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Evaluation of the N-O-T Program for Smoking Cessation Among High School Students

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This is to certify that the doctoral study by

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Walden University
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Abstract

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Project Submitted in Partial Fulfillment

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Abstract

Adolescents and young adults use more tobacco than all other adults, yet the percentage of this younger population eventually quitting the use of tobacco is lower. There is little evidence-based research to support adolescent smoking cessation programs. Using social learning theory (SLT) and the stages of change model, the purpose of this project was to evaluate the effectiveness of the Not-On-Tobacco (N-O-T) program, an evidence-based adolescent smoking cessation program, in reducing or preventing the number of cigarettes smoked by high school boarding students and to evaluate how best to individualize the program for this high school going forward. The DNP questions were asked to see to what extent the N-O-T program would reduce the prevalence of student smoking and what changes to the current program curriculum should be made to tailor the program to this particular high school. Pre- and post survey data were obtained from 10 students 15-17 years of age enrolled in the N-O-T program for violating the campus' tobacco-free policy. A secondary data analysis using paired samples *t* test did not determine a statistically significant effect on smoking cessation in this small population of students. The findings did show a significant positive correlation between those who found the program "very helpful" and a decrease in the number of cigarettes smoked pre- and post program. Content analysis of student data resulted in recommendations to modify the program to make it more effective for this school. Awareness of interactions and relationships with others and successfully dealing with social changes through a program like the N-O-T program will lead to increased life-long health benefits, decreased medical costs, and lost productivity associated with tobacco use. School nurses are in an ideal position to implement a successful smoking cessation program.

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Dedications

To Grant, Logan, and Jack. Without your continuous love and support I never would have accomplished my dream of finishing my doctoral degree…the 2nd time around. I love you all so very much.

To my friend and mentor, Dr. Margaret Faut-Callahan. I made it!

To Donna and Sonny. Thank you for teaching me the importance of education.

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Section 1: Nature of the Project

Introduction

Tobacco use is the most preventable cause of disease, morbidity, and mortality in the United States (Healthy People 2020, 2011; U. S. Department of Health & Human Services [HHS], 2015). Tobacco harms nearly every organ of the body and causes cancer, lung disease, and heart disease; it results in more deaths annually than drug and alcohol use, human immunodeficiency virus (HIV), motor vehicle collisions, suicide, and murders combined (Healthy People 2020, 2011; HHS, 2015). Tobacco also has other negative health effects, including cosmetic changes, such as yellowed teeth and premature wrinkles, and a weakened immune system (HHS, 2015). The World Health Organization (WHO) estimated that tobacco-related deaths will account for almost 10 percent of all deaths globally by 2030 (Healthy People 2020, 2011).

Person, place, and time are the most common variables that may influence lifestyle, behavior patterns, access to healthcare, and have an impact on development of disease (Friis & Sellers, 2014). Characteristics of persons may be described by age, gender, marital status, race and ethnicity, nativity and migration, religion, and socioeconomic status. Types of place comparisons include international, within-country variations, urban and rural differences, and localized occurrences. Time characteristics may be described in terms of cyclic or seasonal trends, secular time trends, and clustering (Friis & Sellers, 2014). While there are many factors influencing an adolescent's decision to use tobacco products, certain characteristics within each of the variables of person, place, and time increase the probability that an adolescent will smoke. These

characteristics include: age, gender, ethnicity, geographical location, educational attainment, and experiencing stressful life events (HHS, 2015).

According to the Centers for Disease Control and Prevention (CDC; 2014a), smoking is primarily initiated and established during adolescence. The WHO (2016) defines adolescents as "young people between the ages of 10 and 19" (para.1). The incidence of smoking initiation is higher among younger adolescents, while the regular use of tobacco is higher among older adolescents (O'Loughlin, Karp, Koulis, Paradis, & DiFranza, 2009). Men use more tobacco in a day, use tobacco with a higher nicotine content, and inhale more deeply when smoking cigarettes than women (Substance Abuse and Mental Health Services Administration, 2011). Multiethnic, American Indian, and Alaskan Natives are more likely than any other ethnicity to smoke cigarettes, while White adolescents are more likely to smoke than Black or Hispanic adolescents (HHS, 2015; SAMHSA, 2011). Smoking cigarettes is more prevalent in the Midwest (24.8%) and South (24.1%) than in the Northeast (22.2%) and West (20%; HHS, 2015; SAMHSA, 2011). Additionally, the rate of smokers in non-metropolitan areas is 26%, as opposed to 21.7% in large metropolitan areas (HHS, 2015; SAMHSA, 2011). Individuals are less likely to smoke the more education they and their parents have attained (HHS, 2015; SAMHSA, 2011). Finally, the number of stressful events experienced in childhood, such as being a victim of abuse, experiencing parental separation, or having a family member who is mentally ill, is linked to an earlier smoking initiation age (HHS, 2015; O'Loughlin, et al., 2009).

Problem Statement

Approximately 5.6 million youth under the age of 18 are projected to die prematurely from a smoking-related illness if smoking persists at the current rate (CDC, 2014a). Youth who smoke are more likely to engage in other risk-taking behaviors, such as fighting, marijuana use, drinking, and having sex with multiple partners (HHS, 2015). While the long-term effects of e-cigarettes are not yet known due to the relative newness of the product, they are not harmless (HHS, 2015). E-cigarettes have been found to contain the same chemical ingredients as cigarettes and adverse short-term effects include headaches, respiratory irritation, and decreased appetite (HHS, 2015). It is imperative that attempts to prevent and reduce youth smoking continue and the demand for effective youth smoking cessation interventions is growing (CDC, 2004; HHS, 2015).

The Colorado Department of Public Health & Environment (CDPHE) published results of tobacco use among youth in Colorado in 2015 (CDPHE, 2017). Twenty percent of youth had smoked a cigarette at least once in their lifetime and 9% had smoked a cigarette at least once in the last 30 days (CDPHE, 2017). In Western Colorado, where this study took place, 9.1% to 10.7% of students had smoked a cigarette at least once in the past 30 days (CDPHE, 2017).

In 2000, the Youth Tobacco Cessation Collaborative (YTCC) developed the *National Blueprint for Action: Youth and Young Adult Tobacco-Use Cessation* in an effort to guide discussion on tobacco cessation among youth. However, the publication concluded that more research regarding effective strategies and programs for youth must be conducted first, and instead outlined goals to address this knowledge gap (CDC, 2004). As a result, representatives of the CDC, the Canadian Tobacco Control Research

Initiative (CTCRI), the United States National Cancer Institute (NCI), and the American Legacy Foundation (Legacy) came together to assess current initiatives to help youth quit using tobacco and sought to identify best practices (CDC, 2004). Again, the members found that, of 66 published studies on youth tobacco cessation and reduction, most did not allow conclusive recommendations to be made, and more evidence was needed. Because the members felt that immediate guidance on youth smoking cessation was needed they sought to recommend "better" practices. The result was the publication entitled *Youth Tobacco Cessation: A Guide for Making Informed Decisions* (CDC, 2004). The publication outlines the effect of tobacco-use on youth as well as important decisions to be made when helping youth in their effort to quit. These decisions include: assessing current tobacco prevention and control efforts, determining the organization's role in tobacco control, assessing community needs and the organization's commitment and capacity, determining the appropriate intervention, and evaluating efforts (CDC, 2004).

More research is needed to demonstrate the effectiveness of adolescent smoking cessation programs. This project is significant in determining whether the N-O-T program will be a useful program for school nurses to implement among adolescent high school students.

Purpose

Almost 90% of smokers started smoking by the age of 18, and 23.3% of high school students currently use tobacco products (CDC, 2014a). While tobacco use among adolescents has declined in the past 40 years, almost 1 in 15 high school seniors admitted to being a daily smoker in 2014 (HHS, 2015). Additionally, the use of e-cigarettes has doubled from 2011 to 2012 (CDC, 2014a).

School nurses interact with students on a daily basis. They were first introduced in the school setting in the late 1800s, and were responsible for decreasing school absenteeism, monitoring vaccinations, and preventing the spread of communicable diseases (Institute of Medicine, 2011). In recent years, school nurses have seen significant changes in student acuity requiring increased skilled nursing care during school hours (IOM, 2011; National Association of School Nurses, 2015). This increase in acuity is the result of medical advancements that have increased survival rates among those with neurological deficits and cognitive delays, cancer, and congenital heart disease; a significant increase in chronic health conditions, such as asthma, diabetes, seizure disorders, bleeding disorders, genetic conditions, and severe allergic reactions; an increase in the number of mental health disorders, including a rising incidence of autism, addictive behaviors, anxiety and depression, and violent behaviors; and a rise in factors related to social influences, such as poverty and limited access to healthcare (IOM, 2011; NASN, 2015). School nurses act as care providers, educators, counselors, consultants, and advocates to students, families, and communities (Selekman, 2013), putting them in an ideal position to promote smoking cessation among adolescents.

The purpose of this project was to perform a secondary data analysis to evaluate the effectiveness of an evidence-based adolescent smoking cessation program in reducing or preventing the number of cigarettes smoked by high school students and to evaluate qualitative data to determine how best to individualize the N-O-T program to address violations of the smoking policy on campus going forward. The evidence-based project questions were: “Among high school students, to what extent does a school-based adolescent smoking cessation program reduce the prevalence of student smoking” and

"What changes to the current N-O-T program curriculum should be made to tailor the program to this particular high school"?

Nature of the Doctoral Project

I was employed as the director of health services for a college preparatory boarding and day school in Colorado for students in Grades 9 through 12 during the 2014-2015 school year. While serving in this position, the dean of students and I discovered that a number of students consistently violated the tobacco-free policy on campus. After researching several options for alternative programs, the decision was made by the headmaster, the dean of students, and I to implement an adolescent, evidence-based smoking cessation program. Consequently, all students caught violating the tobacco-free policy were enrolled in the N-O-T program (ALA, 2014) during my time as the director of health services.

As part of the N-O-T program (ALA, 2014), students completed an "About Me" pre- and postsurvey designed by the American Lung Association (ALA; ALA, 2014) prior to and after implementation of the smoking cessation program. The group also provided input as to what did and did not work after each session, as well as the overall program, which was recorded by me in my role as the director. The primary objectives of the project were to determine: a) the extent to which the program reduced the prevalence of student smoking and b) what changes to the current curriculum should be made to tailor the program to this particular high school.

I collected the data during the program while serving in my position as the director of health services. I conducted a secondary analysis of the data at a later date in my role as the doctor of nursing practice (DNP) student, after having left my position as

the director of health services. I used paired *t*-tests to determine significance of quit rates. Students were asked to rate how helpful the N-O-T program (ALA, 2014) was in helping to quit smoking as "not helpful," "somewhat helpful," or "very helpful." Finally, I recommended strategies to improve the program for this school going forward based on the themes identified from my notes about what did and did not work throughout the program. As the director of health sciences I was hoping that individualizing the program for this school would increase participation in the program moving forward; I was not looking to achieve statistical significance. It is unknown whether the nurse who took over my position as the director of health services continued using the N-O-T program (ALA, 2014) for violations of the smoking policy.

I assumed that during the N-O-T program (ALA, 2014) the students would actively participate and be honest in their responses to questions and survey responses. Several limitations to the project existed: a) the ALA suggests that no more than 10 students participate in the program at one time; therefore, the sample size is known to be small and the ability to generalize findings is limited; b) since students are not given the option of attending the N-O-T program, they may not be in the appropriate stage of change to effect a change in their behavior; and c) self-report data is obtained without biochemical validation; therefore, the results rely on the memory and honesty of the individual students.

