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Using an Evidence-Based Tobacco Cessation Treatment Guideline Workshop to Increase Nurses’ Skill, Confidence, and Provision of Care

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Using an Evidence-Based Tobacco Cessation Treatment Guideline Workshop to Increase Nurses’ Skill, Confidence, and Provision of Care

Tonya Tyson
Georgia College and State University
Doctor of Nursing Practice Translational Research and Clinical Project

ACCEPTANCE

This Translational Research and Clinical Project, USING AN EVIDENCE-BASED TOBACCO CESSATION TREATMENT GUIDELINE WORKSHOP TO INCREASE NURSES’S SKILL, CONFIDENCE, AND PROVISION OF CARE by Tonya Tyson was prepared under the direction of the candidate’s research committee. It is accepted by the committee members in partial fulfillment of the requirement for the degree Doctor of Nursing Practice in the Georgia College School of Nursing in the College of Health Science, Georgia College & State University.

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5/1/2018

Date
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Abstract
Approximately 15% of adults 18 years of age or older in the United States smoke tobacco. Over 16 million people who smoke tobacco have a related disease. Since nurses comprise the largest group of health care providers in the country, they could have a big impact on client cessation efforts. Many nurses, however, feel unprepared to provide evidence-based smoking cessation counseling (SCC) per established national guidelines. The aim of this project was to provide a brief workshop providing nursing students and faculty training. The theory of planned behavior was used as a framework to measure attitudes toward providing SCC, perceived subjective norms to provide SCC, perceived behavioral control as measured by ability and confidence to provide SCC, and intent to provide the counseling. Data analysis found a significant increase in all five variables. This suggests that providing SCC education to nursing students and faculty can be effective in increasing their intent to incorporate this care into practice.

*Keyword:* smoking cessation counseling, evidence-based guidelines, education, nursing
Chapter 1: Introduction

Fifteen out of every one hundred adults in the United States (U.S.) eighteen years old or older, smoke tobacco; this is more than 36 million people (Centers for Disease and Prevention, 2016). The CDC further reports that over 16 million people who smoke tobacco have a related disease. Tobacco smoking related diseases and complications are responsible for an estimated 480,000 deaths in the U.S. per year (United States Department of Health and Human Services, 2014). Responses to the 2015 National Health Interview Survey (NHIS) indicate that 68% of adults who smoke want to stop and over 55% have tried to stop smoking (CDC, 2017). Furthermore, less than 60% of adults that had ever smoked have been able to successfully stop smoking while the goal set in Health People 2020 objectives for a tobacco use cessation rate of 80% (Office of Disease Prevention and Health Promotion [ODPHP], 2017). Among the adults that were surveyed by the NHIS, just over 57% reported that they had been advised by a health care provider and used counseling and/or pharmacologic aids to quit smoking (CDC, 2017). Additionally, less than a third of the adults that were surveyed reported using evidence-based strategies to stop smoking.

Despite the significant decrease in the number of people who smoke over the past five decades, smoking continues to be a national health concern; it is estimated that 40% of the U.S. population smoked in 1965 (United States Department of Health and Human Services, 2014) with current estimates at 15% (Jamal, King, Neff, Whitmill, Babb, & Graffunder, 2016). People who have never smoked have a hospitalization rate of 16% compared to 49% for those who currently smoke or who have ever smoked (Martens et al., 2015). Current and former smokers make more than four more outpatient visits to hospitals than those who do not smoke (Kahende, Adhikari, Maurice, Rock, & Malarcher, 2009). Treatment of smoking-related illness puts a cost
burden on the U.S. of almost $3 billion dollars (Jamal, Agaku, O'Connor, King, Kenemer, & Neff, 2014).

**Background of the Problem**

All clinicians and health care systems are encouraged to identify and offer treatment for clients who smoke tobacco (Fiore et al., 2008; Roberts, Kerr, & Smith, 2013). In the World Health Organization’s Framework Convention on Tobacco Control (WHO FCTC, 2010), the recommendation is made to integrate training on tobacco control into the pre- and post-qualification levels of education for all health care professions as well as in the form of continuing education. In the U.S., the Agency for Healthcare Research and Quality (AHRQ) put tobacco use assessment and treatment within the responsibilities of healthcare providers practicing in direct client care (Fiore et al., 2008). Therefore, nurses are responsible for tobacco dependence identification and intervention. A white paper from the American Academy of Nursing (AAN) posits that nursing curricula must include tobacco dependence education to nurses (Sarna, Bialous, Chan, Hollen, & O’Connell, 2013). The American Association of Nurse Practitioners (NP) (2015) state that NPs practicing in ambulatory, acute, and long-term care settings are the “experts” in health promotion and disease management. For nurse practitioners (NPs) to acquire the competencies needed to provide health promotion and disease management, it is incumbent upon graduate nurse practitioner programs to include curricula to provide NP students with the core competencies for practice. The National Organization of Nurse Practitioner Faculties (NONPF) (Thomas et al., 2017) includes among the recommended competencies of NP students; practice, quality, and independent practice competencies that require the NP student to translate research and other knowledge to improve processes and outcomes, use available evidence to improve the quality of their practice, and to provide patient
centered care to preserves the patient’s control. The number of registered nurses in the U.S. is more than 2,857,180 and the number of NPs at about 150,230 according to the United States Department of Labor (2017). Nurses make up the largest group of health care clinicians in the U.S. (Fayer & Watson, 2015), positioning them to provide tobacco abuse care to a great number of clients who continue to smoke. The National Organization of Nurse Practitioner Faculties (NONPF) include within their recommendations that NP students be competent in translating research into practice, develop new practice approaches based on research, use the best available evidence to improve the quality of practice, and to make the patient a partner in the decision making about their care (Thomas et al., 2017). For nurses to have the knowledge, attitudes, and skills for tobacco cessation counseling, they must receive evidence-based education.

A Cochrane Review provides conclusions based on 17 studies of health professionals, three of which include nurses and nurse practitioners, who are trained in tobacco cessation and found that those trained are more likely to provide cessation care than those who are not trained (Carson, Verbiest, Crone, Brinn, Esterman, Assendelft, & Smith, 2013). Another Cochrane Review pools 35 studies including over 17,000 participants of nurse provided cessation interventions versus usual care (Rice, Hartmann-Boyce, & Stead, 2013). The review examines nurse delivered smoking cessation interventions such as advice and counseling and/or the provision of cessation strategies and finds that interventions by nurses as compared to usual care which included brief advice and self-help materials provide an increase in the likelihood of cessation (RR 1.29; 95% CI 1.20 to 1.39). The findings from these two meta reviews provide evidence that nurses have an important role in smoking cessation counseling and are effective in providing that counseling to aid clients who smoke in their cessation efforts.
Tobacco Use and Dependence Guidelines

The American Nurses Association (2015) directs nursing practice to include current evidence-based research findings into practice. The latest and most current analysis of the research on the care of the individual who uses and is dependent on tobacco products is presented by Fiore et al. (2008) in “Treating Tobacco Use and Dependence:  2008 Update.” The 2008 update is the latest revision of the guideline. The following is a description of this most current evidence-based smoking cessation guideline.

“Treating Tobacco use and Dependence:  2008 Update,” serves as a national guideline for the identification and treatment of individuals who are tobacco dependent (Fiore et al., 2008). Based on an extensive review of the tobacco use and cessation literature, this guideline was first published in 1996, then again in 2000 with the latest version in 2008. The 2008 update was based on a total of 8,700 randomized controlled trials screened among the three publications. The guideline is comprehensive in scope including assessment, intervention, and follow-up strategies. The interventions cover cognitive, psychosocial, behavioral, and pharmacologic interventions as appropriate. The guideline also covers smoking cessation strategies for 13 special populations of individuals that smoke with strategies that are relevant to each population.

Tobacco use and dependence guidelines are intended for individuals at all stages of change including those who are willing to quit smoking, those who are unwilling to quit, and those who have just recently quit (Fiore et al., 2008). The guides can be used locally, regional, or nationally for any health care provider in any setting. Tobacco dependence care continues to be relevant in health care as many disease processes can be either directly or indirectly associated with tobacco use. The recommendations are to facilitate the health care provider to give short but effective, individualized care to the appropriate patients. The interventions provided do not vary from
current practices but rather put all the information and resource in one document for health care providers, systems, and insurers. Cessation outcomes can easily be measured through follow-up and return visits by the patients as well measuring outcomes through larger research studies. The tobacco use treatment guidelines include ten key recommendations for providers in treating clients who use tobacco. Tobacco use should be considered as a chronic disease, thus repeated interventions with effective treatments should be offered. Every client who uses tobacco should be identified and their status documented consistently. Every client who is willing to attempt a cessation attempt should be consistently offered counseling and pharmacologic agents if there are no contraindications. Because brief interventions are effective, every client should be offered brief tobacco cessation strategies. Practical guidance such as problem solving and skill training as well as social support should be provided as two components of the counseling intervention. The use of pharmacologic agents that are effective alone or in combinations should be encouraged if there are no contraindications to use of the agents. Recommended pharmacotherapy and counseling should be used together if possible to provide the most effective treatment. Since tobacco quit telephone lines staffed with trained cessation counselors have been shown to be highly effective for clients who desire to quit, referrals to quit lines should be used. For clients that are unwilling to attempt to quit, motivational interviewing techniques should be used. And the final recommendation from the tobacco use treatment guidelines encourages insurers to provide coverage to clients as the treatments recommended are effective both clinically and financially.

For clinicians to be able to provide the recommendations in a brief intervention, the 5As model is provide (Fiore et al., 2008). This model includes Ask, Advise, Assess, Assist, and Arrange. The first step (ask), prompts the clinician to identify and document tobacco use status
at every client visit. The next step (advise) includes encouraging the client using a clear, personalized approach. The client’s willingness to quit is then assessed in the third step (assess). If the client is willing to attempt to quit, the clinician then proceeds to the fourth step (assist) by offering pharmacotherapy when appropriate and offering counseling or referring to an outside resource for counseling. And the fifth step (arrange), the clinician arranges follow-up visits with the client beginning one week from the selected quit date. If the client is not willing to quit, during the assist step, the clinician uses motivational interviewing techniques to provide strong, clear information about the risks of tobacco use and the benefits of cessation. The clinician then should arrange to follow-up on tobacco status with the client on the next clinical visit.

**Problem Statement**

Despite the responsibility for nurses regarding tobacco treatment, inclusion of tobacco dependence education lacks in pre-licensure and advanced practice nursing curricula (Heath, Andrews, Thomas, Kelly, & Friedman, 2002; Heath, Kelley, Andrews, Crowell, & Hudman, 2007; Henson-Evertz, 2011; Wewers, Kidd, Armbruster, & Sarna, 2004; Wong & Stokes, 2011). A barrier to including SCC training in nursing curricula is that faculty do not have the knowledge base to provide such training (Lenz, 2013). To be able to provide instruction to nursing students both at the undergraduate and graduate levels, nursing faculty need appropriate training.

**Purpose of the Project**

This translational study aims to provide an evidence-based tobacco treatment presentation for undergraduate baccalaureate nursing students, advanced practice nursing students, nurse practitioners, and faculty. The purpose of this Doctor of Nursing practice (DNP) project is to educate nurses on the use evidence-based tobacco cessation care to patients they encounter in the clinical setting. The research question is to determine whether a workshop provided to train
nurses on evidence-based smoking cessation counseling interventions will increase the participants self-efficacy to provide smoking cessation counseling for their patients who smoke. The anticipated outcome is that the increase in self-efficacy to provide smoking cessation counseling (SCC) to the patient who smokes will be reflected in an increase in the implementation of SCC. A secondary outcome is that there will be an increase in the level of the SCC provided.

