DEVELOPING AND EVALUATING PHARMACISTS' CONFIDENCE AND SKILLS THROUGH A CONTINUING PROFESSIONAL EDUCATION PROGRAM

by

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"They are able who think they are able"

Virgil, a Roman poet

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ABSTRACT

Objectives: The goal of this study was to evaluate the impact of a comprehensive tobacco cessation training program on pharmacists' perceived self-efficacy for tobacco cessation counseling. The primary objective was to conduct exploratory research to study the effects of different training strategies on pharmacists' perceived self-efficacy to counsel patients to quit using tobacco. The secondary objective was to determine the training program's effect on pharmacist's perception of their overall ability and current skills using the "5'A's" counseling process [as contained in the *Clinical Practice Guideline* (Fiore et al, 2000)].

Methods: The continuing education training program for pharmacists was developed and implemented as part of a larger project to provide smoking cessation counseling to young adults. The smoking cessation counseling process incorporated comprehensive clinical guidelines and an application of the Transtheoretical Model. Pharmacists (N=25) participated in both home and live continuing education program components during a three week period. The home study component included lectures and readings in CD-ROM format. Consistent with Self-Efficacy Theory, the live training was based on exercises including modeling, rehearsal and feedback to learners. Evaluation methods included a multiple choice knowledge assessment, and pre- and post-training surveys assessing the pharmacists' current perceived smoking cessation counseling skills and confidence level.

Results: Pharmacists' perceived self-efficacy to counsel patients to quit using tobacco improved significantly ($p \leq 0.004$) after their participation in the combined program (home study and live training). In contrast, following the didactic home study component alone, pharmacists did not demonstrate a significant change in confidence ($p=0.163$). This suggests that there is value in using a combination of teaching strategies. Similar results

were found when assessing pharmacists' perception of current skills using the "5'A's" counseling process ($p \leq 0.001$ after both components and the live training alone; $p=0.201$ after the home study alone). Participants rated their overall ability to counsel patients on smoking cessation significantly higher after exposure to the entire training program ($p \leq 0.001$) as compared to before the training program. All participants completed the multiple choice knowledge assessment after the home training: 23(92%) received a 70% or better.

Conclusions: A smoking cessation continuing professional education program designed to include instructional strategies such as establishing learning goals, verbalization of strategy, modeling, rehearsal, and performance feedback was created; this program increased pharmacists' knowledge and their perceived self-efficacy to counsel patients on tobacco use. These findings reinforce and are consistent with Self-Efficacy Theory which in turn posits that higher self-efficacy can motivate the practitioner to acquire and master the skills necessary to perform proficiently in practice. Future study will determine how much pharmacists' confidence in their tobacco cessation counseling affects practice behavior, and will include measures of program implementation, patient enrollment, and patient quit smoking rates.

CHAPTER 1

INTRODUCTION

The current United States comprehensive smoking cessation guideline, *Treating Tobacco Use and Dependence: A Clinical Practice Guideline* (Fiore et al 2000), sets a high priority on conducting research on the effective elements of successful training programs. Basic questions that should be answered include: Is formal continuing education effective? Under what conditions is it effective in changing practitioners' skills and ultimately their influence on patient outcomes? A review by Davis et al (1999) of continuing medical education programs (CME) concluded that solely didactic programming had little or no influence on the transfer of knowledge to a change in practitioner behavior and patient outcomes. In contrast, interactive CME modalities that engaged the participants and provided opportunities to practice skills were effective in changing physician performance and in some instances, were associated with health care outcomes.

A training program should incorporate essential elements of adult education theory and stress skill development and maintenance (Palmer 1998, Knox 1990, Knox 2000). As noted by Davis and colleagues (1999), although didactic lectures can significantly enhance knowledge, skills or attitudes, utilizing interactive techniques such as role play, case discussion, and hands-on opportunities, are more effective in influencing the confidence of the practitioner or their *perceived self-efficacy*. This enhanced self-efficacy would lead to a greater likelihood of transferring those skills into practice.

Current trends in the pharmacy practice environment rely on the enhanced knowledge and skills of the pharmacist. The pharmaceutical care movement has evolved over the last two decades to a form of patient-directed care that focuses on providing

educational and behavioral interventions that impact patient health outcomes positively (Rovers et al 1998). The area of smoking cessation is a major public health concern as expressed in *Healthy People 2010* (US Dept HHS 2000); and pharmacists are among the health care providers that can maximize the impact on Health People 2010 objectives (Babb and Babb, 2003). Pharmacists are a uniquely qualified resource to provide smoking cessation counseling because they are widely accessible to the public, have a broad clinical knowledge of the health conditions associated with tobacco use, and are knowledgeable about the treatment options available for smoking cessation assistance.

Many pharmacy continuing education programs are geared toward improving skills. However, a paucity of studies exist that demonstrate an effect on pharmacists' self-efficacy and performance of current practice guidelines. Thus, a study was needed to determine whether the design and delivery of a smoking cessation training program increased pharmacists' level of confidence in their ability to provide patient consultation and smoking cessation skills. The current study has focused on development and evaluation of such a training program. If such a program is successful, the stage will be set to determine whether participation in the training program will increase the transfer of knowledge and skills to a simulated patient encounter, reflecting an improvement in behavior performance.

Study Objectives

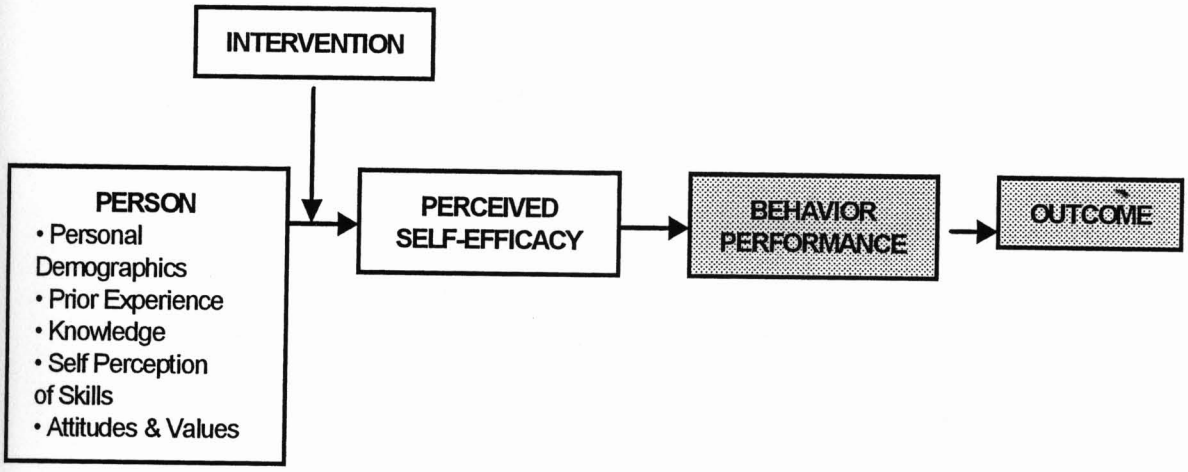
The goal of this study was to evaluate the impact of a comprehensive tobacco cessation training program on pharmacists' perceived self-efficacy for tobacco cessation counseling. The primary objective was to conduct exploratory research to study the effects of different training strategies on pharmacists' perceived self-efficacy to counsel patients to quit using tobacco. The secondary objective was to determine the training program's effect

on pharmacist's perception of their current skills using the "5'A's" counseling process [as contained in the *Clinical Practice Guideline* (Fiore et al, 2000)] and their overall ability.

Conceptual Framework

The conceptual framework (Figure 1.1, adapted from Figure 1.3, Bandura 1997) proposes that pharmacists' level of perceived self-efficacy in applying the tools to counsel patients on smoking cessation determines the behavior performance (patient counseling) and thus the expected outcomes (motivating the patient to quit or consider quitting).

Figure 1.1: Conceptual Framework



To accomplish this, it is proposed that an intervention, such as a continuing professional education program, be designed to enhance pharmacists' perceived self-efficacy in the skills required to perform the necessary counseling service. Bandura proposes that a training intervention include opportunities for modeling the desired behavior,

having the learner rehearse or practice the desired skill, and receiving accurate and supportive feedback (1997). Pharmacist characteristics that may influence their response to the intervention include personal demographics, prior experience with similar skills and services, knowledge, self perception of their skills, personal and professional attitudes and values. This study focuses on the influence of the intervention on pharmacists' perceived self-efficacy. Behavior performance and outcomes (shaded boxes) will be measured at a later time using videotaped simulation and both pharmacist and patient outcome measures.

CHAPTER 2

LITERATURE REVIEW

Continuing professional education (CPE) has evolved from a traditional focus on knowledge and technical competence to a more far-reaching goal of reflective practice, that is, achieving a high level of professional skills through practice and coaching (Novak 1992). Health professionals, including pharmacists, are rethinking their roles in society. CPE is a resource that can provide leadership and direction for those who desire to train for dramatically expanding professional tasks. CPE content and delivery can support skill development and the confidence to transfer those skills into practice. To do so, a training program must incorporate essential elements of adult education theory and stress skill development and maintenance (Palmer 1998, Knox 1990, Knox 2000). An important concept associated with behavior performance and transferring skills to practice is perceived self-efficacy. A pharmacist's strong belief in self-efficacy is essential to applying the skills developed to succeed in difficult tasks (Bandura 1997). Many pharmacists' continuing education programs are geared toward improving skills and optimizing patient outcomes. However, only limited studies demonstrate an effect of CPE on pharmacists' skill improvement, confidence to apply the skills, and performance of current practice guidelines with the goal of improving patient outcomes.

This chapter will begin by discussing the need for, and importance of, a smoking cessation training program. Then I will briefly describe why pharmacists are appropriate providers of a smoking cessation program as part of their expanding roles and will provide evidence of increased pharmacist participation in drug therapy management and their impact on patient outcomes. Specific elements of program content and development will

then be discussed in relation to key frameworks of Proficiency Theory, Self-Efficacy Theory, and the Transtheoretical Model. Literature will be reviewed that guides program design and evaluation methods. Implications for training strategies that enhance self-efficacy will be discussed. Research methods in this area will be discussed. Methods to assess pharmacists' knowledge, counseling skills and self-efficacy associated with the ability to provide smoking cessation counseling will be presented.

Smoking Cessation

Tobacco use is one of America's most important health challenges. Although the dangerous health consequences of smoking have been heightened through public awareness campaigns, cigarette smoking remains the leading preventable cause of morbidity and mortality in the United States (Fiore et al 2000). It is linked to serious health conditions including cardiovascular disease, hypertension, and cancer. Recent studies have indicated an increase in the number of young adults, including college students, developing tobacco dependence. Young adults have thus been identified as an important target group (Rigotti et al 2000 and Wechsler et al 1998). Although a decline in adult tobacco use and dependence has been seen over the past 30 years, the growing number of young adults who smoke threatens to change this trend (CDC-MMWR 2002). In fact, during the period from 1993-2000, all age groups, except those aged 18-24 years, saw substantial reductions in smoking prevalence (CDC-MMWR 2002). As the Department of Health and Human Services identified in a January 8, 2001 Fact Sheet, this underscores the importance of investing in tobacco use and dependence research and to support smoking cessation programs (HHS 2001).

In August 2000, the Surgeon General called for a 50% reduction in US smoking rates by the year 2010 through various means, including increasing the success rate of

individuals attempting to quit smoking (http://www.surgeongeneral.gov/library/tobacco_use. "Reducing Tobacco Use," August 8, 2000). Supportive pharmacologic treatment options exist to assist adults with nicotine addiction, and combined with behavioral support, can result in a 20-25% abstinence rate at one year post-treatment (Hughs et al 1999).

In addition to national support for smoking cessation, the state of Wisconsin, as a result of a large tobacco settlement with the tobacco industry, earmarked funds for a statewide tobacco initiative, including both cessation and prevention strategies. As a result of this, the Sonderegger Research Center and University of Wisconsin School of Pharmacy faculty received funding to train and assist pharmacists in providing smoking cessation counseling to young adults, 18-24 years of age. The smoking cessation training program incorporates the national clinical practice guideline, *Treating Tobacco Use and Dependence* (Fiore et al 2000), which supports the use of tailored interventions that include tobacco cessation products and behavioral counseling. According to the guideline and published literature, multiple patient contacts are associated with higher quit rates and a dose-response relationship exists for the counseling session length; therefore, the greater the amount of time spent with the patient, the more likely the patient is to achieve abstinence (Fiore et al 2000). As part of an intensive intervention, "multiple types of clinicians are effective and should be used," (Fiore et al 2000). Pharmacists are among the health care practitioners who can deliver the individualized care and pharmacotherapy necessary in a comprehensive tobacco cessation program.

Pharmacists' role

As one of the most trusted health care professionals (CNN/USA Today/Gallup poll, Nov 22-24, 2002) and with their potential to be accessible, pharmacists have an advantage in identifying and assisting current smokers in the process of smoking cessation. The

pharmacists' knowledge of, and proximity to, drug treatment options – including nonprescription products, therapeutic monitoring, and patient counseling skills, helps to tailor a comprehensive program to an individual patient. Pharmacists are accustomed to an educational framework of theory, evidence-based medicine and treatment guidelines. The increasing role of patient-centered services that pharmacists provide, allows them the opportunity to apply these educational tools in daily pharmacy practice. Various smoking cessation clinics have incorporated pharmacists into their program as counselors and pharmacotherapists (Gauen and Lee1995; Smith et al 1995, McGhan and Smith 1996; Winkler et al 1998; and Sinclair et al 1998). As McGhan and Smith (1996) pointed out, pharmacist consultation in addition to nicotine replacement therapy (NRT) doubled the quit rate at $\geq$ 6 months (31% vs 15% with NRT alone), and when a behavioral program was added, the rate further increased to 44%. A study conducted by Hudmon et al (2000) in Northern California asked pharmacists whether they thought the profession should be more or less active in helping patients to quit using tobacco. Although 86.4% responded that they thought the profession should be more active, only 8% had received formal training in tobacco cessation counseling. So although pharmacists can be quite effective in helping patients to quit, it may be possible that they are not active in this role because they have received insufficient training in this content area.

Another reason for pharmacist involvement relates to the larger role of drug therapy manager that pharmacists are assuming, termed *pharmaceutical care*. This patient-oriented practice philosophy of pharmaceutical care encompasses a "fundamental relationship" that is a "mutually beneficial exchange in which the patient grants authority to the provider and the provider gives competence and commitment (accepts responsibility) to the patient," as cited in the landmark report by Helper and Strand (1990). "Pharmaceutical care involves the process through which a pharmacist cooperates with a patient and other

professionals in designing, implementing, and monitoring a therapeutic plan that will produce specific therapeutic outcomes for the patient." This level of caring for the patient goes beyond the traditional pharmacist-patient interaction. Providing pharmaceutical care requires the pharmacist to establish a covenantal relationship with the patient. For this, pharmacists may need to improve their skills and knowledge beyond those required for traditional pharmacy practice.

Transitioning to this new philosophy of practice requires change, and pharmacists may approach these changes with fear and resistance. Barriers to implementing pharmaceutical care services can be both real and perceived. Pharmacists' attitudes, lack of advanced practice skills, resource-related constraints, system-related constraints, intraprofessional obstacles, and academic/educational obstacles have all been cited as factors that can impede pharmacists' ability to implement pharmaceutical care (Rovers et al 1998). CPE can help practitioners overcome some of these perceived or actual barriers, especially the lack of advanced practice skills – including therapeutic knowledge, clinical problem solving, and communication skills. "Pharmacists need to recognize and feel confident about the skills they possess... and with appropriate training and practice... they can start improving" (Rovers et al 1998, p 200). Academic and educational obstacles can be overcome by implementing curricular changes that consider such adult learning strategies as small-group discussions, problem-solving activities, and simulation exercises, and by providing opportunities for practitioners to watch and emulate the behaviors of role models (Knox 1980).

What follows is a discussion of three theoretical frameworks that were applied in the design and development of the smoking cessation CPE program for pharmacists.

