacco Research*, 7(4), 511-522.
- ⁴⁷ Calvo-Sánchez, M. & Martinez, E. (2014). How to address smoking cessation in HIV patients. *HIV Medicine*. doi: 10.1111/hiv.12193
- ⁴⁸ Elzi, L., Spoerl, D., Voggensperger, J., Nicca, D., Simcock, M.... & Swiss HIV Cohort Study. (2006). A smoking cessation programme in HIV-infected individuals: A pilot study. *Antiviral Therapy*, 11, 787-795.
- ⁴⁹ Vidrine, D.J., Arduino, R.C., Gritz, E.R. (2006). Impact of a cell phone intervention on mediating mechanisms of smoking cessation in individuals living with HIV/AIDS. *Nicotine & Tobacco Research*, 8 (Supplement 1), S103-108.
- ⁵⁰ Lloyd-Richardson, E. E., Stanton, C. A., Papandonatos, G. D., Shadel, W. G., Stein, M., Tashima, K., ... & Niaura, R. (2009). Motivation and patch treatment for HIV+ smokers: A randomized controlled trial. *Addiction*, 104(11), 1891-1900.
- ⁵¹ Wewers, M. E., Neidig, J. L., & Kihm, K. E. (2000). The feasibility of a nurse-managed, peer-led tobacco cessation intervention among HIV-positive smokers. *Journal of the Association of Nurses in AIDS Care*, 11(6), 37-44.

-
- ⁵² Elzi, L., Spoerl, D., Voggensperger, J., Nicca, D., Simcock, M., Bucher, H. C., ... & Battegay, M. (2006). A smoking cessation programme in HIV-infected individuals: A pilot study. *Antiviral Therapy*, 11(6), 787.
- ⁵³ Stewart, D.W., Jones, G.N. & Minor, K.S. (2011). Smoking, depression, and gender in low-income African Americans with HIV/AIDS. *Behavioral Medicine*, 37, 77-80.
- ⁵⁴ Matthews, A. K., Conrad, M., Kuhns, L., Vargas, M., & King, A. C. (2013). Project Exhale: Preliminary evaluation of a tailored smoking cessation treatment for HIV-positive African American smokers. *AIDS Patient Care and STDs*, 27(1), 22-32.
- ⁵⁵ Vidrine, D. J., Arduino, R. C. & Gritz, E. R. (2007). The effects of smoking abstinence on symptom burden and quality of life among persons living with HIV/AIDS. *AIDS Patient Care and STDs*, 21(9), 659-666.
- ⁵⁶ Ward, B. W., Dahlhamer, J. M., Galinsky, A. M., & Joestl, S. S. (2014). Sexual orientation and health among US adults: National Health Interview Survey, 2013. *National Health Statistics Reports*, (77), 1-12.
- ⁵⁷ American Cancer Society. (2003). Tobacco and the LGBT Community. Retrieved from: <http://www.glbthealth.org/documents/glbttobacco.pdf>
- ⁵⁸ Matthews, A. K., Hotton, A., Dubois, S., Fingerhut, D., & Kuhns, L. M. (2011). Demographic, psychosocial, and contextual correlates of tobacco use in sexual minority women. *Research in Nursing & Health*, 34(2), 141-152.
- ⁵⁹ Lee, J. G., Griffin, G. K., & Melvin, C. L. (2009). Tobacco Use Among Sexual Minorities, USA, 1987-2007 (May): A Systematic Review. *Tobacco Control*, 18(4), 275-282.
- ⁶⁰ Taylor, S. E., Repetti, R. L., & Seeman, T. (1997). Health psychology: What is an unhealthy environment and how does it get under the skin? *Annual Review of Psychology*, 48(1), 411-447.
- ⁶¹ Krieger, N. (1999). Embodying inequality: A review of concepts, measures, and methods for studying health consequences of discrimination. *International Journal of Health Services*, 29(2), 295-352.
- ⁶² Leibel, K., Lee, J. G., Goldstein, A. O., & Ranney, L. M. (2011). Barring intervention? Lesbian and gay bars as an underutilized venue for tobacco interventions. *Nicotine & Tobacco Research*, 13(7), 507-511.
- ⁶³ Lombardi, E., A. J. Silvestre, J. E. Janosky, G. Fisher, And C. Rinaldo. (2008). Impact of early sexual debut on gay men's tobacco use. *Nicotine & Tobacco Research*, 10(11), 1591-1595.
- ⁶⁴ Gruskin, E., Byrne, K., Kools, S., & Altschuler, A. (2006). Consequences of frequenting the lesbian bar. *Women & Health*, 44(2), 103-120.