**Significance of the Problem**

The number of individuals who smoke still present a significant, modifiable health risk (United States Department of Health and Human Services, 2014). Nurses are the largest body of health care providers (Fayer & Watson, 2015) thus having a greater access to people who smoke. The opportunity to counsel people about smoking cessation is an expectation of nursing practice (Fiore, 2008) yet many nursing programs do not offer this training. Smoking cessation counseling is most often not offered by nursing programs (Heath, Andrews, Thomas, Kelly, & Friedman, 2002; Heath, Kelley, Andrews, Crowell, & Hudman, 2007; Henson-Evertz, 2011; Wewers, Kidd, Armbruster, & Sarna, 2004; Wong & Stokes, 2011) because faculty are not appropriately trained at a level that gives them the self-efficacy to provide this training (Lenz, 2013). Because training is not typically offered during nursing education, nurses at the bedside feel inadequately prepared to provide SCC (Bilaous, Sarna, Wewers, Froelicher, & Danao, 2004). While some nurses may receive smoking cessation counseling training in the practice setting, education for this important client need should start in the basic nursing curricula.
**Definition of Terms**

To better understand the content in this project, a definition of terms used is provided.

**Evidence-based guideline.** Evidence-based is defined as, “referring to the systematic analysis (“meta-analysis”) of information on the effectiveness of various treatment options, evidence of which often comes from multi-national, multi-center clinical trials, to provide the best care for patients” (evidence-based, 2017). The word, guideline, is defined as, “any guide or indication of a future course of action” (guideline, 2017). The guideline used by this project is the guide for treating clients based on the evidence of the best care determined by clinical trials. The evidence-based guideline used in this project is from, “Treating Tobacco Use and Dependence: 2008 Update” (Fiore et al., 2008).

**Smoking cessation counseling.** The word, smoking, is defined as, “the inhalation of the smoke of burning tobacco encased in cigarettes, pipes, and cigars” (smoking, 2017). The word, cessation, is defined as, “the fact or process of ending or being brought to an end” (cessation, 2017). The word, counsel, is defined as “to give advice, especially on social or personal problems” (counsel, 2017). Counseling then, would be considered the act of providing advice. Within the context of the phrase, smoking cessation counseling. Thus, the phrase smoking cessation counseling also referred to as SCC is defined as advice given clients who smoke tobacco containing products to facilitate ending this behavior.

**Tobacco use and dependence.** The word, tobacco, is defined as, “a preparation of the nicotine-rich leaves of an American plant, which are cured by a process of drying and fermentation for smoking or chewing” (tobacco, 2017). In the context of the phrase, tobacco use and dependence, the term tobacco widely refers to any product that contains tobacco plant leaves as an ingredient. The word, use, in the phrase, tobacco use and dependence is defined as,
“the action of using something or the state of being used for a purpose” and “the habitual consumption of a drug” (use, 2017). The dictionary also defines the word, dependence, as “the state of relying on or being controlled by someone or something else” and “addiction to drink or drugs.” When the phrase, tobacco use and dependence, is used in this project, these words refer to the consumption of or smoking of tobacco containing products and the addition to nicotine contained within the tobacco products, respectively.

**Workshop.** The term workshop is defined as, “a usually brief intensive educational program for a relatively small group of people that focuses especially on techniques and skills in a particular field” (workshop, 2018). The workshop in this project will be a group of nursing students, nurses that are in graduate studies, nurses who train students, and nursing faculty to receiving SCC training.

**Assumptions, Limitations, and Delimitations**

**Assumptions.** There are some assumptions that are made regarding this project. It is assumed that the participants of this project have not had formal training in SCC. Another assumption is that the participants in this project will have the same positive attitudes as those of nurses found in the literature (Goldstein, Hellier, Fitzgerald, Stegall, & Fischer, 1987; McCarty, Hennrikus, Lando, & Vessey, 2001; Swenson, Dalton, Nettles-Carlson, & Friedman, 1991). Because the literature suggests that nurses recognized it is their responsibility to provide SCC (Goldstein, Hellier, Fitzgerald, Stegall, & Fischer, 1987; Swenson, Dalton, Nettles-Carlson, & Friedman, 1991), it is assumed that the current participants are also aware of the social norms related to providing SCC. It has also been suggested that group-based activities such as the proposed workshop are highly effective in providing a social influence within the group by providing a secure feeling for one’s skill and beliefs and through group conformity (Hu, Neff,
Agaku, Cox, Day, Holder-Hayes, & King, 2016). It is assumed that the current project will increase the participant’s perceptions of social norms.

**Delimitations.** Delimitations of this project help to define the scope of the project. This project is in fulfillment of the requirements of a doctoral of nursing practice (DNP) program for graduation. Because of the timeline for the DNP program completion, there are some delimitations. The location and sample from which participants will be recruited is limited to a university setting in southeast Georgia. The location and sample pool was chosen due to easy accessibility by the investigator. The university nursing program of interest currently does not offer SCC training on the undergraduate nor graduate levels. This project is designed as a pilot to fill the current curricula voids. Final analysis of this project will provide data with which SCC education may be added to the curricula of both the undergraduate and graduate nursing programs.

The information provided during the project’s workshop limits the training to cigarette smoking with very little information about smoking other tobacco products. The decision to focus the training workshop on cigarette smoking is that based on statistics from the CDC, over 21% of people in the U.S. use tobacco products of any type with approximately 17% people smoking cigarettes (Hu, Neff, Agaku, Cox, Day, Holder-Hayes, & King, 2016). Because of the large proportion of people who smoke cigarettes to the total number of people who use tobacco in any form, it was decided to focus on smoking cessation. One workshop will be offered due to the time constraints of the investigator’s

**Limitations.** The investigator is working with a committee of three members; these members include two faculty members and an expert community member. A bias of the
investigator is that SCC training should be included in all nursing program curricula. The expert community committee member is a pharmacist and is a certified smoking cessation counselor.

During the literature review, there seemed to be a gap in current literature examining the progress or lack of progress regarding the inclusion of SCC training in nursing programs. The few articles that addressed the proportion of nursing programs that included SCC were published more than five years prior.

In a search for instruments to measure the variables of this project, there were few instruments with established validity and reliability available. Because of this limitation, two brief instruments with the available metrics are used. The data collection will be the sole responsibility of the investigator with analysis being the primary responsibility of the investigator with guidance from DNP faculty members. The data collection timeline is limited related to the timeline for completing the DNP program. Despite the limitations of this project, the results are anticipated to provide valuable information from which to develop SCC education for nurses.

Theoretical Framework

A theoretical framework is a group of related concepts or ideas (Melnyk & Fineout-Overholt, 2015). A framework aids in understanding how ideas are related to one another and the direction of those relationships (Ivey, 2015). A framework also provides a way to identify specific variables in a study or project as well as explain the findings of a study or project when they are expected in accordance with the framework.

The current project requires a behavior change framework to provide an intervention that will change nurses’ behaviors regarding smoking cessation counseling (SCC). The theory of planned behavior (TPB) is a theory that is useful in predicting and explaining behavior (Fishbein
& Ajzen, 2010) but is also used to design interventions for behavior change (Albarracin, Gillette, Earl, Glasman, & Durantini, 2005; Kothe & Mulin, 2005; Tyson, Covey, & Rosenthal, 2014).

The theory of planned behavior was derived from the theory of reasoned action in which positive attitudes and subjective norms resulted in a higher motivation to intention to carry out a desired action (Fishbein & Ajzen, 1975). The theory of planned behavior extends the theory of reasoned action by taking into account a person’s perceived control over the performance of the intended action (Ajzen, 1985). Thus, the theory of planned behavior posits that there are three determinants of whether an individual intends to perform a desired action: whether the individual is “in favor” of the action, how much social pressure the individual feels, and whether the individual feels “in control” of performing the action (Francis et al., 2004). By increasing positive feelings in these three determinant constructs, the likelihood that the individual will increase their intention to perform the action and thus is more like to actually carry out the action. Attitudes toward the behavior, subjective norms about the behavior, and perceived behavioral control of the behavior will be described and operationalized (See Appendix, Figure 1 for a model of TPB).

**Attitudes.** Attitudes towards a behavior derive from the individual’s positive or negative beliefs or evaluations about the behavior (Fishbein & Ajzen, 1975; Ajzen, 1985). In this project, attitude will be measured by the nurse’s positive beliefs toward the provision of SCC. An example of one question that will be used to measure attitude is, “Nurses should assess each client for tobacco use,” with the responses ranging from strongly agree to strongly disagree.

**Subject norms.** Subjective norms of a person are determined by the individual’s evaluation of the social pressure to either perform or not perform a behavior (Francis et al., 2004). Among the proposed sample, the social pressure to perform SCC will most likely come
from colleagues, superiors, and/or organizations. To measure subject norms for this project, a question such as, “Those I look up to in the nursing profession expect me to ask clients about their smoking status,” will be used with the responses ranging from strongly agree to strongly disagree.

**Perceived behavioral control.** Perceived behavioral control is determined by the extent that the individual has over enacting the behavior (Francis et al., 2004). Ajzen (1991) describes perceived behavioral control as being more congruent with Bandura’s self-efficacy. Bandura (1977) describes perceived self-efficacy as the evaluation of an individual on how well they can execute a behavior. Within this self-evaluation to execute a behavior, the individual takes into account confidence and ability. An example of a question that will be used to measure confidence is, “How confident are you that you can provide motivation to clients who are trying to quit,” with responses ranging from not at all confident to extremely confident. Questions such as, “How do you rate your overall ability right now to help clients quit using tobacco,” with responses that range from poor to excellent will be used to measure the participant’s ability.

**Intent.** Intent is a construct that indicates the individual’s perceived probability to perform the desired behavior (Fishbein & Ajzen, 1975). Intent is not always congruent with actual performance of a behavior but can be used as a proximal measure. With respect to the current project, intent will be defined as the nurse’s perceived probability that they will provide SCC to all their clients who smoke. Questions such as, “I intent to assess each client for tobacco use,” will be used to measure intent with responses ranging from strongly agree to strongly disagree.

**Interventions based on the theory of planned behavior.** Ajzen (2006) posits that an individual’s behavior is influenced by three variables; attitudes, perceived social pressure, and
the perceived behavioral control. When the individual believes the outcomes of the behavior are good, important people want them to perform the behavior, and that they are confident they have the skills and ability to perform the behavior, they form the intention to perform the action (see Appendix A). Nurses generally have positive attitudes toward providing SCC (Goldstein, Hellier, Fitzgerald, Stegall, & Fischer, 1987; McCarty, Hennrikus, Lando, & Vessey, 2001; Swenson, Dalton, Nettles-Carlson, & Friedman, 1991). Subjective norms have been found to have weak association with intent, however, it has been suggested that group-based interventions are highly effective in increasing social norm beliefs (Steinmetz, Knappstein, Ajzen, Schmidt, & Kabst (2016). These authors explain that group settings may have social influence within the group by providing a secure feeling for one’s skill and beliefs and through group conformity. The expectation is that providing this workshop in a group setting that the participants will experience an increase in subject norm beliefs. And finally, investigation by Bandura, Adams, and Beyer (1977) showed that confidence in one’s ability to perform strongly influences one’s behavior. Because of the strong influence of confidence and ability the workshop will be framed by the national guidelines for treating tobacco use to provide the participants with the skills needed to perform SCC for their clients. Thus, it is expected that the workshop intervention will provide the participants with skill and ability to perform SCC, thus increasing their confidence.
Chapter 2: Review of the Literature

A review of the evidence was performed using the following databases: Complementary Index, Academic Search Complete, ScienceDirect, CINAHL Complete, CINAHL Plus with Full Text, MEDLINE with Full Text, Advanced Placement Source, Health Source: Nursing/Academic Edition, Psychology and Behavioral Sciences Collection, SPORTDiscus with Full Text, Education Source, Business Source Complete, PsycARTICLES, Professional Development Collection, Environment Complete, PsycINFO, Sociological Collection, MasterFILE Elite, Supplemental Index, JSTOR Journals and Google. Keywords used in the literature search included nurses, advanced practice nurses, nursing students, tobacco use, tobacco cessation, training, and education. This review of the literature identifies sources of recommendations to provide SCC education to nurses, studies that support the need for SCC in nursing curricula, and conclusions from the evidence that will be used to develop the SCC workshop for this project.