Proficiency Theory and Self-Efficacy Theory (a component of the Social Cognitive Theory)

describe critical elements that become instrumental in motivating the learner to engage in educational programming, pursue knowledge and skills, and to determine their level of achievement and application. The Transtheoretical Model is presented because it is a component of the smoking cessation that pharmacists use with patients as a guide to behavioral counseling. Without this approach to assessing patients' readiness to quit, pharmacists may not feel as confident counseling patients to quit smoking nor be as effective.

Proficiency Theory

Proficiency theory is an adult learning theory that focuses on identifying the gap between what adults currently know and what they want or need to know, and tailoring the instruction accordingly. Proficiency refers to "the capability to perform satisfactorily if given the opportunity" with performance referring to some combination of knowledge, skills, and attitudes (Knox 1980, p 378). Proficiency Theory suggests the need for teachers and learners to understand the discrepancies that might exist between current and desired proficiencies. Knox recommends the use of needs assessment and evaluation to assist teachers and learners in identifying these discrepancies. Proficiency-oriented learning as compared to competency-based approaches "emphasizes achievement of optimal standards of proficiency, whereas competency-based preparatory education emphasizes achievement of minimal standards of performance in educational tasks," (Knox 1986, p 16). Promoting performance achievement at the highest level and applying adult learning principles with an emphasis on motivation, is an attractive feature of this theory. A continuing education provider can be responsive to the learner by incorporating teaching strategies to enhance self-reflection and provide proficiency models against which the learner can compare their current proficiencies and to guide their future learning efforts.

"Enhanced proficiency entails practice and rehearsal," and teachers can "provide varied and sequential learning tasks that encourage and enable the learner to engage in sufficient repetition to achieve the desired level of proficiency," (Knox 1980, p 396). Knox goes on to say, "actual or simulated experiences are especially effective because they contribute to relevance, interest, persistence, mastery, and transfer or application in the performance setting. ...To improve transfer to practice, it is helpful to include a discussion of skill application and commitment to use the increased proficiency" (p 396-97). In the example of smoking cessation counseling training, pharmacists would not only need to understand when and how to interact with the patient, but to acknowledge the importance of the service and accept it as part of their daily practice.

According to this theory, concepts contributing to a sense of proficiency are interrelated, such as a sense of self, past performance, specific environments and learning activities. To be more effective, CPE programs could apply these concepts to help motivate pharmacists to engage in learning to improve their knowledge and skills. The learner should be provided an opportunity to discover areas of discrepancy in their abilities as compared to a proficient model. The beliefs that learners develop about their capabilities help determine what they do with the knowledge and skills they possess, and can determine the effort, persistence and perseverance required to achieve proficiency, as well as the choice of strategies the learner will use to improve their knowledge and skills.

Self-Efficacy Theory

While Proficiency Theory came out of educational constructs, it is interesting that the social cognitive research-base generated a separate theory with many overlapping themes. Self-Efficacy Theory, although not originally generated for adult education, has similar elements and applications. Self-Efficacy Theory is a core component of Bandura's social

cognitive theory (SCT). An underlying principle of this theory of human learning and function is the concept of *reciprocal determinism* or *triadic reciprocal causation* described as the relationship between three major determinants: the individual, their behavior and the environment (Bandura 1997, p. 6). Personal factors of the individual (their attributes, values, and attitudes) are constantly interacting with the individual's behavior; the individual behavior will interact with the environment; and the environment and the individual will also interact. It is a dynamic relationship and the relative influence of each determinant varies with different activities and circumstances.

According to SCT, individuals are capable of altering their behavior and environment through their perceived self-efficacy which "refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments," (Bandura 1997, p. 3). More simply, self-efficacy is the confidence an individual has in their own ability to perform specific tasks. Through self-reflection, individuals evaluate their own knowledge, skills, and attitudes, and this self-reflection includes perceptions of self-efficacy. "Knowledge, skills, and prior attainment are poor predictors of subsequent attainments because the beliefs that individuals hold about their abilities and about the outcome of their efforts powerfully influence the ways in which they will behave," (Pajares 1996). Thus people engage in activities in which they feel confident and competent and avoid those in which they do not. The greater their sense of efficacy, the more effort, persistence and perseverance they employ on a given activity. Studying the role of self-efficacy in an academic setting like a continuing medical education program has the potential to contribute to understanding how self-perceptions of competence affect self-regulatory strategies, motivation, and achievement of practitioner performance and clinical outcomes.

Figure 2.1 Conditional relationships between efficacy belief and outcome expectancies

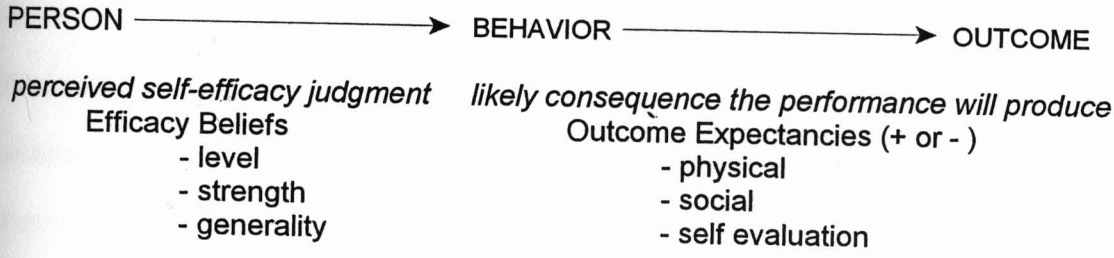


Figure 2.1 presents a model to help understand efficacy beliefs (adapted from Figure 1.3, Bandura 1997). The model reflects the conditional relationships between efficacy beliefs and outcome expectancies. When performance determines outcome, efficacy beliefs account for most of the variance in expected outcomes. In the case of our smoking cessation training program, pharmacists' level of perceived self-efficacy in applying the tools to counsel patients on smoking cessation would influence their behavior performance (patient counseling) and thus the expected outcomes (motivating the patient to quit or consider quitting). Self-Efficacy Theory would suggest that the more positive their self-perception of their capability to perform smoking cessation counseling, the more motivated and likely they will be to pursue opportunities to demonstrate the knowledge and skills they possess.

Assessing practitioner self-efficacy

Efficacy beliefs vary in level of task demands, strength of belief in capability to perform, and generality. These three dimensions therefore are crucial to developing self-efficacy measurement instruments. To be practical, useful, and predictive, Pajares (1996) suggests that an efficacy assessment should resemble the specificity and complexity of the tasks to be performed. This is preferable to using a global assessment because the predictive value of self-efficacy is decreased or can even be nullified. Because individuals

may be unfamiliar with the tasks demanded, they may need to generalize from prior attainments that are perceived as similar and gauge their perceived competence. Perceived self-efficacy can differ between learners with similar previous performance attainments and cognitive skills. Performances are thus better predicted by self-efficacy than by prior attainments. When individuals are familiar with the tasks, their task-specific self-efficacy will more closely correspond to the required performance. This has been described as the difference between self-efficacy for performance and self-efficacy for learning, (Pajares 1996, p 562).

Self-Efficacy Theory was applied in a study by Farris and Kirking (1998) to predict community pharmacists' choice of tasks associated with correcting drug-therapy problems. They examined the effects of self-efficacy (confidence), as well as instrumental beliefs (likelihood that the behavior will prevent or correct a problem), affect toward means (choice of seven different tasks associated with resolving a drug-related problem ranked as low, medium and high effort), self-schemata (importance of preventing and correcting drug-therapy problems), and recency and frequency of past behavior in preventing or correcting drug-related problems. The authors reported that pharmacists' self-efficacy, instrumental beliefs and affect toward means predicted the use of means or tasks requiring medium effort. Instrumental beliefs and the interaction of self-efficacy and affect toward means were significant positive predictors of high effort means. This suggests lack of confidence is a barrier to the implementation of pharmaceutical care services. Thus, an educational program that promotes confidence development can improve pharmacists' skills. A screening tool may also be useful to predict pharmacist's behavior and to identify those who may benefit from training programs with motivational interventions.

Program design to enhance and assess self-efficacy

The classroom is a unique and diverse setting and can be a convenient and practical setting for developing self-efficacy. Classroom instruction techniques beneficial for developing self-efficacy includes identifying specific learning goals, presenting a strategy to achieve the goals (verbalization of strategy), modeling desired behaviors and skills, and providing performance feedback (Schunk and Pajares, 2002).

Stating specific, short-term learning goals can be viewed as challenging but attainable by learners as compared to general, long-term goals. Accreditation of CPE programs requires clear and achievable learning objectives. As practitioners engage in the educational sessions they can gauge their progress toward goals as they work on tasks. "The perception of progress strengthens self-efficacy and motivates students to continue to improve," according to Schunk and Pajares (2002). Verbalizing strategies to achieve goals also raises self-efficacy. This is because verbalization draws attention to special features of the tasks and assists in retaining a systematic approach to skill building and problem solving. This problem solving technique can be accomplished using group discussion, informal participant interaction, and role playing.

Bandura (1997) identifies instructive modeling as the first step in developing competencies. Modeling helps convey to the observer that they are capable of learning. Effective modeling involves individuals, who are perceived as similar by the observers, demonstrating skills successfully. It also teaches general rules and strategies for dealing with various situations they may encounter. Mastery modeling is one of the most effective modes of human enablement (Bandura 1997). To be most effective, the appropriate skills are modeled to convey the basic rules and strategies, the learner receives guided practice under simulated conditions so they can perfect the skills (this includes performance feedback), and lastly they are assisted in applying their new skills in real situations. Learner

rehearsal and feedback from instructors can help the learner identify skills they are proficient in and those that require further skill development. In a study cited by Mann (1994) group feedback on individual consultations had the greatest impact on skill performance by physicians.

Transitioning to the occupational site can also impose stressors and impediments to success, therefore modeling and simulations must also include cognitive strategies for anticipating and neutralizing troublesome situations. The more varied the context through the use of multiple cases and examples, the more opportunity is provided to learning solutions that can be applied in practice.

Transtheoretical Model

A diagnostic tool exists to aid health care professionals, including pharmacists, in categorizing patients according to their readiness to change. Prochaska, DiClemente and Norcross (1992) presented the transtheoretical model and the stages of change (precontemplation, contemplation, preparation, action, maintenance, and sometimes termination) as a unique framework for assessing the patient's degree of readiness to make changes. This model has been cited by the *Clinical Practice Guidelines* (Fiore et al 2000) as a tool to aid practitioners in adapting to the agenda and needs of the patient. Hudmon and Berger (1995) presented a pharmacy practice application of the transtheoretical model for change. When a patient visits the pharmacy, they are asked about their smoking status and desire to quit. Once the pharmacist identifies the patient's stage of change, they can devise an intervention strategy unique to that patient.

Pharmacists in Scotland applied the transtheoretical model for change in smoking cessation (Sinclair et al 1998). Those pharmacists who participated in a two-hour training workshop to improve their smoking cessation counseling were able to assist patients in

achieving a nine month abstinence rate almost twice that of the control group (12% vs 7%). In addition, patients were more likely to discuss stopping smoking with pharmacy personnel and rated the discussion more highly as compared to the control group. In this study, however, Sinclair et al (1998) identified a limitation of external validity in that pharmacy personnel were aware that they were the group allocated to intervene with patients and knew that their performance would be evaluated, "building in an accountability factor that would not be present in replications that took place outside the context of a formal evaluation; however the control pharmacy personnel also knew they were being monitored." This leads to a few questions: Is formal continuing education effective? Under what conditions is it effective in changing practitioners' skills and ultimately their influence on patient outcomes? What assurance is there when offering a certificate training program that the skills learned will be applied to the practice setting?

Practitioner Training Programs

A growing number of disease management certificate programs are being offered by schools of pharmacy and professional associations. These programs serve as a mechanism for pharmacists to expand their clinical skills and knowledge in order to remain viable in the health care community. Because the content of these programs and their evaluation criteria can vary, the American Association of Colleges of Pharmacy (AACP) and the American Council on Pharmaceutical Education (ACPE) issued a joint report in 1998 stating three evaluation criterion. Evaluation of participants in certificate programs should:

- be required of the participants and should be a part of the initial planning. Evaluation should include both didactic and experiential components.
- be congruent with outcome expectations. For example, if skill development is an outcome expectation, the participant evaluation should include demonstration of skill

acquisition.

- consider a predetermined passing level based upon the stated level of performance expectation. Also, evaluation should provide feedback to participants on their performance.

The current United States Clinical Practice Guidelines for treating tobacco use (Fiore et al 2000) set a high priority on conducting research on the effective elements of successful training programs. To identify effective training techniques, Davis et al (1999) reviewed continuing medical education programs (CME). They concluded that solely didactic programming had little or no influence on the transfer of knowledge to a change in practitioner behavior and patient outcomes. In contrast, interactive CME modalities that engaged the participants and provided opportunities to practice skills were effective in changing physician performance. In some instances, these programs were associated with improving health care outcomes.

Although didactic lectures significantly enhance knowledge, skills or attitudes, utilizing interactive techniques such as role play, case discussion, and hands-on opportunities, appear more effective in influencing the confidence of the practitioner or their *perceived self-efficacy.* Consistent with the Self-Efficacy Theory, this enhanced self-efficacy would lead to a greater likelihood of transferring those skills into practice. Multiple interventions or sequenced continuing education sessions may help to sustain the skills and motivation over time to maintain the practitioner's practice performance and thus influence patient outcomes positively.

To test this approach to educational programming, Cornuz and colleagues (2002) recently compared two groups of medical residents who either attended an interactive smoking cessation training program administered over two half-days or a control group who

attended a didactic session on managing dyslipidemia which included some material on smoking cessation. After three months, a short-term effect survey was administered and smokers' self-reports showed that trained residents used all counseling strategies more often than did control residents, with a special emphasis on assessing motivation to quit, offering help to quit, discussing benefits and obstacles to cessation, giving a brochure and discussing strategies to prevent relapses and setting a quit date. Training seemed to improve the quality of the counseling due to a higher mean score overall. In addition, residents were surveyed regarding their level of self-confidence and self-perceived effectiveness in smoking cessation counseling. Trained residents expressed higher self-efficacy than control residents three months after training. At a one year follow-up, smoker abstinence was significantly higher in the intervention group and smokers' willingness to quit was also higher. At the conclusion of the study, residents who received the training provided better counseling.

The authors cited many reasons why their study was effective, especially in comparison to other smoking cessation programs published in the literature. Cornuz et al (2002) believe that because the program duration was longer than most educational interventions, it offered a higher level of intensity of training. Participants spent more than half of the training program in active learning methods, including modeling, role-playing, and practicing with standardized patients. Finally, the training program was based on the Transtheoretical Model or stages-of-change model, in addition to the four "A"s (which later expanded to the "5 'A's" counseling process: ask, advise, assess, assist, arrange) – a popular method of intervention, which enables the practitioner to tailor their interventions to each smoker's readiness to quit.

Attarian and colleagues (1987) reported that practitioner self-efficacy for behavioral counseling (smoking, diet, exercise) correlated directly with the proportion of time spent on

counseling activities. Therefore the more time incorporated into a training program for role-play and simulation activities the more likely the practitioner was to perform such activities in practice due to heightened perceived self-efficacy.

Evaluating Performance Expectations

In addition to structuring continuing education programs according to themes and concepts reviewed thus far, there is also a need to integrate assessment and evaluation tools into the educational process. Written examinations are most often used to assess participant knowledge, while portfolios, case presentations, and simulations (such as an Objective Structured Clinical Exam or OSCE) are commonly used to evaluate clinical skills (Neufeld and Norman 1985, Cerveny et al 1999). OSCEs have been described and used extensively in the medical literature (Barrows 1993, Colliver and Swartz 1997, and Dupras and Li 1995) and to some degree in the pharmacy literature (Fielding 1993, Fielding et al 1997, Monaghan et al 1999, Martin et al 2000, Martin et al 2001). An OSCE is comprised of a series of stations that participants move through, solving pharmacy-related problems or performing pharmacy-related activities. The station may require the participant to view material (lab results) or complete a write-up (document an intervention or recommendation), or it may involve standardized patients – members of the general public who have been trained to present a particular health-related problem in a consistent and accurate manner (patient counseling, monitoring, or assessment). The participant is observed and scored by either a standardized patient or an assessor, and may be videotaped for later evaluation. The clinical skills assessed vary from those assessed by a written exam.

