

PILOT STUDY: BRIEF EDUCATIONAL INTERVENTION
FOR MOTHER-BABY NURSING STAFF ON ASK, ADVISE, AND
REFER FOR TOBACCO CESSATION

Jacqueline Pyle, BSN

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Faculty Mentor: Monica Scheibmeir PhD, ARNP, FAANP

University of Kansas School of Nursing

ABSTRACT

Purpose: Maternal smoking is the greatest modifiable risk factor for the prevention of tobacco-related adverse health outcomes to both the infant and the mother. While nurses working in maternal care units are primed to deliver appropriate patient-centered communication that focuses on the skills required by pregnant women and new mothers to successfully attain smoking cessation, communicating that message is complicated by the many competing demands that nurses experience at work. The purpose of this study was to provide brief educational training to nurses on how to efficiently assess, advise, and refer pregnant women and new mothers who smoke for smoking cessation services.

Theoretical Model: The theoretical model used to develop the training program was derived from the national Prescription for Change Model developed and used by interdisciplinary health care professionals.

Design: This pilot study used a one-group pre-test, post-test pre-experimental design.

Setting: Two maternal care units at a Midwestern University Medical Center Hospital.

Participants: A convenience sample of 17 maternal child nurses.

Methods: A 10 minute educational training was provided during an in-service session for the nursing staff. The educational training included information on: a) Ask, advise, and refer, and b) use of a reminder card to be used by the nursing staff. A baseline survey was given with the initial training session, and a second survey was sent out eight weeks post-training.

Results: Four nursing staff completed the baseline survey and three completed the second survey. The nurses who completed the surveys were female, with a mean age of 39 years, and had

worked on the unit for an average length of 5 years. Nurses reported being highly confident in their abilities at delivering tobacco cessation services.

Conclusions: Issues of nurse participation in educational research identified in this study are discussed. In the future, modifications will be made to the educational training program to enhance nurses' participation in this type of practice-based research.

INTRODUCTION

In 2005, 10.7% of pregnant women continued to smoke during their pregnancy, with higher smoking prevalence rates reported among disadvantaged women (Center for Disease Control, 2007). This is a concern to health care providers because maternal smoking is causally linked to poor health outcomes for the woman including ectopic pregnancy, premature rupture of membranes, abruptio placentae, placenta previa, spontaneous abortion, as well as for the fetus (e.g. preterm delivery, stillbirth, neonatal mortality, low birthweight, and sudden infant death syndrome) (Surgeon General's Report, 2001).

Nurses are well positioned to help their patients with smoking cessation because they are the largest group of health care professionals, are well respected, and have more contact with hospitalized patients than any other health care professional group (Barta, S.K. et al., 2005; Haddock & Burrows, 1997; Rice, 1999). Although nurses are in a strategic position to participate in smoking cessation interventions, they are not prepared for health promotion counseling. Limited knowledge and training, insufficient skills and confidence, perceived lack of patient motivation, and a shortage of time are all reasons why nurses are inadequately engaging in smoking cessation activities (Barta, S.K. et al., 2005; Griebel, Wewers, & Barker, 1998; Johnson et al., 1999; Wewers, Ahijevych, & Sarna, 1998; Williams, Spence-Laschinger, & Weston, 1999).

Review of Literature

Published research on nurses ability to deliver tobacco cessation information to patients reveals a major theme--nurses, regardless of training or practice location face many barriers that result in inadequate engagement in smoking cessation activities with their patients.

Barriers to Smoking Cessation Counseling Among Nurses

Smoking status of the nurse has been found to be a potential barrier to providing smoking cessation counseling to their patients. Nursing students who do not smoke have been found to feel that it is their professional responsibility to help smokers quit, whereas nursing students who do smoke felt that it is not their professional responsibility to help smokers quit. Nursing students who smoke were more likely to report agreement with the psychoactive benefits of smoking than nursing students who do not smoke. As well, nursing students who smoke reported less agreement with the negative aspects of smoking compared to nursing students who do not smoke (Lenz, 2008).