Significance

As the director of health services at the high school, I was in an ideal position to identify youth using tobacco and to provide them with access to a smoking cessation program. The headmaster, dean of students, and I decided to implement an adolescent,

evidence-based smoking cessation program—the N-O-T program (ALA, 2014). Students were included as stakeholders a) as their health would ultimately be affected, and b) in making decisions as to which portions of the program did and did not work and how the N-O-T program (ALA, 2014) would be individualized for this particular high school going forward. Additional research regarding adolescent smoking cessation programs is needed and school nurses are in an ideal position to promote smoking cessation among adolescents (Selekman, 2013).

A Surgeon General report in 2012 found that over $27 million a day was spent on advertising and promotion of tobacco products in the United States (HHS, 2015). If evidence-based youth smoking cessation interventions were implemented, the Surgeon General estimated that smoking would decline by more than 50% in high school students by 2020 (HHS, 2015). Comprehensive, well-funded programs that prevent or reduce tobacco use among youth are shown to save lives and money (Campaign for Tobacco-Free Kids, 2015). Florida reported that its high school smoking rate in 2015 fell to just below 7%, far below the national rate; California reduced lung cancer rates four times faster than other states in the country; and a 2011 study in Washington state found that for every dollar spent during the first 10 years of its programs, five dollars in tobacco-related hospital costs were saved (Campaign for Tobacco-Free Kids, 2015). The social impact of eliminating youth smoking includes increased health benefits; decreased risk-taking behaviors and the consequences of those actions; and a cost-savings not only to the individual, but also to society as a whole. According to the CDC (2012), “coupled with this enormous health toll is the significant economic burden of tobacco use—more than $96 billion a year in medical costs and another $97 billion a year from lost productivity”

(para. 4). Promoting smoking cessation among high school students can improve the lives of students by improving lung health and lung disease.

Summary

Tobacco use is a preventable cause of disease, morbidity, and mortality. Smoking is primarily initiated and established during adolescence. Youth who smoke are also more likely to engage in other risk-taking behaviors (HHS, 2015). While efforts have been made to prevent tobacco use among youth, more research regarding effective strategies and programs for youth must be conducted first. School nurses are in an ideal position to promote smoking cessation and assist individuals to achieve success. In the following section, I will address concepts, models, and theories relative to the N-O-T program, relevance of the project to nursing practice, local background and context, and my role in the study.

Section 2: Background and Context

Introduction

While adolescents and young adults use more tobacco than all other adults combined, there is little evidence-based research to support adolescent smoking cessation programs. The purpose of this project was to evaluate the effectiveness of an evidence-base adolescent smoking cessation program in reducing and preventing the number of cigarettes smoked by high school students and to determine how best to individualize the N-O-T program (ALA, 2014) to address violations of the smoking policy at this particular high school going forward. The evidence-based project questions were: Among high school students, to what extent does a school-based adolescent smoking cessation program reduce the prevalence of student smoking? What changes to the current N-O-T program curriculum should be made to tailor the program to this particular high school? In this section, I will address concepts, models, and theories relative to the N-O-T program, relevance of the project to nursing practice, local background and context, and my role in the study.

Concepts, Models, and Theories

Theory is important in guiding research because it provides a foundation on which to build nursing practice. The most common way to incorporate a theory into research studies is by using the theory as a framework for the entire study (Grove, Burns, & Gray, 2013; McEwen & Wills, 2014; Zaccagnini & White, 2011). The N-O-T program (ALA, 2014) is based on two theories of behavioral change: the social learning theory (SLT; Bandura, 1977) and the transtheoretical (or stages of change) model (Hodges & Videto, 2011; Prochaska & DiClemente, 1983; White & Dudley-Brown, 2012). There is little

evidence-based research to support adolescent smoking cessation programs, including theory in relationship to programs; however, interventions that focus on cognitive-behavioral strategies have been shown to improve outcomes (ALA, 2014).

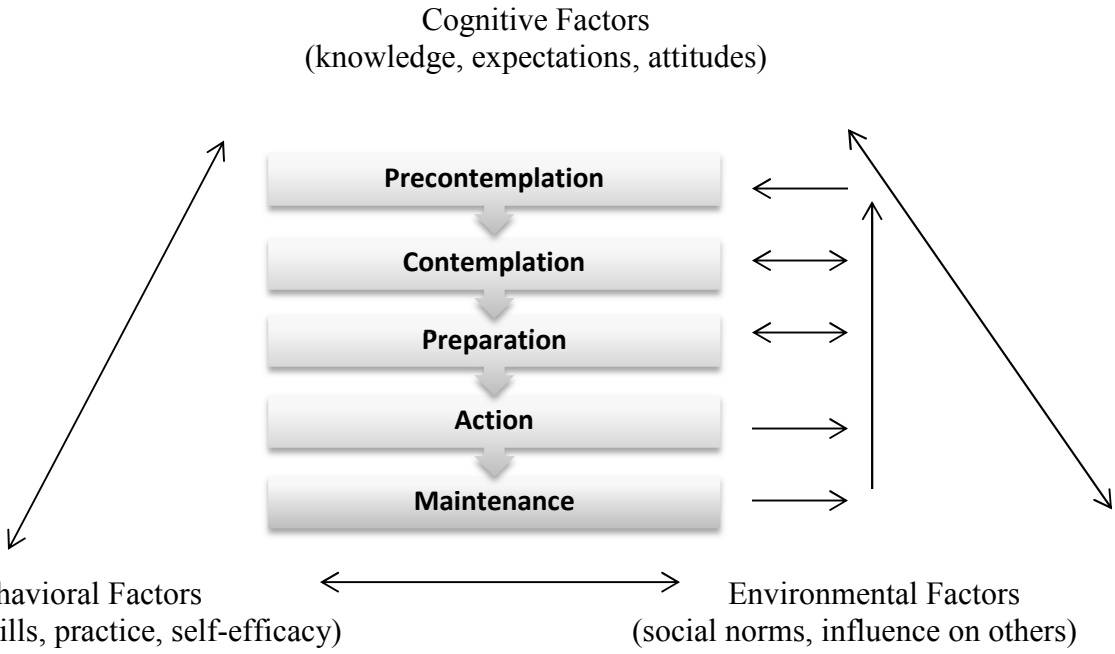
SLT integrates behavioral and cognitive theories of learning (Bandura, 1977). SLT describes how people learn from one another through observation, imitation, and modeling of behaviors, attitudes, and outcomes of those behaviors. Bandura (1977) outlined three types of modeling: live models, verbal instruction, and symbolic models such as books and videos. Conditions that are necessary for effective modeling to occur include attention, retention, reproduction, and motivation (Bandura, 1977). SLT explains how people acquire and maintain behavior in terms of continuous reciprocal interaction between three factors: cognitive, behavioral, and environmental influences. Cognitive factors, also referred to as personal factors, include knowledge, expectations, and attitudes. Behavioral factors include skills, practice, and self-efficacy. Finally, environmental factors include social norms and influence on others or the ability to change one's own environment. As one variable is affected, each of the other two factors is changed (Bandura, 1977). The N-O-T program (ALA, 2014) integrates all of these concepts to help students identify reasons for smoking, develop skills to resist peer pressure, develop accurate social norms about smoking, analyze their own smoking behavior, understand immediate consequences of continued smoking, and use role modeling to demonstrate healthy behaviors.

The stages of the change model tell us that behavior change is not a single event, but a process (Hodges & Videto, 2011; Prochaska & DiClemente, 1983; White & Dudley-Brown, 2012). As one transitions through this process, five stages of change are

encountered: precontemplation, contemplation, preparation for action, action, and maintenance (Hodges & Videto, 2011; Prochaska & DiClemente, 1983; White & Dudley-Brown, 2012). In the precontemplation stage, the individual is in denial and does not acknowledge that a problem exists. The contemplation stage brings about ambivalence and the individual identifies that there may be a problem. During preparation for action, the individual is motivated to change behavior. The action stage is when the individual engages in change. Finally, the maintenance stage is when the individual is living with the change and behavior must be reinforced to maintain the change (Hodges & Videto, 2011; Prochaska & DiClemente, 1983; White & Dudley-Brown, 2012). Bringing awareness of the stages of change through the N-O-T program (ALA, 2014) is another useful element to help youth as they try to change their smoking behavior.

The following diagram illustrates how the N-O-T program (ALA, 2014) identifies the series of stages an individual goes through when trying to bring behavioral changes into their life (see Figure 1). The individual could move through the stages of change (precontemplation, contemplation, preparation, action, and maintenance) or they may revert to previous stages at any time, e.g.. a teen may quit smoking and then start smoking again. The three factors of SLT, including cognitive, behavioral, and environmental influences, are all seen as influences surrounding and impacting the students as they move through the process of behavior change. Students learn through their own experiences as well as observing the actions of others and the results of those actions. How they react to these influences can also affect how they move through the stages of change. It is important to remember that change is a process and not a single event.

Figure 1. Social Learning Theory (SLT) and the Stages of Change Model and Their Impact on Bringing About Behavioral Change in Individuals



Adapted from Resource Center for Adolescent Pregnancy Prevention (2016), and American Society on Aging and American Society of Consultant Pharmacists Foundation (2012).

Relevance to Nursing Practice

I used the following electronic databases to obtain sources for the literature review: Cochrane Database of Systematic Reviews (CDSR), Cumulative Index to Nursing & Allied Health Literature (CINAHL) Plus with Full Text, MEDLINE with Full Text, ProQuest Nursing & Allied Health Source, PsycINFO, and PubMed. In addition, I examined bibliographies of relevant articles reviewed to locate articles not found during the initial search. Search terms included *tobacco OR smoking OR cigarette*, *cessation program OR prevention program*, and *adolescents OR teens*. Studies were limited to

smoking cessation interventions performed in the adolescent population within the United States between 2000 and 2016.

A meaningful smoking cessation program necessitates evidence-based research that demonstrates the effectiveness of the program. However, rigorous scientific studies regarding the effectiveness of youth smoking cessation are limited (CDC, 2004; Curry et al., 2013). While there are greater than 8,700 studies related to adult smoking cessation programs, there are less than 50 experimental studies, and even fewer randomized controlled studies in the youth population (Curry et al., 2013). Youth is defined by the WHO as young people between 10 and 24 years of age (WHO, 2011). One possible explanation for the limited research conducted among the youth population is that many are minors, making this a vulnerable population; research with adolescents (aged 10-19 years) may be even further limited due to an even greater number of minors within this age group.

Patten et al. (2006) randomized 139 adolescent smokers from Minnesota, Wisconsin, and Connecticut to one of two intervention groups: a clinic-based, brief office intervention (BOI) group (n = 69) or a Stomp Out Smokes (SOS) Internet-based intervention group (n = 70). The BOI consisted of four consecutive, weekly, individual counseling sessions, lasting between 10 and 40 minutes. The counselor used motivational interviewing to encourage the adolescent to use new techniques taught during the session and to reinforce any progress or efforts made by the adolescent toward abstinence. Specific homework assignments were given with each session. The SOS intervention was an Internet, home-based intervention that adolescents could access 24 hours per day, 7 days per week, for up to 24 weeks. The SOS included interactive services, such as private

journaling, quizzes, quit plans and quit notes, private electronic mail service to ask personal questions of experts, and group electronic mail as well as information services, such as up-to-date information on smoking, the health effects of smoking, smoking cessation, dealing with withdrawal symptoms, and enlisting support to deal with relationships and feelings. Clinic-based assessments were performed in-person at weeks 0 (baseline), 4, 8, 12, 24, and 36. The quit rates for BOI and SOS were 12% and 6% respectively at week 24, and 13% and 6% respectively at week 36, with no significant differences found. The BOI had high session attendance, while SOS use fell below one-third of participants by week 3. There was no mention of long-term effects, and the authors concluded that face-to-face interaction is more effective in helping teens to quit smoking and more research is needed to identify uses of Internet-based interventions.

