

A Review of Current Smoking Cessation Practices

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A Review of Current Smoking Cessation Practices

Around 35 million people will attempt to quit smoking this year; without an intervention program for support, 90% of attempted quitters will fail, most within the first week of the attempt (Albrecht, Payne, Stone, & Reynolds, 1998). Not all interventions are successful, however; the better ones incorporate a combination of behavioral and pharmacological treatments (i.e. Nicotine Replacement Therapies, or NRT) (Andrews, Heath, Harrell, & Forbes, 2000), as nicotine dependence involves psychological, behavioral, social, and physical dependencies (Brown, Larkin, & Davis, 2000). As difficult as it is to implement and run a successful smoking prevention program, they do reduce health risks, prevent smoking complications, and decrease societal costs for the individual, community, business, and health care system (Andrews et al., 2000).

Theories Driving the Smoking Cessation Program Design

When designing a smoking cessation program, there are a few important theoretical points to keep in mind. Social Learning Theory and the Health Belief Model posit that changing health-related behaviors is only possible when an individual is willing to change. Willingness to change is affected by a person's perceived self-efficacy and perceived vulnerability. Self-efficacy can be defined as a person's belief in his or her ability to change, and can be boosted in three major ways: by observing others who have been successful at changing the behavior (ex. using role-models who are successful ex-smokers), by being successful oneself at changing (ex. emphasizing small steps to make the individual appear more successful), and through persuasion to change from a credible source (ex. having a physician or nurse deliver a strong anti-smoking message). Perceived vulnerability is a person's belief in whether or not changing the behavior will result in a positive outcome (ex. knowing smoking is bad for the lungs, but feeling that one is immune to

getting lung cancer would be low vulnerability). Perceived vulnerability is affected through an education that incorporates tailored materials that make changing seem more relevant and necessary to the individual (Albrecht et al., 1998; Froelicher & Christopherson, 2000; Tyc et al., 1997).

Once an individual decides to attempt to quit, they must be equipped to deal with the inevitable relapse. Froelicher & Christopherson (2000) describes what happens when a person encounters a high-risk situation (ex. drinking with friends that smoke, relaxing after a meal or work, and/or experiencing situations of frustration and emotional upsets) that could result in relapse: an individual encounters the risky situation without having the necessary skills to avoid smoking. Feelings of self-efficacy are then lowered, and the individual undergoes "the abstinence violation effect" in which he or she feels guilty, frustrated, and not in control. To avoid this effect, an individual must possess the necessary skills to avoid, cope with, or escape risky situations and relapses (Froelicher & Christopherson, 2000; Martin, Froelicher, & Miller, 2000).

The Transtheoretical Model, or Stages of Change Model, is almost universally accepted among health behavior literature. It states that individuals cycle through five stages of change: Precontemplation (the individual has no intention to change), Contemplation (the person is thinking about changing), Preparation (the person is preparing to change within the next few weeks), Action (the individual has been in the process of changing for one day to six months), and Maintenance (the individual has completed the changed behavior for more than six months). Individuals in the different stages have different needs from a cessation program. The earlier stages require promoting self-efficacy and vulnerability; the later stages need more social support in order to help maintain the changed behavior (Dalton, Swenson, Nettles-Carson, & Friedman, 1991; Glasgow, Whitlock, Eakin, & Lichtenstein, 2000; Martin et al., 2000; Tyc et al., 1997).

Promoting the Intervention

Before a program can even begin, it must "advertise" for patient enrollment. Previous studies have done this through posters, print media (brochures, flyers, cards), payroll inserts, email messages, bulletin boards, television, radio, newsletters, newspaper ads, and word-of-mouth. Lectures and presentations at local schools, colleges, technical schools, and businesses provide both a moment for education and for program promotion. In addition, one should contact local church heads, and health professionals in the community and in local businesses. When giving lectures or contacting leaders of the community or business, send or leave a press kit including materials addressed to the leader that inspire confidence in the program, (ex. success rates at the six and twelve month periods), and information about how smoking cessation financially affects the community.