Common barriers to counseling pregnant patients who smoke among nurse-midwives was lack of time (14%) and not knowing where to send pregnant smokers for treatment (14%) (Price, Jordan, & Dake, 2006). The majority of nurse midwives (74%) reported that nicotine replacement therapy would be useful in helping pregnancy smokers stop smoking, but only 26% of the nurse midwives were confident in their ability to prescribe/recommend nicotine replacement therapy.

Predictors of tobacco use assessment and smoking cessation intervention by office-based nurses found that nurses who had not had tobacco-related continuing education within the previous year or had less than five years of nursing practice were less likely to assess patient tobacco use. Results of this study also supported that nurses were less likely to assess tobacco use if they were not a nurse practitioner. The authors concluded that continuing education, skills development, and improved understanding of tobacco cessation facts may increase nurses self-efficacy towards delivering tobacco cessation information to patients (Wetta-Hall et al., 2005).

Sarna and Bialous (2005) report on similar barriers identified by nurses certified in oncology with respect to helping patients with smoking cessation. The authors reported that appropriate knowledge and skills in tobacco cessation, along with a sense of accountability and expectation were identified by nurses as reasons for not engaging in assisting oncology patients

with stopping tobacco use. The authors reported that “lack of clinical interventions, limited research, an absence of professional policies, and minimal nursing leadership have diminished the critical role that nurses can play in confronting this epidemic” (Sarna and Bialous, 2005, p. 21).

Supporting Sarna and Bialous comments, Whyte, Watson, and McIntosh (2006) report that in order for nurses to participate in a health-promoting role for patients who smoke, they need knowledge of the physical and psychological effects of smoking, as well as smoking cessation strategies.

Changing Behavior through Education

Evidence-based practice (EBP) is defined as using the best proven information when making clinical decisions. EBP is especially important for intervening with tobacco-dependent patients. Research has found EBP to improve patient care and healthcare outcomes, yet nurses are still not prepared to embrace an EBP culture. It is important to narrow the gap between EBP and tobacco cessation interventions. In order to do so, awareness about the value of EBP must be raised, empowerment to access and use EBP resources by nurses must occur, support from healthcare and academic leaders must be present, and nursing policies must be changed in the academic and clinical area. This may include requiring EBP training and supporting internet access availability and requiring competency evaluation of EBP tobacco knowledge and skills (Heath & Andrews, 2006; Mazurek-Melnyk & Fineout-Overhold, 2004; Heath, 2004)

Research supports that when evidence based smoking cessation counseling is offered by nurses, the outcomes are very positive. Smokers who were offered advice by professional nurses found to have an increased likelihood of quitting by approximately 50%. This has been found in various clinical settings and among both healthy smokers and those with tobacco-attributed illnesses (Wewers, Sarna, & Rice, 2006).

Advanced practice nursing students who attended smoking cessation counseling workshops during their program of study showed a significant increase on tobacco cessation knowledge and

self-efficacy in providing tobacco cessation counseling on post-training measures (Heath et al, 2006; Kelley, Heath, & Crowell, 2006).

The Prescription for Change Model (Rx for Change), evolved from the Transtheoretical Model of Change, incorporates evidence-based material and is an educational model aimed at helping a variety of health care professional assisting all patients with tobacco cessation. The Rx for Change Model has been tested among pharmacists, nurses, and physicians. One of the benefits of the Rx for Change model is that it is a comprehensive educational program, but different components of the model can be used and tailored for specific educational needs. In the original Rx for Change model, the 5 A's are listed and are: Ask, Advise, Assess, Assist, and Arrange (used interchangeably with Refer).

The Rx for Change model was used to train nurses who worked on an oncology unit. The nurses had good to very good ratings of their overall ability to help patients quit tobacco despite not having previous training in tobacco cessation with only 49% reporting that the information was new. Six months after the training session, all respondents had counseled or referred at least one patient to a smoking cessation program. However, the study indicated that knowledge gains were not maintained over 6 months. The authors acknowledged that improving the performance of nurses to deliver tobacco cessation advice may require the addition of brief reminders of how to help patients stop smoking (Matten, Chung, Rutledge, & Wong, 2007).