Woodruff, Conway, Edwards, Elliott, and Crittenden (2007) performed a longitudinal study of 136 high school students in San Diego County to determine the effect of an Internet virtual world chat room on adolescent smoking cessation. Seventy-seven students in the experimental group participated in seven 45-minute real-time virtual world sessions over a 7-week period combined with motivational interviewing by a smoking cessation counselor and completed four online surveys; 59 students in the control group completed four online surveys. The surveys were completed at baseline, after the intervention, 3 months post intervention, and 12 months post intervention. The virtual world sessions allowed the participants to see each other as 3-dimensional figures on their computer screens, move around in the virtual world, and have live discussions. The virtual world contained various areas, such as a pathology laboratory where pictures of the health effects of smoking were presented, an art gallery which prompted discussion

on the effects of tobacco advertising, a pharmacy which allowed users to identify pharmacological aids to quit smoking, and a teen dance club and fast food restaurant where social influences were discussed. While chatting with students, the smoking cessation counselor used motivational interviewing techniques. Students participating in the experimental group were significantly more likely in the immediate post-intervention assessment period than those in the control group to quit smoking in the previous week, smoke fewer days in the previous week, smoke fewer cigarettes in the past week, and consider themselves a former smoker. At 12-month follow-up, however, only the number of times each student quit was significant. Weaknesses of the study included: groups differed significantly at baseline due to recruitment strategies, high attrition rate, and no objective validation of smoking or quitting. The authors concluded that a real-time Internet chat room may be an appealing and effective method for smoking cessation in the short term.

In 2008, Fritz, et al. used a quasiexperimental design to test the effect of a Computerized Adolescent Smoking Cessation Program (CASCP) on smoking among 121 high school students. Sixty-one students completed the four 30-minute CASCP sessions; the remaining 60 students served as the control group. The participants were primarily White, with 90.2% in the experimental group and 95% in the control group. The CASCP program consisted of video clips, audio clips, and animated figures to address nicotine addiction and the harmful effects of smoking as well as methods to combat the urge to smoke. Pre- and post survey information was obtained regarding smoking history and exposure, smoking dependence, social support, and stage of change. The experimental group completed the surveys at baseline, immediately following the intervention, and 1

month post intervention, the control group completed the surveys at baseline and 4 to 5 weeks later. The experimental group demonstrated a quit rate of 23.1% at one-month follow-up, which was significantly greater than the 5% quit rate of the control group. Additionally, the authors noted that students who did not quit smoking in both groups were able to decrease the number of cigarettes smoked daily. The authors reported their findings are consistent with those reported by the N-O-T program.

Richardson (2008) implemented a community-based intervention program in an effort to address smoking prevention and cessation among 12- to 16-year-old black youth in a Delaware community. Twenty-seven youth participated in the 12-week program, consisting of 36 hours of instruction with 30- and 60-day follow-ups. Youth participated in group discussions, peer learning, problem solving, role-playing, focus groups, computer interactive programs, and lectures. Outcomes were measured during group and one-on-one interviews, pretest-posttest surveys, end of unit evaluations, and the 30- and 60-day follow-ups. Of significance, no data or findings regarding outcomes were reported. The author concluded, "this program demonstrated the importance of early smoking cessation and prevention for youths" (p. 154).

In 2008, Hoffman et al. performed a randomized study of seven schools in Montgomery County, Maryland to evaluate the effectiveness of the Adolescent Smoking Cessation Escaping Nicotine and Tobacco (ASCENT) program in teens aged 14 to 18 years. Three schools (n = 61) were included in the ASCENT intervention group; four schools (n = 44) were in the control group. The ASCENT group attended six 1-hour group sessions provided once a week for 6 weeks. Sessions were didactic and included group discussions, role-playing, and interactive games. Workbooks were provided and

included worksheets, homework assignments, and room for note taking. The primary outcomes of interest were: smoking behavior, withdrawal symptoms, nicotine dependence, stage of change, and saliva cotinine level. Data were collected at baseline, after the intervention, 30-days post-intervention, and 12-months post-intervention. The results indicated a significant difference in number of students smoking daily 12-months post-intervention, 67% in the intervention group and 42% in the control group. The number of students in the intervention group smoking fewer cigarettes overall was also significantly less. The authors concluded that it is possible to reduce adolescent smoking with supportive interventions.

Stanton and Grimshaw (2013) evaluated 28 studies involving approximately 6000 participants less than 20 years of age to determine the effectiveness of strategies to promote smoking cessation among youth. Interventions varied and were based on the stages of change model, some form of motivational enhancement, use of the Internet or computers to deliver part of the intervention, pharmacological interventions, and cognitive behavioral techniques. The primary outcome was smoking status after 6 months. Those trials based mainly on the stages of change model and motivational enhancement achieved the most success. The N-O-T program did not demonstrate statistically significant findings during six individual trials; however, overall effectiveness of the trials taken together did reveal significant findings. Those trials based on cognitive behavioral therapy and pharmacological interventions did not detect significant effects.

Park and Drake (2015) performed a systematic review of 12 articles involving 10,016 students between 11 and 23 years of age to determine the characteristics and

effects of internet-based programs on youth smoking prevention and cessation. The authors noted that due to the number of theoretical frameworks, diverse populations, different interventions, frequency times, duration times, intensity, and study designs used the results were difficult to compare. The results indicated varying levels of effectiveness (quit rates ranging from 1% to 40%). However, the authors went on to conclude that use of the Internet could be a promising tool in developing smoking cessation programs.

Local Background and Context

West Virginia had the highest incidence of teen smoking in the United States in the mid-1990s. As a result, West Virginia University Prevention Research Center (PRC) partnered with state public health agencies to develop a program that could be implemented in schools statewide to strengthen smoking cessation interventions for teens (CDC, 2014b; Franks et al., 2007). After 1995, the ALA was included in the partnership, bringing a national presence to the efforts. The program adopted the youth-friendly name, Not-On-Tobacco (N-O-T; CDC, 2014b; Franks et al., 2007).

Several studies of the efficacy of the N-O-T program were performed in the late 1990s and early 2000s. Dino el al. (2001a) compared two "matched" study groups in Florida. Ten schools were enrolled in the N-O-T program and then a brief intervention (BI) school was matched to each of the N-O-T schools based on school location, student population, student-teacher ratio, race and ethnicity, economic status, and tobacco policy violations. The BI groups received 10 minutes of scripted smoking cessation advice and self-help brochures. The findings indicated that a greater percentage of N-O-T participants than BI participants quit smoking, however, the results were not statistically significant; on the other hand, the number of N-O-T female participants who quit

smoking was statistically significant. A continuation study by Dino et al. (2001b) matched a total of 20 N-O-T schools with 20 BI schools in Florida and West Virginia. Overall, the quit rates for both groups of participants were significantly different, and again, girls were significantly more likely to quit smoking. The N-O-T program had a significant impact on reduction rates and weekend smoking rates over the BI group. The total number of participants in the study was not identified, and participants who quit for one day, as opposed to the conventional 7- or 30-day period, are considered smoke-free.

Horn, Fernandes, Dino, Massey, and Kalsekar (2003) also compared use of the N-O-T program and BI on 365 Florida and West Virginia students to determine the effectiveness of smoking cessation in adolescents with varying levels of nicotine dependence. Nicotine dependence was determined using the Fagerstrom Tolerance Questionnaire as well as positively correlating the number of cigarettes smoked per day with duration of smoking. Dependence scores between the two groups were not significantly different at baseline. The findings indicated that the BI intervention was effective for low-dependent smokers; the N-O-T program was effective for those smokers possessing a range of nicotine dependence.

In 2006, Mermelstein and Turner performed a randomized, two-arm trial to compare the effectiveness of the N-O-T program used alone to the N-O-T program combined with three adjuncts (N-O-T Plus). Twenty-nine high schools throughout Illinois were recruited with 170 students randomized to the N-O-T program, and 181 students randomized to the N-O-T Plus program. The majority of students were White (74.4%) and female (53.8%). The N-O-T program was taught in 10 weekly sessions. The three adjuncts of the N-O-T Plus program included: up to five facilitator-initiated phone

calls to participants, lasting only a few minutes to provide students with emotional support; access to the Not Hooked Website, which was developed specifically for teens trying to quit smoking; and access to the ALA quit line. Survey data were obtained at baseline, at the end of the 10-week sessions, and 3-months after the sessions were completed. The N-O-T Plus program demonstrated a marginally significant effect (p = .06) over the N-O-T program in 7-day quit rates, and a significant effect ($p < .05$) at 3-months. The authors do report that few participants used the ALA quit line (5 total), and the facilitator-initiated phone calls had no significant effect on quit rates. The authors went on to conclude that a Web-based adjunct to the N-O-T program weekly sessions may be of benefit. Future research is needed to explore this option.

In 2008 Kohler, Schoenberger, Beasley, and Phillips performed an effectiveness study of the N-O-T program. A total of 492 Alabama high school students were recruited to participate, 241 participants in the N-O-T group and 251 in the comparison group. The study did not describe the comparison group intervention. Significant differences between the two groups were noted at baseline: the percentage of previous cessation attempts and those students who expected to quit smoking in 6 months were significantly lower in the comparison group, and the comparison group had a significantly higher number of males. The findings indicated an increased quit rate at the end of the program by those enrolled in the N-O-T program; however, there were no statistically significant differences at 7- or 30-days.

Branstetter, Blosnich, Dino, Nolan, and Horn (2012) sought to identify gender differences in six categories previously found to influence smoking cessation in adolescents: (1) history of smoking, (2) readiness to quit, (3) social influences, (4)

smoking cessation support, (5) nicotine dependence, and (6) attitude toward smoking. The participants were 755 teens who participated in a N-O-T program in one of five states (New Jersey, West Virginia, Florida, North Carolina, and Wisconsin) between 1998 and 2009. The findings indicated that females are more likely to be surrounded by friends or loved-ones who smoke, believe they will receive support for smoking cessation, and less likely to have motivation and confidence to quit smoking if they have a parent who smokes. Males are less likely to have motivation, confidence, and ability to quit smoking if they have a friend who smokes.

The CDPHE published results of tobacco use among youth in Colorado in 2015 using the Healthy Kids Colorado Survey (CDPHE, 2017). The survey is a tool used to better understand the health of middle and high school students in Colorado (CDPHE, 2017). At the time the survey was taken, the demographic breakdown of cigarette smokers in the last 30 days were found to be 9% male and 8% female; 13% multiracial youth, 12% American Indian, 10% Pacific Islander, 8% White, 8% Hispanic, 6% Asian, and 5% black; and 22% bisexual youth, 18% youth not sure of gender identity, 15% gay or lesbian, and 7% heterosexual. Twenty percent of youth had smoked a cigarette at least once in their lifetime and 9% had smoked a cigarette at least once in the last 30 days. In Western Colorado, where the high school in this study is located, 9.1% to 10.7% of students had smoked a cigarette at least once in the past 30 days (CDPHE, 2017).

Definitions of Terms

The following is a list of terms relevant to understanding the project:

Adolescent: Individuals between the ages of 10 and 19 years (WHO, 2016).

High school student: Student enrolled in a college preparatory boarding and day school for students in grades 9 through 12. The age range for these students is between 14 and 18 years of age. The school is located in the state of Colorado, in a non-metropolitan area. One hundred percent of the graduating students are accepted to a four-year college or university, and the majority of the students have one or more parents with a college education.

Not-On-Tobacco (N-O-T) facilitator: An individual who has undergone standardized training by the American Lung Association (ALA). An effective facilitator acts not only as a teacher, but also as a guide to help participants move through the program, encouraging the group to share their thoughts and feelings (ALA, 2014).

