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Smoking cessation and nursing

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Smoking cessation and nursing

Abstract
Smoking is currently the leading cause of preventable death and disease in the United States, and is responsible for nearly 20% of deaths each year (U.S. Department of Health and Human Services [USDHHS], 2014). Ten times as many Americans have died prematurely from cigarette smoking than have died in all wars fought by the United States (USDHHS, 2014). Cigarette use negatively affects users’ health, increases healthcare costs, is a financial burden, and negatively impacts the lifestyle of its users. This thesis will explore current cigarette use in the United States, the effects on its users, and the plan of action in eliminating its prevalence. Thorough analysis of current nursing evidence-based practice of smoking cessation interventions will be examined. Additionally, this thesis will include research of a survey examining the perceptions of nursing students, faculty, and staff to determine the effectiveness of the smoking ban at Eastern Michigan University (EMU).

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SMOKING CESSATION AND NURSING

By

Isabelle McCormack

A Senior Thesis Submitted to the

Eastern Michigan University

Honors College

in Partial Fulfillment of the Requirements for Graduation

with Honors in Nursing

Approved at Ypsilanti, Michigan, on this date December 7, 2016
Smoking Cessation and Nursing

By

Isabelle McCormack

Senior Honors Thesis
Submitted to the Honors College
For Fulfillment of Departmental and Highest Honors
For the degree of

BACHELORS OF SCIENCE
In
Nursing

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December 2016
Eastern Michigan University
Ypsilanti, Michigan
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Abstract

Smoking is currently the leading cause of preventable death and disease in the United States, and is responsible for nearly 20% of deaths each year (U.S. Department of Health and Human Services [USDHHS], 2014). Ten times as many Americans have died prematurely from cigarette smoking than have died in all wars fought by the United States (USDHHS, 2014). Cigarette use negatively affects users’ health, increases healthcare costs, is a financial burden, and negatively impacts the lifestyle of its users. This thesis will explore current cigarette use in the United States, the effects on its users, and the plan of action in eliminating its prevalence. Thorough analysis of current nursing evidence-based practice of smoking cessation interventions will be examined. Additionally, this thesis will include research of a survey examining the perceptions of nursing students, faculty, and staff to determine the effectiveness of the smoking ban at Eastern Michigan University (EMU).

Keywords: Smoking, Cigarette, Nursing, Cessation, Ban, Quitting
Smoking Cessation and Nursing

Introduction

Smoking use is still a significant issue in healthcare today due to its prevalence of use, increased rates among high-risk populations, and its high economic cost. An estimated 16.8% of adults aged 18 years or older, or 40 million people, in the United States currently smoke cigarettes (Jamal et al., 2015). There are several high-risk populations with higher rates of cigarette smoking:

- Males, adults aged 25–44 years, multiracial persons and American Indian/Alaska Natives, persons who have a General Education Development certificate, live below the federal poverty level, live in the Midwest, are insured through Medicaid or are uninsured, have a disability or limitation, or are lesbian, gay, or bisexual. (Jamal et al., 2015)

Cigarette smoking is also an economic burden, accounting for over $300 billion a year in the United States due to increased healthcare costs and loss of work productivity (USDHHS, 2014; Xu, Bishop, Kennedy, Simpson, Pechacek, 2015).

Literature Review

Mechanisms of Disease Production and Addiction

Smoking-related diseases result from more than 7,000 chemicals in cigarette smoke, with about 70 of them known to cause cancer (USDHHS, 2010a). When a cigarette is inhaled, toxins immediately reach the lungs, but they also quickly reach every organ in the body via the bloodstream. A report by the U.S. Department of Health and Human Services (2010b) found that inhaling this complex chemical mixture causes adverse health outcomes through DNA damage, inflammation, and oxidative stress. This report also found that the risk and severity of these
outcomes directly correlates to the duration of exposure, and no matter how small, every exposure to tobacco smoke carries a significant risk.

Only about four to seven percent of smokers are able to quit without any medicines or help (American Cancer Society, 2014). This is because smoking is a learned behavior through operant conditioning, being positively reinforced by the pharmacological actions of nicotine (i.e. enhancement of mood) and associated situational and/or environmental rewards of its use (Jiloha, 2010). Another major cause for low initial success rate in smoking cessation is the powerful addiction properties from the action of nicotine on nicotinic receptors in the brain (USDHHS, 2010b). Nicotine causes several pathophysiological changes in the body, as well as develops tolerance to its own action with repeated use, or nicotine dependence; this dependence results from nicotine reinforcement in the dopamine and reward pathways (Jiloha, 2010). If a nicotine-dependent user quits "cold turkey", they develop withdrawal symptoms, which may include: irritability, depressed mood, restlessness, anxiety, difficulty concentrating, increased hunger, insomnia and craving for tobacco (Benowitz, 2008).

Health Effects of Smoking in Adults

Cigarette smoking causes numerous diseases, premature death, and diminishes the overall health of its users. More than 16 million Americans currently have a smoking-related disease (USDHHS, 2014). Smokers have diminished overall wellbeing from self-reported poor health, increased absenteeism from work, and increased healthcare utilization and cost (USDHHS, 2014). Smoking can cause negative health effects on the body, many causing chronic illnesses in adults such as cancers, respiratory diseases, and cardiovascular diseases.

Cancer and smoking. Most cancers are caused by the carcinogens in cigarette smoke by mutating and damaging cell DNA (USDHHS, 2010b). Smoking can cause cancer in almost
anywhere in the body, including: bladder, blood, cervix, colon and rectum, esophagus, kidney and ureter, larynx, liver, oropharynx, pancreas, stomach, trachea, bronchus, and lung (USDHHS, 2014). The risk of dying from cancer is higher in patients who have cancer and survivors who smoke; these patients and survivors also have a higher risk of developing a second cancer caused by smoking (USDHHS, 2014). However, smoking cessation has been shown to improve the prognosis of cancer patients (USDHHS, 2014). Cigarette use in cancer patients is especially significant because cessation reduces the risk of cancer recurrence, improves the effectiveness of radiotherapy, improves healing of surgical wounds, lowers the risk of infection, and improves the functioning of your heart and lungs (Hymowitz, 2011). Cancer patients are usually immunocompromised due to radiation therapy, and smoking decreases your immune function; therefore, a patient with cancer who smokes is at an even higher risk of developing an infection. Encouraging and educating cancer patients on the importance of smoking cessation prior to major surgery can decrease postoperative complications and length of hospital stay (Gajdos, 2012).

_Nursing implications in relation to cigarette-using cancer patients._ It is important to be mindful of the tendency for patients to begin cigarette use following a successful recovery when working with patients who have cancer. It is critical to focus as much attention, care, and education of smoking cessation during long-term treatment as it is during initial treatment (Hymowitz, 2011). It is also important for healthcare providers to be aware that the nicotine used in nicotine replacement therapy is contraindicated in several chemotherapy agents due to its ability to accelerate tumor growth and suppress cell death (Hymowitz, 2011). Another challenge when encouraging smoking cessation among cancer patients is the situational crisis of the diagnosis and its associated psychological disorders such as anxiety and depression, which
makes quitting even more difficult (Cooley, Lundin, & Murray, 2009). These factors are important for healthcare providers to be aware of when facilitating smoking cessation in their patients.

**Respiratory diseases and smoking.** According to *The health consequences of smoking—50 years of progress: A report of the surgeon general* (2014), people who smoke are at an increased risk of developing *Mycobacterium tuberculosis*. Smoking is also linked to mortality due to tuberculosis, as well as increased recurrence of tuberculosis (USHHS, 2014). This is due to cigarette use negatively impacting the immune system function as a whole, and specifically damaging immune response in the pulmonary system. This also increases the risk of respiratory infection in smokers. Smoking has also been linked to asthma exacerbation, whether as an active smoker or a nonsmoker exposed to secondhand smoke (USDHHA, 2010a).