Educational Supplies

When designing the program, incorporate print materials to be taken home, including a handbook, NRT information, where applicable, educational brochures, and no-smoking signs and/or stickers to be placed where the enrollee desires. Walsh, Redman, Brinsmead, Byrne, & Melmeth (1997) found that a 6-week personalized calendar, including the individual's quit date, weekly tips for quitting and maintaining smoke-free status, health information, advice from ex-smokers, prompts to comply with the NRT, and idiosyncratic reasons for quitting was extremely helpful, especially because it was personalized. For example, on John Smith's calendar are reminders that his daughter's allergies will lessen after he quits; Jane's calendar keeps a running tab of money saved because that is her primary reason for quitting. Other studies offered materials that highlighted personal reasons for quitting and offered suggestions for coping with the previously identified idiosyncratic situations that would promote returning to smoking status (Shiffman, Paty, Rohay, DiMarino, & Gitchell, 2000).

Any materials used should take the primary language(s) of the audience into consideration, and should be written at a fifth to sixth grade reading level (Kendrick et al. 1995; Secker-Walker et al., 2000). In addition, the facilitator should walk the smokers through the material, giving tips on how to use what is provided (Walsh et al., 1997).

One should include information about community support systems and national hotlines in the information that is to be passed out to the smokers (Emmons, Hammond, Fava, Velicer, Evands, & Monroe, 2001). For parents, emphasizing the risks of passive smoking to children was found to be especially beneficial in the Cohn, Dodson, French, Ervin, Ciarlariello, & Wilson (2000) study. Materials should attempt to rectify inaccurate risk perceptions, especially among women, by stressing the link between smoking and susceptibility to disease (Tyc et al., 1997).

As important as education materials are to a smoking cessation program, materials alone have been shown to be insufficient in helping smokers quit (Emmons et al., 2001; Kendrick et al. 1995), especially when the materials are not targeted to a specific population (Shiffman et al., 2000). Educational materials themselves are considered a low-intensity intervention, and these alone do not work well with populations that have low socioeconomic status (SES), low willingness to quit, and/or little education (Kendrick et al. 1995).

The Facilitator

Multiple studies suggest using a variety of clinicians with varying backgrounds (nurses, psychologists, medical students) to teach the counseling sessions, as each person has his or her own strengths (Andrews et al., 2000; Andrews, Tinggen, & Harper, 1999; Klein, Levine, & Allan, 2001; Secker-Walker et al., 2000). The clinician/facilitator should have knowledge in cessation program practices, nicotine addiction, effective quitting strategies, pharmacological therapies, and how to lead behavioral interventions (Andrews

et al., 2000). While not required, Andrews et al. (2000) suggests using ex-smokers, as participants feel they are more credible as they "know what it was like." If the facilitator is not a clinician, he or she should have an extensive knowledge of the areas listed above in order that he or she can be viewed as being a credible source of information. Many studies used clinicians; however, others mentioned "health educators," which could have been anyone with a suitable source of knowledge (Emmons et al., 2001; Secker-Walker et al., 2000).

When incorporating an intervention into an existing clinic, the workload of existing staff should be taken into consideration, as to not overwhelm the already overwhelmed. Kendrick et al. (1995) suggests that the involvement of a person who does not have other responsibilities in the clinic is a key to an intervention's success.

Training the Facilitator

Martin et al. (2000) describes one of the more in-depth training sessions for nurse facilitators: a 2-day workshop that included a literature review of current smoking cessation methods, intervention protocol, mock counseling sessions, and role-playing; this was followed by discussing case studies, role playing, and using group problem solving strategies at staff meetings. In addition, the epidemiology and pharmacology of smoking cessation should also be covered (Sidorov et al., 1997).

Room

When running a group program, the meeting room should comfortably seat double the amount of smokers enrolled in the program, as smokers may bring along social support. No more than fifteen smokers should be enrolled in a group, as this lessens the amount of individual attention given to each group member (Andrews et al., 2000).