Cerveny et al (1999) analyzed a variety of evaluation instruments over a three year period in conjunction with a disease management certificate program. The analysis suggested that while data indicated a low correlation between the three clinical evaluations

(case presentation, portfolio, and OSCE) and also a low correlation between the overall clinical evaluation (OSCE) and the written evaluation, a comprehensive approach to participant evaluation is necessary. Bruskiewitz and colleagues (1988) used both cognitive tests and simulations to assess improvement in performance after participating in a continuing pharmaceutical education program delivered via teleconferencing. Cognitive test results showed a significant improvement in the level of performance; pre- and post-simulations showed a trend towards improvement in scores, however, they were not statistically significant.

The OSCEs provide both formative and summative evaluation and are also a teaching tool. Participants value this examination experience as preparation for real-life clinical encounters. Faculty also benefit by gaining insight on effectiveness of course content and delivery. Preliminary analysis suggests the OSCE evaluates professional competencies different from, but complementary to, traditional didactic examinations (Martin et al 2000, Martin et al 2001). The OSCE provides a measurement of what a participant can do with knowledge previously learned and provides a measure of participant skills and response when confronted with a patient or clinical situation; it is a method of assessing process as well as product of clinical thinking (Martin et al 2000, Martin et al 2001).

Inference to practice performance

A limitation to the use of a clinical evaluation tool like the OSCE is that it cannot determine the likelihood of whether the participant will apply the necessary skills outside of the testing environment (Barrows 1993). In a meta-analysis performed by Stajkovic and Luthans (1998) to study the relationship between self-efficacy and work-related task performance, they found a 28% gain in task performance due to self-efficacy, a greater gain as compared to other methods of effecting task performance (e.g. goal setting, feedback

interventions, and organizational behavior modification). As it pertains to the smoking cessation program, pharmacist's perceived self-efficacy can be a good predictor of practice performance.

Summary and Implications

Tobacco cessation counseling based on national clinical guidelines can be an effective patient intervention. Pharmacists are among the health care practitioners who can deliver the individualized care and pharmacotherapy necessary for a comprehensive tobacco cessation program. Unfortunately, insufficient training and other barriers to implementing pharmaceutical care services, such as smoking cessation counseling, exist. Barriers include deficiencies in therapeutic knowledge, perceived proficiency of skill performance, and attitudes (self-efficacy belief and confidence). More study is needed about effective continuing education program design elements. Based on the theories and research reviewed in this chapter, effective teaching strategies for adult learners must enhance pharmacists' knowledge and their perceived self-efficacy of smoking cessation counseling skills. Active learning teaching strategies include: establishing learning goals, verbalizing strategies to meet the goals, modeling, rehearsal, and performance feedback. The implication is that higher self-efficacy can motivate the practitioner to acquire and master the skills necessary to perform proficiently in practice.

The research reported here aims to establish standardized training methods that improve pharmacists' ability to appreciate and enhance their knowledge, skills and attitudes. The teaching strategies should be realistic and generalizable to other CPE programs that are geared towards helping professionals, like pharmacists, improve their practice-based skills and the self-efficacy beliefs associated with the specific tasks, in hopes of assisting patients and achieving positive outcomes. Medical education literature primarily focuses on

knowledge gains rather than performance-based improvements. Most of the documentation is descriptive and the design does not include evaluation of the participants at three different time points. To my knowledge, no published reports have demonstrated self-efficacy gains associated with a smoking cessation training program. Design and implementation of disease management training programs is also sparsely reported. Although the success of smoking cessation interventions has been documented, the training methods used to provide education to pharmacists or other health professionals on the medical condition or counseling skills has been omitted or only briefly described. It is difficult to determine whether the success of the intervention is associated with the practitioner's training or their own skills prior to the study.

CHAPTER 3

METHODS

This chapter will begin with the presentation of the study objectives and research hypotheses, then a description of the research design and the rationale for its selection, followed by the intervention development, sample selection, and measurement development. It will conclude with a description of data collection procedures and data analysis.

Study Objectives

The purpose of the study was to assess changes in pharmacists' perceived self-efficacy for tobacco cessation counseling as a result of participation in a comprehensive tobacco cessation training program. The primary objective was to conduct exploratory research to study the effects of different training strategies on pharmacists' perceived self-efficacy to counsel patients to quit using tobacco. The secondary objective was to determine whether the training program improved the pharmacist's perception of overall ability and current skills using the "5'A's" post-training.

Research Hypotheses

Several research hypotheses structured the statistical analyses performed in this research. For a training program with a home study component followed by a live training component:

Primary Hypotheses:

H_1: Pharmacists will rate their perceived self-efficacy scores significantly higher post-live training as compared to pre-home study.

H_2: Pharmacists will not rate their perceived self-efficacy scores significantly higher pre-live training as compared to pre-home study.

H_3: Pharmacists will rate their perceived self-efficacy scores significantly higher post-live training as compared to pre-live training.

Secondary Hypotheses:

H_4: Pharmacists will rate their current skill level using the "5'A's" counseling process significantly higher post-live training as compared to pre-home study.

H_5: Pharmacists will not rate their current skill level using the "5'A's" counseling process significantly higher pre-live training as compared to pre-home study.

H_6: Pharmacists will rate their current skill level using the "5'A's" counseling process significantly higher post-live training as compared to pre-live training.

H_7: Pharmacists' overall ability score will be significantly higher post training.

Research Design

A quasi-experimental, pretest/posttest design was used because randomization of pharmacists to either a treatment (receive the training) or control group was not possible as part of the larger research grant. This design allowed the researcher to examine the relationship between exposure to specific teaching strategies and practitioner's confidence level with smoking cessation counseling. Using a repeated measures design,(repeated measures of the same variables over time for each individual) reduced the variability of, and

controlled for, individual differences unrelated to the intervention itself. Thus, use of repeated measures enhances the power of the analysis with fewer subjects. The smoking cessation training program was administered as two components: home study using CD-ROM technology, and a full day (eight hour), live training workshop. To evaluate self-efficacy, multiple points of data collection were used to administer the pre/post surveys to the pharmacists. In addition, a multiple choice knowledge assessment was given and scored in order to comply with the American Council on Pharmaceutical Education (ACPE) continuing education requirements.

The two educational components were:

Educational Component #1: Home Study

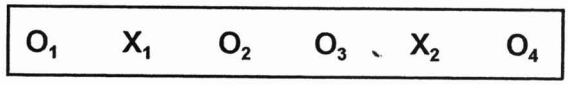
- Pretest Self-Efficacy and Current Skills Survey
- Completion of home study CD-ROM
- Post-test Multiple Choice Knowledge Assessment

Educational Component #2: Live Training

- Pretest Self-Efficacy and Current Skills Survey
- Videotaped Consultation
- Live training and skill rehearsal
- Post training Self-Efficacy, Current Skills, and Overall Ability Survey
- Post training Videotaped Consultation

The first observation or data collection point was a pretest administered before the home study. The second data collection point occurred after the home study but prior to the live training day. The third data collection point occurred the morning of the live training component; and the final data collection point was at the end of the live training component. See Figure 3.1 for a diagram depicting the intervention and data collection points.

Figure 3.1: Intervention (X) and Data Collection (O) Points



X_1 = Home Study (CD-ROM) Educational Component

X_2 = Live Training Educational Component

O_1 O_3 O_4 = Self-Efficacy and Current Skills Survey

O_2 = Multiple Choice Knowledge Assessment

O_3 O_4 = Behavior Performance: Videotaped Consultation

Intervention Development

Selecting a training program

National experts in the area of tobacco cessation were consulted and two pharmacy faculty from the University of California-San Francisco (UCSF) College of Pharmacy were enlisted as additional faculty and program developers. A comprehensive smoking cessation guideline, *Treating Tobacco Use and Dependence: A Clinical Practice Guideline* (Fiore et al 2000), and a formal program developed by the UCSF faculty for pharmacy students titled *Rx for Change: Pharmacist-Assisted Tobacco Cessation*, (Hudmon et al, in press), were used and adapted to create this pharmacy continuing education program.

The merits of the *Rx for Change* program were three-fold. First, the patient counseling material was based on the Transtheoretical Model for Change (Prochaska and DiClemente 1982) which, when applied, can help to identify and classify the tobacco user's readiness to change their smoking behavior. Once the stage of change has been identified, recommendations can be made to help move the patient into the next stage of change. The Transtheoretical Model is a tool the pharmacist can use to appropriately tailor the intervention based upon the individual's stage of change and upon an understanding of

what actions and words best suit the behavior change desired. Another merit of this program was its use of the U.S. Public Health Service's *Treating Tobacco Use and Dependence: A Clinical Practice Guideline* (Fiore et al 2000), including the "5 'A's" (Ask, Advise, Assess, Assist, Arrange). The "5'A's" technique consistently guides the process of intervention. And lastly, the training program was developed with pharmacists in mind. Many smoking cessation training programs exist, but are not specifically adapted to the pharmacy setting nor the pharmacist's expertise in drug therapy selection.

Modifying the training program

Because the target group for this study was practicing pharmacists rather than students, the *Rx for Change* program needed to be adapted. It also needed to be delivered in a reasonable and convenient time frame and provide the pharmacist the opportunity to immediately apply the knowledge and skills to their practice site. The researcher, with input from the expert panel of UCSF faculty, pharmacy faculty associated with the larger research project and the CE coordinator from UWESP assigned the specific educational program topics to either the home study or live training component. The researcher, with input from the same group, designed and coordinated the delivery of the live training and the administration of the evaluation instruments, including the videotaped patient consultations.

The live training component could be no longer than one full day to accommodate the pharmacists' schedules. Therefore the home study component needed to cover some of the original program's didactic material in a convenient format. CD-ROM technology was chosen because it best mimicked a live, didactic lecture and was a format that the UWESP instructional technology staff could support. The home study was developed for CD-ROM using Power Point slides and audio taped lectures by the two UCSF faculty and was prepared for the pilot study the previous year. Also on the CD-ROM were printable versions

of two required readings that would provide pharmacists a preview of the Transtheoretical Model and *Clinical Practice Guidelines* (including the "5'A's" counseling process) that would be elaborated on further in the live training component. Pharmacists could also access two evaluation instruments (multiple choice knowledge assessment and general home study evaluation form for ACPE requirements) on the CD-ROM. Pharmacists were instructed to bring the completed pre-test survey and evaluation instruments to the live training session.

Classroom instruction techniques identified as being beneficial for developing self-efficacy include stating specific learning goals, verbalization of strategy to achieve goals (includes problem-solving), modeling, rehearsal, and performance feedback. To effectively identify whether these active learning strategies would enhance the pharmacists' perceived self-efficacy, the following strategies were incorporated into the live training component: learning goals/ objectives, verbalization of strategy (problem-solving), modeling, rehearsal, and performance feedback. Stating specific learning goals was the only technique utilized in the home study educational component.

The learning goals or objectives assigned to the home study were:

- List five health risks associated with chronic tobacco use;
- Discuss the pharmacodynamics of nicotine on the central and peripheral nervous systems, and the cardiovascular system;
- List the five stages of change in smoking behavior; and
- Summarize the system changes designed to promote the assessment and treatment of tobacco dependence, as recommended by the US Public Health Service.

The live training topics were those that either did not lend themselves well to the CD-ROM format or topics that would benefit from an interactive instructional approach.

The live training objectives were:

- Outline the current therapies for smoking cessation;
- Demonstrate how to assess a patient's nicotine dependence and describe their stage of change;
- Develop a therapeutic plan for a patient who desires to quit smoking, including monitoring and follow-up;
- Demonstrate how to educate a patient on methods for smoking cessation and how to overcome obstacles to smoking cessation; and
- Discuss strategies for enrolling and managing patients in a smoking cessation program.

The live training component began with videotaped patient simulations to help pharmacists gauge their level of proficiency (consistent with Proficiency Theory) in two areas: counseling a patient in the preparation phase to quit smoking and monitoring a patient in the action phase trying to succeed in quitting. By scheduling one set of videotaped patient encounters before the start of the live training component, pharmacists would have recent patient interactions to refer to when learning new concepts and skills during the live training. After a traditional lecture-style presentation of smoking cessation products, behavioral counseling techniques using the Transtheoretical Model (Prochaska and DiClemente, 1982) and the "5 'A's" counseling process (Ask, Advise, Assess, Assist, Arrange) from the *Clinical Practice Guideline* (Fiore et al 2000) were presented. Pre-written scenarios were used to demonstrate precontemplation and contemplation stages of change associated with the Transtheoretical Model. One faculty member would model the pharmacist's role while the other played the part of the patient.

Verbalization of strategies or problem solving approaches were discussed as

pharmacists anticipated problems associated with targeting an 18-24 year old smoking population. Additional role play scenarios were given to the pharmacists for their own rehearsal in pairs. These scenarios included a general description of the patient encounter for the pharmacist and answers to potential questions for the person role playing the patient role. The pharmacists were instructed to provide feedback to their partner at the completion of their role plays. Also during the live training component, nicotine replacement products were available for the pharmacists to view (nicotine patches) and actually try (nicotine gum and inhaler). And, finally, a step-by-step discussion of program tools and documentation forms was added so that pharmacists could enroll patients immediately upon returning to their pharmacy practice sites.

Final continuing education program

The final pharmacist continuing education program resulted in the two educational components with assigned continuing education credits: the home study (CD-ROM and readings, 4 CE credits) and the live training (lecture, product "show and tell," modeling, role plays and rehearsal, and standardized patient simulations pre- and post-training, 7.5 CE credits, for agenda see Appendix A). Pharmacy continuing education credits (11.5 hours = 1.15CEUs) were granted to participants through the University of Wisconsin Extension Services in Pharmacy (UWESP) to those pharmacists completing the required course work and evaluation forms. All of the necessary documentation for ACPE (the American Council on Pharmaceutical Education) approval and continuing education accreditation was completed. A comparison of the home study and live training topics and their formats are presented in Table 3.1 and Table 3.2, respectively.

Table 3.1 Contrast Between Home Study and Live Training Component Topics

Educational Component #1: Home Study	Educational Component #2: Live Training
• Introduction • Epidemiology of Tobacco Use • Forms of Tobacco • Nicotine Pharmacology & Principles of Addiction • Drug Interactions with Smoking and Nicotine • Consequences of Quitting • Pathophysiology of Tobacco-related Disease • Behavior Modification Strategies: "5'A's" counseling process Transtheoretical Model	• Introductions • Tobacco users and their quit experiences (videotape) • Tobacco Cessation Products (review, demonstration, sample) • Behavior Modification Strategies: "5'A's" counseling process, Transtheoretical Model, Withdrawal Symptoms and Preventing Relapse • Program Tools and Documentation Forms • Role Plays and Patient Encounter Strategies • Videotaped patient consultations

Table 3.2 Contrast Between Home Study and Live Training Component Formats

Educational Component #1: Home Study	Educational Component #2: Live Training
• CD-ROM format • Didactic: PowerPoint slides with audio lecture • Readings: Two articles • Learning Objectives/Goals • Multiple Choice Knowledge Assessment	• Didactic: PowerPoint slides • Interactive: Products, tools, and scenarios • Learning Objectives/Goals • Modeling, Rehearsal, Performance Feedback • Verbalization of strategy (problem-solving) • Videotaped Consultations

Pilot study

A pilot study was conducted in 2001 with nine subjects to pretest the educational program and survey instruments. This study was useful in establishing the feasibility and ease of implementation of the training program. The findings supported the need for, and readiness of, pharmacists to implement what they learned while participating in the smoking

cessation training program upon returning to their practice site. The only change in the program as a result of the pilot study was the expansion of the live training component to include detailed use of the patient consent forms and smoking cessation patient program tools and the patient enrollment and documentation forms. This was done to ensure that all pharmacists could implement the program immediately upon returning to their individual practice sites, rather than waiting for faculty to conduct a site visit to review the use of the enrollment and documentation forms. Additional time was allotted to verbalization of strategies and problem solving activities during the 2002 live program because we had experiences of our pilot group to share and had pharmacists with prior smoking cessation counseling experiences attending. To accommodate these additions, the rehearsal of additional scenarios was less formal than during the pilot, thus depended upon the pharmacist's own self-directed approach to learning.