These studies collectively found that lack of knowledge and lack of time were the two main reasons cited by nurses as reasons for not actively assessing and counseling patients on tobacco cessation. As well, these studies revealed the positive outcomes that take place when nurses are provided education on how to participate in smoking cessation counseling. However, there is limited information as to whether a brief educational training session on tobacco cessation will assist nurses in the maternal child in-patient setting in providing tobacco cessation services to

pregnant women and new mothers. It is unclear if a brief educational intervention on how to efficiently and effectively assess, advise, and refer pregnant women and new mothers who smoked would improve the self-efficacy of the nurses in regards to their tobacco cessation skills. The purpose of this study is to evaluate if a brief educational intervention using the Rx for Change model improves the knowledge and attitudes towards tobacco cessation skills among nursing staff employed in a maternal care unit.

METHODS

Design

This pilot study used a one-group pre-test, post-test pre-experimental design.

Instruments

The Smoking Cessation Counseling Self-Efficacy Scale (SCCSES) was used to test baseline and post-intervention knowledge and attitudes. The original SCCSES was developed to be completed by BSN students (Edwards, 2005). The original SCCSES contained 20 items and focused on the following six domains: Ask, Advise, Assess, Assist, Arrange, and Motivational Intervention. The SCCSES uses a Likert format with 1 being “not confident at all” to 5 being “very confident”. For the purposes of this study an abbreviated version of the SCCSES scale was used (Appendix A). In the abbreviated scale, there were nine questions that focused on the subject’s knowledge and attitudes of asking a patient about tobacco use, advising a patient to quit using tobacco, and arranging follow-up help with tobacco cessation. In addition, the stem of the question was modified to address the specific population of this study, pregnant women and new mothers. An example of a question was “How confident are you right now that you would be able to ask a new mother/pregnant patient on admission if they use tobacco?” Currently there are no reported reliability for this scale as it is being developed (L. Edwards personal communication, 10 November, 2009).

A brief demographic questionnaire was developed for the study (Appendix B). The one page questionnaire included information on tobacco history in addition to age, gender, level of education, and information on work experience in the maternal child nursing area.

Sample

The participants were a convenience sample of registered nurses employed in two maternal child care units located in an academic hospital. All of the respondents in our study were female, with a mean age of 39.5 years (SD=11.6). The educational level of the respondents revealed that two of the respondents were prepared at the associate's degree level, one subject had a bachelor's degree in nursing, and one respondent had a master's degree in nursing. The average length of time working on the unit was 5 years.

Procedures

Human Subjects approval was granted prior to the delivery of the educational intervention. Nursing leaders from a midwestern academic medical center hospital's maternal care units met with the research team to discuss the focus and timing of the educational intervention. Based upon their input, the research team developed a brief face-to-face educational intervention that could be delivered in conjunction with a scheduled staff meeting. A cover letter was given at the time of the intervention in order to inform the participants about the study. At the agreed upon staff meeting, a member of the research team presented a 10 minute power point presentation to those nurses in attendance at the meeting. The information was given to them about Ask, Advise, Refer from the Rx for Change model.

Along with the presentation, miniature reminders were provided to the staff that reinforced what was introduced during the educational session. The reminder cards contained information on Ask, Advise, and Refer (Appendix C). The reminder was a double sided laminated badge, specifically

developed for this intervention; that could be placed on the nurses' name badge to remind them what was covered in the presentation. On the front side of the badge was how to Ask a patient about their current smoking use. On the back side of the badge was how to Advise a patient to quit smoking using a clear, strong, or personal manner and how to Refer a patient for further assistance.

Following the training session a demographic questionnaire and the Smoking Cessation Counseling Self-Efficacy Scale were placed on the unit with a request to the staff to return them to the unit manager. Three months following the initial training, respondents were asked to complete a follow up SCCSES. In addition, they were asked to complete 3 questions related to the usefulness of the educational intervention. The first question asked "Did the program meet your educational needs"? The second question asked "Have you had the opportunity to practice your skills in helping women stop smoking"? The third question was "Did you find the reminder cards helpful in reminding you about the steps to take to help with tobacco cessation"? Gift cards were provided to respondents who completed the second SCCSES.