Timing of Sessions

Higher cessation interest naturally occurs at specific times during the year: in January, after the New Year, in spring and fall, coinciding with the onset of common respiratory illnesses, and in November, after the Great American Smokeout (Andrews et al., 2000).

Counseling Sessions

Counseling sessions for past successful cessation interventions have covered the following topics: ways to counter weight gain, strategies of stress control (Cohn et al., 2000), strategies that have helped enrollees previously (Andrews et al., 1999), the concept of good health being smoke-free (Martin et al., 2000), and barriers to quitting (Emmons et al., 2001; Glasgow et al., 2000). Almost every program incorporated the idea that a strong social support system increases cessation success rate. Also, identifying individual's dangerous relapse situations is strongly recommended. This information should then be used in experiential learning activities, like role playing or round robin discussion (Albrecht et al., 1998), to increase and enhance coping skills (Andrews et al., 1999). Experiential learning activities allow the enrollees to come up with their own ideas, promoting a sense of ownership, initiative, and independence, and increasing problem-solving skills (Emmons et al., 2001; Martin et al., 2000) (see Figs. 1 & 2).

At the first session, or before the first session, the facilitator should assess current smoking behavior, attitude toward quitting, perceptions of social support, and perception of the general norm in the individuals to undergo the intervention (Secker-Walker et al., 2000). Checking for nicotine dependence is usually accomplished using the Fagerstrom test (see Fig. 3). Nicotine dependence can also be measured by asking the enrollee how many minutes he or she waits until smoking the first cigarette of the day (Wewers et al., 1998).

The sessions should be highly group-oriented, involving lots of enrollee participation in order to increase success rate. Using a greater amount of tailored information for the individuals in the intervention also promoted a better success rate (Andrews et al., 1999). In the Cohn et al. (2000) study, participants stated that they found group discussion to be the most useful, and videos the least helpful, stressing the importance of keeping the sessions interactive.

Intensive Methods

The Agency for Healthcare Quality and Research (AHQR) recently performed a meta-analysis of 3,000 smoking studies, and recommended that an intensive program should consist of 4-7 sessions, 20-30 minutes in length over a minimum of two weeks (Andrews et al., 2000). Additionally, an intensive program should use multiple clinicians, have counseling sessions that include problem solving and skills training, have clinician social support, provide relapse intervention strategies, and incorporate NRT (see Fig. 4) (Andrews et al., 2000). The drawbacks to operating an intensive program include the cost and a strong need for patient willingness to cooperate (Shiffman et al., 2000).

For people that have shown little willingness to stop smoking (precontemplation in the transtheoretical model), it is considered more efficient to limit counseling to a single, direct statement about the health risks of smoking, and then to provide literature to be taken home, as opposed to trying to enroll that person in a more intensive program (Tyc et al., 1997). However, for those expressing a desire to quit (preparation stage in the transtheoretical model), the more intensive a program is, the better chance the intervention has of being effective (Andrews et al., 2000); Andrews et al. (2000) cites 24-48% success rates for intensive programs, a 9% success rate for self-help programs, and a 5-8% success rate for those who do

not receive any intervention. An intensive program has the potential to allow enrollees to more fully comprehend their susceptibility to the adverse affects of smoking and also helps them to stay motivated to quit (Tyc et al., 1997).

Involving Friends and Family

The literature is the identical throughout the board in suggesting that friends and family be involved with the intervention program. Women are thought to need a greater sense of social support when attempting to quit (Martin et al., 2000), and the use of peer support in smoking cessation has shown to be helpful in achieving greater success rates in teenagers (Albrecht et al., 1998). If a supporter is involved, the intervention should provide tailored materials specifically for the supporter, such as tip sheets, contracts for both the supporter and the supportee to sign, and educational materials on what the smoker is going through (Walsh et al., 1997).