Sample Selection

Recruitment procedure

A judgment sample of Wisconsin pharmacists was invited to participate in the continuing professional education program as part of a larger research project targeting 18-24 year old tobacco users. It was important for the success of the larger research project to invite a judgment sample of pharmacists because we needed to increase the likelihood that the smoking cessation service would be implemented and significant quit rates could be obtained. Using a judgment sample could potentially effect the variance we might obtain with our measures. As these may already be motivated and self-selecting pharmacists, we would expect the variance of some measures to be smaller than if we were using a randomized sample of pharmacy practitioners.

To create a pool of eligible pharmacists, program faculty generated a list of

practitioners they considered capable of participating in this program. Pharmacists who served as preceptors for the School of Pharmacy and as pharmacy internship sites, those who had participated in a statewide pharmaceutical care initiative, and pharmacists who had prior pharmaceutical care service experiences were added to the list. In addition, a large Wisconsin managed care organization (MCO) expressed interest in partnering in the larger research project because 1) they had been involved in the pilot study and, 2) smoking cessation had become a priority within their health care plan. The MCO offered the benefit of having a large employee base to market the service to and a good source of data to assist in documenting costs (both direct and indirect) of implementing the program and to measure patient and system outcomes.

A recruitment letter (Appendix B) was distributed to pharmacists within a large managed care organization and others were contacted either by telephone or electronic mail. A final confirmation letter was sent to all participants (Appendix C).

Eligibility criteria

Practitioners who were motivated, could realistically undertake this enterprise, and could attend the required one-day live training workshop on June 1, 2002, were encouraged to participate. In addition, their site needed access to young adults (either as employees or as part of their clientele), have the ability to enroll at least five 18-24 year old tobacco users, and have a work environment that supported patient-directed services (i.e. pharmaceutical care).

A final sample of 25 Wisconsin pharmacists agreed to participate in the program. Two pharmacists opted not to participate: one was a "no show" for the live training program and the other, in relation to the larger research study, declined participation due to a lack of pharmacist reimbursement for the patient-provided service. The pharmacists who

participated were each paid $200. This amount was considered a token fee to decrease the burden associated with replacing the participating pharmacist at his/her work site for the equivalent amount of time spent at the live training program. In addition, continuing education credits that could be applied toward the pharmacist's Wisconsin licensure renewal requirement of 30 CE credits every two years. Pharmacist characteristics are reported in Table 3.3.

Table 3.3: Participating Pharmacist Characteristics

Gender
male n = 16
female n = 9

Age
range 23-59
average age 35

Smoking history
never smoked 4
current smoker 0
previous smoker 2
experimented 15

Assisted patients in smoking cessation prior to program
yes = 11
no = 12

Number of patients assisted in last year
2 patients = 3
3 patients = 2
4 patients = 1
5 patients = 2

Work setting
independent 8
chain 8
MCO 9 (2 clinic sites)

Wisconsin regions represented
Southeast 9
East-central 10
South/southwest 6

Measures

Two primary data collection measures were used. First, a survey developed by Hudmon et al (in press) and second, a multiple choice knowledge assessment required for continuing education credit and completed post-home study. Pharmacist demographics, prior experience, and attitudes and values were also assessed using the survey.

The survey developed by Hudmon et al (in press) assessed three main components: pharmacists' perceived self-efficacy, pharmacists' rating of their current skills

using the "5'A's" counseling process, and pharmacist's rating of their overall ability to help patients quit using tobacco. A unique coding scheme was used to link the surveys while maintaining respondent anonymity. Additional survey questions gathered demographic information and assessed the pharmacist's attitude toward smoking cessation as a pharmacy service. A copy of the pre/post surveys used can be found in the Appendix (items D and E).

The survey questions included a scale of 12 items measuring perceived self-efficacy, a scale of 5 items that measured perceived current skills using the "5'A's" counseling process, and a two item global rating of perceived overall ability to help patients quit smoking. Each of these will be discussed below.

Perceived self-efficacy to counsel patients to quit using tobacco

The primary dependent variable in this study was the pharmacists' perceived self-efficacy, or level of confidence, in their tobacco cessation counseling skills. The principal reason for using the survey developed by Hudmon et al. (in press) to assess perceived self-efficacy for counseling was to determine the likelihood of whether the participant would have the confidence level to apply the necessary skills outside of the training environment. The self-efficacy survey was studied by Hudmon et al (2000) in conjunction with similar tobacco cessation training programs and reliability has been evaluated (12 items, Cronbach's alpha = 0.94).

The survey uses a five point Likert scale (1 = not at all confident; 2 = not very confident; 3 = moderately confident; 4 = very confident; 5 = extremely confident) to rate the pharmacist's perceived confidence in counseling patients to quit using tobacco.

Question: How much confidence do you have in the following aspects of counseling patients to quit using tobacco?

How confident are you that you –

- Know the appropriate questions to ask patients when providing counseling?
- Have the skills needed to counsel for an addiction?
- Can provide motivation to patients who are trying to quit?
- Have the skills to monitor and assist patients throughout their quit attempt?
- Have the skills to assist patients who seems to be in a hurry?
- Have sufficient therapeutic knowledge of the pharmaceutical products for tobacco cessation?
- Can create consumer awareness of why pharmacists should ask questions about tobacco use?
- Know when a referral to a physician is appropriate?
- Can sensitively suggest tobacco cessation to patients who use tobacco?
- Are able to provide adequate counseling when time is limited?
- Can help recent quitters learn how to cope with situations or triggers that might lead them to relapse back to smoking?
- Can counsel patients who are not interested in quitting?

Current skill level using the "5 'A's" counseling process

Another component of the Hudmon et al (in press) survey instrument was related to the *Clinical Practice Guideline's* "5 'A's" counseling process (Ask, Advise, Assess, Assist, and Arrange). The survey asks pharmacists to rate their current level of counseling skills on five items using a five point Likert scale (5 = excellent, 4 = very good, 3 = good, 2 = fair, and 1 = poor).

Please rate your level of skills for the following aspects of counseling:

- Asking patients whether they use tobacco

- Advising patients to quit using tobacco
- Assessing patients' readiness to quit
- Providing tobacco cessation assistance to patients who are thinking about quitting or trying to quit using tobacco
- Arranging a follow-up counseling session with patients you assist with quitting

Overall ability to help patients quit using tobacco

The third component of the instrument included two items on the post-test assessing the participant's perceived overall ability to help patients quit using tobacco, one assessing ability before any training and the other assessing ability after program completion. Although the surveys administered pre-home study and pre-live training included assessment of overall ability, the post-live training assessment asked pharmacists to compare their overall ability before attending the class to their overall ability after completing the training. Because this assessment was more global, it was considered more reliable to use only the post-training items in the statistical analysis. This is because pharmacists would have a better understanding of the meaning and expectations associated with helping patients quit smoking after they received the entire training program. A five point Likert scale, ranging from 1 = poor to 5 = excellent, was used.

1. *Before* attending this class, how would you have rated your overall ability to help patients quit using tobacco?
2. *Now*, how do you rate your overall ability to help patients quit using tobacco?

Knowledge and other measures

Other variables measured were knowledge, attitudes and values, previous experience, and pharmacist demographics; these measures are components of the pharmacist characteristic box in the conceptual framework and were included as control variables. Program and instructor evaluations were also collected in accordance with ACPE requirements and to provide feedback regarding the format and content of the program (Appendix F and G). Another measure associated with the intervention, but not evaluated for this Master's thesis, was behavior performance. Details about behavior performance are included as information only because of its relevance to the training program.

The pre- and post-survey instruments have been included in their entirety in the Appendix (D and E). The knowledge assessment contained 14 multiple choice questions and a passing score of 70% or better was established (Appendix H).

As part of the larger study, behavior performance was assessed informally through observed role play exercises and formally using videotaped consultations. Patient consultation scenarios were used to assess pharmacists' abilities. The patient simulation serves as a formative evaluation process through which faculty gain insight on effectiveness of program content and delivery. Participants can view the simulation as preparation for real-life clinical encounters with patients and an opportunity to receive feedback from faculty. Videotaped consultations before and after live training provides a comparative measure of the participant's skills and response when confronted with a patient or clinical situation.

Each simulation consisted of two ten minute stations. The scenarios chosen were modified versions of the cases developed by UCSF faculty. One station was a new patient encounter which required an interview and assessment of willingness to quit. The second station was a follow-up to the initial interaction and included clinical problem solving. The

simulations were videotaped using standard VHS tapes in specially equipped and designed patient care rooms and a communications laboratory in the UW-School of Pharmacy. Standardized patients, (individuals trained to take on the characteristics and concerns of the patients in the scenarios), were each individually trained to respond to questions and to present information consistently within the context of their scenario. Pharmacy students were recruited and paid $50 for participating as patients. Pharmacy students were utilized for two reasons. First, the students were all familiar with the process of simulations and had either completed required course work on smoking cessation counseling or had a special interest in the topic. Second, the students all appeared within the age range of 18-24 year olds, the target age group of the larger smoking cessation study.

Data Collection Procedures

Data was collected at four time points: pre-home study, post-home study, pre-live training, and post-live training. Each time point and the measures collected will be discussed below.

Consent

Notice of Exemption from the University of Wisconsin Health Sciences Human Subjects Committee was received on May 16, 2002, allowing us to evaluate the impact of the tobacco cessation pharmacist training program on pharmacist learning (Appendix H). Included in this exemption was approval of the pre-and post-training surveys and the formal evaluation of participant knowledge and skills using the multiple choice knowledge assessment and videotaped consultations. Standardized patients and pharmacist-participants signed a consent allowing personal videotaping (Appendix J).

Pre-home study

Home study materials were mailed out three weeks prior to the live program. Participants were asked to complete the pre-survey (Appendix D) before beginning the CD-ROM home study.

Post-home study

The home study CD-ROM included printable versions of the multiple choice knowledge assessment (Appendix H) and general home study evaluation form (Appendix F). Participants were asked to bring the completed knowledge assessment and evaluation form to the live training component on June 1, 2002.

Pre-live training

Upon arrival the morning of June 1, 2002, each pharmacist-participant received a name tag, a pre-live self-efficacy and current skills survey (Appendix D) to complete prior to videotaping, and a binder with the program agenda, handouts, and example of a patient chart with documentation forms. Boxes were labeled for deposit of the pre-survey completed at home, the multiple choice knowledge assessment, and general home study evaluation form.

Once the pharmacists completed the pre-live training survey and handed in the home study materials, they were assigned to one of five grouped stations to complete two videotaped patient simulations. Pharmacists were asked to read videotaping instructions and sign a consent form (Appendix J). Although encouraged to limit their time per station to no more than 15 minutes, pharmacists were not formally timed, in hopes of relieving any pressure they might feel under time constraints.

Post-live training

To complete the post-training videotaped simulations, pharmacists signed up for a group of stations different from their morning set of stations in order to avoid interacting with the same person as the simulated patient. Pharmacists completed the two videotaped simulations after rehearsal of role play scenarios in pairs, and just prior to leaving the training site. Participants completed the post-test self-efficacy and current skills survey (Appendix E) after the conclusion of the full-day live training educational component. Again, a labeled box was used to collect the surveys and a program facilitator was posted near the doorway to confirm that all forms had been completed. To comply with ACPE standards, program and faculty evaluations (Appendix G) were included with the program binders and labeled boxes were on site for collection of the forms at the end of the live training session.

Data Analysis

SPSS 11.0 software was used to analyze the survey data. Descriptive statistics was used to create summed scores for the 12-item perceived self-efficacy scale and the 5-item self-rated current skills using the "5'A's" counseling process. The reliability for both scales was calculated. Repeated measures analysis of variance (ANOVA) was used to analyze the self-efficacy and current skills using the "5 'A's" counseling process survey responses, comparing pre-home, pre-live and post-live results. Repeated measures ANOVA was used because the same individuals were measured repeated times, thus minimizing individual differences and enhancing the power of the analysis. Assumptions for ANOVA include: the dependent variable should be normally distributed, homogeneity of variance, and compound symmetry (because there is a correlation between the measures when they are from the same individual). If the compound symmetry requirement is not met, an alternative approach is to adjust the degrees of freedom to decrease the likelihood

of type I error. This is done using an epsilon correction for the within-subjects factors. The Wilcoxon Signed Rank test was conducted to test the pairwise comparison of the pharmacist's self reported overall ability to help patients quit using tobacco before and after the training program. Use of the Wilcoxon Signed Rank test was preferred because the within-subjects design of the study entailed two measurements of a single, ordinal, outcome variable. This technique is a nonparametric analog of the repeated measure ANOVA , and was used because normal distribution with the overall ability measure could not be assumed. For all statistical tests, a significance level of 0.05 was used. The knowledge assessment was scored by hand and item analysis was conducted. The videotape analysis of behavior performance has been deferred to another research project, as planned.

CHAPTER 4

RESULTS

Study results are presented in two parts. First, the results of the descriptive statistics are presented, including the reliability for the self-efficacy scale. Second, results from the univariate analyses used to explore the study's test hypotheses are presented.

DESCRIPTIVE STATISTICS RESULTS

Pharmacist Characteristics

Pharmacist Demographics

The study sample consisted of 25 pharmacists. The ages ranged from 23 - 59, with an average age of thirty-five years. Sixty-four percent of respondents were male. Their smoking history varied from never smoked (19%), previous smoker (9.5%), and experimented (71.4%). None of the pharmacists reported being a current smoker. A one-way ANOVA found no significant difference between gender of pharmacists.

Prior Experience

Eleven of 23 reporting pharmacists had assisted patients in smoking cessation prior to the program. Of those, three had assisted two patients in the last year, two had assisted three patients, one had assisted four patients, and two pharmacists had assisted five patients in the last year. Although prior experience could confound the results, a one-way ANOVA found no significant difference between pharmacists who reported prior experience and those who did not.

Knowledge

All participants (N=25) completed the multiple choice knowledge assessment after the home study educational component. Twenty-three participants received a 70% or better (range 57-100, mean = 86.4). An assessment of prior knowledge can be drawn from pharmacists' response to how much of the continuing education program was review. Responses ranged from 15% to 90%, with an average of 48.9% of the information being review. Pharmacists felt less than 10% of the education was unnecessary, and that approximately 90% was usable.

Attitudes and Values

Pharmacist attitudes towards smoking and smoking cessation were also assessed via the pharmacist survey. When asked post-live training how active the profession should be in helping patients quit, the pharmacists (n=21 reported) responded unanimously that the profession should be more active. They also responded unanimously that the profession should be more active in preventing patients from smoking. Pharmacists were also asked whether pharmacies should sell tobacco. Seventeen (81%) were strongly against selling tobacco and 4 (19%) were against it. No respondents were either neutral or in favor of it.

Self Perception of Skills: Self-Efficacy and Current Skills

A Cronbach's alpha coefficient of 0.93 was calculated for the 12-item perceived self-efficacy scale. This compares well to the established internal consistency reliability of 0.94 calculated by the survey authors (Hudmon et al 2000). A Cronbach's alpha of 0.83 was calculated for the 5-item current skills using the "5'A's" scale using post-live training survey data. The Cronbach's alpha were all more than 0.8, as is desired in creating and using such an instrument.

Descriptive statistics were used to calculate summed scores for the perceived self-efficacy scale and assessment of self-reported current skills using the "5'A's" counseling process. See Tables 4.1 and 4.2 for the means and standard deviations. Two interesting things can be noted by examining the means for items across the three surveys. First, pharmacists' confidence in counseling uninterested patients had a much greater rise between the pre-home and pre-live data collection points, than the pre-live to post-live observation. Second, all of the post-live training survey items showed an increase from the pre-live training data collected.