- ⁶⁵ Dilley, J. A., Spigner, C., Boysun, M. J., Dent, C. W., & Pizacani, B. A. (2008). Does tobacco industry marketing excessively impact lesbian, gay and bisexual communities? *Tobacco Control*, 17(6), 385-390.
- ⁶⁶ Stevens, P., Carlson, L. M., & Hinman, J. M. (2004). An analysis of tobacco industry marketing to lesbian, gay, bisexual, and transgender (lgbt) populations: Strategies for mainstream tobacco control and prevention. *Health Promotion Practice*, 5(3 Suppl), 129S-134S.
- ⁶⁷ Mautner Project. The National Lesbian Health Organization. Facts about Lesbians And Smoking. Retrieved from: <http://www.lgbttobacco.org/files/MPFacts%20about%20Lesbians%20and%20Smoking.pdf>
- ⁶⁸ Rosario, M., Schrimshaw, E. W., & Hunter, J. (2009). Disclosure of sexual orientation and subsequent substance use and abuse among lesbian, gay, and bisexual youths: Critical role of disclosure reactions. *Psychology Of Addictive Behaviors*, 23(1), 175-184.
- ⁶⁹ Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, 129(5), 674-697.
- ⁷⁰ Gruskin, E. P., Byrne, K. M., Altschuler, A., & Dibble, S. L. (2009). Smoking it all away: Influences of stress, negative emotions, and stigma on lesbian tobacco use. *Journal of LGBT Health Research*, 4(4), 167-179.
- ⁷¹ Rosario, M., Schrimshaw, E. W., & Hunter, J. (2010). Cigarette smoking as a coping strategy: Negative implications for subsequent psychological distress among lesbian, gay, and bisexual youths. *Journal of Pediatric Psychology* (2010), Jsp141.
- ⁷² Trocki, K. F., Drabble, L. A., & Midanik, L. T. (2009). Tobacco, marijuana, and sensation seeking: Comparisons across gay, lesbian, bisexual, and heterosexual groups. *Psychology of Addictive Behaviors*, 23(4), 620-631.
- ⁷³ Amadio, D. M., & Chung, Y. B. (2004). Internalized homophobia and substance use among lesbian, gay, and bisexual persons. *Journal of Gay & Lesbian Social Services*, 17(1), 83-101.
- ⁷⁴ Eliason, M.J., Dibble, L.S., Gordon, R. Michele J., Soliz, G.B (2012). The Last Drag: An evaluation of an LGBT-specific smoking intervention. *Journal Of Homosexuality*, 59(6), 864-878
- ⁷⁵ Matthews, A. K., Li, C. C., Kuhns, L. M., Tasker, T. B., & Cesario, J. A. (2013). Results from a community-based smoking cessation treatment program for LGBT smokers. *Journal of Environmental and Public Health* 2013, (01).
- ⁷⁶ Burkhalter, J. E., Warren, B., Shuk, E., Primavera, L., & Ostroff, J. S. (2009). Intention to quit smoking among lesbian, gay, bisexual, and transgender smokers. *Nicotine & Tobacco Research*, 11(11), 1312-1320.
- ⁷⁷ Matthews, A. K., Li, C. C., Kuhns, L. M., Tasker, T. B., & Cesario, J. A. (2013). Results from a community-based smoking cessation treatment program for LGBT smokers. *Journal of Environmental and Public Health* 2013, 01.
- ⁷⁸ National Coalition For The Homeless. (2009). Tobacco Use and Homelessness. Retrieved from: <http://www.nationalhomeless.org/factsheets/tobacco.html>
-

- ⁷⁹ Lee, T. C., Hanlon, J. G., Ben-David, J., Booth, G. L., Cantor, W. J., Connelly, P. W., & Hwang, S. W. (2005). Risk factors for cardiovascular disease in homeless adults. *American Heart Association: Circulation*, 111(20), 2629-2635.
- ⁸⁰ Szerlip M.I., Szerlip H.M. (2002). Identification of cardiovascular risk factors in homeless adults. *American Journal of Medical Sciences*, 324(5):243-246.
- ⁸¹ Okuyemi, K.S., Caldwell, A.R., Thomas, J.L., Born, W., Richter, K.P., Nollen, N., Braunstein, K., & Ahluwalia, J.S. (2006). Homelessness and smoking cessation: Insights from focus groups. *Nicotine & Tobacco Research*, 8(2), 287-296.
- ⁸² U.S. Department Of Health And Human Services. (2000). *Healthy People 2010: Understanding And Improving Health. 2nd Ed.* Washington, DC: U.S. Government Printing Office. Retrieved from: <http://www.healthypeople.gov/2010/document/pdf/uih/2010uih.pdf?visit=1>
- ⁸³ Sachs-Ericsson N., Wise E., Debrody C.P., Paniucki H.B. (1999). Health problems and service utilization in the homeless. *Journal of Health Care for the Poor and Underserved*, 10(4), 443-52.