Smoking causes respiratory disease by damaging the airway and alveoli found in your lungs (USDHHS, 2010a). Smoking is the leading cause of Chronic Obstructive Pulmonary Disease (COPD) in both men and women in the United States and smokers are also 12-13 times more likely to die from COPD than nonsmokers (USDHHS, 2014). Smoking specifically causes COPD due to the oxidative stress from exposure to smoke and its role in the pathogenic process (USDHHS, 2010b). This process is the chronic inflammatory response and irritation of the lining of the small airways of the lungs from cigarette smoke, which causes fibrosis and narrowing of the airways; the inflammation also causes excessive mucus production and chronic productive cough from enlargement of goblet cells (Barnett, 2008). COPD causes shortness of breath with everyday activities, frequent cough, fatigue, and difficulty breathing. Smoking cessation is the only proven way to reduce the pathogenic process leading to COPD (USDHHS, 2014).
Nursing implications in cigarette-using respiratory patients. It is important for nurses to understand that if a patient with COPD stops smoking, the rate of decline of lung function slows; therefore, it is imperative to encourage patients to quit. Barnett (2008) found the following effective nursing interventions in smoking cessation of patients with COPD: opportunistic questioning to determine willingness to quit, encouragement of Nicotine Replacement Therapy, approaching in a non-threatening manner and avoiding lecturing the patient, emphasizing health benefits, motivational interviewing, reinforcement, and brief opportunistic advice. It is important to note that smoking cessation is a gradual process, that may take multiple attempts to be successful. The healthcare professional may get frustrated during this time, and it is essential to evaluate one's own beliefs and values during this long process in order to better support the patient.

Cardiovascular diseases and smoking. Smoking cigarettes negatively impacts the cardiovascular system by making blood vessels thicken and grow narrower, resulting in tachycardia, hypertension, and blood clot formation. The damage to the heart and blood vessels is due to chronic inflammation, which in turn causes atherosclerosis (USDHHS, 2010b). Interestingly, reducing the amount of cigarettes smoked per day does not reduce the risk of cardiovascular disease (USDHHS, 2010b). However, similar to the cancer and pulmonary relationships to smoking, complete smoking cessation decreases the risk of cardiovascular morbidity and mortality (USDHHS, 2010b). The negative effects on blood vessels and increased risk of thrombosis can also result in a stroke resulting in smokers having two to four increase in the likelihood of having a stroke than a nonsmoker (USDHHS, 2014).

Nursing implications in cigarette-using cardiovascular patients. Patients who are hospitalized with cardiovascular disease have a chance to quit smoking because they are in an
environment with skilled healthcare professionals who can assist and encourage them to quit. Even though they are faced with a serious illness and are confronted with a place that initially doesn’t permit smoking, patients are more vulnerable and more likely to change while in a new environment and faced with a difficult situation. Nursing interventions that have been shown to be effective in smoking cessation among cardiovascular disease patients include: thorough assessment, individualized plan of care, follow-up, increasing patient’s self-efficacy throughout the process, pharmacological therapy, and encouraging the patient to remain completely abstinent (Shishani, Sohn, Okada, & Froelicher, 2009).

**Lifestyle Effects of Smoking**

In addition to the extensive negative sequelae of smoking, there are lifestyle considerations as well. Smoking can impact one’s health, job, the ability to have children, and financials. In 2013, the average cost of a pack of cigarettes in the United States was $5.76 (Orzechowski & Walker, 2013). That additional expenditure, even though it may be small daily, adds up over time. In addition to the monetary cost of cigarettes, there are additional costs of frequent absence from work due to associated health effects of smoking and the increased medical costs associated with the health care. Furthermore, many healthcare organizations nationwide have begun to implement a no-hire policy against smokers. Therefore, continued cigarette use can have an impact on one’s career in the medical field. Another unforeseen cost is due to fire-related accidents in the home from cigarette use. According to the United States Fire Administration (2012), smoking-related fires were the leading cause of civilian fire deaths. Outside of economic effects, smoking can have a negative effect on your ability to have children. Male smokers may have DNA damage or chromosomal changes in their sperm, which may
affect fertility and pregnancy viability when trying to have children (USDHHS, 2010b).

Additionally, smoking has been linked to erectile dysfunction (USDHHS, 2014).

**Quitting and Associated Risk Reduction**

A common misconception about smoking is that “the damage is already done” and there is no point in quitting. As evidenced earlier, quitting can have many beneficial health effects associated with a diagnosis of pulmonary disease, cardiovascular disease, and cancer. Within 20 minutes of smoking your last cigarette, your body begins a positive change that will continue for years; within 12 hours of quitting, carbon monoxide blood levels return to normal; within two weeks to three months, heart attack risk drops and lung functions begins to improve (USHHS, 2004). After one year of quitting smoking, the added risk of developing coronary heart disease is cut in half (USHHS, 2004) and the longer one refrains from smoking, the greater health benefits will be seen. In essence it is never too late to quit smoking.

**History of Smoking in the United States**

Native American tribes grew tobacco long before Europeans arrived, smoking through a pipe for religious and medical reasons. Tobacco was the first commercial crop grown for profit in North America after colonization in 1865. The first cigarette-making mechanism was created in 1881 and could produce 120,000 cigarettes a day, causing cigarette use to become widespread across the United States (Jacobs, 1997). During World War I and II, American soldiers were given free cigarettes every day, thus growing and popularizing the tobacco industry in the United States.

**U.S. Federal and State Tobacco Control**

The Surgeon General of the United States wrote the first report on the dangers of cigarette smoking in 1964, revealing the correlation between smoking and lung cancer
development. In 1965, U.S. Congress passed the Federal Cigarette Labeling and Advertising Act, requiring a health warning on cigarette packages. In the past 50 years, federal and state tobacco control legislation has increased tremendously, directly correlating with the significant decline in cigarette use in the United States, which can be seen in Figure 1 and 2 below.

![Trends in Cigarette Smoking by Adults in U.S. 1965-2014](image)

*Figure 1. (National Center for Health Statistics, 2015)*

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965</td>
<td>Federal Cigarette Labeling and Advertising Act: Requires a health warning on cigarette packages</td>
</tr>
<tr>
<td>1970</td>
<td>Comprehensive Smokeless Tobacco Health Education Act: Prohibits smokeless tobacco advertising on television and radio</td>
</tr>
<tr>
<td>1986</td>
<td>Amendment to Federal Aviation Act: Makes domestic flights of two hours or less smoke-free</td>
</tr>
<tr>
<td>1992</td>
<td>Synar Amendment to the Alcohol, Drug Abuse, and Mental Health Administration Reorganization Act: Enact laws prohibiting the sale and distribution of tobacco products to minors</td>
</tr>
<tr>
<td>2000</td>
<td>Family Smoking Prevention and Tobacco Control Act (Tobacco Control Act): Requires prominent graphic warning labels for cigarettes</td>
</tr>
</tbody>
</table>

*Figure 2. (USDHHS, 2016)*

Smoke-free laws and public policies have been proven to reduce smoking rates. The *health consequences of smoking–50 years of progress: A report of the surgeon general* (2014),
found that evidence-based tobacco control interventions that are effective at eliminating the use of cigarettes includes:

Hard-hitting media campaigns, tobacco excise taxes at sufficiently high rates to deter youth smoking and promote quitting, easy-to-access cessation treatment and promotion of cessation treatment in clinical settings, smoke-free policies, and comprehensive statewide tobacco control programs funded at CDC-recommended levels (USDHHS, 2014).

Cigarette use is often a cultural practice and by implementing anti-smoking legislation, it is creating a new paradigm in which smoking in public is no longer tolerated. These policies help to affect change in the “social norm” of a culture where smoking is no longer a socially accepted practice. A 2006 report by the Surgeon General concluded that “workplace smoking restrictions lead to less smoking among covered workers” (USDHHS, 2006, p.668). A 2010 systematic review by the Task Force on Community Preventative Services found that eleven studies on smoke-free laws and policies in the workplace were associated with a median 6.4% increase in smoking cessation (Hopkins et al., 2010). These studies both support the social policy of requiring a smoke-free workplace. Additionally, a 2009 report by the International Agency for Research on Cancer on the effects of smoke-free laws concluded that: There is sufficient evidence (the highest level of evidence under the report’s rating scale) that smoke-free workplaces reduce cigarette use among employees who smoke; There is strong evidence (the second highest level of evidence) that smoke-free workplaces lead to increased successful cessation among smokers (International Agency for Research on Cancer, 2009).