Table 4.1 Self-Efficacy Measures (12-item scale) Reported as Mean (SD)

	Pre-Home (n=22)	Pre-Live (n=14)	Post-Live (n=23)
Ask appropriate questions	2.59 (1.01)	2.93 (0.62)	3.76 (0.52)
Counsel an addiction	2.68 (1.04)	2.64 (0.50)	3.57 (0.73)
Provide motivation	3.00 (1.02)	3.07 (0.73)	3.85 (0.76)
Monitor and assist	2.81 (1.03)	3.14 (0.77)	3.91 (0.79)
Assist hurried patients	2.68 (1.04)	2.93 (0.73)	3.74 (0.75)
Have therapeutic knowledge	3.18 (0.96)	3.18 (0.61)	4.20 (0.69)
Create RPh role awareness	3.05 (1.17)	2.93 (0.73)	4.09 (0.79)
Know when to refer	2.91 (1.02)	3.07 (1.00)	4.13 (0.81)
Suggest tobacco cessation	3.19 (1.17)	2.93 (0.73)	3.87 (0.81)
Counsel with limited time	3.14 (1.13)	3.00 (0.88)	3.78 (0.74)
Help quitters cope	2.77 (1.11)	2.64 (0.84)	3.70 (0.70)
Counsel uninterested patients	2.45 (1.14)	3.64 (0.74)	3.76 (0.71)
Summed Score	34.18 (10.62)	35.11 (6.28)	46.35 (6.58)

Table 4.2 Current Skills Measures (5-item scale) Reported as Mean (SD)

	Pre-Home (n= 22)	Pre-Live (n= 14)	Post-Live (n= 23)
Ask about tobacco use	2.95 (1.29)	2.79 (0.89)	4.04 (0.71)
Advise to quit tobacco use	3.00 (1.16)	2.57 (0.76)	4.00 (0.60)
Assess readiness to quit	2.59 (1.33)	2.29 (0.83)	3.87 (0.63)
Provide assistance	2.795 (1.22)	2.77 (0.60)	3.91 (0.60)
Arrange follow-up	2.36 (1.43)	2.07 (0.83)	3.91 (0.60)
Summed Score	13.70 (5.78)	12.29 (3.00)	19.74 (2.42)

A decline in summed scores for current skills is noted between the pre-home study and pre-live training components. Although it is not significant, it seems unusual to see reported means reduce in all five items. Perhaps pharmacists reported a lower skill level in the pre-live training because they became more aware of the associated meaning with each of the "5'A's" via the home study reading component but did not have an opportunity to apply or practice the counseling process.

STUDY HYPOTHESES TESTING

The response rates for the three surveys were: pre-home study 88%, pre-live training 56%, and post-live training 92%. Paired-t tests and repeated measures analysis of variance (ANOVA) were used to measure within-subjects changes over time for the perceived self-efficacy 12-item scale and the pharmacists' perceived current skills using the "5'A's" counseling process 5-item scale .

The overall goal of this study was to assess changes in pharmacists' perceived self-efficacy for tobacco cessation counseling as a result of exposure to a comprehensive

tobacco cessation training program. The primary objective was to conduct exploratory research to study the effects of different training strategies on pharmacists' perceived self-efficacy to counsel patients to quit using tobacco. The secondary objective was to determine whether the training program improved the pharmacist's perception of their overall ability and current skills using the "5'A's" counseling process.

Primary Research Hypotheses

A paired t-test and repeated measures ANOVA were run to test the first three primary hypotheses regarding pharmacists' perceived self-efficacy to counsel patients on tobacco use:

H_1: Pharmacists will rate their perceived self-efficacy scores significantly higher post-live training as compared to pre-home study.

H_2: Pharmacists will not rate their perceived self-efficacy scores significantly higher pre-live training as compared to pre-home study.

H_3: Pharmacists will rate their perceived self-efficacy scores significantly higher post-live training as compared to pre-live training.

The outcome is contained in Tables 4.3, 4.4 and 4.5. First, the results in Table 4.3 for the paired t-tests suggest that the self-efficacy scores were significantly higher post-live training as compared to before the home study ($p \leq 0.001$). There was no significant difference in perceived self-efficacy ($p = 0.163$) without the live training component. Considering that the format used for the home study component was primarily a knowledge-

based didactic format, this finding is consistent with our expectations. For completeness, a significance of p=0.032 was found when pre-live to post-live self-efficacy summed scores were compared, thus the live training strategies had a more significant effect on pharmacists' perceived self-efficacy to counsel patients on tobacco cessation.

Table 4.3 Paired t-test Using Summed Scores for Self-Efficacy Measures

Self-Efficacy Hypotheses	**N**	**p value**
H1: Pre-Home vs Pre-Live	10	$p = 0.163$
H2: Pre-Home vs Post-Live	19	$p < 0.001$
H3: Pre-Live vs Post-Live	14	$p = 0.003$

Tables 4.4 and 4.5 display the results of the repeated measures ANOVA. Recall that this statistical analysis was conducted as a more conservative approach to measuring whether the same individuals across all three data collection points, not only a composite of summed scores of all survey data collected, produced in similar results as the paired t-test. The data from ten pharmacist who submitted complete survey responses at all three data collection points was used for this specific analysis.

There were four within-subjects factors and no between-subjects factors. Because Mauchly's test of sphericity was not significant (p=0.909), the assumption of compound symmetry was met, and the univariate test was appropriate (and more powerful). No matter which epsilon correction was used, the overall F is significant at an alpha < 0.05 ($p \leq 0.004$ and $p \leq 0.021$ for lower-bound correction).

Looking at the simple pairwise comparisons, we see that the self-efficacy scores were significantly higher post-live training as compared to before the home study ($p \leq 0.005$ for all). (Table 4.5) There was no significant difference in perceived self-efficacy ($p = 0.163$)

without the live training component. Considering that the format used for the home study component was primarily knowledge-based didactic format, this finding is consistent with our expectations. For completeness, a significance of p=0.032 was found when pre-live to post-live self-efficacy summed scores were compared. Using the Holm's process to accommodate for the familywise alpha, this value would not be significant, and therefore the data suggest that the entire training program was necessary, including both the home and live training strategies, to produce a significant effect on pharmacists' perceived self-efficacy to counsel patients on tobacco cessation.

Table 4.4 Repeated Measures of Within-Subjects Effects for the Measurement of Self-Efficacy
Mauchly's Test of Sphericity (p= 0.909)

Source (Self-Efficacy)	SS	df	MS	F	p value
Sphericity Assumed	659.617	2	329.808	7.849	.004
Greenhouse-Geisser	659.617	1.954	337.576	7.849	.004*
Huynh-Feldt	659.617	2.000	329.808	7.849	.004
Lower-bound	659.617	1.000	659.617	7.849	.021

Table 4.5 Test of Within-Subjects Simple Pairwise Contrasts: Self-Efficacy

Source (Self-Efficacy)	SS	df	MS	MS Error (df9)	F	p value
Pre-Home vs Pre-Live	172.225	1	172.225	74.781	2.303	0.163
Pre-Home vs Post-Live	1288.225	1	1288.225	96.447	13.357	0.005
Pre-Live vs Post-Live	518.400	1	518.400	80.900	6.408	0.032

Secondary Research Hypotheses

Repeated measures ANOVA was used to test three secondary hypotheses addressing pharmacists' perception of their current skill level

H_4: Pharmacists will rate their current skill level using the "5'A's" counseling process significantly higher post-live training as compared to pre-home study.

H_5: Pharmacists will not rate their current skill level using the "5'A's" counseling process significantly higher pre-live training as compared to pre-home study.

H_6: Pharmacists will rate their current skill level using the "5'A's" counseling process significantly higher post-live training as compared to pre-live training.

Referring first to Tables 4.7 and 4.8, we see that Mauchly's test of sphericity for the repeated measures ANOVA was significant ($p \leq 0.038$). Because we cannot assume compound symmetry, we could report the multivariate results rather than the univariate results, however this approach is not as powerful. It is also appropriate to report the univariate results if the degrees of freedom have been adjusted with the epsilon correction. Looking at Table 4.7, no matter which epsilon correction was used, the overall F is significant ($p \leq 0.001$).

Table 4.6 Paired t-test Using Summed Scores for Current Skills Measures

Self-Efficacy Hypotheses	N	p value
H1: Pre-Home vs Pre-Live	10	p = 0.201
H2: Pre-Home vs Post-Live	19	p < 0.001
H3: Pre-Live vs Post-Live	14	p < 0.001

Table 4.7 Repeated Measures of Within-Subjects Effects for the Measurement of Current Skills Using the "5 'A's" Counseling Process
Mauchly's Test of Sphericity (p=0.038)

Source (Current Skills)	SS	df	MS	F	p value
Sphericity Assumed	345.317	2	172.658	41.154	.000
Greenhouse-Geisser	345.317	1.284	268.988	41.154	.000
Huynh-Feldt	345.317	1.405	245.861	41.154	.000
Lower-bound	345.317	1.000	345.317	41.154	.000

Table 4.8 Test of Within-Subjects Simple Pairwise Contrasts: Current Skills Using the "5 'A's" Counseling Process

Source (Current Skills)	SS	df	MS	MS Error (df 9)	F	p value
Pre-Home vs Pre-Live	4.225	1	4.225	2.225	1.899	0.201
Pre-Home vs Post-Live	469.225	1	469.225	12.447	37.697	0.000
Pre-Live vs Post-Live	562.500	1	562.500	10.500	53.571	0.000

Looking at the paired t-tests in Table 4.6 and the simple pairwise comparisons in Table 4.8, all three hypotheses were supported. Pharmacists rated their current skill level for the "5'A's" counseling process significantly higher post-live training ($p \leq 0.001$) as

compared to pre-home study and as compared to pre-live training. There was no significant difference for the "5'A's" measures (p=0.201) when comparing pre-home study to pre-live training surveys. So, although the "5'A's" process was a content area in both the home and live educational components, the pharmacist's skill level was perceived significantly higher only after the live training strategies were incorporated.

The Wilcoxon Signed Ranks Test was conducted to test the pairwise comparison of overall ability before and after the training program as proposed in Hypothesis 7:

H_7: Pharmacists will rate their overall ability significantly higher post training.

The mean scores and standard deviations for the overall ability before and after the training were 2.44 (0.93) and 3.83 (0.70), respectively. Participants rated their overall ability after the entire training program significantly higher than their ability before ($p<0.001$), thus Hypothesis 7 was supported.

CHAPTER 5

DISCUSSION

The main goal of this study was to assess changes in pharmacists' perceived self-efficacy for tobacco cessation counseling as a result of exposure to a comprehensive tobacco cessation training program. The primary objective was to conduct exploratory research to study the effects of different training strategies on pharmacists' perceived self-efficacy to counsel patients to quit using tobacco. The secondary objective was to determine whether the training program improved the pharmacist's perception of their overall ability and current skills using the "5'A's" counseling process.

This study was exploratory in nature. It contributes conceptually to the current knowledge about the design of continuing pharmacy education programs to enhance knowledge, skills, and confidence. This was accomplished by designing a continuing professional education program for pharmacists that applied essential elements of adult education theory and stressed skill development and maintenance. Instructional techniques shown to develop self-efficacy were incorporated into the live training component. The home study, by contrast, was solely didactic programming. By comparing pharmacists' confidence in their ability to counsel on tobacco cessation before and after the different training components, we could identify whether the interactive techniques contributed to developing the confidence of the practitioner.

Discussion of Survey Tools and Instructional Strategies Used

Based on the study results, using the self-efficacy survey tool twice as a pre-survey revealed areas where pharmacists' confidence level actually decreased, possibly due to an

increased awareness (via the home study materials) of the actual process and knowledge necessary to assist patients throughout their quit attempt. On further analysis, the degree of change in skill rating could be assessed to determine whether certain tasks were associated with a higher or lower confidence level. This information would be useful in targeting specific educational interventions for each learner as Knox (1980) encouraged in an attempt to achieve proficiency.

Multiple patient scenarios, case studies and role plays were used as part of modeling and rehearsal in the live training program. Instructors modeled key skills using the Transtheoretical Model Stages of Change tool and the "5'A's" counseling process. Although these exercises were not formally evaluated, participants were very active and engaged throughout the process, sharing their reflections and feedback during discussions and assisting one another when they felt uncomfortable and had creative approaches and solutions in applying the models being taught.

The videotaped patient simulations served two purposes: 1) as a formative evaluation process through which faculty gain insight on effectiveness of program content and delivery, and 2) as an additional learning environment aside from the classroom to serve as a stimulus and resource for ongoing learning. Participants could view the simulation as preparation for real-life clinical encounters and an opportunity to receive feedback from faculty. Utilizing a pre- and post-simulation provides a comparative measure of the participant's skills and responses when confronted with a patient or clinical situation both before and after training.

The simulations, although resource intensive, were another gauge of pharmacists' level of confidence and ability to apply the skills developed in training. To assess whether these skills are actually transferred to the "real world" setting, onsite assessment in the pharmacy utilizing an observation checklist to evaluate real patient encounters would be

valuable. Patient encounters could either be videotaped or audiotaped with proper consents, or standardized patient actors could visit pharmacies and complete a checklist post-interaction with the pharmacist.

Perceived Self-Efficacy and Current Skills

Study results indicate that pharmacists' perceived self-efficacy to counsel patients to quit using tobacco improved significantly post-live training. This increase in confidence was found despite a small sample size and a conservative test (e.g. a selection of motivated and skilled practitioners). In contrast, the home study (CD-ROM) component did not demonstrate a significant change in perceived self-efficacy. Thus, although home study included readings about the application of the Transtheoretical Model and the "5'A's" counseling process to smoking cessation, pharmacists' confidence to use these tools in counseling patients on tobacco use did not increase without the live training component. This finding suggests that a combination of instructional strategies did enhance the learner's self-efficacy, and that a solely didactic approach by itself did not increase the learner's confidence in their capability to perform the desired skill. The increased level of confidence reported by the pharmacists after the live training component suggests that there was value in using a combination of teaching strategies, including learning goals, verbalizing strategies, modeling, rehearsal, and performance feedback. These results are consistent with and supportive of the Self-Efficacy Theory. According to Bandura's theory, these are critical elements in an academic setting. Similar results occurred in the analysis of pharmacists' rating of their current skills using the "5'A's" counseling process as well as their self-reported overall ability.

Bandura's theory proposes that higher self-efficacy beliefs motivate the practitioner

to acquire the needed skills to perform proficiently in practice. The current research suggests that increasing self-efficacy would be facilitated through the full range of participatory, as well as didactic, instructional strategies. This research provides necessary documentation to help establish standardized training methods that positively impact pharmacists' ability to appreciate and enhance their knowledge, skills and attitudes. The teaching strategies used were realistic and generalizable to other CPE programs. These strategies can thus help professionals, such as pharmacists, improve their practice-based skills and confidence in assisting patients in achieving positive outcomes.

We cannot determine from this study which strategies within the live training were most important. One approach to this would be to add this question to the training program evaluation: "The instructors raised my self-confidence by.... ." In addition a randomized, controlled trial that varied exposure to each educational strategy would be valuable. This research supports recommendations derived from Proficiency Theory and Self-Efficacy Theory that program developers and instructors should use more than a traditional didactic approach to instruction when the desired outcome of the educational program includes building confidence and skill development, not just knowledge.

As the continuing education needs of our learner changes, so will our need to adapt our delivery methods. Pharmacy curriculums have become increasingly interactive through the use of laboratory experiences, cooperative learning environments. and experiential rotations with practitioners. This learning environment helps support the skill development necessary to fluorish in a time when the pharmacist's role is expanding and changing. As practitioners work in the field they will look to CPE programs to keep their skills from becoming outdated. They may pursue continuing education opportunities to cultivate skills for their own sake or to improve patient care. CPE can be delivered in a way that supports pharmacists' skill development and their confidence to transfer those skills into practice.