The recommendation to include SCC in nursing education comes from many sources. To address prevention of morbidity and mortality from cigarette smoking, the Agency for Healthcare Research and Quality (AHRQ) has called on systems changes in healthcare facilities based on evidence-based, clinical practice guidelines (CPG) for tobacco use and dependence (Fiore et al., 2008). The call for action is directed at healthcare systems to identify and provide tobacco dependence treatment. Among the responsible staff, AHRQ identifies physicians, pharmacists, respiratory therapist, advanced practice nurses, staff nurses, and other members of the health care team. The Joint Commission is an accrediting organization that certifies health care institutions in the United States has implemented strategies to increase tobacco dependence counseling and intervention by implementing global (population) performance measures...
addressing tobacco use. These global performance measures require addressing smoking no matter the patient’s diagnosis or condition (The Joint Commission, 2014). The American Academy of Nursing (AAN) has called for tobacco dependence education to be included in undergraduate and graduate nursing curricula (Sarna, Bialous, Chan, Hollen, & O’Connell, 2013; Heath et al., 2002).

**Need for SCC Education in Nursing Curricula**

A review of the evidence establishes a need for SCC education in nursing curricula, both at the undergraduate and graduate levels, as well as practicing nurses at all levels and nursing faculty. The amount of time devoted to teaching tobacco use and cessation is not adequate in most baccalaureate and graduate nursing programs (Health & Crowell, 2007; Horneberger & Edwards, 2004; Lenz, 2009, Sharpe et al., 2009; Wewers, Kidd, Ambruster, & Sarna, 2004). Many of the nursing programs in the U.S. devote less than two hours of instruction to tobacco use and dependence while others devote one to three hours (Heath, Andrews, Thomas, Kelley, & Friedman, 2002; Heath & Crowell, 2007). Among 50 acute care advanced practice (AP) programs, topics such as the 5As and 5Rs as well as the pharmacologic cessation aids received zero to five hours with less than a fourth of the programs not covering these interventions at all (Heath, Andrews, Thomas, Kelley, & Friedman, 2002). The AP programs also reported that behavioral modification is not covered by 16% of the responding acute care advanced practice programs. Only two of the AP programs out of the 50 that responding report offering SCC certification opportunity to the graduate students. Students indicated a moderate comfort level with providing advising, assessing, and assisting to their clients who smoked (Lenz, 2009).

These studies suggest that the time devoted to teaching about tobacco use is not necessarily adequate. The time devoted to this teaching may focus more on the science and
pathophysiology of smoking rather than the treatment. Because of the focus of the teaching rather than the techniques needed to help clients who smoke, students may not have the confidence needed to effectively counsel clients.

**Students’ and Faculty Perceptions of SCC Education**

A qualitative study to explore the views of undergraduate nursing students provides insight from the student’s perspective regarding SCC education (Schwindt, McNelis, & Sharp, 2016). The students had received one-hour of online training, two case studies, and two hours of instruction in the classroom setting prior to data collection. A focus group of seven of the students who had completed the education were interviewed in a focus group. The themes that emerged from the focus group included wanting the SCC education early in their curriculum and perhaps making SCC an objective in their mental health course. The knowledge they gained helped them to provide care in a non-judgmental way and with empathy for the clients who smoked. The students also understood the importance of talking with clients at every visit about their smoking status. A small qualitative study in Canada examines nursing students' and clinical instructors' perceptions regarding the development of a curriculum that includes smoking cessation as a part of health promotion (Ritchie, Evans, & Matthews, 2010). This small study finds that both nursing students and faculty feel that SCC is an important part of best practices that should be included in undergraduate curricula. A cross-sectional study done in Australia finds that nursing students perceive themselves to be in a good position to counsel clients on smoking cessation (Moxham, Dwyer, & Reid-Searl, 2013). They also indicate they were aware that they had a strong influence and were role models. These studies indicate that students have positive beliefs about their role in SCC. They also indicate a desire to have the training included in their nursing educational curricula.
Students and faculty seem to acknowledge the responsibility of SCC within their respective roles. The perceptions of students indicate a desire to have SCC training included in their nursing programs. Faculty recognize the need to provide the most current best practices based on the evidence. Because SCC is an important strategy to improve health, it should be considered as a necessary part of nursing curricula.

**SCC and Practicing Nurses**

It is also important to understand what actual nurse practice is regarding the provision of SCC. In a cross-sectional study of 290 nurses who are employed in office practices in Kansas (Wetta-Hall et al., 2005), approximately half of the nurses either agree or strongly agree that smoking cessation counseling is part of their role as a nurse, they indicate adequate time to devote to smoking cessation counseling, have the confidence to provide the counseling, and have the support of their office administrators to provide the care. In a study of nurses in acute care hospitals, many of the nurses (66%) report assessing tobacco use, 61% report documenting tobacco use, 52% report asking patients who smoke if they are willing to quit, 62% report advising those who smoke to quit, and 68% report providing resources to the patient who smokes and offering assistance for quitting (Newhouse, Dennison, and Liange, 2011). Nurses’ counseling behaviors significantly correlate with comfort with SCC and are the only significant predictor of performance of SCC (explained 36% of the variance). In a cross-sectional survey study, 162 (81% response rate) practicing nurses respond (Scanlon, Clark, & McGuiness, 2008). The findings show that 87% (n=141) strongly agree or agree with the statement that they have the responsibility to counsel on health-related issues; 22% (n=35) are already talking with patients, 57% are ready but require assistance to do so, 15% are unsure, 3% are not ready; and
22% (n=36) score passing on the knowledge portion of the survey. Nurses on some units are more likely to counsel than others due to the nature of the illnesses of the patients on their unit.

Another cross-sectional survey describes the frequency of nurses' delivery of tobacco cessation interventions and to determine the relationship of interventions to nurses' awareness to Tobacco Free Nurses Initiative (TFNI) (Sarna et al., 2009). The TFNI is to help nurses stop smoking but to also provide information to nurses to help their clients stop smoking cigarettes with evidence-based strategies (Tobacco Free Nurses, 2003). This large survey of 3482 nurses shows 73% always or usually asks, 62% advise about risks and benefits of quitting, 62% assess motivation to quit, 37% assist, 19% arrange, 24% recommend meds, 22% refer to resources, and 10% recommend a quit line. The nurses who are aware of TFNI report significantly more frequent smoking cessation intervention activities as compared to those who are not aware.

An intervention is provided to 98 home health nurses to examine whether SCC training is associated with a change in attitudes and counseling behavior (Borrelli, Lee, & Novak, 2008). One group is instructed on how to provide standard care by providing brief advice to quit per the AHRQ guidelines. The other group is trained to provide care per the AHRQ guidelines along with motivational strategies. The group that received instruction on motivational strategies in addition to the AHRQ guidelines had an increase in confidence to encourage clients in other lifestyle change behaviors. Three main findings from this study includes changes associated with in nurse attitudes towards delivering smoking cessation and these changes persist at six months, a significant increase in the frequency and duration of nurse counseling behaviors from pre-training to the six-month follow-up, and attitudes towards counseling at the end of the training were predictive of nurse counseling behaviors at the six-month follow-up. In addition, there is an increase in perceptions regarding the worth of providing SCC. The nurses are 1.5
time more likely to assist clients with quitting after they are trained, and this also persisted at six months. The frequency and duration of the counseling is increased and at six months, the nurses are more likely to counsel all clients regardless of health status or willingness to quit. This study did have a high attrition rate due to nursing lay-offs and normal staff turnover. The findings of this study suggest that in addition to actual training, making nurses aware of the importance of SCC or increasing positive attitudes of SCC influences the amount of SCC provided.

These studies suggest that nurses feel that it is their responsibility to provide SCC to clients, feel that it is important, and are willing to provide the counseling. The more comfort the nurse experiences, the more counseling activities he/she provides and reinforces the need to educate nurses to increase awareness of tobacco use treatment guidelines and providing training focusing on knowledge, skills, and attitudes regarding SCC. This evidence suggests that the areas that need focus in the education of nurses are the provision of knowledge and strategies that can be used by the nurse for SCC. Limitations of these studies include small, heterogeneous samples of nurses. Office based nurses may indeed have more time to devote to SCC activities than nurses in acute care settings.

**Effectiveness of SCC Training**

Next, it is important to examine the effectiveness of SCC. The SCC training for nursing students, both undergraduate and graduate levels, as well as for practicing nurses and for nursing faculty will be examined.

**Effectiveness of SCC training for undergraduate nursing students.** In a descriptive, comparative study to evaluate the effects of tobacco education on perceived competence and motivation to intervene with seriously ill mental health patients, findings indicate that autonomous motivation and perceived competence were significant (Schwindt, McNelis, &
Sharp, 2014). These findings suggest that tobacco education among undergraduate students is beneficial in increasing competence and motivation to intervene with mental health clients. Mental health clients are an especially difficult population to use SCC activities because of their use of smoking as a coping mechanism for their illnesses. A pilot for an evidence-based training program, “Rx for Change” for Bachelor of Science Nursing (BSN) students to determine if the program will increase skill, confidence, knowledge, and perception of how active the students should be in promoting smoking cessation (Butler et al., 2009). There is a comparison of a six-hour training curriculum to a two-hour curriculum. There was significant positive impact of the “Rx for Change” program on BSN students and there is no difference between the six-hour and two-hour curricula. These findings suggest that a brief training session can be effective for BSN students.

**Effectiveness of SCC training for graduate nursing students.** A study examines the effects of an evidence-based smoking cessation educational intervention to examine whether this education will increase advanced-practice registered nursing (APRN) students’ knowledge, skills, and confidence in providing tobacco cessation training (Whitehead, Zucker, and Stone, 2014). The design of this study is pre-test and post-test with the intervention with a convenience sample of 36 second-year APRN students in a family practice educational tract. Out of the sample, only three participants indicated that they have discussed smoking cessation with a patient and had assessed a patient’s current smoking status in the past. Only one of the sample indicate they provide resource information to a patient who smoked. Findings include a significant increase in the students’ perceptions of knowledge, skills, and confidence for providing SCC to patients who smoke after they completed the intervention.
**Effectiveness of SCC training for nursing faculty.** A study examining faculty members’ perceived effectiveness regarding the teaching of tobacco education in an acute care NP curriculum and finds that significant improvement in perceived effectiveness in teaching tobacco cessation among the faculty after the training conference (Heath, Kelley, Andrews, Crowell, Corelli, & Hudmon, 2007). At twelve months, the faculty perceive the most valuable resource for their teaching is the USPHS guidelines. The amount of time devoted to teaching tobacco education increases from 22% teaching three or more hours of tobacco content to 74.1% teaching three or more hours.