**Tobacco Screening for Healthcare Employees**
A more recent controversial social policy is the mandatory tobacco screenings for healthcare employees and the initiation of smoke-free healthcare institutions. Many healthcare organizations have mandated tobacco screenings for new employees, hiring only non-smokers. Among these are the Beaumont and Henry Ford Health systems that announced they would not hire applicants who use tobacco products, effective January 2013 (Olejarz & Stimmel, 2012). Both of these healthcare facilities are located in the state of Michigan, one of twenty-one states that does not have a law protecting employees from being discriminated against for using tobacco products. Interestingly, the American Lung Association (ALA) has publicly stood against such laws (State Legislated Actions on Tobacco Issues, 2014). From a global standpoint, the World Health Organization has implemented a policy of not hiring tobacco users in an effort to reduce, and eventually eliminate, the tobacco epidemic (World Health Organization, 2008). This issue has become increasingly controversial in that instituting such a policy is ethical, legal, economically efficient, and significant in decreasing and/or eliminating tobacco use.

**Opposition of mandatory tobacco screenings of healthcare workers.** The first argument against mandatory tobacco screenings is from an economic standpoint, stating that smokers do not have a higher healthcare cost to employers than non-smokers. Irvine and Nguyen (2014) found that current smokers are not more costly to employers than individuals who have other morbidities (i.e. obesity), occasional smokers are not more costly than never smokers, and smokers who recently quit cost more than current smokers. This research presents a strong argument in favor of the opposition, but focuses only on three specific instances and comparisons: current smokers vs. workers with other morbidities, occasional smokers vs. never smokers, and smokers who recently quit vs. current smokers. It does not provide results on current smokers vs. never smokers.
Interestingly, Berman, Crane, Seiber, and Munur (2013) found that employers face an annual excess cost of approximately $5816 for each employee that smokes due to lost productivity during smoking breaks and excess healthcare costs. This research provides an estimated cost differentiation between smokers and nonsmokers, a comparison that was not made by Irvine and Nguyen (2014). Berman et al. (2013) supports the claim that smokers do increase total healthcare costs for employers, and therefore, it is economically efficient for employers to use smoking status as a criterion for hire.

The second opposing argument against mandatory tobacco screenings is that enacting this type of policy would unintentionally target those of a lower socioeconomic status because of their historically high smoking rates. Agaku, King, and Dube (2013) found that 29% of those living below the federal poverty level, smoked cigarettes compared to 17.9% of those living at or above this level. For this reason, Schmidt, Voigt, and Emanuel (2013) argue that implementing a mandatory tobacco screening would unfairly affect these populations that have higher unemployment rates, fewer job opportunities, lower education levels, and lack of job security.

Mandatory tobacco screening is not intended to target those of a lower economic status, but may inadvertently do so. However, Asch, Muller, and Volpp (2013) argue that these policies may be beneficial to these populations from a long-term perspective. Because this population has higher rates of smoking, they are also at greater risk of the negative health effects associated with smoking. Implementing policies that allow employers to overlook job applicants based on smoking status changes the social norm, much like the change to ban cigarette smoking on airplanes. By increasing the stigma against smoking, the prevalence of cigarette use decreases; this correlation is evidenced by the Cleveland Clinic executing a policy against hiring smokers in 2007. In Cuyahoga County, where the Cleveland Clinic is located, smoking rates decreased from
20.7% in 2005 to 15% in 2009, whereas the state as a whole only decreased from 22.4% to 20.3% in the same time span (Kleinerman, 2010). Changing the social norm of cigarette use through these kinds of policies will decrease smoking rates, and in turn decrease the prevalence of the negative health effects incurred by smoking.

The final opposing argument most commonly presented is that employers have an obligation to promote public health. Schmidt et al. (2013) argues that companies should promote public health and decrease tobacco use among their employees through cessation programs and incentives. Volpp, Asch, Galvin, and Loewenstein (2011) found that financial incentives could effectively promote smoking cessation among employees. This was evidenced by the case of General Electric. In this case, monetary incentives resulted in cessation rates three times higher than informational programs. However, nonsmokers objected to these incentives, arguing that they were excluded from the benefits. As a result, General Electric replaced the incentive with a surcharge for smokers on their insurance premium.

A similar study by Asch et al. (2013), compared cessation programs with incentives to programs without incentives. They found similar results, with the incentive group having a cessation rate three times higher than the comparison group. However, only nine percent of the incentive group was able to quit, even with this reward system. Asch et al. (2013) then offered a ladder model of interventions to reduce tobacco use, arguing that employers must institute more aggressive interventions in order to decrease tobacco rates and promote public health. These more aggressive interventions include: refusal to hire smokers and/or financially penalize current employees who smoke. These measures are necessary in order to gain positive results.

Support of mandatory tobacco screening in healthcare workers. Implementing mandatory tobacco screening for healthcare workers will decrease smoking rates and promote
health. As previously stated, these policies will increase the stigma against tobacco use, thus decreasing its prevalence. This was evident in the case of the Cleveland Clinic, where the smoking rate of the surrounding county decreased 5.7% in a four-year span, while the entire state only decreased 2.1% (Kleinerman, 2010). The World Health Organization implemented its policy against recruiting tobacco users to stress the importance of not normalizing smoking (2008). Moreover, Asch et al. (2013) state that the reason smokers have a difficult time quitting is because of the relationship between the cost and benefit of quitting. The immediate cost to quitting is nicotine withdrawal and the associated costs of treatment; however, the health benefits to quitting are gradual, and often not seen immediately after quitting. For this reason, Asch et al. argues that these policies (getting hired for not being a smoker) would be an immediate reward to counterbalance that immediate cost. This policy is economically efficient by decreasing healthcare costs to employers and increasing work productivity. Callanan, Tomkowicz, and Perri (2013) argue that from a legal standpoint, employers who are not restricted by the “lifestyle discrimination” statues enacted in 29 states and Washington, D.C., have every legal right to implement policies that they deem to be in the best interest of their company. Additionally, they argue that from a business angle, it would be beneficial to create a smoke-free work environment and only hire non-smokers to maximize profits by lowering the economic healthcare costs of hiring smokers as well as being socially responsible and promoting public health. Berman et al. (2013) supports this claim by stating that smokers cost employers an average of $5,816.00 annually compared to non-smokers, due to additional healthcare costs and loss of productivity from cigarette breaks.

Implementing a policy against hiring smokers specifically impacts healthcare workers by providing a better, safer healing environment for patients. Olsen (2014) argues that healthcare
workers who carry smoke residue on their clothing (thirdhand smoke) can come in contact with patients who find the smell offensive, avoiding the facility in the future when given a choice. Thirdhand smoke contains over 7,000 chemicals, and 70 of these chemicals are known carcinogens (USDHHS, 2014). Thirdhand smoke cannot be removed by taking a shower or changing clothing; the smoker has to have a chemical bath to remove the carcinogens; therefore, a healthcare professional who is a smoker exposes his or her patients to carcinogens with each interaction. Some patients may also be hypersensitive to the smell of cigarette smoke and have a negative reaction to the smell of third hand smoke (i.e. nausea, headache). Furthermore, healthcare professionals act as role models to their patients and to the community, and they are responsible for creating a healing environment and advocating for healthy lifestyle choices. Many argue that it is hypocritical for healthcare professionals who smoke to educate and advise patients to quit smoking.