- ⁸⁴ Heffron W.A., Skipper B.J., Lambert L. (1997). Health and lifestyle issues as risk factors for homelessness. *Journal of the American Board of Family Practice*, 10, 6-12.
- ⁸⁵ Bryant, J., Bonevski, B., Paul, C., O'Brien, J., & Oakes, W. (2010). Delivering smoking cessation support to disadvantaged groups: A qualitative study of the potential of community welfare organizations. *Health Education Research*, 25(6), 979-990.
- ⁸⁶ Connor, S. E., Scharf, D. M., Jonkman, L. J., & Herbert, M. I. (2014). Focusing on the five A's: A comparison of homeless and housed patients' access to and use of pharmacist-provided smoking cessation treatment. *Research in Social and Administrative Pharmacy*, 10(2), 369-377.
- ⁸⁷ Okuyemi, K.S., Caldwell, A.R., Thomas, J.L., Born, W., Richter, K.P., Nollen, N., Braunstein, K., And Ahluwalia, J.S. (2006). Homelessness and smoking cessation: insights from focus groups. *Nicotine & Tobacco Research*, 8(2), 287-296.
- ⁸⁸ Connor, S. E., Scharf, D. M., Jonkman, L. J., & Herbert, M. I. (2014). Focusing on the five A's: A comparison of homeless and housed patients' access to and use of pharmacist-provided smoking cessation treatment. *Research in Social and Administrative Pharmacy*, 10(2), 369-377.
- ⁸⁹ Picciotto, M., Brunzell, D. & Caldarone, B. (2002). Effect of nicotine and nicotinic receptors on anxiety and depression. *Neuroreport*, 13(9), 1097-1106.
- ⁹⁰ Apollonio, D.E. & Malone, R.E. (2005). Marketing to the marginalised: Tobacco industry targeting of the homeless and mentally ill. *Tobacco Control*, 14, 409-415.
- ⁹¹ Connor, S. E., Cook, R. L., Herbert, M. I., Neal, S. M., & Williams, J. T. (2002). Smoking cessation in a homeless population. *Journal Of General Internal Medicine*, 17(5), 369-372.
- ⁹² Okuyemi, K.S., Thomas, J.L., Hall, S., Nollen, N.L., Richter, K.P., Jeffries, S.K., & Ahluwalia, J.S. (2006). Smoking cessation in homeless populations: a pilot clinical trial. *Nicotine & tobacco research*, 8(5), 689-699.
- ⁹³ Apollonio, D.E. & Malone, R.E. (2005). Marketing to the marginalised: Tobacco industry targeting of the homeless and mentally ill. *Tobacco Control*, 14, 409-415.
- ⁹⁴ American Lung Association. (2011). Trends in Tobacco Use. Retrieved from: <http://www.lung.org/finding-cures/our-research/trend-reports/Tobacco-Trend-Report.pdf>
- ⁹⁵ Centers For Disease Control And Prevention. (2012). Current cigarette smoking among adults-United States, 2011. *MMWR. Morbidity And Mortality Weekly Report*, 61(44), 889-894. Retrieved from: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6144a2.htm>
- ⁹⁶ Davies, S. L., Kohler, C. L., Fish, L., Taylor, B. E., Foster, G. E., & Annang, L. (2005). Evaluation of an intervention for hospitalized African American smokers. *American Journal of Health Behavior*, 29, 228-239.