Both the Proficiency Theory and Self-Efficacy Theory suggest that the focus be on increasing the learner's self-directedness so that they may be adaptable, proficient learners throughout their lifetime. Education can be individualized, thus enabling the learner to exercise control over the pace, content, mastery level, and the learning environment. The teacher or CPE provider can help create and tailor the learning environment to suit the particular goals. Different modalities and strategies can be used, each with varying success.

Distance technology – such as the use of CD-ROMs and the internet – has gained popularity because of convenience, price, and flexibility. This technology can support the self-directed learner. To be most effective, creative approaches are needed to incorporate combinations of teaching strategies into this modality which allow for reflective learning to occur.

Based on the study results, supporting concepts, and the structure of the home study component, the following suggestions are offered.

- First, *incorporate learning goals*. They should be short term goals perceived as more attainable. The learning goals or objectives serve as standards with which the learner can measure performance gains and judge their capabilities or level of proficiency.
- *Verbalizing strategies* can take place through discussion and problem-solving approaches. Case studies can be presented, along with options based upon the learning objectives and tools being taught. If the internet is being used, on-line chat rooms could allow for real time discussions. Teleconferencing could also be used. Multiple choice assessments could guide a CD-ROM user through the correct responses or approach to a problem, identifying the reasons why the respondents choice was right or wrong. This would provide the learner with feedback as well.

Modeling could be accomplished by using digitized video if it is a skill that must be demonstrated. Audio may be sufficient in some cases, or even a depiction such as a documentation note from a patient chart. The complexity of the knowledge and skills should be gradually increased. A step approach to building skills provides the learner the opportunity to learn basic principles and to practice applying them to simpler problems. As they build confidence in their abilities to accomplish these tasks, it provides positive incentive and motivation to develop their skills further.

Rehearsal could be a difficult instructional strategy to incorporate into distance education technology depending upon the desired outcomes. If the goal of the program is to have pharmacists counsel patients on smoking cessation, one possibility is to require the participant to videotape an encounter and submit it to the instructor for feedback. This could be very time consuming, expensive, and requires at least one other person for the interaction. It may even be possible to use teleconferencing for this skill. If the desired outcome can be assessed using paper and pencil, case write-ups or on-line problems could be used and scored. Instructional software such as WebCT and First Class allow for easy scoring and linking of on-line discussions.

Feedback, whether explicit or implicit, is another important instructional strategy. Without performance feedback it is difficult for learners to gauge their progress. Implicit feedback may go unnoticed, but can be acquired through learning objectives and the standards set, the attention paid to particular learners or topics, and the difficulty level of the educational instruction (Bandura 1997, p 225). Bandura (1997) suggests that providing feedback that focuses on the learner's ability rather than their hard work reflects more positively on their self-efficacy beliefs and motivation to learn. Forming interactive networks through cooperative and collaborative

instructional methods can also serve as a source of feedback. Cooperative learning strategies have peers working together to accomplish different tasks. When properly structured, "cooperative structures generally promote more positive self-evaluation and higher academic attainments than do individualistic or competitive ones," (Bandura 1997, p 255).

Educational technology has its limits. Timely instructor feedback is needed to build a sense of efficacy and to help the learner gauge the discrepancy between current skills and proficiency. Access to education, whether it is highly technological or not, is also a limitation. Technology itself can impose human and technical challenges that can frustrate learners and create a barrier to learning.

Limitations

Several limitations should be kept in mind when interpreting the results of this study.

First, caution must be exercised in generalizing results because of the small, select, sample size of Wisconsin pharmacists participating. This was not a representative group of pharmacists because they seemed highly motivated to be involved in the larger research project. Because a control group was not included in the study design, we are unable to state with certainty that the observed changes in self-efficacy are, in fact, due to the training program. There is no way to distinguish whether a Hawthorne effect – or placebo effect – occurred because" the act of research itself is an intervention," (Rossi et al 1999).

Although we had relatively good response rates, (88% and 92% response rates for the pre-home study and post-live training surveys, respectively), only 14 of 25 pharmacists (56%) responded to the pre-live training survey. This is a possible source of non-response bias for the pre-live comparisons. Based upon verbal questions from participants the

morning of the live training program, I would speculate that the rather rigid and full schedule that morning did not allow for all to complete the survey prior to the start of the training. Some also considered it redundant to the first survey, feeling their answers would not have changed from the pre-home survey and therefore deemed it unnecessary to complete the pre-live training survey. Interestingly, though, if non-response bias were occurring, the responses would most likely have been higher and thus would have resulted in more significant values when comparing pre-live to pre-home survey results.

Another potential limitation was the decision to postpone analysis of the videotaped consultations until a later research project. Without the opportunity to assess and evaluate the pharmacist's actual behavior performance, we cannot state that the learners achieved a desired level of proficiency because we did not observe them applying the process and tools learned during the live educational component to a patient encounter. Therefore, the significant results of the self-efficacy and current skills scales must be interpreted with caution until behavior performance is assessed.

And finally, social desirability could be a possible source of bias in the results. This occurs when participants respond to questions in a way they feel is preferred or more socially acceptable to the researcher. Participants knew that we were relying on them to deliver this smoking cessation intervention to young adults. While completing the surveys pharmacists may have felt compelled to rate their skills higher so that the researchers would feel satisfied with the training results and feel confident in the pharmacists who had been trained. Interestingly, however, even though the home study included readings that discussed the use of the "5'A's" counseling process and the Transtheoretical Model as behavioral modification strategies, pharmacists did not report an increased level of confidence or perceived skill using these processes pre-live training. Fortunately the larger research project has identified successful implementation of the smoking cessation

counseling service by nearly 60% of participating pharmacists, enrolling 70 patients during a six month period. This data can account for actual skill application, and monitoring a successful quit rate will assure positive patient outcomes as a result of transfer of learning to practice.

CHAPTER 6

CONCLUSIONS

This study demonstrated effective continuing education program instructional strategies designed to enhance the learner's knowledge and develop their perceived self-efficacy to counsel patients on tobacco use. These instructional strategies include: establishing learning goals, verbalization of strategy, modeling, rehearsal, and performance feedback. These findings reinforce and are consistent with the Self-Efficacy Theory which in turn posits that higher self-efficacy can motivate the practitioner to acquire and master the skills necessary to perform proficiently in practice. The teaching strategies used were realistic and generalizable to other CPE programs that are geared towards helping professionals, like pharmacists, improve their practice-based skills and the self-efficacy beliefs associated with the specific tasks, in hopes of assisting patients and achieving positive outcomes.

Future Research

The planned analysis of the videotaped consultations will help to determine whether a relationship between perceived self-efficacy and actual behavior performance exists. Future studies associated with the larger research project will estimate the extent to which pharmacists' confidence in tobacco cessation counseling is associated with actual practice behavior, and will include measures of program implementation, participant enrollment, and patient quit rates.

Additional research should be done with investigator-observed behavior using a longitudinal, time-lagged design. The observational data can determine the true effects of

the interventions designed to improve the pharmacists' skills and to validate the self-reported measures of behavior.

The classroom context could also be manipulated to observe various influences on practitioner confidence. The effect of different sources of self-efficacy and altered self-efficacy beliefs, through verbal persuasion and differing performance feedback, could be measured. A path analysis of how the beliefs influence choices, effort, persistence, perseverance and resiliency could be conducted. One could study the effect of learning in groups and the impact of different perspectives, backgrounds, strengths and feedback on attitudes and actions.

Other variables – such as external variables relating to the practice environment–also affect the impact of formal education programs and site implementation. To assess workplace issues that may impact implementation of the pharmacy service, additional analysis through survey and observational research could evaluate the potential influence of the practice environment on practitioner performance and clinical outcomes. Variables related to the practitioner population (age, gender, culture, degree, years in practice, smoking history) can also influence the degree of perceived self-efficacy.

Rewards can also enhance self-efficacy when they are linked with accomplishments and convey that progress is being made. When combined with goals, performance-contingent rewards led to the highest self-efficacy and achievement (Schunk and Pajaras, in press). Thus it is likely that rewards and goals each provide information to the learners about their progress and promote interest. What effect do monetary versus professional or personal rewards have on the maintenance of practitioner performance? Knox (1990) would argue that practitioners participate in ongoing education to achieve a personally desired goal or level of proficiency. Whether and how rewards are a modifying factor on practitioner motivation and persistence in education is complex and should be evaluated.

How are self-assessment and self-directed learning skills related to self-efficacy? This would provide an opportunity to study concepts that both the Proficiency Theory and Self-Efficacy framework discuss.

Generality of self-efficacy beliefs would increase their practical utility. Generality can take place when differing tasks require similar skills or when the skills required to accomplish very dissimilar activities are acquired at the same time (Bandura 1997). Judgments of capability are determined by the self-regulatory and general coping skills of the individual. Understanding the conditions and contexts under which self-efficacy beliefs will generalize to various performance criteria would offer valuable insight to the interventions and instructional strategies that could be employed to assist practitioners in building their competence and self-efficacy through educational programming. For instance, can pharmacist's with high self-efficacy in smoking cessation counseling transfer that level of confidence to asthma management or drug-therapy problem solving?

Studying the relationship of pharmacists' confidence and skill development to positive patient outcomes is an intriguing and potentially valuable area of research. The results could have implications in various professional fields and most importantly, on the quality of care received by those who need the skills and services provided.

REFERENCES

AACP. (1998). Report of the second AACP/ACPE invitation conference on certificate programs in pharmacy. *American Journal of Pharmacy Education.* 62, 39S-42S.

Babb VJ and Babb J. (2003). Pharmacist involvement in health people 2010. *Journal of the American Pharmaceutical Association.* 43 (1), 56-60.

Bandura A. (1997). *Self-efficacy: the exercise of control.* New York: WH Freeman and Company.

Barrows HS. (1993). An overview of the uses of standardized patients for teaching and evaluating clinical skills. *Academic Medicine* 68, 443-451.

Borrelli B, Hogan JW, Bock B, Pinto B, Roberts M, and Marcus B. (2002). Predictors of quitting and dropout among women in a clinic-based smoking cessation program. *Psychology of Additive Behaviors* 16 (1), 22-27.

CDC MMWR Highlights July 26, 2002 vol 51(29): Cigarette Smoking Among Adults - United States, 2000 http://www.cdc.gov/tobacco/)

Cerveny JD, Knapp R, DelSignore M, Stier Carson D, Bultemeier NC. (1999). Experience with objective structured clinical examinations as a participant evaluation instrument in disease management certificate programs. *American Journal of Pharmacy Education* 63 (4), 377-381.

Colliver JA and Swartz MH. (1997). Assessing clinical performance with standardized patients. *Journal of the American Medical Association* 278(9), 790-91.

Cornuz J, Humair J-P, Seematter L, Stoianov R, van Melle G, Staler H, and Pecoud A. (2002). Efficacy of resident training in smoking cessation: a randomized, controlled trial of a program based on application of behavioral theory and practice with standardized patients. *Ann Intern Med* 136, 429-437.

Davis D, O'Brien MAT, Freemantle N, Wolf FM, Mazmanian P, and Taylor-Vaisey A. (1999). Impact of formal continuing medical education: do conferences, workshops, rounds and other traditional continuing education activities change physician behavior or health care outcomes? *Journal of the American Medical Association* 292 (9), 867-874.

Dupras DM and Li JT. (1995). Use of an osce to determine clinical competence. *Academic Medicine* 70(11), 1029-34.

Farris KB and Kirking DM. (1998). Predicting community pharmacists' choice among means to prevent and correct clinically significant drug-therapy problems. *Journal of Social and Administrative Pharmacy* 15 (2), 69-82.

Fielding DW, Page GG, Schulzer M, Moody K, Rogers T, et al. (1993). Developing an

objective structured clinical examination for performance evaluation in pharmacy [abstract]. AACP Annual Meeting 94, p III-1.

Fielding D, Page G, Rogers W, O'Byrne C, Schulzer M, Moody KG, and Dyer S. (1997). Application of objective structured clinical examinations in an assessment of pharmacists' continuing competency, *American Journal of Pharmacy Education* 61, 117-126.

Fiore MC, Bailey WC, Cohen SJ, Dorfman SF, Goldstein MG, Gritz ER et al. (2000). *Treating tobacco use and dependence: Clinical practice guideline.* Rockville, MD: US Department of Health and Human Services, Public Health Service.

Gauen SE, Lee NL. (1995). Pharmacists' role in a smoking cessation program at a managed health care organization. *American Journal of Health-System Pharmacists* 52(3), 294-296.

Hepler CD and Strand LM. (1990) Opportunities and responsibilities in pharmaceutical care. *American Journal of Hospital Pharmacy* 47, 533-43.

HHS Fact Sheet January 8, 2001 Preventing Disease and Death from Tobacco Use http://www.hhs.gov/news/press/2001pres/01fstbco.html

Hudmon K, Berger BA. (1995). Pharmacy applications of the transtheoretical model in smoking cessation, *American Journal of Health-System Pharmacists* 52(3), 282-287.

Hudmon KS, Corelli RL, Chung E, Gundersen B, Kroon LA, Salamoto L,Hemberger KK, Fenlon C, and Prokhorov AV. (In press, 2003). Development and statewide implementation of a tobacco cessation training program for California pharmacy schools. *Journal of Cancer Education.*

Hudmon KS, Prokhorov AV, Corelli RL, Krasnow R, Trondsen L. (2000) Helping tobacco users quit: Pharmacists' counseling role. Poster presented at: American Society for Preventive Oncology 24th Annual Meeting, March 5-7, 2000, Bethesda MD.

Hughs JR, Goldstein MG, Hurt RD, Shiffman S. (1999). Recent advances in the pharmacotherapy of smoking. *Journal of the American Medical Association* 281(1), 72-76.

Knox AB. (1980). Proficiency Theory of Adult Learning, *Contemporary Educational Psychology* 5, 378-404.

Knox, AB. (1986). *Helping adults learn.* San Francisco: Jossey-Bass.

Knox AB. (1990). Influences on participation in continuing education. *Journal of Continuing Education for the Health Professional* 10, 261-274.

Knox AB. (2000). The continuum of professional education and practice. *New Directions for Adult and Continuing Education* 86, 13-22.

Mann KV. (1994). Educating medical students: lessons from research in continuing

education. *Academic Medicine* 69 (1), 41-47.

Martin BA, Pitterle ME, and Johnson CA. (2000). Objective, structured, clinical examination (OSCE) for assessing pharmacotherapy skills [abstract]. AACP Annual meeting. 101, p 32.

Martin BA, Kanous NL, Pitterle ME, and Kieser MA. (2001). Objective, structured, clinical examination (OSCE) for assessing professional abilities [abstract]. AACP Annual meeting. 102, p 0.

McGhan WF and Smith MD. (1996). Pharmacoeconomic analysis of smoking-cessation interventions. *American Journal of Health-System Pharmacists* 53(1), 45-52.

Merriam SB and Caffarella RS (1999). *Learning in adulthood : a comprehensive guide* (2nd ed). San Francisco: Jossey-Bass.

Neufeld VR, Norman GR, eds. (1985). *Assessing clinical competence.* New York: Springer Publishing Co.

Novak JC. (1992). Active learning in continuing professional education: the challenge of leadership. In Edelson PJ (ed) *New directions for adult and continuing education: Rethinking leadership in adult and continuing education.* 56, 63-81. San Francisco: Jossey-Bass.

Pajares F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research 66* (4), 543-578.

Palmer PJ. (1998) *The courage to teach.* San Francisco: Jossey-Bass.

Prochaska JO, DiClemente CC. (1982) Transtheoretical therapy: Toward a more integrative model of change. *Psychotherapy 19*(3), 276-288.

Prochaska JO, DiClemente CC, and Norcross CC. (1992). In search of how people change: Applications to addictive behaviors. *American Psychologist* 47(9), 1102-1114.