**Global and national efforts.** Healthcare institutions should follow in the example set out by the World Health Organization and eliminate a social norm of smoking by mandating tobacco screening for new employees. Healthcare providers have an ethical obligation to permeate health and wellness throughout the institution, including employees. This can be accomplished by first giving healthcare facilities the legal right to be more selective in the hiring process based on smoking status in all fifty states. The “lifestyle discrimination” statues enacted in 29 states and Washington, D.C. must be eliminated. Secondly, healthcare institutions must only hire non-smokers as new employees, and provide cessation programs to current employees who smoke. Institutions must also provide strict timelines for when current smokers need to quit, and enforce financial penalizations or eventual termination if they are not successful in quitting.
This plan is supported by Healthy People 2020 in the goal to reduce cigarette smoking by adults from 20.6% in 2008 to 12.0% by 2020 (Office of Disease Prevention and Health Promotion, 2010). Based on the evidence presented, implementing policies to only hire non-smoking healthcare employees will reduce the prevalence of cigarette use. Additionally, Healthy People 2020 advocates for social and environmental change by establishing laws on smoke-free indoor air that prohibits smoking on hospital campuses in all 50 states and the District of Columbia by 2020 (Office of Disease Prevention and Health Promotion, 2010). The plan previously outlined is similar to this in addressing the social changes needed to end the norm of cigarette smoking.

**Nursing and anti-smoking legislation.** Specifically, nurses have an ethical duty to act as advocates to patients, the community, and each other to promote health and wellness, prevent illness and improve the health outcomes of their patients. This can be accomplished by acting as role models and by not smoking. This social policy is a gradual process, but it sends a powerful message and will ultimately change how society views smoking. There was once a time when smoking in hospitals was acceptable—an idea that seems unthinkable now. However, our tolerance for restricting the activity of smoking has come a long way in recent years, and implementing this plan will further eliminate the epidemic of smoking in today’s world.

Obligatory tobacco screenings for healthcare employees is a controversial topic in today’s society. It questions if this policy is ethical, legal, economically efficient, and significant in eliminating tobacco use. Although cigarette use is still an accepted part of daily life, the policy against hiring smokers in healthcare aims to change that. Due to controversial social policies being implemented over time, the stigma against smoking has increased dramatically, and our tolerance of the activity has greatly reduced in recent years. Mandatory tobacco screenings for
healthcare workers hopes to again change the way society views cigarette use and further increase the stigma.

**Smoking Prevention in Pregnancy and After Birth**

According to the Pregnancy Risk Assessment and Monitoring System (PRAMS) data in the United States (Tong et al., 2013), approximately 23.2% of pregnant women smoked cigarettes during the three months leading up to the pregnancy, 10.7% smoked during the last three months of pregnancy, and 54.3% quit smoking during pregnancy. One objective of *Healthy People 2020* is to increase abstinence from cigarette smoking among pregnant women to 98.6% (Office of Disease Prevention and Health Promotion, 2010). Cigarette smoking before, during, and after pregnancy can negatively affect the health of both the mother and child. Nurses have an opportunity to educate pregnant women and families on the importance of smoking cessation, and they can also assist them in quitting.

**Cigarette use during pregnancy.** Smoking use among pregnant women is still a significant topic in healthcare today due to its prevalence of use, increased rates among high-risk populations, and its severe health effects on the mother and infant. Predictors of cigarette use in pregnancy include: having a partner who smokes, having Medicaid insurance coverage, less than 12 years of education, older women, and are American Indians/Alaska Natives (Tong et al., 2013; Ma, Goins, Pbert, & Ockene, 2005). These same risk factors were present in women with the highest smoking rates postpartum. Women with the highest rates of quitting smoking during pregnancy were: less than 20 years of age, were Asian/Pacific Islander, had greater than 12 years of education, and had private insurance coverage (Tong et al., 2013).

There are many benefits to quitting smoking while pregnant, including: the mother will have more energy, breathe more easily, mother and baby will be healthier, mother and baby will
SMOKING CESSATION

have a lower risk of health complications, the mother will have better smelling breath, cleaner teeth, fewer skin wrinkles, better taste and smell senses, and patient will have more money to spend on other things. One study (Ussher, Etter, & West, 2006) asked pregnant women what they perceived to be the benefits for seeking medical assistance in quitting smoking. They found that 74% of pregnant women reported getting advice about cigarette cravings to be a benefit, and 71% stated that receiving praise and encouragement with quitting was a benefit (Ussher, et al., 2006).

There are many risks to smoking while pregnant to both the mother and fetus. According to the U.S. Department of Health and Human Services (USDHHS), smoking during pregnancy causes more than 1,000 infant deaths every year (USDHHS, 2014). Smoking can cause infertility, decrease sperm count and quality in men, and/or cause difficulty in women trying to become pregnant (USDHHS, 2014). Smoking while pregnant increases the mother’s risk for: ectopic pregnancy, premature rupture of membranes, placental abortion, placental previa, premature birth, low birth weight, fetal growth restriction, sudden infant death syndrome (SIDS), and facial deformities such as cleft lip, cleft palate, or both (USDHHS, 2014). Ussher, et al., (2006) asked pregnant women what they perceived to be the greatest barriers to quitting smoking. They found that 54% of women reported that they were afraid of disappointing themselves if they failed, and 41% don’t tend to seek help for this sort of thing (Ussher, et al., 2006).

Methods of smoking cessation during pregnancy. It is important for pregnant women to quit smoking completely and as early in the pregnancy as possible. There is not sufficient evidence in current literature to suggest that reducing cigarette use is effective at reducing health risks to the fetus, but it is a positive step in quitting completely. However, Samet & Yoon (2010),
found that reducing cigarette smoke by at least 50% while pregnant could significantly increase infant birth weight. Mothers should also understand that being exposed to secondhand smoke from others still increases her risk of delivering a stillborn child, the child dying soon after birth, premature birth, and their growth and health being negatively affected (Royal College of Obstetricians and Gynecologists, 2015). Pregnant women who are trying to quit smoking can be referred to online and telephone resources, have cognitive behavioral therapy, and if they are still have trouble quitting, they can talk to their healthcare provider about Nicotine Replacement Therapy (NRT) such as transdermal patches and chewing gum to help them quit. A study by Kapaya, Tong & Ding (2015), found that one in five pregnant smokers was offered NRT, and about one in four pregnant smokers did not receive any interventions to stop smoking. Therefore, it is essential for healthcare providers to identify and educate pregnant women and families on smoking cessation.

**Nursing implications in antepartum and intrapartum women.** All women should be asked during prenatal care if they smoke. Additionally, all pregnant women should be advised that complete cessation has the most health benefits, and any amount of cigarette use can be harmful to the fetus. Pregnancy specific counseling can also be performed by nurses through “The 5 A’s in Quitting Smoking”, which are: ask, advise, assess, assist, and arrange. The first step is to ask all patients about tobacco use. The second step is to advise every tobacco user to quit completely. The third step is to assess the tobacco user’s willingness to quit; ask her if she is willing to quit in the next 2-4 weeks. The fourth step is to assist tobacco users to quit. During this step, the nurse will: congratulate her on her decision to quit, ask her how many cigarettes she smokes a day, ask about previous quit attempts or problems she might have had, ask about social support in her environment, set a quit date with her, ask her what she thinks are her most serious
barriers to quitting, tell her that our clinic’s staff is here to support her quit attempt, provide pregnancy-specific, self-help patient education materials, and ask her to sign a “Quit Contract”.

The final and fifth step is to arrange follow-up care.

There is free online training to learn and practice “The 5 A’s” through the Centers for Disease Control and Prevention (CDC) Smoking Cessation for Pregnancy and Beyond: A Virtual Clinic at https://www.smokingcessationandpregnancy.org/. Other online resources healthcare providers can use when helping a patient quit smoking includes: “Smokefree Women” at http://women.smokefree.gov/Default.aspx. This website is useful for pregnant women trying to quit because they offer tips, information, and blogs with other women about quitting. Telephone resources include Smokefree Mom: Text Message at http://women.smokefree.gov/smokefreemom.aspx, which provides 24/7 tips, advice, and encouragement to help pregnant women quit smoking. Also, 1-800-QUIT-NOW (1-800-784-8669) can provide special resources for pregnant women. Additionally, an educational handout was developed by the author, that nurses can use when educating pregnant women on smoking cessation (Appendix A). This resource allows women to easily access the resources and information given about cessation techniques outside of the healthcare setting.