Heath and Crowell (2007) examine the attitudes and beliefs of faulty in an advanced practice nursing program regarding curricular revision to include tobacco education. The authors’ aim is to identify factors that lead to the intent to include tobacco education into an advance-practice curriculum. Faculty of various advanced-practice programs are included in the sample including nurse anesthesia, midwifery, clinical nurse specialist, and nurse practitioner. The sample size is 161 faculty respondents. Regarding self-efficacy of the faculty, highest SE is noted in teaching health effects and risks with the lowest SE is noted in teaching content of cigarettes and nicotine withdrawal. External factors such as demographics, gender of the respondent, level of education, and years of education experience as well as behavioral beliefs—attitude toward the behavior (tobacco education) are significant in influencing the intent to integrate tobacco education. Limitations of this study include a small convenience sample related to a low response rate. This study demonstrates the importance of faculty in graduate NP programs to have education and comfort with providing the knowledge, skills, and education to students in SCC.
**Effectiveness of SCC training for practicing nurses.** To better understand the reasons for low advice rates among nurses and how to improve those rates, a cross-sectional study is done of 297 nurses (McCarty, Hennrikus, Lando, & Vessey, 2001). Of the respondents to this study, 7% report always, 23% most, 41% sometimes, 25% rarely, 4 never to the question of likelihood of providing SCC to clients who report tobacco use. The conclusions of the researchers of this study are to educate staff and to include treatment of tobacco use in the curriculum and to make nurses aware of the impact of smoking cessation on the impact on health/illness.

**Most Effective Dose of Training**

Because nurses’ time is valuable, the dose or length of time of an education intervention is to be considered. The best balance of dose and material presented shall be based on what the evidence shows as an effective dose of training.

A study that examines the effect of a three-hour SCC training program on hospital nurses finds that the immediate post-test results show a significant increase in knowledge (Matten et al., 2011). While 80% of nurses indicate they have good to excellent skills during the pre-test and immediate post-test, an increase in counseling skills is seen in the immediate post-test. The perceived ability of the participants in providing SCC increases from 24% to 81% after the training. Significant change is noted in the nurses’ scores of advising, assessing readiness, providing assistance, and overall ability to help patients quit smoking. Most of the nurses (63%) state the information provided is new to them, 80% report the number of patients they will counsel will increase, and 87% state the quality of their counseling will improve. The limitations in this study include a small sample in a Magnet Status hospital where nurses are acutely aware of the importance of evidence-based practice. This study does demonstrate a 3-hour training
session is effective in changing the knowledge, confidence, and counseling-related behaviors of nurses.

A quasi-experimental study is done to evaluate a brief hospital-based educational program focused on increasing nurses' delivery of smoking cessation interventions according to the five As and referral to a quit line and promoting positive attitudes about their involvement in smoking cessation (Sarna et al., 2014). The sample included 98 nurses and the findings show a significant improvement in frequency of assessment of readiness, provision of assistance, recommendations for quit line, and recommendations about meds after 3 months after a one-hour evidence-based SCC program. This study suggest that a brief program may be effective; however, this study includes experienced nurses.

**Suggestions for the Development of a SCC Training Intervention**

There is concerned that nursing programs are not providing the curricula to enable nursing students to meet the needs of the population of clients that smoke despite the provide treatment education based on current guidelines (Heath, 2002; Whitehead, Zucker, & Stone, 2014). When the comfort level is increased, the frequency and duration of SCC activities are increased (Newhouse, Dennison, & Liange, 2011) reinforcing the need to educate nurses. To affect a change in the instruction of nursing students, faculty need to have a belief that they can provide the needed education (Heath et al., 2002). In turn, faculty need education regarding the tobacco use and treatment guidelines to be able to provide evidence-based instruction to students. The use of AHRQ guidelines as a guide for instruction would help to standardize the information that students across education settings (Lenz, 2009).

To prepare nurses for providing SCC, education must be done on several levels. Education is needed for bedside nurses but should start in nursing education programs curricula
(Sarna et al., 2013; Heath et al., 2002). It has been suggested that research needs to be done to identify how smoking cessation can be included in nursing curricula and resources needed by faculty to teach smoking cessation needs to be identified (Lenz, 2013).

The evidence suggests that there is an ongoing need to provide SCC training to nurses and to incorporate this education into nursing curricula. Nursing faculty feel ill prepared to offer this education in nursing programs. Training provided to faculty and practicing nurses will enable training of nursing students to receive the training in SCC that they will need going forward into practice.
Chapter 3: Methodology

This translational research project is designed to address the need for smoking cessation counseling training to nurses. A smoking cessation workshop will be provided to undergraduate and graduate nursing students as well as nurse preceptors and nurse faculty.

Research Questions

The clinical research aim is to determine whether a workshop provided to train nurses on evidence-based smoking cessation counseling interventions will increase the nurses’ attitudes, perceived subjective norms, perceived behavioral control through self-efficacy as measured by confidence and ability, and intent to provide smoking cessation counseling for their patients who smoke. The research questions are:

1. Is there a difference in the nurse’s perceived attitude in providing SCC after receiving smoking cessation counseling education?
2. Is there a difference in the nurse’s perceived subjective norms in providing SCC after receiving smoking cessation counseling education?
3. Is there a difference in the nurse’s perceived ability in providing SCC after receiving smoking cessation counseling education?
4. Is there a difference in the nurse’s perceived confidence in providing SCC after receiving smoking cessation counseling education?
5. Is there a difference the nurse’s intent to provide SCC after receiving smoking cessation counseling education?
6. Is there a difference in the nurse’s provision of SCC after receiving smoking cessation counseling education?
Data Collection Procedures

After obtaining informed consent, baseline data collection (time one) was obtained. Two weeks after the time one data collection, an educational intervention workshop was offered in the following format: a face-to-face workshop taught by a certified smoking cessation counselor trainer lasting about four hours. The workshop contained information and training to the participants based on areas of need indicated by the pre-intervention surveys. The training topics include: general information about smoking, interventions including 5As, motivational interviewing, and pharmacotherapy. Data collection continued for approximately four months for participants who completed the online recorded workshop.

The surveys for pre- and post-workshop data collection (time one and time two data collection, respectively) were uploaded on an online survey application, Survey Monkey®. Participants will self-create personal identification codes to maintain the confidentiality and anonymity of the participants. Only aggregate data was received by the primary investigator. Data collected for this project will be retained for three years, then the data will be destroyed.

Protection of Human Subjects

This translational project was not anticipated to impose any more stress, psychological, social, legal, or physical harm than routine assignments that one might find in a nursing education program. If the participant experienced any of the previously mentioned harms, they would have been advised to stop the training and had the option to withdraw from the study. The participants were provided the project investigator’s contact information should any further actions need to be taken.

No compensation was offered to participate in this project. Continuing education (CE) credits were awarded upon completion of the workshop at no charge for participants who hold a
nursing license. Participation was voluntary, and the participants could withdraw from the project at any time. Students were made aware that their decision to participate or not to participate would have no bearing on grades for any nursing courses or performance evaluation. Informed consent letters were at the beginning of each survey and the participant was asked to indicate consent by choosing “yes” or decline consent by choosing “no.” (See Appendices B and C for copies of the informed consent letter).

**Setting and Sample**

The setting for this project was the campus of a university in the southeastern U.S. that currently has both pre-licensure nursing program and nurse practitioner programs. The program did not have a dedicated educational unit on evidence-based tobacco cessation training for undergraduate or graduate nursing programs offered (D. MacMillan, personal communications, December 19, 2017). Tobacco related complications and pharmacology were segmented into appropriate courses such as advanced pathophysiology and pharmacology (K. Bouthillet, personal communication, March 12, 2016).

A convenience sample was recruited from students enrolled in the pre-licensure and nurse practitioner programs offered at the university campuses as well as the precepting nurse practitioners that work with the students and nursing faculty. The participants were recruited via email invitation as well as by personal invitation, and flyers. The voluntary training was offered to all pre-licensure students who are enrolled in the junior second semester adult health course, NP students, NP preceptors, and faculty. Approval of the IRBs of both the educational facility and the study setting were obtained.
Variables

The independent variable in this project was operationalized as the smoking cessation counseling workshop presentation. The dependent variables were operationalized as the participants’ skill and confidence as components of the participants’ perceived self-efficacy to control their behavior related to the provision of smoking cessation counseling to their patients who smoke.

Instruments

Demographic data collected was minimal and consisted of the three questions that were asked with the pre-presentation survey. The demographic questions include: 1) I am a: BSN student, NP student, NP preceptor, or nursing faculty? 2) Have you even taken a tobacco treatment class? 3) If an NP faculty, do you teach tobacco treatment? Yes/No/I am not nursing faculty. The SCC and Skill and Ability for Smoking Cessation surveys were then re-administered after the workshop (See Appendix B for a copy of the pre-intervention survey and Appendix C for the post-intervention survey).

Smoking cessation counseling (SCC) scale. The SCC is a 24-item instrument that measures how much a participant currently provides four levels of smoking cessation counseling; standard care, basic case, advanced care, and referral (Newhouse, Himmelfarb, & Liang, 2011). Participants are asked to rank the extent to which they implement 24 items; 1) not at all, 2) less than half the time, 3) more than half the time, and 4) all the time. The scoring range for the SCC scale is 24-96 with a low score indicating less provision of care. The internal consistency has been found to be Cronbach’s alpha of 0.95 (Liu, Johantgen, & Newhouse, 2017; Newhouse et al., 2011; Newhouse, Himmelfarb, & Liang, 2011).
Skills and confidence for smoking cessation tool. The Skills and Confidence for Smoking Cessation Counseling tool is an instrument that measures a health care provider’s skill (12 items subscale) and confidence (7 items subscale) to provide SSC. Matten (2011) reported an internal consistency with a Cronbach’s alpha 0.81 for the skill subscale and 0.93 for the confidence subscale (Matten et al., 2011). Other authors who have used the instrument report Cronbach’s alphas of 0.81-0.91 for the skill subscale and 0.92-0.94 for the ability subscale (Kelley, Heath, & Crowell, 2006; Hudmon et al., 2003; Martin, Bruskiewitz, & Chewning, 2010; Matten et al., 2011; Whitehead, Zucker, & Stone, 2014). The questions for the skill subscale are answered by Likert-type responses; 1) not confident at all, 2) not very confident, 3) moderately confident, 4) very confident, and 5) extremely confident. The score range for the confidence subscale is 12-60, with low score indicating low confidence in providing smoking cessation counseling. The skill subscale is also uses a Likert-type scale for responses; 1) poor, 2) fair, 3) good, 4) very good, and 5) excellent. The score range on the skill subscale is 7-35, with low scores indicating low perceived ability to provide SCC.

Attitudes, perceived subjective norms, and intent. No formal instruments were found to measure these variables as defined by the scope of this translational project. Questions were developed for this project using a manual developed for instrument development based on the theory of planned behavior for health care service researchers (Francis et al. 2004). A subscale of six items was created to measure the attitudes of the participants related to the nurse’s role in providing smoking cessation counseling. The attitude item responses included five Likert-type choices; 1) strongly disagree, 2) disagree, 3) undecided, 4) agree, and 5) strongly agree. The score range on the attitudes items is 6-30 with the low scores indicating a more negative attitude.
and a high score indicating a more positive attitude toward the nurse’s responsibility for providing smoking cessation counseling.

To measure perceived subjective norms, seven questions are asked regarding how the nurse perceived the expectations of important others for the nurse to provide this care. Again, these item responses included five Likert-type choices; 1) strongly disagree, 2) disagree, 3) undecided, 4) agree, and 5) strongly agree. The score range for perceived subjective norms is 7-35 with a low score indicating the nurse perceives a lesser expectation and a higher score indicating a higher expectation from important others in health care to provide SCC.