Not-On-Tobacco (N-O-T) program: An evidence-based, voluntary smoking cessation program developed in part by the American Lung Association (ALA) for teenagers between the ages of 14 and 19. The sessions incorporate student training in self-management and stimulus control; social skills and peer pressure; methods to identify social support; stress management; relapse prevention; and techniques to manage withdrawal, weight, and outside pressures. The N-O-T program can be implemented in schools by school nurses trained to facilitate group sessions (ALA, 2014).

Social Learning Theory: Social learning theory is a theory that integrates behavioral and cognitive theories of learning. The theory states that people learn from one another through observation, imitation, and modeling of behaviors, attitudes, and outcomes of those behaviors (Bandura, 1977; McEwen & Wills, 2014).

Smoking cessation: Determined by self-report as to whether the individual has quit smoking and the number of days since last smoking a cigarette (ALA, 2014).

Smoking cessation training: Ten 50-minute sessions per week over an 11-week period to high school students utilizing content from the N-O-T program. The students participate in sessions for 5 weeks, have one week off, and then resume weekly for 5 weeks (ALA, 2014).

Transtheoretical (or Stages of Change) Model: A model that tells us that behavior change is a process, and not a single event. For change to occur, an individual goes through five stages: pre-contemplation, contemplation, preparation, action, and maintenance (Hodges & Videto, 2011; Prochaska & DiClemente, 1983; White & Dudley-Brown, 2012).

Youth: Individuals between the ages of 10 and 24 years (WHO, 2011).

Ongoing evaluation of evidence-based programs, such as the N-O-T program, is needed to add to the current research, and to help guide health policy decisions on adolescent smoking cessation in the future.

Role of the DNP Student

I was employed as the director of health services for a college preparatory boarding and day school in the state of Colorado for students in grades 9 through 12 during the 2014-2015 school year. While serving in this position, the dean of students, and I discovered that a number of students consistently violated the tobacco-free policy on campus. During the course of the disciplinary action for these violations, students were required to meet with me on every occasion of a violation. That put me in an ideal position to identify youth using tobacco and to provide them with access to a smoking cessation program. The action taken by previous directors was to have students watch a podcast about the health risks of cigarette smoking (Rehm, 2014), and then complete a

post-test to assess learning. After continuing to meet with students, it was quickly apparent that the podcast was not taken seriously. The tobacco issue and, often times, nicotine addiction were not specifically addressed. I researched several options for alternative programs. As a result of these efforts, the decision was made by the Headmaster and Dean of Students to implement an adolescent, evidence-based smoking cessation program. Consequently, all students caught violating the tobacco-free policy were enrolled in the N-O-T program.

As a DNP student I was interested in using evidence-based practice to make a decision as to an effective smoking cessation program. When I quit using the previous method of the podcast I did not collect data to decide it was not effective, I used anecdotal information given to me by students and by seeing the same students that had watched the podcast continue to smoke. In my role as the DNP student I performed a secondary data analysis to see whether the program yielded significant results. If I had stayed in the position as the director of health services I would have continued to collect data to build on my own research and to support the limited research in the literature on adolescent smoking cessation.

Summary

A meaningful smoking cessation program necessitates evidence-based research that demonstrates the effectiveness of the program; however, there are a limited number of scientific studies regarding the effectiveness of youth smoking cessation. The N-O-T program (ALA, 2014) has shown to be an effective evidence-based program for high school students. The program has been shown to help youth recognize reasons for smoking, find healthy alternatives to tobacco use, and identify individuals who will assist

them in their efforts to quit smoking (ALA, 2014; Fritz, Wider, Hardin, & Horrocks, 2008); however, more research is needed in the adolescent population. In the next section I will outline the practice-focused questions, sources of evidence, and analysis and synthesis of the data.

Section 3: Collection and Analysis of Evidence

Introduction

In 2015, 20% of Colorado youth had smoked a cigarette at least once in their lifetime and 9% had smoked a cigarette at least once in the last 30 days (CDPHE, 2017). In Western Colorado, 9.1% to 10.7% of students had smoked a cigarette at least once in the past 30 days (CDPHE, 2017). There is little evidence to support adolescent smoking cessation programs. This project evaluated the effectiveness of the N-O-T program in a group of high school boarding students and identified changes that should be made to the current N-O-T curriculum to tailor the program to this particular high school. In this section I will outline the practice-focused questions, sources of evidence, and analysis and synthesis of the data.

Practice-Focused Questions

The evidence-based project questions were: Among high school students, to what extent does a school-based adolescent smoking cessation program reduce the prevalence of student smoking? What changes to the current N-O-T program curriculum should be made to tailor the program to this particular high school?

Sources of Evidence

I performed a secondary data analysis of quantitative data to determine the effectiveness and ongoing use of the N-O-T program (ALA, 2014). I did not select a cohort of participants, rather I generated the date data from participants that were enrolled in the N-O-T program (ALA, 2014) as a result of violating the campus' tobacco free policy. If a student was found to have tobacco products, I sent a letter to the parents and student, the student's advisor, and the dean of students. The letter addressed the tobacco

policy, background on why the school chose to implement a smoking cessation program, a link to an informational website about the N-O-T program, and information about data being collected (see Appendix A).

The N-O-T program (ALA, 2014) is an evidence-based, voluntary smoking cessation program developed for teenagers between the ages of 14 and 19 (ALA, 2014). I completed standardized training by the ALA to be a facilitator and, as someone who worked as a nurse at the school, had a good rapport with the students. The ALA (2014) believed that being a facilitator is more than just being a teacher. An effective facilitator serves as a guide to help participants move through the program, encouraging each member of the group to openly share their thoughts and feelings (ALA, 2014).

The original N-O-T program (ALA, 2014) consists of 10 50-minute sessions over a 10-week period. Due to the school calendar schedule and structure of the school, the time period of administration of the program was modified, lasting 11 weeks. The 50-minute training sessions were performed every week for 5 weeks, followed by a week off, during which time students attended a mandatory supervised spring trip, and then resumed every week for 5 weeks. As in the original N-O-T program, the students received small incentives such as diaries, water bottles, highlighters, key chains, mints, stress balls, Frisbees, and ear buds throughout the program (ALA, 2014). The ALA also provided the facilitator with $30 per student to purchase additional incentive items. I chose to make goody bags containing sugarless gum and hard candy, have a pizza party, and provide gift certificates for students' participation at the completion of program.

The 10 sessions that make up the N-O-T program are entitled: a) Getting the Facts, b) Getting Pumped Up, c) Me Without My Smokes, d) Mind and Body (Before), e)

The Big Day, f) Staying Quit, g) Working It Out With Friends and Family, h) Mind and Body (After), i) Tuning In/Tuning Out, and j) Committed and Connected (ALA, 2014). The following chart describes the objectives for each module (see Table 1).

Table 1

Ten Sessions Comprising the N-O-T Program and Objectives for Each Session

Session Titles	Session Objectives
Getting the Facts	1. An overview of the N-O-T program 2. Why males/females smoke
Getting Pumped Up	1. The realities of smoking 2. Getting excited about quitting
Me Without My Smokes	1. Exploring smoking behavior 2. Understanding addiction
Mind and Body (Before)	1. The impact of smoking on mind and body 2. Getting support for quitting
The Big Day	1. The benefits of quitting 2. Coping with urges and cravings
Staying Quit	1. Sharing the experience of quitting 2. Avoiding slips and risky situations
Working It Out With Friends and Family	1. Ways to be assertive with family and friends

	2. Planning ahead
Mind and Body (After)	1. Physical and psychological changes associated with quitting
	2. Healthy ways to deal with stress
Tuning In/Tuning Out	1. Understanding the impact of tobacco advertising
	2. Teens as a positive social force
Committed and Connected	1. Staying committed to the decision to quit
	2. Staying connected to the N-O-T group

From the ALA (2014).

The "About Me" pre- and postsurveys currently used to collect data by the ALA were initially developed in 1997 when the program was created. However, the Colorado office of the ALA has since altered the survey annually to be more relevant for adolescents in Colorado. No specific data regarding the validity and reliability of the initial or subsequent surveys has been reported. The surveys were completed by each student prior to implementation of the first session and upon completion of the last session (see Appendix B). While there are a number of additional questions asked on these surveys, this project only focused on those questions relevant to the outcomes of interest, which included:

- Are students still smoking cigarettes after completing the smoking cessation program?
- If students are no longer smoking, how long has it been since their last cigarette?
- If students continue to smoke, how many cigarettes do they smoke per day?
- How helpful was the smoking cessation program in helping to quit smoking?

Additional questions on the surveys regarding how students obtain cigarettes, parental approval and education of the effects of cigarette smoking, and specific days of the week students smoke were not considered in this project as they do not address the outcomes of interest. Permission to use the tool was obtained from the ALA (see Appendix C).

I collected the data during the program while serving in my position as the director of health services during the 2014-2015 school year and conducted a secondary analysis of the data at a later date. I collected demographic and smoking history data during the first session, and at completion of the 10 N-O-T sessions. Surveys were administered in the classroom setting using pencil and paper method, taking approximately 20 to 30 minutes to complete. The surveys then became part of the student's school health record. While data from school health programs are generally not available and are known to be sporadic and incomplete (Friis & Sellers, 2014), I maintained and checked the records for completeness in my role as director of health

services. Instruction was provided to the students, as well as questions answered as needed, to complete the surveys.

Analysis and Synthesis

I performed a secondary analysis of the data collected during the program. Demographic information obtained included gender, age, grade, and race/ethnic group. I considered all student data for secondary data analysis. If students did not complete the program, I reported the data as missing. Tobacco cessation, or quit rates, were determined based on self-report at the end of the last session (see Appendix B—About Me Post Survey 2 Question 1). Paired *t*-tests were used to determine significance of quit rates using International Business Machines (IBM) Statistical Package for the Social Sciences (SPSS) version 21.0. If students reported they were no longer smoking, the number of days since their last cigarette was reported (see Appendix B—About Me Post Survey 2 Question 3). This number was reported as an average of the total number of days since last cigarette. If students reported they have continued to smoke, the number of cigarettes smoked per week divided by 7 days was calculated (see Appendix B—About Me Post Survey 2 Questions 5 and 6). Students were asked to rate how helpful the N-O-T program was in helping to quit smoking as "not helpful," "somewhat helpful," or "very helpful" (see Appendix B—About Me Post Survey 2 Question 15).

I used qualitative content analysis to determine what did and did not work for each session. I grouped and coded themes based on students' responses. At the beginning of each session I asked students their perception of the program's effectiveness to date. I was interested in how the present curriculum for the N-O-T program could be modified and individualized for this particular school. Therefore, students identified what did and

did not work with the program throughout the sessions. The group members were specifically asked, “What part of the previous session worked for you?” and “What part of the previous session did not work for you?” at the beginning of each session, and at the end of the final session (see Appendix D). Due to the small sample size, overall participant responses were reported in a table format. These themes may be used to improve the program for the school going forward.

Because pre- and postsurvey information is part of the school’s own assessment, consent was not needed from parents to analyze the students’ data. A data use agreement was obtained from the school to use de-identified data from the students so that secondary data analysis could be performed (see Appendix E). The school does not have an internal Institutional Review Board (IRB), and Walden University IRB approval was obtained. The approval number for this study is 12-23-16-0501636 (see Appendix F).

Summary

There is little evidence to support adolescent smoking cessation programs. Secondary data analysis of quantitative data to determine the effectiveness and ongoing use of the N-O-T program (ALA, 2014) was undertaken. While the original N-O-T program (ALA, 2014) consists of 50-minute sessions over a 10-week period, the time period of administration of the program was modified in this case, lasting 11 weeks. The “About Me” pre- and postsurveys developed by the ALA (2014) were used to collect demographic and quantitative data to be used for secondary analysis. Qualitative data were collected to improve future programs at this particular high school. In the following section I will focus on findings and implications, recommendations, and strengths and limitations of the project.