To Quit Dates and Contracts

A widely accepted, less-intense method of interventions is setting a "To Quit Date" (TQD). The smoker must be the one to decide when the best date is for the quit attempt; he or she should take into account stressful work situations that may be approaching, family gatherings, etc. that would normally induce smoking. The TQD is most effective when set within the first two weeks of the first attempt at intervention (i.e. the first intervention meeting, when first receiving advice from a physician, etc.) The most important concept in setting the TQD, however, is letting the smoker pick a specific date, and making sure that he or she sticks to that date by sending reminders, and having friends and family offer social support (Andrews et al., 1999). A website run by the Boston University School of Public Health, www.quitnet.org, offers a Quit Date wizard, which asks pertinent questions and gives personal advice regarding when to set the quit date. Complete abstinence on the TQD improves the likelihood of a successful attempt at

quitting at the six-month period (Andrews et al., 1999). A means of enforcing the TQD include providing personalized materials highlighting the TQD, and sending a letter a few days after the TQD has been set (Andrews et al., 1999).

Another less-intense method includes having the smoker sign a "No Smoking Contract" with his or her main source of support (spouse, friend, etc), another with the facilitator or counselor, and/or one with his or her primary care clinician (Martin et al., 2000).

Follow-Up

The more the facilitator/counselor is available for individual counseling after the sessions are over, the greater the chance of the intervention being successful (Andrews et al., 1999). Enrollees who have had relapse issues should receive additional counseling to further help them problem solve, see their attempt as an educational moment (i.e. to learn from previous mistakes), and to reinforce the benefits of quitting Froelicher & Christopherson, 2000; Martin et al., 2000).

Research suggests that interpersonal communication, such as telephone calls or face-to-face counseling, is more effective than mailings (Brown et al., 2000). However, in the Shiffman et al. (2000) study, a single telephone call was found to be ineffective in increasing quit rates. Therefore, follow-up must be just as intensive as the counseling sessions in order to not lose any forward steps gained by the original counseling intervention.

Depending upon resources available, past studies have had follow-up periods of two weeks to two years. Most interventions have follow-up intervals that increase as time progresses, using more tactics in the earlier period after the intervention has ended (for example, calling in weeks one and three, and sending a letter in week two), and then gradually increasing the contact interval to two-weeks to a month. For an intervention's quit rate to be taken seriously, contact should definitely be made at the six-month

period, and if possible, at the twelve-month period to assess success at quitting.

Running a Program without a Large Amount of Financial Resources

A successful quit program does not have to incorporate extensive financial resources, advertising, evaluation methods, etc. If, for example, a small community church decided to run an intervention for members, costs can be kept to a minimum by looking for free information available on the web, or by calling national non-profit organizations or government organizations and using their free materials. The Center for Disease Control (www.cdc.gov) offers many videos, brochures, tip sheets, etc, for free or for a minimum cost. While the American Cancer Society's website (www.cancer.org) is hard to navigate for smoking information, it does offer free brochures also. Nicotine Anonymous (www.nicotine-anonymous.org) offers a free 12-step program, though while the nicotine anonymous site states that it does not have any religious affiliation, many of the twelve steps mention God and recognizing Him as a source of power. The American Lung Association has an extensive website (www.lungusa.org), one of the best on the web, regarding information for those trying to quit. The ALA also provides educational materials for free or a small cost, and additionally, offers tailored materials for teens, women, and ethnic groups. An ALA-run link, www.ffsonline.org, is a 24-hour online support system for those trying to quit.

The Duke University Medical Center offers the QuitSmart kit (\$27/kit) and also offers facilitator training and classes throughout the United States for the QuitSmart Program. (Note: this is a highly successful program and has been evaluated in peer-reviewed medical journals.) This kit was actually the cheapest of the commercial kits available, with other ranging from \$40-\$200. If a commercial organization offers an expensive quit, especially through the web, consumers should be wary of their published success rates, as many said they had quit rates of 60-80%. With medical literature only offering 15-40%

success rates, one has to wonder why the commercial organization methods are so much better; of course, commercial organizations do not undergo the scrutiny of fellow professionals, and can scam the public easier.