Breastfeeding while smoking cigarettes. There is no current research to indicate the effects of nicotine transfer through breast milk on the infant. However, current practice recommends that smoking by breastfeeding mothers should be strongly discouraged (American Academy of Pediatrics, 2012). Smoking postpartum can impair milk production, and it can also expose the infant to the risks of secondhand smoke. Nicotine is transferred to the infant in breast milk, whether the mother smokes cigarettes or uses Nicotine Replacement Therapy (NRT). Healthcare providers should advise mothers who continue to use cigarettes not to smoke within
two hours before breastfeeding and never smoke in the same room with the infant (Perry, Hockenberry, Lowdermilk, & Wilson, 2014).

**Smoking postpartum and risks of secondhand and thirdhand smoke.** According to the Pregnancy Risk Assessment and Monitoring System (PRAMS) data in the United States, 15.9% of women reported smoking approximately four months postpartum (Tong et al., 2013). Among the women who quit smoking during pregnancy, about 40% relapsed within six months postpartum (Tong et al., 2013). Secondhand smoke contains over 7,000 chemicals, and 70 of these chemicals are known carcinogens (USDHHS, 2014). Every time a child breathes in secondhand smoke, they are exposed to these chemicals. This exposure increases the child’s risk of developing: SIDS, ear infections, colds, coughs, bronchitis, pneumonia, tooth decay, poor lung development, lung cancer, heart disease, cataracts, and wheezing (USDHHS, 2014). It is important for mothers to know that there is no safe level of exposure to tobacco smoke.

Research by the American Academy of Pediatrics (AAP) (Winickoff et al., 2009) indicates that there is a danger to all children called thirdhand smoke. Thirdhand smoke is the pollution that remains after a cigarette is put out. Smoke residue can stick to dust, furniture, carpeting, car seats, hair, or clothes. This residue results from secondhand smoke particles being released into the air and combining with air particles to form nitrosamines, which are carcinogenic. Smoking in front of fans or out an open window does not prevent thirdhand smoke. Children are exposed to thirdhand smoke in a variety of ways. They can breathe in these toxic chemicals by crawling on the floor, sitting in cars, or by being held by adults who smoke; the smoke residue settles on all of these surfaces.

**Protection against secondhand and thirdhand smoke.** It is important for nurses to educate patients and families on protection against secondhand and thirdhand smoke. Teach
parents and families to not allow smoking inside the car or home, do not allow smoking near children, make sure children’s daycare centers and schools are tobacco-free, and choose a babysitter who doesn’t smoke. It is also important to teach parents who smoke to make the car and home completely smoke-free. Air flows throughout a house, so smoking in any room allows smoke to be spread throughout the house, even if it is in front of a window or fan. Opening windows of a car isn’t enough to clear the air of smoke, and it can even blow into the faces of backseat passengers.

Nursing implications for postpartum women and families. Healthcare providers have an opportunity to educate families on the importance of quitting smoking, and they can also help smokers who aren’t ready to quit create a safe environment for their children. Encourage parents who smoke cigarettes to create a completely smoke-free home and car. This may be difficult, but with encouragement and education it is possible. Smokers can create a comfortable environment to smoke outdoors for themselves and visitors, keep an umbrella next to the door to help encourage them to smoke outside in poor weather, let guests know that your house is smoke-free and where they can smoke if they need to, remove ash trays from inside the house, and put a sign on the front door to remind visitors that your home is smoke-free. To maintain a smoke-free car: remind passengers not to smoke in the car, fill the car’s ashtray with something such as spare change, leave a cell phone charger or other electronic device plugged into the car’s outlet so you are not tempted to use the lighter, store cigarettes out of reach while driving such as the trunk, or consider putting a sticker that reminds passengers not to smoke in the car. Additionally, it is important to educate patients about the dangers and risks of secondhand and thirdhand smoke, and provide them with resources to aid in quitting.
The author developed an educational handout that nurses can use when educating parents on the dangers secondhand smoke and tips for creating a smoke free environment in Appendix B. This resource allows parents to easily access the information given by the healthcare provider outside of the healthcare setting.

**National and worldwide efforts.** Cigarette smoking in pregnant women, secondhand smoke exposure to children, and thirdhand smoke exposure to children are continuing international threats to health and wellness, and therefore receive global efforts from healthcare organizations. One of the objectives of *Healthy People 2020* in relation to tobacco use is to increase abstinence from cigarette smoking among pregnant women to 98.6% (Office of Disease Prevention and Health Promotion, 2010). The World Health Organization (WHO) (2015) implemented the Tobacco-Free Initiative, stating their mission:

> To reduce the global burden of disease and death caused by tobacco, thereby protecting present and future generations from the devastating health, social, environmental and economic consequences of tobacco use and exposure to tobacco smoke.

State and community tobacco control interventions also affect the rate of cigarette use among pregnant women. “A $1.00 increase in cigarette taxes increased quit rates among pregnant women by 5 percentage points. Higher cigarette prices also reduced the number of women who start smoking again after delivery” (Centers for Disease Control and Prevention, 2015). Additionally, full smoking bans in private work sites can increase smoking cessation among pregnant women by 5%, and expanded Medicaid tobacco cessation coverage increased smoking cessation by nearly 2% in women who smoked prior to pregnancy (Centers for Disease Control and Prevention, 2015). Legislature has also been passed to help protect children from secondhand smoke, such as smoke free car laws in Arkansas, California, Louisiana, Maine,
Oregon, Puerto Rico, Utah, Vermont, and Virginia, which prohibit cigarette use in vehicles with minors present (Americans for Nonsmokers’ Rights, 2016). These types of cultural changes reinforce a paradigm shift that is moving towards a “new normal” where smoking cigarettes is increasingly unpopular, and the public is becoming more aware of the health risks associated with it.

Smoking Prevention in Children and Adolescents

In 2014, two and a half percent of middle school students and just over nine percent of high school students reported smoking cigarettes in the past 30 days (Centers for Disease Control and Prevention, 2016). These rates have declined 1.8% and 6.6% respectively since 2011 (CDC, 2016). Although these rates are on the decline, preventing tobacco use among adolescents is still critical to ending the tobacco epidemic in the United States. Smoking cigarettes is started and established primarily during adolescence. Almost 90% of current smokers tried their first cigarette by the age of 18, and 99% tried their first cigarette by the age of 26 (U.S. Department of Health and Human Services, 2012). One of the objectives for Healthy People 2020 is to reduce the initiation of the use of cigarettes among children and adolescents 12-17 years old to 4.3% (Office of Disease Prevention and Health Promotion, 2010).

Cigarette use during adolescence. Smoking use among adolescents is still a significant topic in healthcare today due to its prevalence of use, increased rates among high-risk populations, and its severe health effects on the growing child. Every day in the United States, more than 3,800 adolescents less than 18 years old smoke their first cigarette, and 2,100 young adults become daily cigarette users (USDHHS, 2012). Risk factors of cigarette use among youth include: parents who smoke, genetic factors can make quitting more difficult, mother smoked during pregnancy, depression, anxiety, stress, lower socioeconomic status, lack of parental
involvement, low levels of academic achievement, low self-esteem, and exposure to tobacco advertising (USDHHS, 2000). Adolescents begin smoking for a variety of reasons, including: imitation of adult behavior, peer pressure, imitation of smoking behavior in the media, and to control weight (Perry, Hockenberry, Lowdermilk, & Wilson, 2014). One study (Fritz, Wider, Hardin, & Horrocks, 2008) found that 82.3% of adolescents reported smoking as a means to relax, 75% smoked to reduce stress, and 68.8% smoked to relieve feelings of depression and worry. Furthermore, a majority of females in this study smoked to control weight. It is important for nurses to recognize these risk factors and reasons for smoking when assessing the pediatric population and when developing their plan for cessation. Some social and environmental factors have been associated with lower levels of cigarette use among youth, including: religious participation, racial/ethnic pride and strong racial identity, higher academic achievements and aspirations (USDHHS, 2012).