Section 4: Findings and Recommendations

Introduction

Adolescents and young adults use more tobacco than all other adults, and yet, the percentage of this younger age population eventually quitting the use of tobacco is lower. In 2015 in the state of Colorado, 20% of youth had smoked a cigarette at least once in their lifetime and 9% had smoked a cigarette at least once in the last 30 days (CDPHE, 2017). In Western Colorado, where the high school in this study is located, 9.1% to 10.7% of students had smoked a cigarette at least once in the past 30 days (CDPHE, 2017).

There is little evidence-based research to support adolescent smoking cessation programs; however, interventions that focus on cognitive-behavioral strategies have been shown to improve outcomes (ALA, 2014). As the director of health services for a college preparatory boarding and day school in the state of Colorado for students in Grades 9 through 12 during the 2014-2015 school year, I was in an ideal position to identify youth using tobacco and to provide them with access to a smoking cessation program. The action taken by previous directors was to have students watch a podcast about the health risks of cigarette smoking (Rehm, 2014) and complete a posttest to assess learning. It quickly became evident that the podcast was not taken seriously. I researched and implemented an evidence-based adolescent smoking cessation program, the N-O-T program.

The purpose of this project was to perform a secondary data analysis to evaluate the effectiveness of the N-O-T program in reducing the number of cigarettes smoked by high school students and to evaluate qualitative data to determine how best to

individualize the N-O-T program to address violations of the smoking policy in a particular high school going forward. The evidence-based project questions were: "Among high school students, to what extent does a school-based adolescent smoking cessation program reduce the prevalence of student smoking?" and "What changes to the current N-O-T program curriculum should be made to tailor the program to this particular high school?" This section will focus on findings and implications, recommendations, and strengths and limitations of the project.

Findings and Implications

Ten students were caught violating the school's tobacco-free policy and were enrolled in the N-O-T program. Nine of the students were boys and one was a girl. The age of the students ranged from 15 years of age to 17 years of age; eight of the students were juniors and two were sophomores. Seven of the 10 students were Caucasian/White, while the remaining three were Hispanic/Latino, Black/African American, and Asian American. One student identified as lesbian, gay, bi-sexual, transgender, or questioning (see Table 2).

Table 2

Demographics

Characteristic	*n*= (Total *n*=10)
Gender	
Male	9
Female	1
Age (years)	
15	1
16	5
17	4
Grade	
Sophomore	2
Junior	8
Ethnicity	
Asian/American	1
Black/African American	1
Caucasian/White	7
Hispanic/Latino	1
Lesbian/Gay/Bi-sexual/Questioning	
No	9
Yes	1

As part of the N-O-T program (ALA, 2014), students completed an "About Me" pre- and postsurvey designed by the ALA prior to and after implementation of the program. While there are a number of additional questions asked on the "About Me" surveys, this study focused on those questions relevant to the outcomes of interest, which included: Are students still smoking cigarettes after completing the smoking cessation program? If students are no longer smoking, how long has it been since their last

cigarette? If students continue to smoke, how many cigarettes do they smoke per day? How helpful was the smoking cessation program in helping to quit smoking?

All 10 students completed the program. Of the 10 students, only one boy reported that he was no longer smoking at the end of the program; it had been 14 days since his last cigarette. To address the first practice-focused question as to whether a school-based adolescent smoking cessation program reduced the prevalence of student smoking, I performed a paired samples *t*-test using IBM's Statistical Package for the Social Sciences (SPSS) version 21.0 to compare the mean number of cigarettes smoked per day prior to the program to the mean number of cigarettes smoked per day after the program was completed. The paired samples *t*-test revealed that there was not a statistically significant difference in the prevalence of cigarette use prior to and after implementation of the N-O-T program ($P \geq 0.05$, see Table 3).

Table 3

Results of Smoking Cessation at Completion of the N-O-T Program

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Average Number of Cigarettes Per Day in Last Week Pre - Average Number of Cigarettes Per Day in Last Week Post	.74500	2.64238	.83559	-1.14525	2.63525	.892	9	.396

While analyzing the data I made an interesting observation. While not a part of the research questions for this project, the findings are being included to support evidence for the effectiveness of the use of adolescent smoking cessation programs. On the "About

Me" postsurvey there was a question as to whether students thought the program was "very helpful," "somewhat helpful" or "not helpful." The students were found to have increased or decreased tobacco use in relationship to their perception of the "helpfulness" of the program. One student found the program "very helpful" and was able to stop smoking completely. Of the nine remaining students, three students found the program "very helpful" and reduced their use of tobacco, four students found it "not helpful" and increased their use of tobacco, and the two remaining students indicated that the program was "somewhat helpful" and their tobacco use was unchanged. There was a significant positive correlation between those who found the program "very helpful" and a decrease in the prevalence of cigarette use prior to and after the program ($P = 0.50$, see Table 4).

Table 4

Correlation Between Helpfulness of the Program and Number of Cigarettes Per Day

Paired Samples Correlations[a]

		N	Correlation	Sig.
Pair 1	Average Number of Cigarettes Per Day in Last Week Pre & Average Number of Cigarettes Per Day in Last Week Post	4	.950	.050

a. Was Program Helpful in Helping You to Quit = Very Helpful

While I found no literature directly linking the statement on the "About Me" questionnaire of "helpfulness" of the program to tobacco use, there is literature to support that enrollment in an adolescent smoking cessation program is more effective than no

program at all (Campaign for Tobacco-Free Kids, 2015; Dino, et al., 2008; Fritz, Wider, Hardin, & Horrocks, 2008; HHS, 2015).

Studies of more than 10,000 teenagers have shown the N-O-T program (ALA, 2014) to be approximately 90% effective in helping teenagers to either quit or cut back on smoking (ALA, 2014). This author found the program to be 40% effective in helping teenagers to either quit or cut back. The small sample size determined by the ALA was a known factor in generalizing the findings (Grove, Burns, & Gray, 2013). Additionally, since the students did not voluntarily enroll in the program, they may not have been in the appropriate stage of change to effect a change in their behavior. Students who have been mandated to enroll in a smoking cessation program may differ from those students who have enrolled voluntarily, affecting program delivery and outcomes (Houser-Marko, Curry, Mermelstein, Emery, & Pugach, 2011). Mandated youth are more likely to be in an earlier stage of change and have lower overall motivation to quit smoking (Curry, Grothaus, & McBride, 1997; Houser-Marko, Curry, Mermelstein, Emery, & Pugach, 2011).

To address the second practice-focused question of what changes could be made to the current N-O-T program (ALA, 2014) curriculum to tailor the program to this particular high school, I obtained qualitative content at the beginning and end of each session. Students were asked as a group (n=10) what part of the previous session worked for them and what part of the previous session did not work for them. The data were discussed within the group to determine which activities did and did not work for each session. A consensus was reached and grouped based on activities that fell into each session to determine whether the group thought the content should be included in each

session and whether or not each session should be included in the program moving forward. Consensus was reached among the group as to which activities in each session the group felt worked, what did not work, and whether the session should be included in the program going forward (see Table 5).

Table 5

Ten Sessions Comprising the N-O-T Program and Content Analysis From the Group

Session Titles	What Did/Did Not Work
Getting the Facts *n*=10	Did: Liked learning about program, setting boundaries (touchstones), talking about male/female reasons for smoking Did Not: None voiced Include this session going forward
Getting Pumped Up *n*=10	Did: Liked talking about the realities of smoking, why they started smoking, okay with journaling Did Not: Did not feel that additional exercising was necessary due to the school's active program Include this session without focusing on exercise
Me Without My Smokes *n*=10	Did: Liked talking about smoking triggers and addiction, anatomy of a cigarette Did Not: Did not think tracking cigarettes

	smoked (pack tracks) was useful Include this session and make pack tracks optional
Mind and Body (Before) *n*=10	Did: Enjoyed discussing impact of smoking on mind and body, finding a support person, learning tips to quit smoking Did Not: None voiced Include this session going forward
The Big Day *n*=10	Did: Liked talking about the benefits of quitting, coping with urges and cravings Did Not: Did not like signing quit sheet, but recognized value in having a written commitment Include this session going forward
Staying Quit *n*=10	Did: Enjoyed sharing stories about quitting and their slips, ways to spend money other than on cigarettes Did Not: None voiced Include this session going forward
Working It Out With Friends and Family *n*=10	Did: Liked discussing ways to talk to others about their journey in trying to quit

	smoking Did Not: None voiced Include this session going forward
Mind and Body (After) *n*=10	Did: Liked talking about physical and psychological changes Did Not: Did not feel that focus on exercise (as noted above) and eating healthy (as the school provides it's own home-grown foods) was useful Combine this session with the previous session going forward
Tuning In/Tuning Out *n*=10	Did: One of their favorite sessions as they discussed tobacco advertising Did Not: None voiced Include this session going forward. Incorporate a piece of it in every session.
Committed and Connected *n*=10	Did: Likes having tips for staying on track Did Not: None voiced Combine this session with previous session going forward

As a result of the content analysis, the group thought that five of the sessions should remain as is (Getting the Facts, Mind and Body—Before, The Big Day, Staying Quit and Working It Out With Friends and Family), three of the sessions should be

modified by eliminating or modifying portions of the activities (Getting Pumped Up, Me Without My Smokes and Timing In/Timing Out), and two sessions could be combined (Mind and Body—After and Committed and Connected). The group felt that with minor adjustments the program could be individualized for this high school going forward, making it more effective. I found no literature to support individualizing the program for a particular group and the impact upon tobacco use. However, the Colorado office of the ALA does alter the survey annually to be more relevant for adolescents in Colorado.

While early school nurses were responsible for decreasing school absenteeism, monitoring vaccinations, and preventing the spread of communicable diseases (Institute of Medicine, 2011), school nurses in recent years have seen significant changes in student acuity requiring increased skilled nursing care (IOM, 2011; National Association of School Nurses, 2015). School nurses now act as care providers; educators; counselors; consultants; and advocates to students, families, and communities (Selekman, 2013), putting them in an ideal position to promote smoking cessation and to assist individuals to achieve success. Decreasing tobacco use in adolescents is an important step to implementing positive social change by increasing life-long health benefits and decreasing medical costs and lost productivity associated with tobacco use.

Recommendations

While only one male student accomplished complete smoking cessation, there were also students who cut back on the number of cigarettes that they smoked. This behavior is consistent with other studies of adolescent smoking cessation where students either quit smoking or reduced their cigarette use after participating in the N-O-T program (Dino et al., 2001a; Dino et al., 2001b). Research by Dino el al. (2001a, 2001b)

found that the N-O-T program was significantly more effective for females than males, although males also demonstrated successful quit attempts. Due to the small number of students enrolled in the program at this time (n=10) continued research at this school is needed to see if future program efforts are consistent with these findings.

The students and I believe that a modified program tailored to this particular high school is beneficial to students caught violating the tobacco-free policy in the future. Anecdotal reporting by the students found the alternative podcast that had been used in the past was not seen as useful to the students and offered little value. Many expressed that although they did not quit smoking, the tools learned during the sessions "would be helpful when they did decide to quit smoking one day." The students stated that, by combining the sessions, the program could be shortened by a week or two and might incentivize others to join that may want to quit smoking. They felt the program should be opened to all students interested and not just those students who were caught violating the tobacco-free policy. The students recognized that if someone wanted to quit smoking, the program would be much more beneficial. Several students offered to be a part of teaching the program in the future. The students expressed that having someone else who smoked and was able to quit or cut back might better help another student to stop smoking. Literature supports that having peers who smoke is a strong predictor of smoking later in life (Pierce, White, & Emery, 2012). While there is no literature to support individualizing the N-O-T program to a particular school, the Colorado office of the ALA does report altering the survey annually to be more relevant for adolescents in Colorado (C. Isaacks, electronic communication, December 1, 2015). Future research is needed to

determine if individualizing the program at this particular school would enhance student participation and positive change.