The Boston University School of Public Health offers an incredible resource, second only to the ALA site, (www.quitnet.org) for smoking cessation information. Any facilitator for a program should view this site and make use of its resources, such as the Q-Gadget, which keeps a running total of how much money a person saves by quitting, and the Q-Date Wizard, which helps a person figure out how to set a Quit Date. The site also offers the opportunity to create a personalized calendar, information about local programs across the United States, and online support via email reminders and chat rooms. Quitsmoking.about.com offers daily tips, quotes, news, personal stories, and how-to guides, such as how to get through the first week of quitting smoking.

Small intervention programs should make use of these available resources, incorporating the information available into their interventions. Since the information is free, and easily accessible, the only problem is assessing the validity of the information offered. National organizations such as the ALA or the CDC are valid sources of information, as their programs are run by professionals. Smaller commercial organizations do not offer the same validity, as they are profit-based.

Facilitators for smaller interventions can access the free material, and put together a great intervention program, as long as they keep in mind suggestions offered by the medical community. The small program facilitator does not have to be an expert in smoking cessation, though the more he or she knows regarding the physiology of cessation (the physical addiction to smoking), and the psychological aspects of quitting, the more credible he or she is as a source, and the more smokers will feel what he or she is suggesting is valid.

Nicotine Replacement Therapy (NRT)

The AHQR recommends that Nicotine Replacement Therapy be used in order to enhance the success rate of an intervention (Andrewset al., 2000). It provides for withdrawal symptoms, leaving the attempting quitter to focus on psychological and social dependencies without having to deal with the physical dependencies also (Brown et al., 2000). When NRT is used, the success rate for quitters is 2-3 times higher than the rate of those who do not use NRT (Andrews et al., 1999); the cost of the therapy is equivalent to 1-2 packs of cigarettes a day (Andrews et al., 2000).

NRT has not been used widely in the past because of myths regarding cardiovascular injury and cancer surrounding its use. Cardiovascular injury and cancer are actually caused by toxins other than nicotine in cigarettes, not nicotine itself, so NRT will not harm a patient (Brown et al., 2000). If incorporating NRT into the intervention, however, a smoker's physician should be notified if the smoker is pregnant or has heart disease (Brown et al., 2000).

Why Tailoring?

For an intervention program to be successful, it must cross ethnic, racial, SES, literacy, language and gender boundaries (Higgs, Edwards, Harbin, & Higgs, 2000). Each of these components presents a different set of issues when dividing the audience into subsets. Tailoring allows a program to deal with and abolish specific issues, such as women not quitting because they are worried about gaining weight (Brown et al., 2000).

While tailoring the program to the audience presents more challenges, literature shows that higher quit rates are seen in those who are specifically targeted by the tailored program (Secker-Walker et al., 2000). Grouping like participants in an intervention allows one to tailor the

intervention to the audience more easily (Andrews et al., 2000; Jenkins, McPhee, Pham, Le, Ha, & Stewart, 1997).

Tailoring for Gender

The process of smoking cessation is different for men and women in terms of physiologic, behavioral, and psychological factors (Martin et al., 2000; Secker-Walker et al., 2000). Women tend to have greater nicotine dependency than men (Wewers et al., 1998), they are less likely to perceive the health benefits of quitting (Martin et al., 2000), and they are more likely to report relapses associated with anxiety and craving for cigarettes (Martin et al., 2000). In addition, women more likely to chose programs that include mental health professionals on the intervention staff (Martinet al., 2000). Additionally, women in formal programs that emphasize social support, involved behavior modification, and individualized attention showed an increase in quit rate successfulness (Martin et al., 2000).

For interventions involving women, focus on ways to counter weight gain, stress, and depression. Highlight the negative cosmetic affects of smoking, like the fact that smoking increases the risk for facial wrinkling two to three times among white women (Martin et al., 2000).