Only one question is included to measure intent. This item also included five Likert-type choices as a response; 1) strongly disagree, 2) disagree, 3) undecided, 4) agree, and 5) strongly agree. The score of one indicates the respondent does not intend and a score of five indicates the respondent does intend to provide SCC.

**Recruitment**

Recruitment for participants was done by inviting students enrolled in the university’s pre-licensure nursing students in their second nursing semester and students in the NP programs. In addition, NPs who serve as preceptors to the graduate students and the entire nursing faculty will be invited to attend. A sample size calculator (UCSF Clinical & Translational Science Institute, 2017) was used to estimate the sample size needed for an alpha=.05 (two tailed), beta=.20, effect size=.50, and standard deviation=1.000. The calculated sample size was N=31. The sample obtained from the original university was not adequate, so an addendum was made to the teaching university to include their nursing school’s population from which to recruit.
**Intervention**

A face-to-face SCC training workshop was provided to the participants by a pharmacist certified as a tobacco treatment trainer. The workshop lasted approximately three hours and twenty minutes; it covered the importance of providing SCC, the impact of smoking cessation on health and illness, pharmacotherapies, and counseling techniques. The workshop was attended by eight participants, so the presentation was recorded so that it could be offered to more participants.

**Analysis Plan**

IBM Statistical Package for the Social Sciences (SPSS) for Windows version 23 was used to analyze the data for the current project. The demographics of the sample were reported with descriptive statistics. Paired samples t-test was used to compare the pre-intervention survey scores with the post-intervention survey scores for data that met the assumptions of normality; Wilcoxon signed rank test was used for data that was not normally distributed.

Exploratory analysis of the data included calculation of the mean, median, and standard deviation of each subscale of each instrument. The data was examined for missing data and if data were found to be missing, it was substituted with the mean value of the variable. The data was examined by histogram and Q-Q Plot for outliers and if needed transformation was used as appropriate to the direction of the skew.

Description of the sample was done by frequency and percentages of each characteristic on the demographic survey. A flow diagram is provided in Appendix E, (Figure 1) to demonstrate the flow of participants through the project.

Analysis from the SCC scale, the Skills and Confidence for Smoking Cessation Tool, and the questions regarding attitudes, perceived subjective norms, and intent pre-intervention will be
compared to the scores post-intervention. The paired difference will be determined by using a paired samples t-Test (Appendix, Table 1 for the mean difference between the pre- and post-intervention scores).

**Data Security Plan**

Data continues to be secured on the researcher’s personal laptop computer. The computer is password protected and the files will be encrypted. A code log is being kept in a separate locked location in the researcher’s. All files are backed up on an encrypted portable USB drive, also kept in a separate locked location in the researcher’s office remote from the computer. All documents containing identifying information are kept locked and only the researcher has the key. Data and documents with identifying information will be destroyed after three years. Data will only be reported as aggregate findings.

**Benefits of the Project**

The benefits of this study are two-fold. The participants will receive evidence-based tobacco use and counseling training to incorporate into their nursing practice. Patients who smoke and are cared for by these students while in the clinical settings and when in professional practice may be helped by these practitioners to be successful in quitting smoking.
Chapter 4: Data Analysis

Data for this translational project was done using SPSS version 23. A total of 88 (N=88) participants were recruited and consented to the project. Of the 88 participants recruited, 54 completed the pre-intervention survey, the workshop, and post-intervention survey. The dependent variable was completion of the workshop and was treated as a categorical measure. The independent variables were attitudes, subjective norms, ability, confidence, and intent and were treated as continuous level variables.

A Kolmogorov-Smirnov test was used to test for normality of the independent variables. This test is used to determine whether the distribution of the data is normal or approximates a bell-shaped curve (Elliot & Woodward, 2007). The differences in attitudes, subjective norms, and intent scores were all found to be normally distributed (see Appendix __ for Kolmogorov-Smirnov results). The parametric test, paired sample t-test was used to compare pre-intervention survey results with post-intervention survey results. Differences in ability and confidence scores, however, were not normally distributed. The non-parametric test, Wilcoxon Signed-Rank Test was used to compare these two variables.

Paired sample t-test is a statistical test that is used to compare two sets of observations to determine if the mean difference between the two is equal to zero (Statistics Solutions, 2018). For the current project, the paired sample t-test was used to determine if the mean difference between of each aggregate variable score was equal to zero. In order to use the paired sample t-test, assumptions of normality for the data must be met (Statistics Solutions, 2018). These assumptions of normality are that the variable must be continuous, the observations are independent of each other, the dependent variable should be approximately normally distributed,
and the variable should not contain any outliers. The independent variables attitudes, subjective norms, and intent all met the assumptions of normality.

The Wilcoxon Signed-Rank Test is a non-parametric test that is used as an alternative to the paired sample t-test when data do not meet the normality assumptions for differences (Elliot & Woodward, 2007). This non-parametric test was used to examine the differences in pre-intervention and post-intervention scores were significantly different.

Findings

The demographic characteristics of the project sample included 48 BSN students (89%), one NP student (2%), five nursing faculty (9%); no NP preceptors participated. Two participants reported ever having taken a tobacco treatment course and none of the faculty reported teaching tobacco treatment content (See Appendix D, Figure 2).

Question 1

Is there a difference in the nurse’s perceived attitude in providing SCC after receiving smoking cessation counseling education? A paired t-test showed a significant, positive difference between the nurse’s perceived attitude pre-intervention (M=25.89, SD=3.051) and post-intervention (M=28.74, SD=1.772); t(53)=7.077, p=.000. (See Appendix E, Table 1 for descriptive and t-test results)

Question 2

Is there a difference in the nurse’s perceived subjective norms in providing SCC after receiving smoking cessation counseling education? A paired t-test showed a significant, positive difference in the nurse’s perceived subjective norm scores pre-intervention (M=29.43, SD=4.146) and post-intervention (M=33.09, SD=2.903); t(53)=7.172, p=.000. (See Appendix E, Table 1 for descriptive and t-test results)
Question 3

Is there a difference in the nurse’s perceived ability in providing SCC after receiving smoking cessation counseling education? A Wilcoxon Signed-Ranks test indicated that the post-intervention ability score, $Mdn=24.00$, was statistically significantly higher than the pre-intervention ability score, $Mdn=16.00$, $Z=-6.235$, $p<.000$.

Question 4

Is there a difference in the nurse’s perceived confidence in providing SCC after receiving smoking cessation counseling education? A Wilcoxon Signed-Ranks test indicated that the post-intervention confidence score, $Mdn=43.00$, was statistically significantly higher than the pre-intervention ability score, $Mdn=29.00$, $Z=-6.255$, $p<.000$.

Question 5

Is there a difference the nurse’s intent to provide SCC after receiving smoking cessation counseling education? A paired t-test showed a significant, positive difference between the nurse’s intent to provide SCC pre-intervention ($M=3.72$, $SD=.834$) and post-intervention ($M=4.44$, $SD=.691$); $t(53)=5.529$, $p=.000$. (See Appendix E, Table 1 for descriptive and t-test results)

Question 6

Is there a difference in the nurse’s provision of SCC after receiving smoking cessation counseling education? A survey was administered to participants to measure the provision of SCC on four levels; standard, basic, advanced, and referral. A change in the methods for survey administration and the intervention made collecting accurate information regarding the change in provision of care uncertain. The participants for the in-person workshop were sent post-intervention surveys via email approximately one to two weeks after the workshop to allow time
for the participant to assimilate learning into practice. There was not enough meaningful data collected from these participants on which to make any inferences. To extend the workshop to more participants, the workshop link was emailed to potential participants with the instruction to take the pre-intervention survey before viewing the workshop and then the post-intervention survey approximately one to two weeks later. It could not be assured that this instruction was followed to allow for meaningful data collection.

**Instrument Internal Consistency**

The Skills and Confidence for Smoking Cessation (Matten et al., 2011) tool had an established Cronbach’s alpha of 0.81 for the skill subscale and 0.93 for the confidence subscale. The established internal consistency for the Smoking Cessation Counseling (Newhouse, Himmelfarb, & Liang, 2011) tool was 0.95. The internal consistency of the author developed tool for measuring attitudes, subjective norms, and intent had not been tested (see Appendix F, Table 2).
Chapter 5: Discussion and Conclusion

Nurses comprise the largest group of heath care providers in the country (Fayer & Watson, 2015). Because of the great number of nurses providing care, people encounter nurses frequently during heath care visits. When trained in tobacco cessation counseling, nurses can provide effective support to clients to quit smoking (Carson, Verbiest, Crone, Brinn, Esterman, Assendelft, & Smith, 2013; Rice, Hartmann-Boytce, & Stead, 2013). Through work with the U.S. Department of Health and Human Services, a group of experts in the field of tobacco treatment has provided health care professionals with guidelines with which to identify the client who uses tobacco or smokes and to provide evidence-based interventions to aid in cessation (Fiore et al., 2008). Several studies indicate that with appropriate training, nurses can acquire positive attitudes towards, increase their self-efficacy for, and understand their role expectations of providing smoking cessation counseling for their clients (Goldstein, Hellier, Fitzgerald, Stegall, & Fischer, 1987; McCarty, Hennrikus, Lando, & Vassey, 2001; Swenson, Dalton, Nettles-Carlson, & Friedman, 1991). Thus, this translational project aimed to provide a smoking cessation counseling workshop to undergraduate and graduate nursing students as well as to nursing faculty and nurse preceptors. This chapter will summarize the study, provide a summary of the findings, draw conclusions from the findings, discuss the meaning of the findings, and outline the implications for the future.

Summary of the Study

This SCC translational project was chosen because of the need to educate nurses to provide evidence-based smoking cessation counseling. The curriculum in most nursing programs does not inadequately train nurses to provide smoking cessation counseling (Health & Crowell, 2007; Horneberger & Edwards, 2004; Lenz, 2009, Sharpe et al., 2009; Wewers, Kidd,
Ambruster, & Sarna, 2004). Because of inadequate training in nursing education programs, student nurses, student NPs, and nursing faculty were chosen as the population of interest. The education provided was in the form of a workshop. Participants were invited to participate and asked to fill out a pre-workshop survey, participate in the workshop, and then complete a post-workshop survey. Since the attendance at the workshop was small, the presentation was recorded so that it could be viewed by other participants at a time more convenient to their schedules. The participants who viewed the workshop online were asked to complete the pre-intervention survey, view the presentation, and then complete the post-intervention survey.

Eight participants attended the live presentation of the workshop and the remaining 46 participants completed the recorded presentation of the workshop. The sample consisted of 48 BSN students, one NP student, five nursing faculty, and no nurse preceptors.

Discussion of the Findings

Statistical analysis of the data from the surveys found that attitudes, perceived subjective norms, confidence, and ability were all significantly increased after nurses completed the smoking cessation counseling educational workshop. This was an expected finding that was also supported by other studies (Chan, So, Wong, & Lam, 2008; Theodosia et al., 2017).

Research Question 1: Attitudes

Attitudes have been defined the individual’s positive or negative beliefs about the target behavior (Fishbein & Ajzen, 1975; Ajzen, 1985). In the context of the current project, attitudes were measured by asking the participants to rate belief statements that indicated nurses were effective with helping clients stop smoking, nurses should perform each of the 5As, nurses should document smoking status, and nurses should help identify resources to clients who are unwilling to quit. Attitude mean score before the intervention were relatively high, 25.89 out of
a total possible score of 30. The mean score after the intervention, 28.74, represented a 2.85 difference and very near the total possible score. This means that students already had positive attitudes about their roles as nurses in providing smoking cessation counseling to clients with the intervention further increasing their attitudes. Chan and colleagues (2008) found that students had positive attitudes before receiving smoking cessation counseling education and also saw a significant increase after the intervention. In addition, this study found that educating the students greatly increased their beliefs about the effectiveness of health professional’s smoking cessation advice.