Strengths and Limitations of the Project

Several strengths of the project were noted. Support of the administration, particularly the Dean of Students in allowing me access to the students' files to do a retrospective analysis of the data was vital to the success of the project. Additionally the Colorado Chapter of the ALA allowed me to use portions of their survey for my work. The fact that I had ensured that the surveys were thoroughly completed by students during my role as the Director of Health Sciences ensured that all of the data needed to accomplish the retrospective study was present. Strengths of the program were also noted. Students were actively engaged and willing to share their tobacco use experiences. They were also open to providing feedback in a positive manner. The recommendations they made for the program going forward will likely strengthen future program efforts at this particular high school.

The greatest limitation of the project was the small sample size which limited the ability to generalize the findings; however, the survey results were also sent to the ALA and are combined with other high school students' statewide, adding to the adolescent smoking-cessation literature. Other limitations of the program itself were also noted. Some students reported that they were not ready to quit smoking but felt that the tools learned during the sessions "would be helpful when they did decide to quit smoking." Finally, use of self-report was also a limiting factor. While several students reported to the group that they had quit smoking, their survey results indicated otherwise. This was not surprising as Lantini et al. (2015) determined that misreporting is likely to occur in

adolescent smoking research, with as many as 25.6% of students admitting to under-reporting smoking behavior in a recent study. Underreporting may occur because the student fears being reprimanded or punished, or fears an adult may disapprove of their behavior (Lantini et al., 2015). Without biochemical validation, the results were based on the memory and honesty of the students at the time the surveys were completed.

Summary

The N-O-T program (ALA, 2014) is a voluntary smoking cessation program that incorporates social learning theory and the stages of change model to assist students in behavior change through self-management and stimulus control; social skills and peer pressure; methods to identify social support; stress management; relapse prevention; and techniques to manage withdrawal, weight, and outside pressures. A secondary data analysis using paired samples *t*-test did not determine a statistically significant effect on smoking cessation in this small population of students ($P = 0.396$, $n = 10$). The findings did show a significant positive correlation between those who found the program "very helpful" and a decrease in the number of cigarettes smoked pre- and post-program ($P = 0.50$). Content analysis was performed and recommendations for modifying the program for this high school were made. Strengths of the project were identified as students being actively engaged and willing to share their tobacco use experiences and open to providing feedback in a positive manner. Limitations of the project were identified as small sample size, use of self-report, and lack of biochemical validation. Awareness of interactions and relationships with others and how to successfully deal with social changes is essential as part of an effective smoking cessation program. Decreasing tobacco use in adolescents is an important step to implementing positive social change by increasing life-long health

benefits and decreasing medical costs and lost productivity associated with tobacco use. The final section will discuss disseminations plans and a self-analysis.

Section 5: Dissemination Plan

Dissemination

I will verbally present the results of the data and recommendations for modification of the N-O-T program to the dean of students and the current director of health services at the high school to determine whether they want to continue using the program moving forward. If they choose to continue the program, I will present the findings to the students in all all-school forum to facilitate interest in the program. Since resigning my position at the high school where the data was collected, I have since taught this program at an alternative high school and would be interested in comparing the results from two very different student populations. I had hoped to present the data at the Colorado Association of School Nurses meeting, as well, but have since left school nursing and returned to hospital-based practice. As a result, I no longer attend the Colorado Association of School Nurses meeting. I would still like to pursue submitting my findings to *School Nurse*, the official publication of the National Association of School Nurses.

Analysis of Self

As I look back on my doctor of nursing practice journey, I am excited and humbled by what I have accomplished. My older brother, Shawn, and I were in high school when he was severely injured in a crash. He was a passenger on a motorcycle, riding on a deserted road, when a drunk driver swerved in front of the bike. Shawn's leg caught the fender of the car, tearing off most of his leg. From the minute my family arrived at the hospital, we found Shawn pale, in and out of consciousness, and we later found out, close to death. The nurses were there to provide medical care and emotional

support. More importantly, however, the nurses involved Shawn and all of the family in all aspects of his care. It was over the next several months that I discovered what I wanted to do with my life: I wanted to be a nurse and help others. That crash changed my life and impacted my philosophy of nursing forever.

My personal philosophy of nursing combines the science of medicine with Peplau's theory of interpersonal relationship. In her article, "A Comparative Analysis of Orem's Self-Care Model and Peplau's Interpersonal Theory," Comley (1994) described Peplau's theory as "being able to understand one's own behavior to help others identify felt difficulties, and to apply principles of human relations to problems that arise at all levels of experience" (p. 756). Peplau's theory defines nursing as therapeutic; it explains overlapping phases of the nurse-patient relationship, describes nursing roles that may emerge during this relationship, and responses that may occur as a result of the relationship. The nurse and patient work toward a common goal to mutually grow and gain knowledge (Comley, 1994). I believe that nurses should treat each person as an individual, caring for them with dignity and respect. Individuals should be included in all aspects of their care, from treatment of one's illness to health promotion and disease prevention. Our practice may change as we progress from novice to expert nurses; however, our philosophy is the solid foundation on which we build research, theory, and ultimately, our practice. I have taken this philosophy and applied the same principles throughout my nursing career, including my time spent as a school nurse.

This project challenged me as a scholar, project manager, and practitioner. As a scholar, I continued to expand my knowledge of disseminating evidence-based research, critically evaluating research articles to determine credibility and usefulness for practice.

As a project manager, I had to organize my time to complete necessary steps to advance my research. Finally, as a practitioner, I learned so much about the benefits of school nursing and school-based health centers. Personally, this was one of the greatest achievements I have accomplished. I completed the coursework for my doctor of nursing science degree more than 20 years ago and did not finish my dissertation. Finishing this project and completing my doctor of nursing practice has given me the confidence, skills and ability to reach any goal I strive for in the future, whether it be a chief nursing office in a hospital setting or a professor at a school of nursing.

Summary

I used secondary data analysis to evaluate the effectiveness of an evidence-based, and school-based adolescent smoking cessation program in reducing or preventing the number of cigarettes smoked by high school students and to evaluate qualitative data to determine how best to individualize the N-O-T program to address violations of the smoking policy on campus going forward. While not statistically significant, one student did stop smoking for at least 14 days and three others decreased the number of cigarettes smoked by the end of the program. Recommendations for modifying the program for this particular high school were also made by the students and investigator. As 5.6 million youths under the age of 18 are projected to die prematurely from a smoking-related illness if smoking persists at the current rate (CDC, 2014a), it is imperative that more research to prevent and reduce youth smoking through effective youth smoking cessation interventions is conducted (CDC, 2004; HHS, 2015).

References

American Lung Association (ALA). (2014). *Not-On-Tobacco*. Retrieved from http://www.lung.org/associations/states/colorado/tobacco/not-on-tobacco/

American Society on Aging and American Society of Consultant Pharmacists Foundation. (2012). *Adult meducation: Facilitating behavior change*. Retrieved from http://www.adultmeducation.com/facilitatingbehaviorchange.html

Bandura, A. (1977). *Social Learning Theory*. New York, NY: General Learning Press.

Branstetter, S. A., Blosnich, J., Dino, G., Nolan, J., & Horn, K. (2012). Gender differences in cigarette smoking, social correlates and cessation among adolescents. *Addictive Behaviors, 37*, 739-742.

Campaign for Tobacco-Free Kids. (2015). *Prevention and cessation programs*. Retrieved from https://www.tobaccofreekids.org/what_we_do/state_local/prevention_cessation/

Centers for Disease Control and Prevention (CDC). (2004). *Youth tobacco cessation: A guide for making informed decisions*. Retrieved from http://www.cdc.gov/tobacco/quit_smoking/cessation/pdfs/youth_tobacco.pdf

Centers for Disease Control and Prevention (CDC). (2012). *The burden of tobacco use*. Retrieved from http://www.cdc.gov/chronicdisease/resources/publications/aag/osh.htm

Centers for Disease Control and Prevention (CDC). (2014a). *Youth and tobacco use*. Retrieved from http://www.cdc.gov/tobacco/data_statistics/fact_sheets/youth_data/tobacco_use/

Centers for Disease Control and Prevention (CDC). (2014b). *Not-On-Tobacco (NOT)—Smoking cessation program for 14-19 year olds selected as a model program*. Retrieved from http://www.cdc.gov/prc/prevention-strategies/smoking-cessation-program.htm

Colorado Department of Public Health & Environment. (2017). *Tobacco use among youth in Colorado*. Retrieved from https://www.colorado.gov/pacific/sites/default/files/PF_Youth_HKCS_Tobacco-Infographic-Digital.pdf

Comley, A. L. (1994). A comparative analysis of Orem's self-care model and Peplau's interpersonal theory. *Journal of Advanced Nursing, 20*, 755-760.

Curry, S. J., Grothaus, L., & McBride, C. (1997). Reasons for quitting: Intrinsic and extrinsic motivation for smoking cessation in a population-based sample of smokers. *Addictive Behaviors, 22*, 727-739.

Curry, S. J., Mermelstein, R. J., Emery, S. L., Sporer, A. K., Berbaum, M. L., Campbell, R. T., …Warnacke, R. B. (2013). A national evaluation of community-based youth cessation programs: End of program and twelve-month outcomes. *American Journal of Community Psychology, 51*, 15-29.

Dino, G., Horn, K., Abdulkadri, A., Kalsekar, I., & Branstetter, S. (2008). Cost-effectiveness analysis of the Not-On-Tobacco program for adolescent smoking cessation. *Prevention Science, 9*(1), 38-46.

Dino, G. A., Horn, K. A., Goldcamp, J., Maniar, S. D., Fernandes, A., & Massey, C. J. (2001a). Statewide demonstration of Not-On-Tobacco: A gender-sensitive teen smoking cessation program. *The Journal of School Nursing, 17*(2), 90-97.

Dino, G., Horn, K., Goldcamp, J., Fernandes, A., Kalsekar, I., & Massey, C. (2001b). A 2-year efficacy study of Not-On-Tobacco in Florida: An overview of program successes in changing teen smoking behavior. *Preventive Medicine, 33*, 600-605.

Franks, A. L., Kelder, S. H., Dino, G. A., Horn, K. A., Gortmaker, S. L., Wiecha, J. L., &

Simoes, E. J. (2007). School-based programs: Lessons learned from CATCH, Planet Health, and Not-On-Tobacco. *Preventing Chronic Disease: Public Health Research, Practice, and Policy, 4*(2), 1-9.

Friis, R. H., & Sellers, T. A. (2014). *Epidemiology for public health practice* (5th ed.). Sudbury, MA: Jones & Bartlett.

Fritz, D. J., Hardin, S. B., Gore, P. A., & Bram, D. (2008). A computerized smoking cessation intervention for high school smokers. *Pediatric Nursing, 34*(1), 13-17.

Fritz, D. J., Wider, L. C., Hardin, S. B., & Horrocks, M. (2008). Program strategies for adolescent smoking cessation. *The Journal of School Nursing, 24*(1), 21-27.

Grove, S., Burns, N., & Gray, J. (2013). *The practice of nursing research: Appraisal, synthesis, and generation of evidence* (7th ed.). St. Louis, MO: Saunders Elsevier.