Tailoring for African Americans

Low income African Americans appear to be isolated from professional and formal health informational channels, but tend to be responsive to extended kin networks. A community organization approach that involves the intended audiences in planning and implementing the intervention is a good means of counteracting the African American isolation from formal channels. The community approach helps recruit peer support for the attempting quitters and also provides for multiple publicity tactics and channels (Fisher, Auslander, Munro, Arfken, Brownson, & Owens, 1998). Wewers et al. (1998) recommends the incorporation of pastoral sermons, and other spiritually

related information into interventions designed for African Americans, especially when dealing at the community level.

Tailoring for Children

Adolescents generally do not respond to threats of long-term health consequences of smoking, or to scare tactics, because of a general sense of invulnerability and immortality (Albrecht et al., 1998; Higgs et al., 2000; Wewers et al., 1998). In addition, they are often unrealistic about the difficulties of quitting smoking, creating an unusual situation for those designing cessation programs for teenagers (Wewers et al., 1998).

When designing a program for cessation intervention in teenagers, it should be a skill-based program, helping not only to assist in quitting, but also preparing students for skills needed later in life, such as how to acquire new information to make informed decisions about health and wellness issues, and how to better handle stress, peer pressure, and decisions about smoking. The younger the child, the more he or she needs to learn to internalize responsibility for making personal decisions, to understand and manage stress, and to learn coping skills (Higgs et al., 2000).

Tyc et al. (1997) stated that of 94 studies analyzed, programs based on the social reinforcement approach were the most effective in terms of attitude change and behavioral outcome. The social reinforcement approach identifies immediate social and physical consequences of smoking, and aids in developing skills to recognize and resist social pressures to smoke.

Interventions should specifically emphasize the unattractive cosmetic and athletic consequences of tobacco (Albrecht et al., 1998); they should establish the individual's motivation to quit, as this increases the success rate; and they should also emphasize the monetary gain that is achieved by quitting. As with all programs, the education should include the idea that

relapses are common and should be seen as a learning experience (Wewers et al., 1998).

Community Organizations

When deciding how to manage the intervention, programs must first define their goals and their available resources. An intervention that hopes to address individual and community behavior change would do better to organize at the community level using volunteers and/or a coalition; an intervention that hopes to change the legislation regarding the smoking environment would do better to incorporate professionals into its backbone structure. Interventions that have very little supplies would do well to staff their programs with professionals carrying connections to needed resources.

There is no one accepted method of management; each intervention must analyze its strengths and weaknesses in order to decide which type of organization is best for its needs: professional, community, or a mixture of both (Secker-Walker et al., 2000).

Work-Place Organizations

Sorensen et al. (1998) suggests that the key elements to a work-place intervention program include: joint worker-management participation in program planning and implementation, operationalized through an employee advisories board and designated work-site liaison; consultation by project staff with management on work site environmental changes, such as tobacco control policies; and health education programs targeting individual behaviors. As in community organizations, a successful intervention will incorporate multiple levels of collaborators, from management on down.

Using the Primary Care Provider (PCP)

Overall, the literature suggests that counseling with PCP staff increases quit rates (Andrews et al., 1999; Klein et al., 2001). PCP staff

includes nurses, physician's assistants, the physicians themselves, medical students, residents, and dental hygienists (Andrews et al., 2000; Secker-Walker et al., 2000). Primary care providers are considered to be a credible source of information by their patients, and providers often see their patients during a teachable moment, increasing the effectiveness of providing counseling (Albrecht et al., 1998). Seventy percent of smokers claim, if asked by a physician to quit smoking, that they would attempt to quit (Brown et al., 2000).

PCP counseling is effective in as little as 3 minutes (Brown et al., 2000). The AHRQ recommends 5 A's to be used in the PCP setting: ask patients if they use tobacco, advise them to quit using a strong quit message, assess their willingness to make a quit attempt, assist those willing by providing literature and a referral to a program if needed, and arrange for follow up contact to prevent relapse (Andrews et al., 2000; Tyc et al., 1997). In an intervention that does not use the PCP directly, facilitators should seek permission to alert the PCP that his or her patient is attempting to quit smoking, as it provides another channel for social support, as well as allows the attempting quitter to discuss NRT prescriptions with his or her physician. Programs should provide a brief outline of what they would like the PCP to do, along with any relevant materials, as literature has shown that many PCP staff do not feel qualified to assist in smoking cessation counseling.