Rigotti NA, Lee, JE, Wechsler H. (2000). US college students' use of tobacco products: Results of a national survey, *Journal of the American Medical Association* 284(6), 699-705.

Rossi PH, Freeman HE, and Lipsey MW. (1999). *Evaluation: a systematic approach* (6th ed). (pp 254-255) Thousand Oaks CA: SAGE Publications.

Rovers JP, Currie JD, Hagel H, McDonough RP, Sobotka JL. (1998). *A practical guide to pharmaceutical care.*, Washington DC: American Pharmaceutical Association.

Schunk DH and Pajares F. (2002). The development of academic self-efficacy. In: A Wigfield & J Eccles (Eds.) *Development of achievement motivation.* (pp 16-31) San Diego: Academic Press.

Serxner S and Anderson D. (2002). Practical considerations for the design and evaluation of disease education and management programs in the workplace. *Dis Manage Health*

Outcomes 10 (2), 109-115.

Sinclair HK, Bond CM, Lennox AS, Silcock J, Winfield AJ, Donnan PT. (1998). Training pharmacists and pharmacy assistants in the stage-of-change model of smoking cessation: a randomised controlled trial in Scotland. *Tobacco Control* 7, 253-261.

Smith MD, McGhan WF, and Lauger G. (1995). Pharmacist counseling and outcomes of smoking cessation. *American Pharmacy* NS35 (8), 20-32.

Stajkovic AD and Luthans F (1998) Self-efficacy and work-related performance: A meta-analysis. *Psychological Bulletin*, 124, 240-261.

US Department of Health and Human Services. (2000). *Health people 2010: Understanding and improving health.* 2nd ed, 2 vols. Washington DC: US Government Printing Office.

Wechsler H, Rigotti NA, Gledhill-Hoyt J, Lee H. (1998). Increased Levels of Cigarette Use Among College Students: A Cause for National Concern. *Journal of the American Medical Association* 280(19), 1673-1678.

Winkler SR, Seabolt JL, Wilken LA. (1998). A pharmacist-managed smoking cessation clinic: A novel pharmaceutical care model. *KeePosted* pp16-17, 19.

Appendix A

Live training program agenda

Smoking Cessation Program - June 1, 2002

Live Workshop Agenda:

7:30am - 8:00am	Registration, continental breakfast in Room 2339 Rennebohm Hall
8:00am - 9:00am	Pre-test survey and videotaping
9:00am - 9:15am	Introductions
9:15am - 12:15pm	Program: Assisting patients, behavior modification strategies, tobacco cessation products (breaks will occur "as needed")
12:15pm - 1:00pm	Lunch in Atrium
1:00pm - 1:30pm	Patient enrollment and structure of the Quit Smoking Project Patient Visits
1:30pm - 3:30pm	Role plays and Patient encounter strategies
3:30pm - 3:45pm	Break
3:45pm - 5:00pm	Evaluations, Post-test survey and videotaping

Live CE Objectives:

After attending the live workshop, participants should be able to:

1. Outline the current therapies for smoking cessation;
2. Demonstrate how to assess a patient's nicotine dependence and describe their stage of change;
3. Develop a therapeutic plan for a patient who desires to quit smoking, including monitoring and follow-up;
4. Demonstrate how to educate a patient on methods for smoking cessation and how to overcome obstacles to smoking cessation; and
5. Discuss strategies for enrolling and managing patients in a smoking cessation program.

Continuing Education Credit:

This live workshop is accredited for 7.5 hours (0.75 CEUs) of continuing education credit. Statements of credit will be mailed by Extension Services in Pharmacy, within one month of completion of the program, and are based on successful completion of all course exercises, post-tests, and evaluation materials.

Extension Services in Pharmacy at the University of Wisconsin School of Pharmacy is approved by the American Council on Pharmaceutical Education as a provider of continuing pharmaceutical education. ACPE Universal Program Number 073-000-01-075-L01

Faculty:

Betty Chewning, Ph.D.
Director Sonderegger Research Center
Associate Professor
University of Wisconsin School of Pharmacy
Madison, WI

Dave Kreling, Ph.D., R.Ph.
Division Chair, Social and Administrative Sciences
Professor
Hammel/Sanders Chair in Pharmacy Administration
University of Wisconsin School of Pharmacy
Madison, WI

Nathan L. Kanous II, Pharm.D., BCPS
Clinical Assistant Professor
University of Wisconsin School of Pharmacy
Madison, WI

Beth Martin, R.Ph.
Clinical Assistant Professor
Director of Pharmacotherapy Labs
University of Wisconsin School of Pharmacy
Madison, WI

Appendix B

Managed Care Organization (MCO) pharmacist recruitment letter

May 10, 2002

Dear Aurora Pharmacist:

We are very excited to announce our collaboration with you on this Quit Smoking Project! This Wisconsin Tobacco Control Board funded project focuses on how pharmacists can help 18-24 year olds quit smoking. This project has generated a lot of interest since our pilot last year with Copps/Aurora pharmacies in south and central Wisconsin.

Earn continuing education credit and implement a smoking cessation program
This pharmacist-directed training program is based on the AHRQ *Clinical Practice Guideline: Treating Tobacco Use and Dependence*, and has been developed by UCSF faculty for a National Cancer Institute project. Through both home study (4 CE credits) and a live workshop (7.5 CE credits) you will be able to implement this new patient care program into your practice right away!

The 2002 training program is slated for Saturday, June 1, 2002, and will be conducted at the new pharmacy school, Rennebohm Hall, in Madison. This facility offers us the technology and surroundings to optimize learning by use of video taping, role play, and hands-on experience with nicotine withdrawal products. Because you'll be among peers who are interested in a patient-focused practice within your healthcare system, you'll build a network of colleagues by discovering new approaches and solutions to creating an action plan designed to facilitate implementation of these new techniques into your practice setting. In addition to CE credits, each pharmacist will receive reimbursement from Aurora for their travel expenses.

Ongoing support
After the training, University of Wisconsin faculty will provide support through site visits and phone follow-up. Implementing a patient care service requires a desire to build your patient relationships and improve pharmacists' time with patients. Pharmacist-tested patient history forms and care plan forms will make information gathering and problem solving even easier. All tools will be provided, including documentation forms, patient charts, and marketing materials. Each pharmacist will be expected to enroll at least 5 young adults between the training date and mid-October. You will be prepared to implement this service on June 3rd!

In addition, two Wisconsin pharmacists from the Madison East Copps have been invited to share their personal experience and tips for successfully implementing this exact program into their busy practice.

Enclosed is a copy of the agenda, objectives, and home study program on cd-rom. Also included in the packet is a "to do" list (please follow this order), pre-test survey and site questionnaire, sample physician letter and marketing brochure, hotel, map and parking information (please park in Lot 85). **Please bring all completed materials to the June 1st training (Room 2339 Rennebohm Hall).**

If you have any questions or suggestions regarding the training or the Quit Smoking Program, please contact anyone listed below. This is such a unique opportunity to work together and show what pharmacy can do! Feel free to give us a call or e-mail:

- Beth Martin (608-265-4667; bamartin@pharmacy.wisc.edu)
- Nathan Kanous (608-263-1799; nlkanous@pharmacy.wisc.edu)
- Betty Chewning (608-263-4878; bachewning@pharmacy.wisc.edu)

Sincerely,

Betty Chewning, Ph.D.
Director Sonderegger Research Center
Associate Professor

Appendix C

Confirmation letter to participating pharmacists

May 10, 2002

Dear Pharmacist:

We are very excited to announce our collaboration with you on this Quit Smoking Project! This Wisconsin Tobacco Control Board funded project focuses on how pharmacists can help 18-24 year olds quit smoking. This project has generated a lot of interest since our pilot last year with Copps/Aurora pharmacies in south and central Wisconsin.

Earn continuing education credit and implement a smoking cessation program
This pharmacist-directed training program is based on the AHRQ *Clinical Practice Guideline: Treating Tobacco Use and Dependence*, and has been developed by UCSF faculty for a National Cancer Institute project. Through both home study (4 CE credits) and a live workshop (7.5 CE credits) you will be able to implement this new patient care program into your practice right away!

The 2002 training program is slated for Saturday, June 1, 2002, and will be conducted at the new pharmacy school, Rennebohm Hall, in Madison. This facility offers us the technology and surroundings to optimize learning by use of video taping, role play, and hands-on experience with nicotine withdrawal products. Because you'll be among peers who are interested in a patient-focused practice within your healthcare system, you'll build a network of colleagues by discovering new approaches and solutions to creating an action plan designed to facilitate implementation of these new techniques into your practice setting. In addition to CE credits, each pharmacist will receive $200.00 for their participation in the program.

Ongoing support
After the training, University of Wisconsin faculty will provide support through site visits and phone follow-up. Implementing a patient care service requires a desire to build your patient relationships and improve pharmacists' time with patients. Pharmacist-tested patient history forms and care plan forms will make information gathering and problem solving even easier. All tools will be provided, including documentation forms, patient charts, and marketing materials. Each pharmacist will be expected to enroll at least 5 young adults between the training date and mid-October. You will be prepared to implement this service on June 3rd!

In addition, two Wisconsin pharmacists from the Madison East Copps have been invited to share their personal experience and tips for successfully implementing this exact program into their busy practice.

Enclosed is a copy of the agenda, objectives, and home study program on cd-rom. Also included in the packet is a "to do" list (please follow this order), pre-test survey and site questionnaire, sample physician letter and marketing brochure, hotel, map and parking information (please park in Lot 85). **Please bring all completed materials to the June 1st training (Room 2339 Rennebohm Hall).**

If you have any questions or suggestions regarding the training or the Quit Smoking Program, please contact anyone listed below. This is such a unique opportunity to work together and show what pharmacy can do! Feel free to give us a call or e-mail:

- Beth Martin (608-265-4667; bamartin@pharmacy.wisc.edu)
- Nathan Kanous (608-263-1799; nlkanous@pharmacy.wisc.edu)
- Betty Chewning (608-263-4878; bachewning@pharmacy.wisc.edu)

Sincerely,

Betty Chewning, Ph.D.
Director Sonderegger Research Center
Associate Professor

Prescription for Change: Pharmacist-Assisted Tobacco Cessation

Home Study CE Objectives:
After completing the home study materials, participants should be able to:

- List five health risks associated with chronic tobacco use;
- Discuss the pharmacodynamics of nicotine on the central and peripheral nervous systems, and the cardiovascular system;
- List the five stages of change in smoking behavior; and
- Summarize the system changes designed to promote the assessment and treatment of tobacco dependence, as recommended by the US Public Health Service.

Home Study Topics via cd-rom technology:

1. Introduction
2. Epidemiology of Tobacco Use
3. Forms of Tobacco
4. Nicotine Pharmacology and Principles of Addiction
5. Drug Interactions with Smoking and Nicotine
6. Consequences of Quitting: Withdrawal Effects and Health Benefits
7. Pathophysiology of Tobacco-Related Disease

Live CE Objectives:
After attending the live workshop, participants should be able to:

- Outline the current therapies for smoking cessation;
- Demonstrate how to assess a patient's nicotine dependence and describe their stage of change;
- Develop a therapeutic plan for a patient who desires to quit smoking, including monitoring and follow-up;
- Demonstrate how to educate a patient on methods for smoking cessation and how to overcome obstacles to smoking cessation; and
- Discuss strategies for enrolling and managing patients in a smoking cessation program

Live Workshop Topics:

1. Videotape of interviews with tobacco users and their smoking cessation experience
2. Assisting patients in tobacco cessation
3. Behavior modification strategies
4. Tobacco cessation products (actual products reviewed, demonstrated, and sampled)
5. Role plays and patient encounter strategies

Appendix D

Pre-test self-efficacy and current skills survey

Prescription for Change: Pharmacist-Assisted Tobacco Cessation
PRE-TRAINING SURVEY

Note: Your responses are anonymous. However, we need the following information to "link" the forms that you complete for the training.

What are the **last three digits** of your **home telephone number**? ___ ___ ___
On what **day of the month** were you born? ___ ___
What are the first two letters of the high school from which you graduated? ___ ___

1. How do you rate your overall ability to help patients quit using tobacco?

5	4	3	2	1
Excellent	Very Good	Good	Fair	Poor

2. Please rate your current level of skills for the following aspects of counseling:

	Excellent	Very Good	Good	Fair	Poor
Asking patients whether they use tobacco	5	4	3	2	1
Advising patients to quit using tobacco	5	4	3	2	1
Assessing patients' readiness to quit	5	4	3	2	1
Providing tobacco cessation assistance to patients are thinking about quitting or are trying to quit using tobacco	5	4	3	2	1
Arranging a follow-up counseling session with patients you assist with quitting	5	4	3	2	1

3. How much confidence do you have in the following aspects of counseling patients to quit using tobacco?
(Please circle one number for each item, using the response options shown below)

1 = not at all confident; 2 = not very confident; 3 = moderately confident, 4 = very confident; 5 = extremely confident

How confident are you that you—	Not at all confident				Extremely confident
a. Know the appropriate questions to ask patients when providing counseling?	1	2	3	4	5
b. Have the skills needed to counsel for an addiction?	1	2	3	4	5
c. Can provide motivation to patients who are trying to quit?	1	2	3	4	5
d. Have the skills to monitor and assist patients throughout their quit attempt?	1	2	3	4	5
e. Have the skills to assist patients who seem to be in a hurry?	1	2	3	4	5
f. Have sufficient therapeutic knowledge of the pharmaceutical products for tobacco cessation?	1	2	3	4	5
g. Can create consumer awareness of why pharmacists should ask questions about tobacco use?	1	2	3	4	5
h. Know when a referral to a physician is appropriate?	1	2	3	4	5
i. Can sensitively suggest tobacco cessation to patients who use tobacco?	1	2	3	4	5
j. Are able to provide adequate counseling when time is limited?	1	2	3	4	5
k. Can help recent quitters learn how to cope with situations or triggers that might lead them to relapse back to smoking?	1	2	3	4	5
l. Can counsel patients who are not interested in quitting?	1	2	3	4	5

⊃ PLEASE COMPLETE BOTH SIDES OF THE PAGE

4. Do you think that the profession of pharmacy should be more or less active in:
(Circle one number for EACH column)

• Helping patients to quit smoking?	• Helping to prevent patients from starting smoking?
1 ... More active	1 ... More active
2 ... No change is needed	2 ... No change is needed
3 ... Less active	3 ... Less active

5. What is your opinion about whether pharmacies should sell tobacco?

1 ... I am strongly against it
2 ... I am against it
3 ... I am neither for or against it
4 ... I am in favor of it
5 ... I am strongly in favor of it

THANKS, and WE HOPE YOU ENJOY THE TRAINING PROGRAM!

Appendix E

Post-test self-efficacy and current skills survey

Prescription for Change: Pharmacist-Assisted Tobacco Cessation
POST-TRAINING SURVEY

Note: Your responses are anonymous. However, we need the following information to "link" the forms that you complete for the training.

What are the **last three digits** of your **home telephone number?** ___ ___ ___
On what **day of the month** were you born? ___ ___
What are the first two letters of the high school from which you graduated? ___ ___

COURSE EVALUATION

1. Please estimate the following: *(should sum to 100)*

   a) Percentage of the program information that was *completely new to you* _____ %

   b) Percentage of the program information that you had been taught before but *needed to review* _____ %

   c) Percentage of the program that you had been taught before and was an *unnecessary review* _____ %

   TOTAL **100%**

2. What percentage of the program information do you expect to use when you work with patients? _____ %

3. *Before* attending this class, had you provided tobacco cessation assistance to any patients? (Circle one number)

   0... No
   1... Yes ➲ **IF YES,** How many patients did you assist with quitting in the **past year?** _____

4. Do you think that participating in this class will increase: (Circle one number for EACH column)

• The **number** of patients that you counsel to quit using tobacco?	• The **quality** of counseling that you provide?
5 ... Definitely yes	5 ... Definitely yes
4 ... Probably yes	4 ... Probably yes
3 ... Not sure	3 ... Not sure
2 ... Probably not	2 ... Probably not
1 ... Definitely not	1 ... Definitely not

5. *Before* attending this class, how would you have rated your overall ability to help patients quit using tobacco?