There are many negative health risks to smoking in young adulthood, including: addiction to nicotine, reduced lung function, impaired lung growth, asthma, early abdominal aortic atherosclerosis, impairment of growth of pre-frontal cortex, decreased night vision, hearing loss, dull taste, oral ulcers, stained teeth yellow, acne, dry and cracked skin, bad breath, higher resting heart rate and blood pressure, shortness of breath, formation of blood clots, increase of abdominal fat, erectile dysfunction, weakened immune system, and disruption of bone growth (USDHHS, 2012; National Cancer Institute, 2016). Developmentally, children ages 12-14 are starting to show more concern about body image and about how their peers view them. Healthcare providers can appeal to this self-interest by educating children about the harmful effects of smoking (i.e. stained teeth, acne, bad breath, dry skin). If smoking rates continue at current rates among adolescents in the United States, 5.6 million Americans currently younger
than 18 years old will die early from a smoking-related disease (USDHHS, 2014). Despite national and global efforts to educate about the harmful effects of smoking, the majority of teenagers are still unaware of these dangers (Fritz et al., 2008).

Many adolescents may also be unaware of the benefits of quitting; benefits which include: healthier lungs and heart for athletic performance, capable of running faster and farther than smokers, whiter teeth, better skin overall, save a lot of money, quitting benefits the planet, and teens will have better smelling clothes, hair, and breath. Fritz et al., (2008) found that teens were more likely to quit smoking when educated about the physical changes that take place 20 minutes, 8 hours, and 48 hours following smoking cessation. Additionally, adolescents in were shown a video showing the quality of life of a smoker. Subsequently, this video proved to be effective at impressing the dangers of smoking in teens (Fritz et al., 2008). This video featured smokers with tracheostomies and mechanical larynxes, which provoked an alarming reaction from the teenage participants, leaving the vast majority of current smokers wanting to quit.

Methods of smoking cessation for young adults. A report by the Surgeon General, "Preventing Tobacco use Among Youth and Young Adults" (2012), found that effective ways of reducing tobacco use among young people includes: mass media campaigns, comprehensive community programs, statewide tobacco control programs, increase in cigarette prices, and school-based programs. Comprehensive community programs incorporate members of a specific region or population and are funded by local businesses in order to promote public knowledge about the dangers of smoking, initiate anti-tobacco programs in school curriculums, and create media campaigns within the community. School-based programs are effective because they reach nearly all adolescents within a community, and they provide students with skills training to resist peer pressure, stress reduction techniques, decision making skills, confidence in achieving their
anti-tobacco goals, and knowledge about the effects of smoking (Krowchuk, 2005). These school-based programs are aimed to prevent tobacco use, and operate within the context of a social environment by changing behaviors, attitudes, and knowledge of the teenager. Smoking bans in schools are also effective at reducing smoking rates because they discourage students from starting to smoke, reinforce knowledge of health risks of smoking, and promote a smoke-free environment as the norm.

Nursing implications for adolescent smoking cessation. According to Fritz et al., (2008), adolescents were asked to rank quit strategies, and the three highest were, 1) providing information on cigarette content and its effects, 2) the benefits of quitting, and 3) measures for staying on track. Healthcare providers, especially nurses, have the opportunity to influence health behaviors of their pediatric patients by providing tobacco-use prevention counseling and education. The American Academy of Pediatrics Committee on Substance Abuse (2001) recommends healthcare provider intervention of counseling, educating, and recommending treatment as an effective means of reducing cigarette use among the pediatric population. Fidler, & Lambert, (2001) found that having the teen’s primary healthcare provider mail them developmentally appropriate anti-smoking education every three months for one year had significantly fewer teen smokers (just over 5 percent) than the control group that did not receive the educational flyers (nearly 8 percent).

Moreover, young adults were asked to describe specific quit strategies to maintain smoking cessation, and they reported the following as effective tips for staying on track: chewing gum, exercising, deep breathing, positive self-encouragement, drinking water, walking, doodling, listening to music, talking to friends, sucking on a straw, brushing teeth, and meditating (Fritz et al., 2008). This same study also found that teenage perceived barriers to quitting were alcohol
consumption and social influences. These findings can be useful to nurses when planning smoking cessation by deciding which strategies will be useful to the patient, and nurses can also address the barriers to quitting. Nurses can also use specific information to appeal to various populations. For example, if the patient is an athlete, then nurse can describe how smoking affects athletic performance (i.e. slower running, can’t run as far, out of breath quicker, inhibits muscle and bone development, higher resting heart rate, etc.).

Prevention of smoking in teenagers is the most effective way to reduce overall cigarette use, and nurses have an opportunity to implement preventative measures in their practice. Smoking among young adults is most closely related to social status and peers, so healthcare providers must appeal to the social norms of potential smokers. Posters, charts, displays, statistics, and examples of real-life damage (i.e. damaged lungs, smokers with tracheostomies) can also be used. However, the most effective strategies are to emphasize immediate effects of smoking and teach strategies to resist peer pressure to cigarette use. Emphasis should be on teaching these strategies at an early age, when children are most susceptible to starting smoking, rather than aiding adolescents in quitting later in age. In addition to teaching strategies against peer pressure, nurses can educate young adults on problem-solving techniques, decision-making skills, goal-setting skills, and stress reduction strategies, which are all effective at preventing tobacco use. It is also important for nurses to understand that the use of pharmacologic therapy for smoking cessation (nicotine replacement therapy, bupropion, and varenicline) have not yet been approved for use in children or adolescents (Perry et al., 2008).

One of the most effective programs at decreasing smoking among teens is a peer-led program emphasizing the social consequences of cigarette use (Perry et al., 2008). Influential peers have the ability to convince their friends that smoking is not popular or cool. These kinds
of programs should emphasize short-term consequences such as the effects of smoking on physical appearance. Media can also be used in these presentations to reinforce the harmful effects (i.e. movies, pictures). These youth-to-youth programs are effective because they emphasize a social norm against smoking. This is significant because smoking among teenagers is a social practice, and can be reduced by changing the teenager's attitude of smoking.

Tobacco use in the media. 59% of PG-13 movies showed tobacco use between 2002-2015 (Polansky, Titus, Atayeva, & Glantz, 2016). Adolescents are especially susceptible to seeing tobacco use in media, and according to a report by the Surgeon General (USDHHS, 2012), watching movies that include smoking causes teenagers to start smoking. This same report estimates that if films with smoking received an R rating, it would reduce teen smoking rates 18% and prevent one million deaths from smoking among children alive today. However, there is a recent trend of eliminating the use of tobacco products in the film industry, with a 27% increase in smoke-free PG-13 movies between 2002 and 2015, and between 2011 and 2015, all G-rated movies were tobacco-free (Polansky et al., 2016). Additionally, many major movie companies have issued policies addressing tobacco use in their movies. For example, Disney released a statement about their smoking policy in movies:

Disney has determined not to depict cigarette smoking in movies produced by it after 2015 [...] and distributed under the Disney, Pixar, Marvel or Lucas film labels, that are rated G, PG or PG-13, except for scenes that: depict a historical figure who may have smoked at the time of his or her life; or portray cigarette smoking in an unfavorable light or emphasize the negative consequences of smoking. (The Walt Disney Company, 2015)
Despite this statement and a recent negative trend of cigarette use in movies, between 2010-2015 tobacco incidents in youth-rated movies from Disney increased (Polansky et al., 2016). Based on this data, there should be an industry-wide standard to rate movies with tobacco use R to reduce tobacco use among youth. Examples of smoking use in popular Disney movies can be seen in the pictures below:

*Aladdin* (Walt Disney Pictures, Clements, & Musker, 1992)

*Hercules* (Walt Disney Pictures, Clements, & Musker, 1997)
Tobacco companies market their products to appeal to youth in order to create a new generation of nicotine-addicted smokers to sustain its industry. In 2008, tobacco companies spent $9.94 billion on the marketing of cigarettes (USDHHS, 2012). Additionally, tobacco companies have re-designed their products in order to increase appeal to young adults. Nearly 90% of young teens surveyed (Fritz et al., 2008) reported being influenced by tobacco advertising. 60.5% of this same study (Fritz et al., 2008) believed that most teens smoked, which may be due to the fact that the vast majority of them had been exposed to tobacco marketing, which reinforces the false notion that tobacco use is a social normality.