Research Question 2: Subjective norms

Subjective norms have been defined an individual’s evaluation or perception of the social pressure to either perform or not perform a behavior (Frances et al., 2004). Subjective norms were measured in this project by having the participants rate expectation of behavior statements that included performing each level of the 5As, documentation of smoking status, and providing resources to help the client identify barriers if they were unwilling to quit. The mean scores related to subjective norms were 29.43 before the workshop and 33.09 after the workshop. The mean scores were increased by 3.66 by the intervention. The survey statements used “those I look up to expect me to….” Perhaps, the statements rewritten to say, “clients and settings in which I see clients expect me to….” This wording may better measure the expectations from society and from the institutions in which the participants will be seeing clients.

Research Question 3: Ability

The concept of perceived behavioral control (PBC) in TPB is based on Bandura’s (1977) work on self-efficacy (Ajzen, 1991). Both concepts of self-efficacy and PBC include the individual’s capabilities in terms of ability to control their functioning in an event (Ajzen, 2002).
Ajzen states that PBC can be measured by asking questions directly about the individual’s ability to perform the behavior. In the current project, the ability aspect of PBC was measured by the individual’s perceived ability or skill to perform SCC. The survey statements presented to the participants regarding ability asked them to rate their level of skill to provide each of the 5As within SCC in varied situations such as with the client that was in a hurry. Because non-parametric analysis had to be done on the ability scores, the median scores were reported. The median ability score was 16.00 pre-workshop and 24.00 post-workshop reflecting an increase of eight points.

**Research Question 4: Confidence**

Within social cognitive theory, it is recognized that an individual will only try to perform a behavior if they are confident in their ability to perform it successful, even though they have positive attitudes of the outcome (Bandura, 1977). Confidence is an individual’s perceived feelings of certainty that they could perform SCC. To assess confidence, participants were asked to rate their level of confidence in their skill to perform SCC in varied situations such as with the client that was in a hurry. Other statements measured the confidence in the participant’s ability to perform within each level of the 5As and confidence in their knowledge of cessation aids. The scores for the pre-workshop survey was $Mdn=29.00$, and post-workshop was $Mdn=43.00$, with the range of possible scores of resulting in an increase in the median score of 14. The range of scores for the confidence subscale is 12 as the lowest score and 60 to the highest score. Since the data was not normally distributed, the analysis was done using non-parametric tests using the median or middle score. Perceived ability was shown to be influential in nurses’ provision of SCC to hospitalized clients (McCarty, Hennrikus, Lando, and Vessey, 2001). Self-efficacy has also been shown to mediator of the intent to provide SCC (Kannikar, Surintorn, Marjorie, Sunee, ...
A mediating variable increases the effect on the dependent variable; in this case, self-efficacy functioned to increase the intent to provide SCC. Increasing self-efficacy through increasing the student’s ability and confidence in providing counseling should increase the intent to provide this care. In the current study, both ability and confidence mean scores were not normally distributed. This finding could be explained by the level of actual client exposure of the students. The project sample included students who were at various levels within the nursing curricula, with some having very little to no actual experiences with client care.

**Question 5: Intent**

In this project, intent was defined as the individual’s perceived probability of performing a behavior (Fishbein & Ajzen, 1975). This variable was measured by one statement in which the individual rated the level of their intent to provide SCC. The mean score for intent pre-workshop was 3.72 and the post-workshop score was 4.44 reflecting an increase of .72. The range of scores on this item was one to five. The intent to provide SCC was high post-intervention considering the demographic of this project; the majority of participants were BSN students.

**Question 6: Provision of SCC**

While the provision of care was measured in this project, the accuracy of the data received could not be ensured. The project design did not include gathering data on the participant’s client encounter opportunities during the course of the project. In other words, some of the participants may have not had the opportunity to interact with clients who smoked after receiving the training, thus would not have been able to give feedback on actual practice. Another issue considered was that some participants of the online version of the surveys and
workshop may not have completed the post-workshop survey after one to two weeks after the workshop in order to implement the learned behavior.

**Findings Compared with the Literature**

Smoking cessation counseling training research studies have indicated favorable results in among various health care professions (Amenori, Virtanen, Korhonen, Kinnunen, & Murtomaa, 2013; Asfar et al., 2018; Bernstein et al., 2009; Chen et al., 2015; Hudmon et al., 2003; Lee, Hishinuma, Derauf, Guerrero, Iwaishi, & Kasuya, 2004). A belief of the importance of smoking cessation concepts into the nursing curricula by nursing faculty was has been noted (Lepage, Dumas, & Saint-Pierre, 2015).

In addition to the current project’s findings, an increase in attitudes after an educational intervention on SCC has also been seen in other studies (Choi & Kim, 2016; Theodosia et al., 2017). Attitudes were shown to influence hospital nurses’ provision of SCC to clients who smoked (McCarty, Hennrikus, Lando, and Vessey, 2001). By increasing nursing students’ attitudes toward providing SCC as part of their roles, it is expected that their intention and in turn actual behaviors will result in providing this care.

Schwindt, McNelis, and Sharp (2014) found that an educational intervention aimed at motivating students to provide smoking cessation counseling for their mentally ill clients increased perceived competence as well as autonomous and controlled motivation. Perceived competence in this study was defined as the extent to which the participant felt that they could successfully engage in the target behavior. This can be analogous to the perceived behavioral control of TPB and that was measured as confidence and ability in the current translational project. Schwindt, McNelis, and Sharp (2014) defined autonomous motivation as volitional control over one’s behavior because the behavior is important and fits the individual’s values,
and controlled motivation as pressure from external and/or internal demands. These modes of motivation can be compared to attitudes and subjective norms from TBP as used in the current project. This study supports the need to affect student’s attitudes and perceived subjective norms when educating them on SCC.

Self-efficacy was also a significant factor among nursing faculty in teaching tobacco related content (Heath & Crowell, 2007). Self-efficacy was defined by these authors as an individual’s cognitive process to integrate attitudes, emotions, social factors, and knowledge in order to overcome a challenging behavior. This study found that self-efficacy was significantly correlated with time teaching, importance of, attitude, and control of providing tobacco education. Most nursing faculty would agree that SCC content is important and should be included in the curricula. However, many nursing faculty do not have the “tools” to effectively provide this education. Lepage, Dumas, and Saint-Pierre (2015) found that only 11% of the sample of 278 educators they sampled in Quebec had the appropriate training themselves. In the current project, none of the faculty respondents reported teaching SCC.

One study found while examining the SCC practices of home health nurses that the more these nurses were provided with the evidence that nurses are effective in helping with cessation efforts, the more time the nurses spent on SCC (Borelli et al., 2001). This suggests that the nurse’s ability and confidence can be enhanced by emphasizing their effectiveness and that this in turn increases their actual provision of care. With regard to teaching nursing students, reinforcing the societal and health care expectations of SCC as part of the registered nurse’s role may provide an increase in existing positive attitudes and subjective norms of students strengthening the intent and actual provision of the care.
Implications for the Future

This translational project is the starting point for integrating smoking cessation counseling training into a nursing curriculum. This project suggests that a brief smoking cessation counseling workshop increased the factors that influence an individual’s the intent to perform a behavior. The measure of actual application of the workshop concepts into practice needs to be assessed for both short-term effects and longer-term effects. This measure of application could be done within a few weeks of receiving the training and then at future points to ensure SCC becomes part of the nurse’s routine care.

When determining what information needs to be added to the curriculum, it would be important to examine the knowledge baseline for current students. In this way, areas of knowledge gap could be identified to integrate without duplication of content that already exists. It is important to emphasize the role of the registered nurse in the provision of SCC. Students tend to treat content they feel is important with more priority in learning.

While the post-workshop scores were high, it may be that more emphasis should be made regarding the role responsibilities of the registered nurse with regard to providing SCC. None of the faulty participants of the current project reported ever having had SCC training. Perhaps, part of emphasizing the importance of this education to the students, faculty would also benefit from some measures to reinforce the importance. This could be done by providing a training course developed specifically for the faculty. This training would increase the faculty attitudes, subjective norms, and PBC for providing the education to students. Attitudes are important in faculty’s intentions to integrate tobacco education (Heath & Crowell, 2007).

Incorporating SCC into simulation scenarios could facilitate improving skills for students (Sohn, Ahn, Park, & Lee, 2012), thereby improving confidence. In conjunction with simulation,
SCC could be made a clinical competency. In this way students could translate learning in the simulation environment into actual practice in their clinical encounters with clients. The expectation is to ask every client about smoking status and document. When students have the ability and confidence in how to go beyond asking the question, they should be able to provide effective counseling to clients who do smoke.

And finally, providing basic content for SCC within the curriculum could be enhanced by developing and providing a more in-depth elective course. Within an elective course environment, reinforcement of the basics can be done as well as providing more advanced knowledge and skills for students. This would work especially well for nurse practitioner students. Students could be offered the content and then be allowed to complete the requirement to become a certified smoking cessation counselor.

**Conclusion**

Smoking cessation counseling education for nurses is sporadic and scarce for practicing nurses and for nursing students. It is incumbent on nursing faculty to realize the importance of providing this training at the basic nursing level.

This SCC workshop project has provided some valuable information about implementing the content into nursing curricula at both the undergraduate and graduate levels. The findings from this project found a significant increase in the attitudes, subjective norms, and perceived behavioral control as measured by ability and confidence and in turn found an increase in the intent to offer SCC for their clients who smoke. The inference from these findings is that once nurses are educated, they increase the factors needed for them to develop the intent to provide SCC care. In turn, it is expected that many of the participants will actually integrate the guidelines into their practice.
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Appendix A

Used by permission (Ajzen, 2006).

Figure 1
Appendix B
Pre-workshop survey

Informed Consent Letter

You have been invited to participate in a translational research project on smoking cessation counseling training. The following is the informed consent letter for this project. A training workshop will be offered on October 28, 2017, regarding this important counseling for clients who smoke. The workshop will take place at Armstrong State University, University Hall 158 from 1:00 p.m until 5:00 p.m.

INFORMED CONSENT

I agree to participate in the research “Using an Evidence-Based Tobacco Cessation Treatment Guideline Workshop to Increase Nurse Practitioners’ Skill, Confidence, and Provision of Care,” which is being conducted by Tonya Tyson, who can be reached at Tonya.Tyson@bobcats.gcsu.edu or 912 844-2445. I understand that my participation is voluntary; I can withdraw my consent at any time. If I withdraw my consent, my data will not be used as part of the study and will be destroyed.

The following points have been explained to me:

1. The purpose of this study is to provide an evidence-based tobacco training curriculum to prelicensure nursing students, nurse practitioner students, nurse practitioner preceptors, and nursing faculty.

2. The procedures are as follows: you will be asked to fill out 2-3 general questions and then two brief questionnaires electronically before the training. Completing the questionnaires should take no more than 15 minutes of your time. The questionnaire will ask you questions about your skills, self-efficacy, and practice about smoking cessation with patients who smoke. You will be then asked to attend a tobacco use and cessation educational workshop that will last approximately four hours. Following the workshop, you will be asked complete two questionnaires regarding skills, self-efficacy, and practice about smoking cessation assessments, again, taking no more than 15 minutes of your time.

3. Your name will not be connected to your data. Therefore, the information gathered will be confidential.

4. You will be asked to sign two identical consent forms. You must return one form to the investigator before the study begins, and you may keep the other consent form for your records.