Healthy People 2020. (2011). *Social determinants of health*. Retrieved from http://healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=39

Hodges, B. C., & Videto, D. M. (2011). *Assessment and planning in health programs* (2nd ed.). Sudbury, MA: Jones & Bartlett Learning.

Hoffman, J., Nemes, S., Weil, J., Zack, S., Munly, K., & Hess, L. (2008) Evaluation of the ASCENT smoking cessation program for adolescents. *Journal of Smoking Cessation, 3*(1), 2-8.

Horn, K., Fernandes, A., Dino, G., Massey, C. J., & Kalsekar, I. (2003). Adolescent nicotine dependence and smoking cessation outcomes. *Addictive Behaviors, 28*, 769-776.

Houser-Marko, L., Curry, S. J., Mermelstein, R. J., Emery, S., & Pugach, O. (2011). A comparison of mandated versus volunteer adolescent participants in youth tobacco cessation programs. *Addictive Behaviors, 36*, 937-940.

Institute of Medicine (IOM). (2011). *The future of nursing: Leading change, advancing health.* Retrieved from http://www.iom.edu/Reports/2010/The-Future-of-Nursing-Leading-Change-Advancing-Health.aspx

Kohler, C. L., Schoenberger, Y-M. M., Beasley, T. M., & Phillips, M. M. (2008). Effectiveness evaluation of the N-O-T smoking cessation program for adolescents. *American Journal of Health Behavior, 32*(4), 368-379.

Lantini, R., McGrath, A. C., Stein, L. A. R., Barnett, N. P., Monti, P. M., & Colby, S. M. (2015). Misreporting in a randomized clinical trial for smoking cessation in adolescents. *Addictive Behaviors, 45*, 57-62.

McEwen, M., & Wills, E. M., (2014). *Theoretical basis for nursing* (4th ed.). Philadelphia, PA: Wolters Kluwer Health.

Mermelstein, R., & Turner, L. (2006). Web-based support as an adjunct to group-based smoking cessation for adolescents. *Nicotine Tobacco Research, 8*(Suppl 1), S69-S76.

National Association of School Nurses (NASN). (2015). *School nurse workload: Staffing for safe care: Position statement*. Retrieved from http://www.nasn.org/PolicyAdvocacy/PositionPapersandReports/NASNPositionStatementsFullView/tabid/462/smid/824/ArticleID/803/Default.aspx

O'Loughlin, J. O., Karp, I., Koulis, T., Paradis, G., & DiFranza, J. (2009). Determinants of first puff and daily cigarette smoking in adolescents. *American Journal of Epidemiology*, *170*(5), 585-597.

Park, E., & Drake, E. (2015). Systematic review: Internet-based program for youth smoking prevention and cessation. *Journal of Nursing Scholarship, 47*(1), 43-50.

Patten, C. A., Croghan, I. T., Meis, T. M., Decker, P. A., Pingree, S., Colligan, R. C.,

…Gustafson, D. H. (2006). Randomized clinical trial of an Internet-based versus brief office intervention for adolescent smoking cessation. *Patient Education and Counseling, 64*, 249-258.

Pierce, J. P., White, V. M., & Emery, S. L. (2012). What public health strategies are needed to reduce smoking initiation? *Tobacco Control, 21*, 258-264.

Prochaska, J. O., & DiClemente, C. C. (1983). Stages and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology, 51*(3), 390-395.

Rehm, D. (Producer). (2014, January 21). *New health risks from cigarette smoking* [Audio podcast]. Retrieved from http://thedianerehmshow.org/shows/2014-01-21/new-health-risks-cigarette-smoking

Resource Center for Adolescent Pregnancy Prevention (ReCAPP). (2016). *Theories and approaches: Social learning theory*. Retrieved from http://recapp.etr.org/recapp/index.cfm?fuseaction=pages.TheoriesDetail&PageID=380

Richardson, A. M. (2008). A program of life: A smoking cessation program for youth 12 years through 16 years of age. *Health Education & Behavior, 35*(2), 153-155.

Selekman, J. (2013). *School nursing: A comprehensive text* (2nd ed.). Philadelphia, PA: F. A. Davis Company.

Stanton, A., & Grimshaw, G. (2013). Tobacco cessation interventions for young people. *Cochrane Database of Systematic Reviews*, Issue 8. Art. No.: CD003289. DOI: 10.1002/14651858.CD003289.pub5

Substance Abuse and Mental Health Services Administration (SAMHSA). (2011). *Results from*

The 2010 National Survey on Drug Use and Health: Summary of national findings. Rockville, MD: Substance Abuse and Mental Health Services Administration. Retrieved from http://www.samhsa.gov/data/NSDUH/2k10NSDUH/2k10Results.htm#4.4

U.S. Department of Health and Human Services (HHS). (2015). *Trends in adolescent tobacco use*. Retrieved from http://www.hhs.gov/ash/oah/adolescent-health-topics/substance-abuse/tobacco/trends.html

White, K. M., & Dudley-Brown, S. (2012). *Translation of evidence into nursing and health care practice.* New York, NY: Springer.

World Health Organization (WHO). (2011). *Youth and health risks: Report by the Secretariat*. Retrieved from http://apps.who.int/gb/ebwha/pdf_files/WHA64/A64_25-en.pdf

World Health Organization (WHO). (2016). *Adolescent health*. Retrieved from http://www.who.int/topics/adolescent_health/en/

Woodruff, S. I., Conway, T. L., Edwards, C. C., Elliott, S. P., & Crittenden, J. (2007). Evaluation of an Internet virtual world chat room for adolescent smoking cessation. *Addictive Behaviors, 32*, 1769-1786.

Zaccagnini, M. E., & White, K. W. (2011). *The doctor of nursing practice essentials: A model For advanced practice nursing* (Laureate Education). Sudbury, MA: Jones & Bartlett.

Appendix A: letter to Stakeholders Regarding the N-O-T Program

Dear Parents and Students,

As stated in the Family Handbook, tobacco use is incongruent with the fundamental mission of XYZ School. All students who attend XYZ School are expected not to use or possess any form of tobacco while school is in session, regardless of their age or whether they are on or off campus. Your student has been caught in violation of this policy.

In the past when students have violated the tobacco policy, they have been required to meet with the Director of Health Services, who would then contact parents and initiate a therapeutic response. For most students, this has meant watching a podcast about the health risks of cigarette smoking and completing a post-test. We have found that this process has not been effective in helping students quit smoking.

Students caught violating the tobacco policy will now be enrolled in the Not-On-Tobacco (N-O-T) program. The N-O-T program is an evidence-based, voluntary smoking cessation program that was developed by the American Lung Association (ALA) for teenagers between the ages of 14 and 19. The program will be delivered in ten 50-minute sessions over 11 weeks. The students will have a session every week for 5 weeks, a week off during Spring trip, followed by sessions for 5 weeks. The students receive small incentives, such as highlighters, key chains, stress balls, and suckers throughout the program. **There is NO cost associated with the program**.

Demographic and smoking history data will be collected during the first session and at completion of the program. This anonymous information is then reported to the ALA.

You can check out more about the N-O-T program at the following link:
N-O-T program: http://www.lung.org/associations/states/colorado/tobacco/not-on-tobacco/

If you have questions or concerns, please do not hesitate to contact me.

Sincerely,
Whitney Erickson, RN, MNSc
Director of Health Services
XYZ School

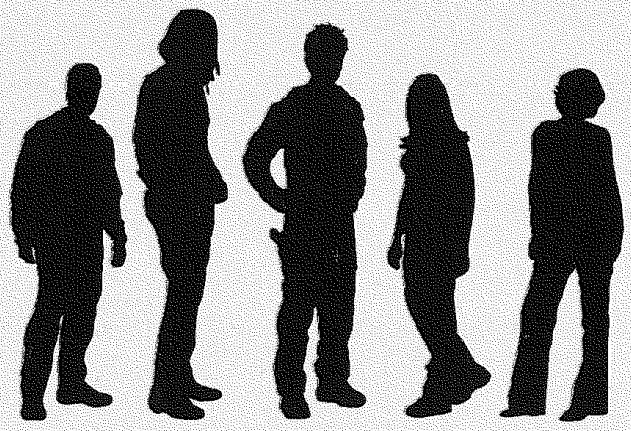
Appendix B: About Me 1 & 2 Survey

N-O-T

NOT ON TOBACCO

AMERICAN LUNG ASSOCIATION.

About Me 1 & 2 Survey Forms
2014-2015



Initials: _____ _____

(First letter of your first name. First letter of your last name)

Birth **DAY**: _____ _____

AMERICAN LUNG ASSOCIATION.
IN COLORADO

American Lung Association in Colorado 2014-2015 Initials: ____ ____Birth DAY:____
Not On Tobacco Program (First & Last Initial. Birth DAY Number 01-31)
Example: Initials: C S Birth DAY 24

About Me Pre-Survey (Session One)

PLEASE REMEMBER THAT YOUR ANSWERS ARE CONFIDENTIAL AND YOUR NAME IS NOT ON THIS SHEET.

1. Are you: **(Please circle)** Male Female

2. Do you identify as any of the following: Lesbian, Gay, Bi-sexual, Transgender or Questioning? Yes No

3. How old are you? _____

4. What grade are you in? 6 7 8 9 10 11 12 Beyond High School

5. What is your race/ethnic group?

White	Black/African American
Asian American or Asian	Hispanic/Latino
American Indian or Alaskan Native	Other

6. If cigarettes were more expensive would you have started smoking? Yes No
7. Do you have access to medicinal marijuana? Yes No
8. Do you have access to recreational marijuana? Yes No
9. Do you think smoking marijuana is harmful? Yes No
10. Do you think smoking e-cigarettes are harmful? Yes No
11. Have you smoked a cigarette or used tobacco at least once in the in the past 30 days? Yes No
12. **For Smokers:** During the week (Monday thru Friday), about how many cigarettes do you smoke per day? _____
13. **For Smokers:** During the weekend (Saturday and Sunday), about how many cigarettes do you smoke per day? _____
14. **For Chew Users:** During the week (Monday thru Friday), about how many dips of chew do you use per day? _____
15. **For Chew Users:** During the weekend (Saturday and Sunday), about how many dips of chew do you use per day?

American Lung Association in Colorado 2014-2015 **Initials: _____ _____Birth DAY:____**
Not On Tobacco Program **(First & Last Initial. Birth DAY Number 01-31)**
Example: Initials: C S Birth DAY 24

16. How old were you when you **first** started smoking? _____

17. Where and how do you get your cigarette products? **(Circle all that apply)**

Purchase on your Own	From Parents
From other Family Members	From Friends
Steal Them	Other _____

18. Have you tried to quit smoking in the past? Yes_____ No_____

19. Have you tried to quit chew tobacco in the past? Yes _____ No_____

20. Which of these products do you use? **(Circle ALL that apply)**

Cigarettes	Cloves	Snus
Flavored Cigars	Menthol	E-Cigarettes
Chew Tobacco	Cigars	Hookah Pipe

21. Do you feel your parent/guardian approves of you smoking and/or using other tobacco products? Yes No Don't Know

22. Has your parent/guardian ever talked to you about the harms of smoking and/or using tobacco products? Yes No

23. Are you allowed to smoke inside the home? Yes No

24. Does anyone smoke inside your home? Yes No

25. Do your friends smoke? Yes No

26. At your school or organization today, is there a teacher or staff member who really cares about you? Yes No Not sure

27. If you had a serious problem, do you know someone (teacher or staff member) in or out of your school or organization that you could talk to or go to for help?
Yes No Not sure

28. On a scale of 1-5, **Circle** the number that shows which one fits you right now.

Not at all ready to quit.....Kind of ready to quit..... Ready to quit right now

1 2 3 4 5

American Lung Association in Colorado 2014-2015 **Initials: ____ ____Birth DAY:___**
Not On Tobacco Program **(First & Last Initial. Birth DAY Number 01-31)**
Example: Initials: C S Birth DAY 24

29. Why do you want to quit smoking?

_____

_____

_____

_____

Session Ten

About Me 2

Form

American Lung Association in Colorado 2014-2015 Initials: ____ ____Birth DAY:____
Not On Tobacco Program (First & Last Initial. Birth DAY Number 01-31)
Example: Initials: C S Birth DAY 24

About Me Post Survey 2 (Session Ten)

PLEASE REMEMBER THAT YOUR ANSWERS ARE CONFIDENTIAL AND YOUR NAME IS NOT ON THIS SHEET.