5	4	3	2	1
Excellent	Very Good	Good	Fair	Poor

6. *Now,* how do you rate your overall ability to help patients quit using tobacco?

5	4	3	2	1
Excellent	Very Good	Good	Fair	Poor

7. Please rate your level of skills for the following aspects of counseling:

	Excellent	Very Good	Good	Fair	Poor
Asking patients whether they use tobacco	5	4	3	2	1
Advising patients to quit using tobacco	5	4	3	2	1
Assessing patients' readiness to quit	5	4	3	2	1
Providing tobacco cessation assistance to patients are thinking about quitting or are trying to quit using tobacco	5	4	3	2	1
Arranging a follow-up counseling session with patients you assist with quitting	5	4	3	2	1

8. How much confidence do you have in the following aspects of counseling patients to quit using tobacco?
(Please circle one number for each item, using the response options shown below)

1 = not at all confident; 2 = not very confident; 3 = moderately confident, 4 = very confident; 5 = extremely confident

How confident are you that you—	Not at all confident				Extremely confident
a. Know the appropriate questions to ask patients when providing counseling?	1	2	3	4	5
b. Have the skills needed to counsel for an addiction?	1	2	3	4	5
c. Can provide motivation to patients who are trying to quit?	1	2	3	4	5
d. Have the skills to monitor and assist patients throughout their quit attempt?	1	2	3	4	5
e. Have the skills to assist patients who seem to be in a hurry?	1	2	3	4	5
f. Have sufficient therapeutic knowledge of the pharmaceutical products for tobacco cessation?	1	2	3	4	5
g. Can create consumer awareness of why pharmacists should ask questions about tobacco use?	1	2	3	4	5
h. Know when a referral to a physician is appropriate?	1	2	3	4	5
i. Can sensitively suggest tobacco cessation to patients who use tobacco?	1	2	3	4	5
j. Are able to provide adequate counseling when time is limited?	1	2	3	4	5
k. Can help recent quitters learn how to cope with situations or triggers that might lead them to relapse back to smoking?	1	2	3	4	5
l. Can counsel patients who are not interested in quitting?	1	2	3	4	5

9. Do you think that the profession of pharmacy should be more or less active in: (Circle one number for EACH column)

- Helping patients to quit smoking?

  1 ... More active
  2 ... No change is needed
  3 ... Less active

- Helping to prevent patients from starting smoking?

  1 ... More active
  2 ... No change is needed
  3 ... Less active

10. Do you believe that students at other schools of pharmacy in the U.S. would benefit from receiving the same, or similar, tobacco cessation training?

    1... Yes
    2... No

11. What is your opinion about whether pharmacies should sell tobacco?

    1 ... I am strongly against it
    2 ... I am against it
    3 ... I am neither for or against it
    4 ... I am in favor of it
    5 ... I am strongly in favor of it

YOUR DEMOGRAPHICS

12. What is your sex? (Circle one number) 1 ... Male 2 ... Female

13. What is your age? _____

14. Which of the following best describes your race or ethnicity? (Circle one number)

    1 ... Caucasian/White
    2 ... African American
    3 ... Hispanic or Latino
    4 ... Asian or Pacific Islander
    5 ... Native American
    6 ... Other:_____

15. Have you smoked 100 or more cigarettes in your lifetime?

    1 ... Yes
    2 ... No

16. Which of the following best describes your tobacco use (cigarettes, cigars, pipes, snuff, or chew)? (Circle one number)

    1 ... Use tobacco once or more a day
    2 ... Use tobacco less than once a day
    3 ... Used to use tobacco but quit ➲ In what year did you quit? 19 __ __
    4 ... Experimented with tobacco a few times in the past
    5 ... Never tried tobacco

17. Did you complete a pre-training survey for this tobacco course? (Circle one number)

    1 ... Yes
    2 ... No

18. Other comments?

Appendix F

Home study program evaluation

Home Study Course Evaluation
Smoking Cessation, 2002

Name _____
(please print)

Social Security Number _____
(Used to ensure accessibility and accuracy of your educational record.)

Home Address _____

City _____

State _____ Zip _____

We hope that this home study course has been a beneficial learning experience for you! We value your input as to how we can improve this course. Completion of this form is required to receive CE credit. Thank you for your assistance.

What is your primary practice site? (check one)

____ community/retail
____ hospital
____ managed care
____ nursing home/long term care
____ multiple sites (please specify)
_____
____ other (please specify)
_____

In what year did you graduate from pharmacy school? _____

Please place a ✓ in the appropriate box.

Questions	Excellent	Good	Adequate	Inadequate
How would you rate this CD ROM home study course?				
How would you rate the quality of instruction?				
How would you rate the quality of audio presentations?				
How would you rate the quality of video presentations?				

Questions	Strongly Agree	Mildly Agree	Mildly Disagree	Strongly Disagree
The information presented will be useful to me in my practice.				
This program was a valuable learning experience for me.				
The information was covered in sufficient detail.				
The examination was representative of the material presented.				

Approximately how many hours did it take to complete this home study module?

_____ Hours

Do you have any suggestions for improving this home study module?

Additional comments about the Smoking Cessation home study module:

Please bring this completed form along with your final examination answer sheet to the live workshop. Thank you for your input.

Appendix G

Live training program and instructor evaluation

EVALUATION

Prescription for Change: Pharmacist-Assisted Tobacco Cessation 2002 Workshop

June 1, 2002, Madison, WI

Name _____
(please print)

Social Security Number

_____
(Used to ensure the accessibility and accuracy of your educational record.)

Address _____

_____

City _____

State _____ Zip _____

Number of years in pharmacy practice _____

Primary Pharmacy Practice Site:
____ Community, Independent
____ Community, Chain
____ Clinic
____ Hospital
____ Long Term Care
____ Managed Care
____ Other (please specify):
_____

To receive a statement of continuing education credit, all requested information must be completed. In addition, you must read and sign the following statement.

"As part of my request for CE credit, I certify that I have attended all the live educational portions of the Smoking Cessation 2002 Workshop."

_____
(Signature)

2. Please rate each of the workshop presenters, and provide comments as desired:

	Excellent	Very Good	Good	Fair	Poor
Betty Chewning (comments)	____	____	____	____	____
Nathan Kanous (comments)	____	____	____	____	____
Beth Martin (comments)	____	____	____	____	____

_____ ____ ____ ____ ____ ____
(comments)

3. Did the educational content of the program meet your expectations? Yes ____ No ____
Why or why not?

4. What was the major strength of this program?

5. What suggestions for program improvement would you offer?

6. How will you apply the knowledge and techniques gained to improve your practice?

7. Please comment on the workshop format:

Thank you for your comments. Please return this evaluation to Extension Services in Pharmacy at the end of the program or mail to:

Extension Services in Pharmacy
Smoking Cessation 2002 Workshop
777 Highland Avenue
Madison, WI 53705-2222

Extension Services in Pharmacy at the University of Wisconsin School of Pharmacy is approved by the American Council on Pharmaceutical Education as a provider of continuing pharmaceutical education. ACPE Universal Program Number 073-000-01-075-L01

Appendix H

Multiple choice knowledge assessment

Questions 1-14 are based on the Smoking Cessation Training Program

1. Which of the following is **FALSE** regarding nicotine absorption?

   a. nicotine is readily absorbed through intact skin
   b. nicotine is readily absorbed across the respiratory epithelium
   c. nicotine in cigarettes is readily absorbed in the buccal (mouth) mucosa
   d. nicotine in cigars is readily absorbed in the buccal (mouth) mucosa
   e. nicotine in pipes is readily absorbed in the buccal (mouth) mucosa

2. Drinking a coffee or cola juice before chewing a piece of nicotine gum will affect nicotine absorption because?

   a. nicotine absorption is pH-dependent & absorption will be decreased
   b. nicotine absorption is pH-dependent & absorption will be increased
   c. nicotine absorption is affected by cold liquids
   d. nicotine absorption is affected by hot liquids
   e. nicotine absorption is affected by caffeine

3. Nicotine inhaled from a cigarette will reach the brain in:

   a. 1-2 seconds
   b. 10-20 seconds
   c. 10-20 minutes
   d. 100-200 minutes
   e. 10-20 hours

4. The best way for researchers to identify whether a patient has quit smoking is:

   a. measure a dopamine blood level
   b. measure a nicotine blood level
   c. measure a cotinine blood level
   d. measure a serotonin blood level
   e. measure a norepinephrine blood level

5. The following are pharmacodynamic effects of nicotine:

   a. feeling of pleasure
   b. increased heart rate
   c. improved memory
   d. skeletal muscle relaxation
   e. all of the above

6. Which of the following statements regarding the nicotine inhaler is **FALSE**:

   a. Mild irritation of mouth and throat are common adverse effects
   b. Patients should be instructed to inhale deeply into their lungs and hold their breath for 10 seconds for optimal effect
   c. The nicotine in the cartridges is used up after 20 minutes of active puffing
   d. Patients should be instructed to use at least 6 cartridges/day during the first three weeks of treatment

7. Common side effects associated with nicotine nasal spray include:

   a. Hot peppery feeling in back of throat or nose
   b. Coughing
   c. Vivid dreams and/or nightmares
   d. A and B
   e. All the above

8. Which of the following statements about the Nicoderm CQ nicotine transdermal system is **TRUE**:

   a. Patients reporting strong morning cravings for cigarettes should be instructed to wear the patch for 24 hours
   b. Patients reporting strong morning cravings for cigarettes should be instructed to wear the patch for 16 hours
   c. Peak blood levels of nicotine at steady-state approach those observed with smoking
   d. Patients may cut the 14mg patch in "half" to provide a 7mg dose during the last 3-4 weeks of therapy

9. Which of the following statements concerning nicotine polacrilex gum is **TRUE**:

   a. Patients should be instructed to use the gum only as needed to control cravings for nicotine
   b. A patient who smokes ½-1 pack of cigarettes per day should initiate therapy with the 4mg dosage form
   c. Nicotine gum can be safely recommended for use in pregnant patients
   d. Nicotine gum should not be recommended for patients with temporomandibular joint disease/syndrome

10. Which of the following statements regarding bupropion (Zyban®) is **TRUE**:

    a. Peak blood levels of nicotine at steady-state approach those observed with smoking
    b. Common side effects associated with therapy include seizures and drowsiness
    c. Patients should be instructed to begin therapy one week before their "quit-date"
    d. Patients should avoid the use nicotine replacement products while on bupropion therapy

11. According to the Smoking Cessation Clinical Guidelines put forth by the Agency for Health Care Policy and Research, the recommended number of treatment counseling sessions for helping patients to quit smoking is 4-7. On average, approximately what percentage of patients is able to quit when they receive this level of counseling?

    a. 8%
    b. 23%
    c. 50%
    d. 70%

12. Which of the following strategies is NOT APPROPRIATE in counseling a precontemplative patient:

a. ask noninvasive questions about tobacco use
b. foster communication
c. raise awareness of the health consequences of tobacco use
d. convince the patient that he/she should quit
e. demonstrate empathy

13. CASE A: Ms. Roberts is a 35-year old female who enters your community pharmacy and asks you for advice on how she can quit smoking. She has been smoking ½-1 pack of cigarettes per day for nearly 15 years and has had one quit attempt in the past year, using nicotine gum. At that time, she was able to stay off of cigarettes for about 8 days. She would like to quit smoking in the next month. She is not pregnant or nursing, and she has no known medication allergies.

What is her Stage of Change?
a. Precontemplation
b. Contemplation
c. Preparation
d. Action
e. Maintenance

14. Ms. Roberts tells you she would like to try the nicotine patch, since she found constantly having to chew the gum to be a nuisance. Based on her ½-1 pack a day cigarette use, which of the following would be NOT be an appropriate nicotine patch to initiate (you may use the table below):

Products	Dosing Light Smokers	Dosing Heavy Smokers
Nicotrol	Not indicated	> 10 cigarettes/day: 15 mg x 6 weeks
Nicoderm CQ	< 10 cigarettes/day: Step 2 (14 mg) x 6 weeks Step 3 (7 mg) x 2 weeks	≥ 10 cigarettes/day: Step 1 (21 mg) x 6 weeks Step 2 (14 mg) x 2 weeks Step 3 (7 mg) x 2 weeks
Generic	< 20 cigarettes: 14 mg x 6-8 weeks 7 mg x 3-4 weeks	≥ 20 cigarettes/day: 21 mg x 3-4 weeks 14 mg x 3-4 weeks 7 mg x 3-4 weeks

I. Nicoderm CQ 21 mg x 6 weeks
II. Nicotrol 15 mg x 6 weeks
III. Nicoderm CQ 14 mg x 6 weeks
IV. Generic patch 14 mg x 6-8 weeks
V. Generic patch 21 mg x 3-4 weeks

a. I, II, IV only
b. III, IV only
c. I, V only
d. II, III, IV only
e. III, V only

Appendix I

Exemption letter from institutional review board

THE UNIVERSITY of WISCONSIN MADISON

NOTICE OF EXEMPTION

May 16, 2002

Betty Chewning, PhD
1022 Rennebohm Hall

RE: E2002-058, "Pharmacy-based Smoking Cessation Program for Young Adults"

Dear Dr. Chewning,

A member of the Health Sciences Human Subjects Committee reviewed and approved your exemption request on May 15, 2002. Your research was determined to be exempt under 45 CFR 46.101(b)(1).

Please keep this letter and the completed form for your records. The following provide some guidelines for proceeding:

- Please note that the University expects Principal Investigators who conduct exempt as well as non-exempt research to be guided by the ethical principles for all research involving humans as subjects, set forth in the report of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (the "Belmont Report"). For a copy of the Belmont Report, please see the HSC website at **www.medicine.wisc.edu/hsc.**
- If the exempted protocol changes in a way such that the basis for exemption is no longer accurate, and may no longer conform to the criteria for exemption, a new Initial Review application will need to be submitted.

Please contact the HSC office at 263-2362 with any questions.

Sincerely,

Alice K. Page, J.D., M.P.H., Director
Health Sciences Human Subjects Committee Office

POC: Beth Martin
2/99

Health Sciences Human Subjects Committee
University of Wisconsin-Madison VA Hospital, Room B3088 2500 Overlook Terrace Madison, Wisconsin 53705
608/263-2362 Fax: 608/265-5811

Appendix J

Videotaping instructions and consent form

Smoking Cessation Workshop Videotaping Instructions (June 1, 2002)

Pharmacist Participants:

Please be sure to complete the authorization and release consent form prior to the videotaping session and to receive your station labels. (Please give a station label to the patient before leaving each of the stations.) Please place your name in the appropriate grid box either before or after completing your stations.

Instructions:

You will receive a single station scenario sheet that you can use as a documentation form. Enter the station when you are ready. Please be sure to hand a label to the patient in the station. They will be completing a brief evaluation form for each encounter.

You will be allowed approx. ten minutes per station for the pre-training videotape. We are aware that you may not sufficiently complete the station in this amount of time, however, due to time constraints and the purpose of the pre-training video, this will be adequate. After completing your first station, proceed to the second station (A goes to B, B goes to A). You may need to wait outside the door until the other pharmacist has completed their first station.

For the post-training videotape session, please choose A DIFFERENT COLOR set of stations. You will be allowed adequate time to complete the stations during the post-training videotape session.

The *purpose* of the videotaping is to get a baseline assessment of your patient intervention skills and to evaluate whether the training program provided any benefit. **Please relax** and just be yourself as if you were in the pharmacy and meeting with your patient. Instructors will review the videotapes after the workshop and provide you feedback during a pharmacy site visit so that you may benefit from this experience.

VIDEOTAPING
AUTHORIZATION AND RELEASE

I, _____, hereby authorize the UW School of Pharmacy to use the videotaped interviews that I complete during the Smoking Cessation Training Program for the purposes of teaching, evaluation, and research.

This release may be revoked at any time by contacting Beth Martin, 608/265-4667.

_____ Signature

_____ Date

_____ Witness