5. You may find that some questions are invasive or personal. If you become uncomfortable answering any questions, you may cease participation at that time.
6. This research project is being conducted because of its potential benefits, either to individuals or to humans in general. The expected benefits of this study include providing you with the knowledge and skills to help patients who smoke to cut down or quit.

7. You are not likely to experience physical, psychological, social, or legal risks beyond those ordinarily encountered in daily life or during the performance of routine examinations or tests by participating in this study.

8. Your individual responses will be confidential and will not be released in any individually identifiable form without your prior consent unless required by law.

9. The investigator will answer any further questions about the research should you have them now or in the future (see above contact information).

10. In addition to the above, further information, including a full explanation of the purpose of this research, will be provided at the completion of the research project on request.

11. By indicating "Yes" on question 1, you are acknowledging that you are 18 years of age or older and consent to be a participant in this project. Participating in the project includes completing a pre- and post-workshop surveys and attendance at the workshop.

Research at Georgia College:

* 1. By answering "Yes" to the consent question, you are acknowledging that you are 18 years of age or older and consent to be a participant in this project.
   Do you consent to be a participant in this project?
   ○ Yes
   ○ No

2. Please generate your own Participant ID using the following formula:
   Mother's middle initial, mother's 2 digit birthday, 2nd letter of mother's middle name.
   
3. I am a:
   ○ BSN student
   ○ NP student
   ○ NP preceptor
   ○ Nursing faculty
4. Have you even taken a tobacco treatment class?
   - Yes
   - No

5. If you are nursing faculty, do you teach tobacco treatment?
   - Yes
   - No
   - I am not nursing faculty
<table>
<thead>
<tr>
<th>Intent, Attitudes, Social Norms</th>
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<tbody>
<tr>
<td>6. Nurses are effective with helping clients to stop smoking.</td>
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<tr>
<td>- Strongly disagree</td>
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<td>- Disagree</td>
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<td>- Undecided</td>
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<td>- Agree</td>
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<td>- Strongly agree</td>
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<tr>
<td>7. Nurses should assess each client for smoking status.</td>
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<td>- Strongly disagree</td>
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<td>- Disagree</td>
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<td>- Undecided</td>
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<td>- Agree</td>
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<td>- Strongly agree</td>
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<td>8. Nurses should document each client's smoking status.</td>
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<td>- Strongly disagree</td>
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<td>- Disagree</td>
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<td>- Undecided</td>
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<td>- Agree</td>
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<td>- Strongly agree</td>
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<td>9. Nurses should advise clients that smoke to quit.</td>
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<td>- Strongly disagree</td>
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<td>- Disagree</td>
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<td>- Undecided</td>
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<td>- Agree</td>
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<td>- Strongly agree</td>
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<td>10. Nurses should ask each client who smokes if they are willing to quit.</td>
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<td>- Strongly disagree</td>
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<td>- Disagree</td>
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<td>- Undecided</td>
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<td>- Agree</td>
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<td>- Strongly agree</td>
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<td>11. Nurses should provide resources and help identify barriers to quitting for clients who are not willing to quit smoking.</td>
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<td>- Strongly disagree</td>
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<td>- Disagree</td>
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<td>- Undecided</td>
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<td>- Agree</td>
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<td>- Strongly agree</td>
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<td>12. Those I look up to in the healthcare setting expect me to ask clients about their smoking status.</td>
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<tr>
<td>13. Those I look up to in the healthcare setting expect me to assess each client for smoking status.</td>
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<td>14. Those I look up to in the healthcare setting expect me to document each client’s smoking status.</td>
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<td>15. Those I look up to in the healthcare setting expect me to advise clients that smoke to quit.</td>
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<td>16. Those I look up to in the healthcare setting expect me to ask each client who smokes if they are willing to quit.</td>
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<tr>
<td>17. Those I look up to in the healthcare setting expect me to provide resources and help identify barriers to quitting for clients who are not willing to quit smoking.</td>
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<td>18. Clients expect me to provide smoking cessation counseling care for them when they report smoking.</td>
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- [ ] Strongly disagree
- [ ] Agree
- [ ] Disagree
- [ ] Strongly agree
- [ ] Undecided
<table>
<thead>
<tr>
<th>Skill and Confidence Survey</th>
</tr>
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</table>

Click on the appropriate answer to indicate your level of confidence with the questions below. How much confidence do you have in the following aspects of counseling patients to quit using tobacco?

19. How confident are you that you know the appropriate questions to ask clients when providing counseling?
   - [ ] Not at all confident
   - [ ] Not very confident
   - [ ] Moderately confident
   - [ ] Very confident
   - [ ] Extremely confident

20. How confident are you that you have the skills needed to counsel for an addiction?
   - [ ] Not at all confident
   - [ ] Not very confident
   - [ ] Moderately confident
   - [ ] Very confident
   - [ ] Extremely confident

21. How confident are you that you can provide motivation to clients who are trying to quit?
   - [ ] Not at all confident
   - [ ] Not very confident
   - [ ] Moderately confident
   - [ ] Very confident
   - [ ] Extremely confident

22. How confident are you that you have the skills to monitor and assist clients throughout their quit attempt?
   - [ ] Not at all confident
   - [ ] Not very confident
   - [ ] Moderately confident
   - [ ] Very confident
   - [ ] Extremely confident

23. How confident are you that you have the skills to assist clients who seem to be in a hurry?
   - [ ] Not at all confident
   - [ ] Not very confident
   - [ ] Moderately confident
   - [ ] Very confident
   - [ ] Extremely confident
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
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<tbody>
<tr>
<td>24. How confident that you have sufficient therapeutic knowledge of the</td>
<td>Not at all confident</td>
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<tr>
<td>pharmaceutical products for tobacco cessation?</td>
<td>Very confident</td>
</tr>
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<td></td>
<td>Not very confident</td>
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<td></td>
<td>Moderately confident</td>
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<td>25. How confident are you that you know when a referral to a physician</td>
<td>Not at all confident</td>
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<td>is appropriate?</td>
<td>Very confident</td>
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<td></td>
<td>Not very confident</td>
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<td></td>
<td>Moderately confident</td>
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<td>26. How confident are you that you can sensitively suggest tobacco</td>
<td>Not at all confident</td>
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<td>cessation to clients who use tobacco?</td>
<td>Very confident</td>
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<td></td>
<td>Not very confident</td>
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<td></td>
<td>Moderately confident</td>
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<tr>
<td>27. How confident are you that you are able to provide adequate</td>
<td>Not at all confident</td>
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<td>counseling when time is limited?</td>
<td>Very confident</td>
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<td></td>
<td>Not very confident</td>
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<td></td>
<td>Moderately confident</td>
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<tr>
<td>28. How confident are you that you are able to help recent clients who</td>
<td>Not at all confident</td>
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<tr>
<td>have quit learn how to cope with situations or triggers that might</td>
<td>Very confident</td>
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<tr>
<td>lead them to relapse back to smoking?</td>
<td>Not very confident</td>
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<td></td>
<td>Moderately confident</td>
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<tr>
<td>29. How confident are you that you can counsel clients who are not</td>
<td>Not at all confident</td>
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<tr>
<td>interested in quitting?</td>
<td>Very confident</td>
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<td></td>
<td>Not very confident</td>
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<td></td>
<td>Moderately confident</td>
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</table>
## Overall Ability and the "5As" Counseling Process

Please choose the appropriate answer option to indicate your ability for the following items.

30. How do you rate your overall ability right now to help clients quit using tobacco?
   - [ ] Poor
   - [ ] Fair
   - [ ] Good
   - [ ] Very good
   - [ ] Excellent

31. Please rate your level of skill for asking clients whether they use tobacco.
   - [ ] Poor
   - [ ] Fair
   - [ ] Good
   - [ ] Very good
   - [ ] Excellent

32. Please rate your skill for advising clients to quit using tobacco.
   - [ ] Poor
   - [ ] Fair
   - [ ] Good
   - [ ] Very good
   - [ ] Excellent

33. Please rate your skill for assessing clients’ readiness to quit.
   - [ ] Poor
   - [ ] Fair
   - [ ] Good
   - [ ] Very good
   - [ ] Excellent

34. Please rate your level of skill for providing tobacco cessation assistance to clients who are thinking about quitting or trying to quit using tobacco.
   - [ ] Poor
   - [ ] Fair
   - [ ] Good
   - [ ] Very good
   - [ ] Excellent
35. Please rate your level of skill for arranging a follow-up counseling session with clients you assist with quitting.

<table>
<thead>
<tr>
<th>Option</th>
<th>Rating</th>
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<tbody>
<tr>
<td>Poor</td>
<td>Very good</td>
</tr>
<tr>
<td>Fair</td>
<td>Excellent</td>
</tr>
<tr>
<td>Good</td>
<td></td>
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</tbody>
</table>

36. I plan to provide smoking cessation counseling to all my clients.

<table>
<thead>
<tr>
<th>Option</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>Agree</td>
</tr>
<tr>
<td>Disagree</td>
<td>Strongly agree</td>
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<tr>
<td>Undecided</td>
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</tbody>
</table>
## Smoking Cessation Counseling (SCC) Scale

Indicate the extent to which you implement each item.

37. I assess my client's tobacco use.
   - Not at all
   - Less than half the time
   - More than half the time
   - All the time

38. I document my client's tobacco use.
   - Not at all
   - Less than half the time
   - More than half the time
   - All the time

39. I advise clients that use tobacco to quit.
   - Not at all
   - Less than half the time
   - More than half the time
   - All the time

40. I ask clients who use tobacco if they are willing to quit.
   - Not at all
   - Less than half the time
   - More than half the time
   - All the time

41. If clients who use tobacco are willing to quit, I provide resources and assistance.
   - Not at all
   - Less than half the time
   - More than half the time
   - All the time
<table>
<thead>
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<th></th>
<th>Question</th>
<th>Options</th>
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</thead>
<tbody>
<tr>
<td>42.</td>
<td>If clients who use tobacco are not willing to quit, I provide resources and help clients identify barriers to quitting.</td>
<td>Not at all, Less than half the time, More than half the time, All the time</td>
</tr>
<tr>
<td>43.</td>
<td>I advise clients who smoke to set a quit date.</td>
<td>Not at all, Less than half the time, More than half the time, All the time</td>
</tr>
<tr>
<td>44.</td>
<td>I advise clients who smoke to get support from family, friends, and coworkers.</td>
<td>Not at all, Less than half the time, More than half the time, All the time</td>
</tr>
<tr>
<td>45.</td>
<td>I review past quit attempts--what helped, what led to relapse.</td>
<td>Not at all, Less than half the time, More than half the time, All the time</td>
</tr>
<tr>
<td>46.</td>
<td>I help the client anticipate challenges, particularly during the critical first few weeks.</td>
<td>Not at all, Less than half the time, More than half the time, All the time</td>
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<td>Question</td>
<td>Options</td>
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<tr>
<td>47. I help clients anticipate nicotine withdrawal.</td>
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<td></td>
<td>Not at all</td>
<td></td>
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<td></td>
<td>Less than half the time</td>
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<td></td>
<td>More than half the time</td>
<td></td>
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<tr>
<td></td>
<td>All the time</td>
<td></td>
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<tr>
<td>48. I identify reasons for quitting and benefits of quitting.</td>
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<tr>
<td></td>
<td>Not at all</td>
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<td></td>
<td>Less than half the time</td>
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<td></td>
<td>More than half the time</td>
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<td></td>
<td>All the time</td>
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<tr>
<td>49. I advise clients that total abstinence is essential—not even a single puff.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Not at all</td>
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<td></td>
<td>Less than half the time</td>
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<td></td>
<td>More than half the time</td>
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<td></td>
<td>All the time</td>
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<tr>
<td>50. I advise clients that drinking alcohol is strongly associated with relapse.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not at all</td>
<td></td>
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<tr>
<td></td>
<td>Less than half the time</td>
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<tr>
<td></td>
<td>More than half the time</td>
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<tr>
<td></td>
<td>All the time</td>
<td></td>
</tr>
<tr>
<td>51. I advise clients that have other people who smoke in the household hinders successful quitting.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not at all</td>
<td></td>
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<tr>
<td></td>
<td>Less than half the time</td>
<td></td>
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<tr>
<td></td>
<td>More than half the time</td>
<td></td>
</tr>
<tr>
<td></td>
<td>All the time</td>
<td></td>
</tr>
</tbody>
</table>
52. I recommend over-the-counter cessation aids or help clients get a prescription for pharmacologic agents unless contraindicated.
- Not at all
- Less than half the time
- More than half the time
- All the time