RESULTS

Of the 17 members of the maternal child nursing units who attended the brief educational training session, 4 completed the baseline surveys and 3 completed the post-intervention surveys. In the sample of nurses who completed the baseline demographic questionnaire, one nurse reported having received tobacco cessation treatment training prior to the educational training, but the majority of RNs had not received any previous training. In addition, respondents were asked if they had received any tobacco cessation treatment in their nursing curriculum and all respondents stated that they had not received any training in helping a patient to stop smoking. At the time of the educational intervention, none of the respondents reported to be current smokers.

The total scale mean score of the SCCSES at baseline was 39.5 (SD =5.0). The total scale mean score of the SCCSES at the post-intervention period was 45 (SD=0). Due to the lack of variability in the total scale score at the 8 week post-intervention time, a one-sample T-test could not be computed. Of the nine items in the modified SCCSES, the two items that addressed asking a new mom or pregnant woman about her tobacco use showed no change in the mean item scores from baseline- to post-intervention. The other seven items of the SCCSES showed higher mean item scores at the post-intervention time relative to the baseline (Table 1). Respondents (N=3) who completed the post-intervention questionnaire did report that the program met their education needs on how to address tobacco cessation with pregnant women and new mothers. In addition, all respondents at the post-intervention time period reported having interactions with pregnant women and new mothers about tobacco cessation and felt the reminders were helpful in developing their skills in delivering tobacco cessation advice.

LIMITATIONS AND RECOMMENDATIONS

There were significant limitations to our study. Two of the major limitations of our study were related to our sample. First, a convenience sample was used in the study instead of a randomly selected group of nurses. Although randomizing the nursing staff into a control group and an intervention group would have significantly improved the design of the study, it would have been difficult to enact. The second significant limitation was the small sample size. The third noteworthy limitation of the study was the lack of reliability data on the SCCSES instrument that was used for this study. Although the SCCSES is a valid tool for measurement of the intervention delivered to the nursing staff, it lacks any published reliability data to support its use.

In retrospect, the research team discussed the types of decisions that were made in the development of the project, and how those decisions impacted the overall implementation of the project. While considering the design for our study, the research team met with key leaders from

the mother/baby and labor and delivery units. Major decisions about the study involved the input of the key leaders. However, the target of the study was the staff nurses. In hindsight it may have been more beneficial to obtain input from the staff nurses before making decisions about the design of the study.

It may have also been beneficial to provide the brief education intervention in a different format. A larger sample of nurses may have been recruited to participate if the educational intervention had been delivered in a more accessible manner, for example an online tobacco cessation tutorial. In addition, the educational intervention was provided only once, which limited the number of nurses who attended the training session. If the educational intervention had been offered on different dates and times of day, it is possible that the overall sample size would have been adequate to detect a difference in tobacco cessation self-efficacy from baseline to post-intervention.

The questionnaires could also have been delivered in a different format. Instead of using a paper and pencil format, questionnaires could have been sent electronically. The current method of paper and pencil questionnaires left on the unit for completion has the potential to diminish the value of the study. The use of paper and pencil questionnaires may have been one of the key reasons why the response rates were so low at baseline- and post-intervention.

The layout of the academic year may have also contributed to our small sample size. The educational intervention was given at the end of the research team's academic semester, before a five week break. Normally we would try to avoid breaks in semesters in order to prevent a delay in data collection. Earlier email reminders to the nursing staff might have improved the response rate.

No one questions the importance of having maternal child nurses deliver effective smoking cessation counseling. It is assumed that behavior change is most likely to occur when knowledge, skills, and attitude related to that behavior change are addressed. Results of this study indicate that

changes in knowledge about advising and referring new mothers and pregnant women about tobacco cessation improved, although we saw no change in nurse's confidence in their knowledge and skills at asking new mothers and pregnant women about their tobacco status. While the results of the pilot test are promising, methodological issues that arose in this study must be addressed in future research to increase nursing's participation in practice-based research.