Monitoring Actual Smoking Levels to Calculate Success Rate

When reporting success rates, it is important to determine whether self reports or biochemical testing will be used. Self-reported methods are generally a reliable measure (Der, You, Wolter, Bowen, & Dale, 2001), but only if there is a minimal pressure to give the correct answer, such as in an impersonal telephone call (Manfredi, Crittenden, Cho, Engler, & Warnecke, 2000; Secker-Walker et al., 2000). However, adolescents, pregnant women, and

people currently in smoking programs have been shown to falsely report their smoking status to clinicians (Kendrick et al. 1995; Wewers et al., 1998). If biochemical analysis is not possible for these populations, it is recommended that the intervention design include a means of leading the smokers to believe testing will be performed, as it has been found that smokers tend to report their smoking status more accurately if they believe biochemical testing will be done (Shiffman et al., 2000; Wewers et al., 1998).

Two means of biochemical testing for nicotine use are testing for the presence of cotinine, a breakdown product of nicotine, in saliva (Froelicher & Christopherson, 2000; Kendrick et al. 1995), and measuring exhaled carbon monoxide levels (Albrecht et al., 1998; Wewers et al., 1998). Both are relatively easy and inexpensive to obtain.

CONCLUSION

The basic key to implementing a successful program seems to be the use of multiple approaches to an intervention; the use of NRT also greatly enhances success rates. A great multiple approach includes screening participants using clinical staff, providing information on Nicotine Replacement Therapies, using a variety of clinicians in the intervention, offering group, peer and individual counseling, providing relapse prevention sessions and information, and offering an agency-wide media campaign (Andrews et al., 2000).

FIGURES

Fig. 1: A comprehensive assessment of tobacco use.

1. Ask about tobacco use	<ul style="list-style-type: none"> ✍ Have you used tobacco in the past month? ✍ Have you used tobacco in the past? ✍ Collect details about tobacco use.
2. Assess and anticipate risk factors	<ul style="list-style-type: none"> ✍ Do your close friends smoke? ✍ Do your family members or members of your household smoke? ✍ Do you think most people your age smoke?
3. Assess future intentions, objective knowledge and perceived vulnerability	<ul style="list-style-type: none"> ✍ Do you think about using tobacco in the future? <i>If yes:</i> Why would(do) you smoke? ✍ Do you plan to use tobacco in the next month? The next 6 months? ✍ Are you aware of your short- and long-term medical risks if you smoke? ✍ Compared to other people your age who do not smoke, what is your risk of developing health problems if you smoke?
4. Assess intention to quit	<ul style="list-style-type: none"> ✍ Are you thinking about stopping tobacco use in the next month? The next 6 months? ✍ What are your reasons for stopping/continuing to smoke? ✍ Reinforce personal benefits of cessation.
5. Assess previous quit attempts	<ul style="list-style-type: none"> ✍ Did you ever attempt to quit smoking in the past? ✍ <i>If yes:</i> What strategies were effective?
6. Assess barriers to stopping tobacco use	<ul style="list-style-type: none"> ✍ What factors trigger your urge to smoke? ✍ What prevents you from stopping tobacco use? ✍ Advise that many smokers are not successful on their first attempt.
7. Assess resources	<ul style="list-style-type: none"> ✍ What could you do to manage situations that trigger your urge to smoke?

Adapted from Tyc et al., (1997). Tobacco use among pediatric cancer patients: recommendations for developing clinical smoking interventions. *J of Clinical Oncology*, 15(6), 2200.

Fig. 2: Implementation of the Quit Start™ smoking cessation group (41% quit rate at 6/mo period).