National and worldwide efforts. Cigarette smoking in children and young adults is a continuing international threat to health and wellness, and therefore receives a global response from healthcare organizations. One of the objectives of Healthy People 2020 in relation to tobacco use is to reduce the initiation of the use of cigarettes among children and adolescents 12-17 years old to 4.3% (Office of Disease Prevention and Health Promotion, 2010). An additional objective is to increase tobacco-free environments in junior high schools, including all school facilities, property, vehicles, and school events from 65.4% in 2006 to 100% (Office of Disease Prevention and Health Promotion, 2010). The World Health Organization (WHO) (2015) implemented the Tobacco-Free Initiative, stating their mission:

To reduce the global burden of disease and death caused by tobacco, thereby protecting present and future generations from the devastating health, social, environmental and economic consequences of tobacco use and exposure to tobacco smoke.

State and community tobacco control interventions also affect the rate of cigarette use among youth. The Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco to Protect Children and Adolescents of 1996 restricts the sale and distribution of
cigarettes and smokeless tobacco to protect youth, and asserts jurisdiction over tobacco products to the Federal Drug Administration (Food and Drug Administration, 1996). These types of cultural changes reinforce a paradigm shift that is moving towards a “new normal” where smoking cigarettes is increasingly unpopular, and the public is becoming more aware of the health risks associated with it.

**Cigarette Use at Eastern Michigan University**

On July 1, 2015, Eastern Michigan University (EMU) implemented a policy to make its campus tobacco-free, joining several colleges across the United States. The policy bans smoking and the use of all tobacco products in or on all university owned, operated or leased buildings, facilities and grounds, including vehicles (Larcom, 2014). Until the campus-wide ban, the university’s policy on cigarette use was prohibiting smoking within 25 feet of a building and near vents and windows. Eastern Michigan University has adopted a tobacco-free policy that supports a healthy learning, living and work environment for all members of the campus community. There are currently 1,475 100% smoke-free college campuses in the United States (American Nonsmokers’ Rights Foundation, 2016a).

Tobacco bans on university campuses are effective at lowering smoking rates among students. Seo, Macy, Torabi, & Middlestadt (2011), compared two public university smoking policies in 2008. The first campus implemented a full smoke-free policy, and the second campus acted as a control group that had an outdoor smoking ban within a certain distance of doorways. The full smoke-free campus saw a smoking prevalence decrease from 16.5% to 12.8% after one year of the smoking ban. The outdoor ban campus saw an increase from 9.5% to 10.1% in the same time (Seo, Macy, Torabi, & Middlestadt, 2011). Through the implementation of this policy, EMU expected to see a similar decrease among its students, faculty, and staff.
SMOKING CESSATION

Changing the Social Norm: Smoking Bans

Based on the literature, the gap remains on how the public perceives anti-smoking legislation. The research question for this study was: how does the public perceive anti-smoking legislation? This research sought to determine student and faculty perceptions of the tobacco ban at Eastern Michigan University (EMU). This research focused on the impact this policy had on smoking rates among students, on campus, and in the surrounding community. This research is important in determining whether or not social policies such as smoking bans positively affect the surrounding community.

Methods

Participants. Participants included faculty, staff, undergraduate students, and graduate students of the EMU School of Nursing. 78 surveys were collected, 6 were omitted because of incomplete responses, resulting in a sample of 72. This study included both smokers and nonsmokers.

Materials. This quantitative research study was conducted using an online questionnaire on SurveyMonkey.com from June 2016-October 2016. Institutional Review Board (IRB) approval was obtained prior to data collection. A copy of the IRB approval letter can be found in Appendix C. This was an eleven question questionnaire about the impact of anti-smoking legislation, the impact of second-hand smoking, and their views for smoking ban in public places. Participants could choose to agree, disagree, or refuse to provide an answer.

The questions were used in the questionnaire “Perception on anti-smoking legislation” in the previous research study, “Effect of Anti-Smoking Legislation in Public Places” (Bhat et al., 2015). This survey was taken from the United States National Center for Biotechnology Information in the United States National Library of Medicine. This questionnaire was...
previously tested in a pilot study. Kappa (k = 0.86) and weighted kappa (kw = 0.9) were used to evaluate test-retest reliability of the questionnaire and internal consistency was assessed by Cronbach’s alpha (\( \alpha = 0.78 \)). A copy of the questionnaire can be found in Appendix D. Analysis of the results was done using Survey Monkey.

**Procedure.** Participants were recruited by an email sent to current students, faculty, and staff of EMU School of Nursing. A copy of the recruitment materials can be found in Appendix E. Participants of the survey gave consent to the study before beginning the questionnaire. A copy of the consent form can be found in Appendix F. The completion of the survey included the principal investigator’s contact information, the advisor’s contact information, and online resources available to aid in quitting smoking. Information about the smoking cessation programs available at Eastern Michigan University’s Snow Health Center were also listed. Upon completion of the survey, participants were asked if they want to submit their responses or exit the survey without their responses.

**Results**

Of the 72 responses, 97.22% of participants (N=72) agreed that secondhand smoke is a serious threat to health. This is supported by current literature, that secondhand smoke is harmful to health (USDHHS, 2014). 86.11% of participants agreed that current legislation is likely to create a healthier environment, and 87.5% of participants agreed that the introduction of recent anti-smoking legislation has reduced their exposure to passive smoking. These two results correlate with one another, in that reducing their exposure to passive smoking creates a healthier environment. It was interesting that 86.11% of participants agreed that it is right to ban smoking in public places, and 75% of participants disagreed that everyone has the right to smoke if they wish to smoke in public places. These two results support the claim that social policies such as
SMOKING CESSATION

smoking bans positively affect the perceptions of the surrounding community. The responses to each question from the questionnaire are displayed in Table 1.

<table>
<thead>
<tr>
<th>Question</th>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The introduction of the recent anti-smoking legislation has forced smokers to reduce the number of cigarettes they smoke</td>
<td>55.56%</td>
<td>44.44%</td>
</tr>
<tr>
<td>The introduction of the recent anti-smoking legislation has reduced your exposure to passive smoking</td>
<td>87.5%</td>
<td>12.5%</td>
</tr>
<tr>
<td>The current legislation is likely to create a healthier environment</td>
<td>86.11%</td>
<td>13.89%</td>
</tr>
<tr>
<td>Everyone has the right to smoke if they wish to smoke in public places</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>Government has fulfilled its duty by making anti-smoking legislation</td>
<td>54.17%</td>
<td>45.83%</td>
</tr>
<tr>
<td>More implementation and advertisement is needed for current anti-smoking legislation</td>
<td>88.89%</td>
<td>11.11%</td>
</tr>
<tr>
<td>The introduction of sign-boards (public place warnings) of anti-smoking legislation will be helpful (e.g. No smoking)</td>
<td>75%</td>
<td>25%</td>
</tr>
<tr>
<td>Do you believe that second hand smoke is a serious threat to health</td>
<td>97.22%</td>
<td>2.78%</td>
</tr>
<tr>
<td>Are you avoiding public places because of smoke</td>
<td>40.28%</td>
<td>59.72%</td>
</tr>
<tr>
<td>Are you bothered by other people smoking in public places (workplace, buses, trains, bus/railway stations, market yard)</td>
<td>80.56%</td>
<td>19.44%</td>
</tr>
<tr>
<td>Is it right to ban smoking in public places</td>
<td>86.11%</td>
<td>13.89%</td>
</tr>
</tbody>
</table>

Discussion

Nurses have a responsibility to promote health and prevent illness within their communities by helping to change the social norm of cigarette use. This study sought to determine student and faculty perceptions of the tobacco ban at Eastern Michigan University (EMU). The results supported the conclusion that nursing students, faculty, and staff of EMU perceived the smoking ban as a positive impact on the community. This is significant in enacting social policies against public smoking due to the public’s support of such legislation. Nurses can
help to change the current culture to one where smoking is no longer publicly accepted, therefore promoting health within their surrounding community.