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APPENDIX A

Table 1. *Mean Item Scores on Modified SCCSES at Baseline and Post-Intervention*

Item	Baseline <i>M</i> (<i>SD</i>)	Post- Intervention <i>M</i> (<i>SD</i>)
1. Ask a new mother/pregnant patient on admission if they use tobacco.	5(0)	5(0)
2. Ask a new mother/pregnant patient about her tobacco use in a non-threatening manner.	5(0)	5(0)
3. Advise a new mother/pregnant patient who uses tobacco to quit in a clear manner.	4.5(.58)	5(0)
4. Advise a new mother/pregnant patient who uses tobacco to quit in a strong manner.	4(.82)	5(0)
5. Advise a new mother/pregnant patient who uses tobacco to quit in a personalized manner.	4.25(.96)	5(0)
6. Discuss the benefits of stopping smoking with a new mother/pregnant patient.	4.25(.50)	5(0)
7. Provide practical counseling about stopping smoking to a new mother/ pregnant patient.	4(.82)	5(0)
8. Encourage a new mother/pregnant patient to ask for support from family and friends when quitting smoking.	4.25(.96)	5(0)
9. Arrange follow-up assistance for a new mother/pregnant patient who wants to quit smoking.	4.25(.96)	5(0)

Code Number:

Date:

Smoking Cessation Counseling Self-Efficacy Scale

Below is a list of nine situations that focus on the tasks of Ask, Advise, and Arrange when helping a new mother/pregnant woman stop smoking. Please read each question and answer the best you can.

How confident are you right now that you would be able to:	not at all confident	not confident	neutral	somewhat confident	very confident
1. Ask a new mother/pregnant patient on admission if they use tobacco.	1	2	3	4	5
2. Ask a new mother/pregnant patient about her tobacco use in a non-threatening manner.	1	2	3	4	5
3. Advise a new mother/pregnant patient who uses tobacco to quit in a clear manner.	1	2	3	4	5
4. Advise a new mother/pregnant patient who uses tobacco to quit in a strong manner.	1	2	3	4	5
5. Advise a new mother/pregnant patient who uses tobacco to quit in a personalized manner.	1	2	3	4	5
6. Discuss the benefits of stopping smoking with a new mother/pregnant patient.	1	2	3	4	5
7. Provide practical counseling about stopping smoking to a new mother/pregnant patient.	1	2	3	4	5
8. Encourage a new mother/pregnant patient to ask for support from family and friends when quitting smoking.	1	2	3	4	5
9. Arrange follow-up assistance for a new mother/pregnant patient who wants to quit smoking.	1	2	3	4	5

APPENDIX B

**A BRIEF EDUCATIONAL INTERVENTION FOR MOTHER-BABY NURSING STAFF ON
ASK, ADVISE, AND REFER FOR TOBACCO CESSATION**

Demographic Questionnaire

Code Number: _____

Date: _____

1. What is your gender? Male Female

2. What is your educational level (mark all that apply)?

LPN

RN

BSN

Other

3. Age as on the present day (please write): _____

4. Have you participated in smoking cessation training in the past?

Yes

No

5. Did you have smoking cessation education in your nursing curricula?

Yes

No

6. Are you a smoker?

Current

Ex-smoker

Never

7. How long have you worked on either unit 54 or 56 (please write out)? _____

APPENDIX C

ASK

Indicate current smoking status.

- I have NEVER smoked, or have smoked LESS THAN 100 cigarettes in my lifetime.
- I stopped smoking BEFORE I found out I was pregnant, and I am not smoking now.
- I stopped smoking AFTER I found out I was pregnant, and I am not smoking now.
- I smoke some now, but I cut down on the number of cigarettes I smoke SINCE I found out I was pregnant.
- I smoke regularly now, about the same as BEFORE I found out I was pregnant.

ASK

Indique su situación actual con respecto a fumar.

- NUNCA he fumado, o he fumado MENOS DE 100 cigarrillos en toda mi vida.
- Dejé de fumar ANTES de enterarme que estaba embarazada, y no fumo ahora.
- Dejé de fumar DESPUES de enterarme que estaba embarazada, y no fumo ahora.
- Fumo un poco ahora, pero reduje la cantidad de cigarrillos que fumo DESDE que me enteré que estaba embarazada.
- Fumo regularmente ahora, aproximadamente la misma cantidad que ANTES de enterarme que estaba embarazada.

Advise

Be clear, Be strong, and make it personal

- Emphasize that quitting smoking is the most important change she can do
- Emphasize the benefits of quitting for her and her baby
- Use positive language

Arrange

Follow up to monitor her progress with smoking cessation

- Provide and identify support
- Notify U-Kan-Quit
- Counsel the patient about potential relapse