1. Are you still smoking any cigarettes? Yes No
2. Are you still using any spit tobacco? Yes No
3. If you are not smoking, how many days has it been since your last cigarette? (Enter number of days) _____
4. If you are not using spit tobacco, how many days has it been since your last dip? (Enter number of days) _____
5. **For Smokers**: During the week (Monday thru Friday), about how many cigarettes do you smoke per day? _____
6. **For Smokers**: During the weekend (Saturday and Sunday), about how many cigarettes do you smoke per day? _____
7. **For Chew Users**: During the week (Monday thru Friday), about how many dips of chew do you use per day? _____
8. **For Chew Users**: During the weekend (Saturday and Sunday), about how many dips of chew do you use per day? _____
9. Did you have family members who supported you quitting smoking? Yes No
10. Does anyone smoke inside your home? Yes No
11. Are you allowed to smoke inside your home? Yes No
12. Do you have friends who smoke? Yes No
13. Do you think smoking e-cigarettes are harmful? Yes No
14. Was there a teacher or someone who works at your school other than your N-O-T facilitator who supported you quitting smoking? Yes No
15. How helpful was the N-O-T program in helping you to quit smoking? **(Circle ONE)**

Not Helpful Somewhat Helpful Very Helpful

American Lung Association in Colorado 2014-2015 **Initials: ____ ____Birth DAY:___**
Not On Tobacco Program **(First & Last Initial. Birth DAY Number 01-31)**
Example: Initials: C S Birth DAY 24

16.In what other areas of your life (other than quitting or reducing smoking or chewing) was the N-O-T program helpful? **(Circle ALL that apply)**

Exercise more	Feel better about myself
Make better grades	Deal with stress better
Go to school more often	Deal with family and friends better
Eat better	Making new friends

Other, please specify_____

17.Would you recommend the N-O-T Program to friends who want to quit? Yes No

18. What did you like about your N-O-T group?

Support from Peers	Learning about the Harms of Smoking
Support from Facilitator	Opportunity to Quit Smoking
Free Food/Free Stuff	Making New Friends

Being with a Group of Friends who are also Trying to Quit Smoking

Other_____

_____

_____

_____

_____

_____

19. On a scale of 1-5, with 5 being the best, circle the number that represents your N-O-T facilitator(s)?

POOR----------OK----------GREAT

1 2 3 4 5

20. At your school or organization today, is there a teacher or staff member who really cares about you? Yes No Not Sure

American Lung Association in Colorado 2014-2015 **Initials: ____ ____Birth DAY:____**
Not On Tobacco Program **(First & Last Initial. Birth DAY Number 01-31)**

Example: Initials: C S Birth DAY 24

21. If you had a serious problem, do you know someone (teacher or staff member) in or out of your school or organization that you could talk to or go to for help?
    Yes No Not Sure

Appendix C: Permission to Use N-O-T Survey

AMERICAN LUNG ASSOCIATION
IN COLORADO

September 30, 2015

To Whom It May Concern:

I give Whitney Erickson permission to use the N-O-T surveys as part of the data collection for her doctoral research project. If there are any questions regarding this, please contact myself by e-mail, cisaacks@lungs.org, or by phone, 303-847-0269.

Thank you,

5600 Greenwood Plaza Blvd. Suite 203 Greenwood Village, CO 80111
Ph. 303 388-4327 F: 877 276 2108 info@lungcolorado.org
lungcolorado.org

Appendix D: Qualitative Questions Asked

At the beginning of each session, and at the end of the final session, the following questions were asked:

1) "What part of the previous session worked for you?"
2) "What part of the previous session did not work for you?"

Appendix E: Data Use Agreement

Initiative/Program/Intervention Oversight and Data Use Agreement when Researcher has Dual Roles

Colorado Rocky Mountain School
Jennifer Ogilby, Dean of Students
500 Holden Way
Carbondale, CO 81623

December 11, 2016

Whitney Erickson was involved in the Not-On-Tobacco (N-O-T) initiative which was being conducted under our organization's supervision within the scope of our standard operations. We understand that Whitney Erickson seeks to write about this initiative as part of a doctoral study for Walden University. To this end, we agree to share a de-identified dataset with the student for research purposes, as described below.

The Walden University Institutional Review Board (IRB) will be responsible for ensuring that the student's published study meets the university's ethical standards regarding confidentiality (outlined below). All other aspects of the implementation and evaluation of the initiative were the responsibility of the student, within her role as our employee.

The doctoral student will be given access to a Limited Data Set ("LDS") for use in the doctoral project according via the ethical standards outlined below.

This Data Use Agreement ("Agreement"), effective as of December 11, 2016 ("Effective Date"), is entered into by and between Whitney Erickson ("Data Recipient") and Colorado Rocky Mountain School ("Data Provider"). The purpose of this Agreement is to provide Data Recipient with access to a Limited Data Set ("LDS") for use in research in accord with laws and regulations of the governing bodies associated with the Data Provider, Data Recipient, and Data Recipient's educational program. In the case of a discrepancy among laws, the agreement shall follow whichever law is more strict.

1. *Definitions. Unless otherwise specified in this Agreement, all capitalized terms used in this Agreement not otherwise defined have the meaning established for purposes of the "HIPAA Regulations" codified at Title 45 parts 160 through 164 of the United States Code of Federal Regulations, as amended from time to time.*

2. *Preparation of the LDS. Data Provider shall prepare and furnish to Data Recipient a LDS in accord with any applicable HIPAA or FERPA Regulations*

3. *Data Fields in the LDS. No direct identifiers such as names may be included in the Limited Data Set (LDS). In preparing the LDS, Data Provider or shall include the data fields specified as follows, which are the minimum necessary to accomplish the research:* any information contained in the Not-On-Tobacco About Me Pre- and Post-Surveys; student interview data collected during implementation of the Not-On-Tobacco program.

4. *Responsibilities of Data Recipient. Data Recipient agrees to:*

a. *Use or disclose the LDS only as permitted by this Agreement or as required by law;*

b. *Use appropriate safeguards to prevent use or disclosure of the LDS other than as permitted by this Agreement or required by law;*

c. *Report to Data Provider any use or disclosure of the LDS of which it becomes aware that is not permitted by this Agreement or required by law;*

d. *Require any of its subcontractors or agents that receive or have access to the LDS to agree to the same restrictions and conditions on the use and/or disclosure of the LDS that apply to Data Recipient under this Agreement; and*

e. *Not use the information in the LDS to identify or contact the individuals who are data subjects.*

5. *Permitted Uses and Disclosures of the LDS. Data Recipient may use and/or disclose the LDS for its research activities only.*

6. *Term and Termination.*

a. *Term. The term of this Agreement shall commence as of the Effective Date and shall continue for so long as Data Recipient retains the LDS, unless sooner terminated as set forth in this Agreement.*

b. *Termination by Data Recipient. Data Recipient may terminate this agreement at any time by notifying the Data Provider and returning or destroying the LDS.*

c. *Termination by Data Provider. Data Provider may terminate this agreement at any time by providing thirty (30) days prior written notice to Data Recipient.*

d. *For Breach. Data Provider shall provide written notice to Data Recipient within ten (10) days of any determination that Data Recipient has breached a material term of this Agreement. Data Provider shall afford Data Recipient an opportunity to cure said alleged material breach upon mutually agreeable terms. Failure to agree on mutually agreeable terms for cure within thirty (30) days shall be grounds for the immediate termination of this Agreement by Data Provider.*

e. *Effect of Termination. Sections 1, 4, 5, 6(e) and 7 of this Agreement shall survive any termination of this Agreement under subsections c or d.*

7. *Miscellaneous.*

a. *Change in Law. The parties agree to negotiate in good faith to amend this Agreement to comport with changes in federal law that materially alter either or both parties' obligations under this Agreement. Provided*

however, that if the parties are unable to agree to mutually acceptable amendment(s) by the compliance date of the change in applicable law or regulations, either Party may terminate this Agreement as provided in section 6.

b. *Construction of Terms. The terms of this Agreement shall be construed to give effect to applicable federal interpretative guidance regarding the HIPAA Regulations.*

c. *No Third Party Beneficiaries. Nothing in this Agreement shall confer upon any person other than the parties and their respective successors or assigns, any rights, remedies, obligations, or liabilities whatsoever.*

d. *Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.*

e. *Headings. The headings and other captions in this Agreement are for convenience and reference only and shall not be used in interpreting, construing or enforcing any of the provisions of this Agreement.*

IN WITNESS WHEREOF, each of the undersigned has caused this Agreement to be duly executed in its name and on its behalf.

Partner Site (Student's Employer)

Signed: Jennifer O'Gilby

Print Name: Jennifer O'Gilby

Print Title: Dean of Students.

Doctoral Student

Signed: Whitney Erickson

Print Name: WHITNEY ERICKSON

Print Title: FORMER DIRECTOR OF HEALTH SERVICES at CCMS / DOCTORAL STUDENT

Appendix F: Walden University Institutional Review Board Approval

Dear Ms. Erickson,

This email is to notify you that the Institutional Review Board (IRB) confirms that your study entitled, "Use of the N-O-T Program as a Smoking Cessation Intervention for High School Students," meets Walden University's ethical standards. Our records indicate that you will be analyzing data provided to you by Colorado Rocky Mountain School as collected under its oversight. Since this study will serve as a Walden doctoral capstone, the Walden IRB will oversee your capstone data analysis and results reporting. The IRB approval number for this study is 12-23-16-0501636.

This confirmation is contingent upon your adherence to the exact procedures described in the final version of the documents that have been submitted to IRB@waldenu.edu as of this date. This includes maintaining your current status with the university and the oversight relationship is only valid while you are an actively enrolled student at Walden University. If you need to take a leave of absence or are otherwise unable to remain actively enrolled, this is suspended.

If you need to make any changes to your research staff or procedures, you must obtain IRB approval by submitting the IRB Request for Change in Procedures Form. You will receive confirmation with a status update of the request within 1 week of submitting the change request form and are not permitted to implement changes prior to receiving approval. Please note that Walden University does not accept responsibility or liability for research activities conducted without the IRB's approval, and the University will not accept or grant credit for student work that fails to comply with the policies and procedures related to ethical standards in research.

When you submitted your IRB materials, you made a commitment to communicate both discrete adverse events and general problems to the IRB within 1 week of their occurrence/realization. Failure to do so may result in invalidation of data, loss of academic credit, and/or loss of legal protections otherwise available to the researcher. Both the Adverse Event Reporting form and Request for Change in Procedures form can be obtained at the IRB section of the Walden website:http://academicguides.waldenu.edu/researchcenter/orec

Researchers are expected to keep detailed records of their research activities (i.e., participant log sheets, completed consent forms, etc.) for the same period of time they retain the original data. If, in the future, you require copies of the originally submitted IRB materials, you may request them from Institutional Review Board.
Both students and faculty are invited to provide feedback on this IRB experience at the link below:
http://www.surveymonkey.com/s.aspx?sm=qHBJzkJMUx43pZegKlmdiQ_3d_3d
Sincerely,