- ⁹⁷ Centers For Disease Control And Prevention . (2004). Prevalence of cigarette use among 14 racial/ethnic populations -- United States, 1999-2001. *MMWR. Morbidity And Mortality Weekly Report*, 53(3), 49-52. Retrieved from: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5303a2.htm>
- ⁹⁸ Howlader N., Noone A.M., Krapcho M., Garshell J., Miller D., Altekruse S.F., Kosary C.L., Yu M., Ruhl J., Tatalovich Z., Mariotto A., Lewis D.R., Chen H.S., Feuer E.J., & Cronin K.A. (2014). SEER Cancer Statistics Review, 1975-2011. Bethesda, MD: National Cancer Institute. Retrieved from: http://seer.cancer.gov/csr/1975_2011/
- ⁹⁹ Agency For Healthcare Research And Quality. (2013). Treating Tobacco Use and Dependence. Retrieved from: <http://www.ahrq.gov/Professionals/Clinicians-Providers/Guidelines-Recommendations/Tobacco/Clinicians/Update/Index.Html>
- ¹⁰⁰ Pierce, J. P., Evans, N., Farkas, A. J., Cavin, S. W., Berry, C., Kramer, M., & Kaplan, R. M. (1994). Tobacco use in California: An evaluation of the tobacco control program, 1989-1993. A report to the California Department of Health Services. *Tobacco Control*. Retrieved from: <http://libraries.ucsd.edu/ssds/pub/CTS/cpc00003/finalrpt1993.pdf>
- ¹⁰¹ Howlader N., Noone A.M., Krapcho M., Garshell J., Miller D., Altekruse S.F., Kosary C.L., Yu M., Ruhl J., Tatalovich Z., Mariotto A., Lewis D.R., Chen H.S., Feuer E.J., & Cronin K.A. (2014). SEER Cancer Statistics Review, 1975-2011. Bethesda, MD: National Cancer Institute. Retrieved from: http://seer.cancer.gov/csr/1975_2011/
- ¹⁰² Royce, J. M., Hymowitz, N., Corbett, K., Hartwell, T. D., & Orlandi, M. A. (1993). Smoking cessation factors among African Americans and whites. COMMIT Research Group. *American Journal of Public Health*, 83(2), 220-226.

-
- ¹⁰³ Centers For Disease Control. (1991). Current trends differences in the age of smoking initiation between blacks and whites-United States. *MMWR; Morbidity And Mortality Weekly Report*, 40(44), 754-757. Retrieved from: <http://www.cdc.gov/mmwr/preview/mmwrhtml/00015531.htm>
- ¹⁰⁴ Garfinkel, L. (1984). Cigarette smoking and coronary heart disease in blacks: Comparison to whites in a prospective study. *American Heart Journal*, 108(3), 802-807.
- ¹⁰⁵ Novotny, T. E., Warner, K. E., Kendrick, J. S., & Remington, P. L. (1988). Smoking by blacks and whites: Socioeconomic and demographic differences. *American Journal of Public Health*, 78(9), 1187-1189.
- ¹⁰⁶ Substance Abuse and Mental Health Services Administration. (2011). The National Survey and Drug Use and Health Report; Recent Trends in Menthol Cigarette Use. Retrieved from: http://media.samhsa.gov/data/2k11/WEB_SR_088/WEB_SR_088.htm
- ¹⁰⁷ U.S. Department Of Health And Human Services. (1998). Tobacco Use Among U.S. Racial/Ethnic Minority Groups — African Americans, American Indians and Alaska Natives, Asian Americans And Pacific Islanders, and Hispanics: A Report of the Surgeon General. Retrieved from: http://www.cdc.gov/tobacco/data_statistics/sgr/1998/complete_report/pdfs/complete_report.pdf
- ¹⁰⁸ Ahluwalia, J. S., Okuyemi, K., Nollen, N., Choi, W. S., Kaur, H., Pulvers, K., & Mayo, M. S. (2006). The effects of nicotine gum and counseling among African American light smokers: A 2× 2 factorial design. *Addiction*, 101(6), 883-891.
- ¹⁰⁹ Ahluwalia J.S., McNagny S.E., Clark W.S.(1998). Smoking cessation among inner-city African Americans using the nicotine transdermal patch. *Journal of General Internal Medicine*,13(1),1–8.
- ¹¹⁰ Lipkus, I. M., Lyna, P. R., & Rimer, B. K. (1999). Using tailored interventions to enhance smoking cessation among African-Americans at a community health center. *Nicotine & Tobacco Research*, 1(1), 77-85.
- ¹¹¹ Schorling, J.B., Roach, J., Siegel, M., Baturka, N., Hunt, D.E., Guterbock, T.M., & Stewart, H.L. (1997). A trial of church-based smoking cessation interventions for rural African Americans. *Preventive Medicine*, 26(1), 92-101.
- ¹¹² Orleans, C. T., Boyd, N. R., Bingle, R., Sutton, C., Fairclough, D., Heller, D., ... & Baum, S. (1998). A self-help intervention for African American smokers: Tailoring cancer information service counseling for a special population. *Preventive Medicine*, 27(5), S61-S70.
- ¹¹³ Resnicow, K., Vaughan, R., Futterman, R., Weston, R. E., Royce, J., Parns, C., ... & Orlandi, M. A. (1997). A self-help smoking cessation program for inner-city African Americans: Results from the Harlem health connection project. *Health Education & Behavior*, 24(2), 201-217.
- ¹¹⁴ Agency For Healthcare Research And Quality . (2013). Treating Tobacco Use and Dependence. Retrieved from: <http://www.ahrq.gov/Professionals/Clinicians-Providers/Guidelines-Recommendations/Tobacco/Clinicians/Update/Index.Html>