**Conclusion**

Based on the national and international efforts to eliminate tobacco use, healthcare providers have a significant role in this endeavor by aiding all patients in quitting. This effort promotes health and wellness not only in the lives of the patients, but in the community as well by contributing to the de-normalization of tobacco use. Cigarette smoking is a pandemic that negatively affects users' health, increases healthcare costs and utilization, is economically inefficient, and negatively impacts the lifestyle of its users. In conclusion, nurses have the opportunity to impact these national and global efforts by educating patients in quitting and helping to prevent the initiation of smoking.
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Smoking and Pregnancy: How You Can Quit

How is smoking harmful to my baby during pregnancy?

Smoking while pregnant increases your risk of:

- Miscarriage
- Pregnancy growing outside the womb
- Your baby dying in the womb or shortly after birth
- Your baby being born with abnormalities such as cleft lip or cleft palate
- Small size or baby; low birth weight
- Premature birth
- Sudden infant death syndrome

What are the benefits to quitting?

When you stop smoking:

- You reduce your chance of the risks listed above from occurring
- Your baby will get more oxygen
- You will have more energy and breathe easier
- Your clothes, hair, and home will smell better
- Your food will taste better
- You will have more money to spend on other things

Resources to help you Quit:

- Free coaching and free quit plan: 1-800-QUIT-NOW
How is smoking near my baby harmful?

*Secondhand smoke can cause:*
- Sudden infant death syndrome
- Ear infections
- Coughs and colds
- Pneumonia, bronchitis, and asthma
- Tooth decay
- Poor lung development
- Lung cancer and heart disease

How can I protect my baby from secondhand smoke?

*You can protect your child by creating a smoke-free environment:*
- Set an example by quitting
- Remove your children from places where smoking is allowed
- Make your home smoke-free
- Make your car smoke-free
- Choose a babysitter who doesn’t smoke
- Encourage tobacco-free daycare and schools
- Ask people not to smoke around you or your children
Appendix C

RESEARCH @ EMU

UHSRC Determination: EXEMPT
DATE: May 20, 2016
TO: Isabelle McCormack
    Department of Nursing
    Eastern Michigan University
Re: UHSRC: # 892904-1
Category: Exempt category 2
Approval Date: May 20, 2016
Title: Changing the Social Norm: Smoking Bans

Your research project, entitled Changing the Social Norm: Smoking Bans, has been determined Exempt in accordance with federal regulation 45 CFR 46.102. UHSRC policy states that you, as the Principal Investigator, are responsible for protecting the rights and welfare of your research subjects and conducting your research as described in your protocol.

Renewals: Exempt protocols do not need to be renewed. When the project is completed, please submit the Human Subjects Study Completion Form (access through IRBNet on the UHSRC website).

Modifications: You may make minor changes (e.g., study staff changes, sample size changes, contact information changes, etc.) without submitting for review. However, if you plan to make changes that alter study design or any study instruments, you must submit a Human Subjects Approval Request Form and obtain approval prior to implementation. The form is available through IRBNet on the UHSRC website.

Problems: All major deviations from the reviewed protocol, unanticipated problems, adverse events, subject complaints, or other problems that may increase the risk to human subjects or change the category of review must be reported to the UHSRC via an Event Report form, available through IRBNet on the UHSRC website.

Follow-up: If your Exempt project is not completed and closed after three years, the UHSRC office will contact you regarding the status of the project.

Please use the UHSRC number listed above on any forms submitted that relate to this project, or on any correspondence with the UHSRC office.

Good luck in your research. If we can be of further assistance, please contact us at 734-487-3090 or via e-mail at human.subjects@emich.edu. Thank you for your cooperation.

Sincerely,
Sonia Chawla, PhD
Research Compliance Officer
Appendix D

Survey Questionnaire

1. The introduction of the recent anti-smoking legislation has forced smokers to reduce the number of cigarettes they smoke?

2. The introduction of the recent anti-smoking legislation has reduced your exposure to passive smoking?

3. The current legislation is likely to create a healthier environment?

4. Everyone has the right to smoke if they wish to smoke in public places?

5. Government has fulfilled its duty by making anti-smoking legislation?

6. More implementation and advertisement is needed for current anti-smoking legislation?

7. The introduction of sign-boards (public place warnings) of anti-smoking legislation will be helpful? (e.g. No smoking)

8. Do you believe that second hand smoke is a serious threat to health?

9. Are you avoiding public places because of smoke?

10. Are you bothered by other people smoking in public places (workplace, buses, trains, bus/railway stations, market yard)?

11. It is right to ban smoking in public places
Dear student or faculty member,

My name is Isabelle McCormack, and I am in my senior year at Eastern Michigan University pursuing my Bachelor of Science in Nursing (BSN). I am interested in studying the effects of smoking bans in public places, such as a college campus. As part of my undergraduate research for my honors senior thesis, I am surveying students and faculty regarding their perceptions of the recent smoking ban on campus.

This email is to get assistance in recruiting current faculty, staff, and students at the university for participation in an online survey to determine the effects of the tobacco ban on campus. The value of the research will help determine the impact this policy has on smoking rates among students, on campus, and in the surrounding community. The data will then be used to determine whether smoking bans are effective in lowering smoking rates. The survey will be completely confidential and should not take longer than 5-10 minutes to complete.

To take the survey, go to: (Link to Survey Monkey survey)

Thank you for your time in reading this email and considering taking my survey!

Sincerely,

Isabelle McCormack
Appendix F

Informed Consent Form:

I am conducting a survey on student and faculty perceptions of the recent tobacco ban on the university campus. The purpose of this research study is to determine the perceptions of the tobacco ban at a Midwest college campus and whether smoking bans are effective in lowering smoking rates among students/staff/faculty, on campus, and in the surrounding community. Your voluntary participation is requested, so I may learn more about the thoughts of students and faculty regarding smoking use at the university following a campus-wide tobacco ban. The online questionnaire consists of multiple-choice questions and will take approximately 5-10 minutes to complete.

Your name will not be recorded on the questionnaire, and your response will be anonymous. Data collected will be stored in a password-protected computer and will be deleted by January 2017. We will make every effort to keep your information confidential, however, we cannot guarantee confidentiality. The results of this research may be published or used for teaching. Identifiable information will not be used for these purposes. Aggregate data will be recorded. No individual data will be presented. A potential benefit to this study would be gaining access to resources online and through Eastern Michigan University to aid in smoking cessation listed at the completion of the survey.

The risks involved are minimal. The primary risk of participation in this study is the potential for negative emotions or reactions for those in favor or against smoking bans, those who may have lost someone due to the negative health effects of smoking, or current or former smokers in regards to quitting. Some of the survey questions are personal in nature and may make you feel uncomfortable. You do not have to answer any questions that make you uncomfortable or that you do not want to answer. If you should experience psychological or emotional stress, services are available at Snow Health Center (734-487-1122).

Again, participation in this research study is your choice, and you may choose not to answer all of the questions on the questionnaire even after signing the consent. If you choose to withdraw from the study, you may withdraw your responses at the end of the survey before submitting. If you leave the study, the information you provided will be kept confidential. However, we cannot destroy any information that has already been published.

If you have any questions about the research, you can contact the Principal Investigator, Isabelle McCormack at imccorma@emich.edu. You can also contact Isabelle McCormack’s adviser, Julie Slack, at js1ack3@emich.edu or by phone at 734.487.3277. For questions about your rights as a research subject, contact the Eastern Michigan University Human Subjects Review Committee at human.subjects@emich.edu or by phone at 734-487-3090.