53. I use cessation materials that are appropriate by age, culture, language, education, and pregnancy status.
- Not at all
- Less than half the time
- More than half the time
- All the time

54. I provide information for follow-up visits with the client's healthcare provider.
- Not at all
- Less than half the time
- More than half the time
- All the time

55. I advise clients if relapse occurs, they should repeat the quit attempt--it is part of the quitting process.
- Not at all
- Less than half the time
- More than half the time
- All the time

56. I advise clients if relapse occurs, they should review the circumstances and learn from the experience.
- Not at all
- Less than half the time
- More than half the time
- All the time
57. I advise clients that if relapse occurs, they should reassess the pharmacotherapy use and problems.
- [ ] Not at all
- [ ] Less than half the time
- [ ] More than half the time
- [ ] All the time

58. I provide the number for the toll-free National Quitline.
- [ ] Not at all
- [ ] Less than half the time
- [ ] More than half the time
- [ ] All the time

59. I refer the client to web resources for Agency for Healthcare Research and Quality.
- [ ] Not at all
- [ ] Less than half the time
- [ ] More than half the time
- [ ] All the time

60. I refer the client to web resources for Tobacco Free Nurses Initiative.
- [ ] Not at all
- [ ] Less than half the time
- [ ] More than half the time
- [ ] All the time
Appendix C
Post-workshop survey

Informed Consent Letter

This is the post-workshop survey for you to complete if you participated in the translational research project on smoking cessation counseling training. Please make sure that you answer each question choosing the response that best answers the question.

INFORMED CONSENT

I agree to participate in the research “Using an Evidence-Based Tobacco Cessation Treatment Guideline Workshop to Increase Nurse Practitioners’ Skill, Confidence, and Prevision of Care,” which is being conducted by Tonya Tyson, who can be reached at Tonya.Tyson@bobcats.gcsu.edu or 912 844-2445. I understand that my participation is voluntary; I can withdraw my consent at any time. If I withdraw my consent, my data will not be used as part of the study and will be destroyed.

The following points have been explained to me:

1. The purpose of this study is to provide an evidence-based tobacco training curriculum to prelicensure nursing students, nurse practitioner students, nurse practitioner preceptors, and nursing faculty.

2. The procedures are as follows: you will be asked to fill out 2-3 general questions and then two brief questionnaires electronically before the training. Completing the questionnaires should take no more than 15 minutes of your time. The questionnaire will ask you questions about your skills, self-efficacy, and practice about smoking cessation with patients who smoke. You will be then asked to attend a tobacco use and cessation educational workshop that will last approximately four hours. Following the workshop, you will be asked complete two questionnaires regarding skills, self-efficacy, and practice about smoking cessation assessments, again, taking no more than 15 minutes of your time.

3. Your name will not be connected to your data. Therefore, the information gathered will be confidential.

4. You will be asked to sign two identical consent forms. You must return one form to the investigator before the study begins, and you may keep the other consent form for your records.

5. You may find that some questions are invasive or personal. If you become uncomfortable answering any questions, you may cease participation at that time.
6. This research project is being conducted because of its potential benefits, either to individuals or to humans in general. The expected benefits of this study include providing you with the knowledge and skills to help patients who smoke to cut down or quit.

7. You are not likely to experience physical, psychological, social, or legal risks beyond those ordinarily encountered in daily life or during the performance of routine examinations or tests by participating in this study.

8. Your individual responses will be confidential and will not be released in any individually identifiable form without your prior consent unless required by law.

9. The investigator will answer any further questions about the research should you have them now or in the future (see above contact information).

10. In addition to the above, further information, including a full explanation of the purpose of this research, will be provided at the completion of the research project on request.

11. By indicating "Yes" on question 1, you are acknowledging that you are 18 years of age or older and consent to be a participant in this project. Participating in the project includes completing a pre- and post-workshop surveys and attendance at the workshop.

Research at Georgia College:

* 1. By answering "Yes" to the consent question, you are acknowledging that you are 18 years of age or older and consent to be a participant in this project.
   Do you consent to be a participant in this project?
   ○ Yes
   ○ No

2. Please use the same Participant ID that you used on the pre-workshop survey.
   Mother's middle initial, mother's 2 digit birthday, 2nd letter of mother's middle name.
### Intent, Attitudes, Social Norms

3. Nurses are effective with helping clients to stop smoking.
   - [ ] Strongly disagree
   - [ ] Disagree
   - [ ] Undecided
   - [ ] Agree
   - [ ] Strongly agree

4. Nurses should assess each client for smoking status.
   - [ ] Strongly disagree
   - [ ] Disagree
   - [ ] Undecided
   - [ ] Agree
   - [ ] Strongly agree

5. Nurses should document each client’s smoking status.
   - [ ] Strongly disagree
   - [ ] Disagree
   - [ ] Undecided
   - [ ] Agree
   - [ ] Strongly agree

6. Nurses should advise clients that smoke to quit.
   - [ ] Strongly disagree
   - [ ] Disagree
   - [ ] Undecided
   - [ ] Agree
   - [ ] Strongly agree

7. Nurses should ask each client who smokes if they are willing to quit.
   - [ ] Strongly disagree
   - [ ] Disagree
   - [ ] Undecided
   - [ ] Agree
   - [ ] Strongly agree

8. Nurses should provide resources and help identify barriers to quitting for clients who are not willing to quit smoking.
   - [ ] Strongly disagree
   - [ ] Disagree
   - [ ] Undecided
   - [ ] Agree
   - [ ] Strongly agree
9. Those I look up to in the healthcare setting expect me to ask clients about their smoking status.
   - Strongly disagree
   - Disagree
   - Undecided
   - Agree
   - Strongly agree

10. Those I look up to in the healthcare setting expect me to assess each client for smoking status.
    - Strongly disagree
    - Disagree
    - Undecided
    - Agree
    - Strongly agree

11. Those I look up to in the healthcare setting expect me to document each client's smoking status.
    - Strongly disagree
    - Disagree
    - Undecided
    - Agree
    - Strongly agree

12. Those I look up to in the healthcare setting expect me to advise clients that smoke to quit.
    - Strongly disagree
    - Disagree
    - Undecided
    - Agree
    - Strongly agree

13. Those I look up to in the healthcare setting expect me to ask each client who smokes if they are willing to quit.
    - Strongly disagree
    - Disagree
    - Undecided
    - Agree
    - Strongly agree

14. Those I look up to in the healthcare setting expect me to provide resources and help identify barriers to quitting for clients who are not willing to quit smoking.
    - Strongly disagree
    - Disagree
    - Undecided
    - Agree
    - Strongly agree
15. Clients expect me to provide smoking cessation counseling care for them when they report smoking.

- [ ] Strongly disagree
- [ ] Disagree
- [ ] Undecided
- [ ] Agree
- [ ] Strongly agree
44. I help clients anticipate nicotine withdrawal.
   - Not at all
   - Less than half the time
   - More than half the time
   - All the time

45. I identify reasons for quitting and benefits of quitting.
   - Not at all
   - Less than half the time
   - More than half the time
   - All the time

46. I advise clients that total abstinence is essential—not even a single puff.
   - Not at all
   - Less than half the time
   - More than half the time
   - All the time

47. I advise clients that drinking alcohol is strongly associated with relapse.
   - Not at all
   - Less than half the time
   - More than half the time
   - All the time

48. I advise clients that have other people who smoke in the household hinders successful quitting.
   - Not at all
   - Less than half the time
   - More than half the time
   - All the time
49. I recommend over-the-counter cessation aids or help clients get a prescription for pharmacologic agents unless contraindicated.

- Not at all
- Less than half the time
- More than half the time
- All the time

50. I use cessation materials that are appropriate by age, culture, language, education, and pregnancy status.

- Not at all
- Less than half the time
- More than half the time
- All the time

51. I provide information for follow-up visits with the client's healthcare provider.

- Not at all
- Less than half the time
- More than half the time
- All the time

52. I advise clients if relapse occurs, they should repeat the quit attempt--it is part of the quitting process.

- Not at all
- Less than half the time
- More than half the time
- All the time

53. I advise clients if relapse occurs, they should review the circumstances and learn from the experience.

- Not at all
- Less than half the time
- More than half the time
- All the time
<table>
<thead>
<tr>
<th>Question</th>
<th>Frequency Options</th>
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<tbody>
<tr>
<td>54. I advise clients that if relapse occurs, they should reassess the pharmacotherapy use and problems.</td>
<td>Not at all, Less than half the time, More than half the time, All the time</td>
</tr>
<tr>
<td>55. I provide the number for the toll-free National Quitline.</td>
<td>Not at all, Less than half the time, More than half the time, All the time</td>
</tr>
<tr>
<td>56. I refer the client to web resources for Agency for Healthcare Research and Quality.</td>
<td>Not at all, Less than half the time, More than half the time, All the time</td>
</tr>
<tr>
<td>57. I refer the client to web resources for Tobacco Free Nurses Initiative.</td>
<td>Not at all, Less than half the time, More than half the time, All the time</td>
</tr>
</tbody>
</table>
Appendix D
Flow of Participants

A sample of approximately 400 people including students, preceptors, faculty were eligible to participate.

88 volunteered for participation

54 completed project

Approximately 322 refused participation

34 dropped out of project

Figure 2. Response rate throughout the recruitment and survey process
Appendix E

Table 1

*Descriptive statistics and t-test results for attitudes, perceived subjective norms, ability, and confidence.*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
<th>95% CI for Mean Difference</th>
<th>t</th>
<th>df</th>
<th>Significance (2 tailed)</th>
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<tbody>
<tr>
<td>Attitudes</td>
<td>25.89 (5.051)</td>
<td>28.74 (1.772)</td>
<td>2.044, 3.660</td>
<td>7.077</td>
<td>53</td>
<td>.000</td>
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<tr>
<td>Perceived social norms</td>
<td>29.43 (4.146)</td>
<td>33.09 (2.903)</td>
<td>2.641, 4.692</td>
<td>7.172</td>
<td>53</td>
<td>.000</td>
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<tr>
<td>Intent</td>
<td>3.72 (0.834)</td>
<td>4.44 (0.691)</td>
<td>.460, .984</td>
<td>5.529</td>
<td>53</td>
<td>.000</td>
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</table>
### Appendix F

Table 2

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<tr>
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<tr>
<td>SCC-overall</td>
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<td>.99</td>
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<td>Standard care</td>
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<td>.84</td>
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<td>Basic care</td>
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<td>Advanced care</td>
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<td>Referral care</td>
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<td>Skills and Confidence for Smoking Cessation</td>
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<td>Skills</td>
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<td>Intent (only 1 question)</td>
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