	Session One	Session Two	Session Three	Session Four
	Preparing to Quit	Becoming a Nonsmoker	Remaining a Nonsmoker	Planning Ahead
Introductions/ Initial Business	<ul style="list-style-type: none"> ✍ General Welcome/ Overview ✍ Distribute materials ✍ Introductions 	<ul style="list-style-type: none"> ✍ Discussion of participant progress ✍ Reinforce individual coping strategies ✍ Reaffirm Quit Date 	<ul style="list-style-type: none"> ✍ Discussion of progress ✍ Reinforce success and positive behaviors 	<ul style="list-style-type: none"> ✍ Check progress ✍ Reinforce coping techniques
Instruction	<ul style="list-style-type: none"> ✍ Discussion of addiction, habit, and emotional dependence ✍ Discussion of brand switching and quitting instructions ✍ Overview of NRT ✍ Discussion of social support systems ✍ Set quit date within two weeks of this session 	<ul style="list-style-type: none"> ✍ Teach coping techniques to include caffeine reduction, social support, avoiding triggers, relaxation and assertion ✍ Self hypnosis tape demonstration ✍ Prescription for 3 week supply NRT given 	<ul style="list-style-type: none"> ✍ Discussion of relapse interventions ✍ Discussion of weight control ✍ Phase 2 of NRT support 	<ul style="list-style-type: none"> ✍ Assist relapsers to decide on next stage of cessation ✍ Step 3 of NRT support ✍ Discuss strategies on remaining a nonsmoker
Follow-up Preparation	<ul style="list-style-type: none"> ✍ Personal letter reinforcing Quit Date and personalizing strategies for quitting mailed 	<ul style="list-style-type: none"> ✍ Facilitator telephones or sends letter to participant within 72 hours to reinforce cessation ✍ Letter mailed to participant's identified social support system 	<ul style="list-style-type: none"> ✍ Follow-up letter mailed reinforcing positive behaviors and congratulating success 	<ul style="list-style-type: none"> ✍ Plan six month celebration, extra maintenance session provided on individual basis

From Andrews et al. (2000). Meeting national tobacco challenges: recommendations for smoking cessation groups. *J of the American Academy of Nurse Practitioners*, 12(12), 529.

Fig. 3: Fagerstrom Test for nicotine dependence.

Question	Answer	Points
How soon after you wake do you smoke your first cigarette?	<input type="checkbox"/> Within 5 minutes <input type="checkbox"/> 6-30 minutes <input type="checkbox"/> 31-60 minutes <input type="checkbox"/> After 60 minutes	<input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 0
Do you find refraining from smoking difficult in places were it is forbidden?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> 1 <input type="checkbox"/> 0
Which cigarettes would you hate to give up?	<input type="checkbox"/> The first one in the morning <input type="checkbox"/> All other	<input type="checkbox"/> 1 <input type="checkbox"/> 0
How many cigarettes do you smoke a day?	<input type="checkbox"/> 10 or fewer <input type="checkbox"/> 11-20 <input type="checkbox"/> 21-30 <input type="checkbox"/> 31 or more	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
Do you smoke more frequently during the first hours of waking than during the rest of the day?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> 1 <input type="checkbox"/> 0
Do you smoke when you are so ill that you are in bed most of the day?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> 1 <input type="checkbox"/> 0
Scoring: 0-4 low nicotine dependence; 6-7 high nicotine dependence; 8-10 very high nicotine dependence. A total score of 7 or more may indicate a potential for more severe withdrawal symptoms, greater difficulty quitting, and the need for supplements with a higher nicotine content		

Andrews et al. (1999). A model nurse practitioner-managed smoking cessation clinic. *Oncology Nursing Forum*, 26(10), 1606.

Fig. 4: Recommendations for components of an intensive smoking cessation intervention (AHQR)

Component	Strategy of Implementation
Assessment	Should ensure that tobacco users are willing to make a quit attempt using an intensive treatment program.
Program Clinicians	Multiple types of clinicians are effective and should be used.
Program Intensity	4 or more sessions, with the longest session lasting longer than 10 minutes, for a total contact time longer than 30 minutes
Program Format	Individual or group counseling, or proactive telephone counseling. Use of adjuvant self-help material is optional. Follow-up assessment should be used.
Type of Counseling Behavioral Therapies	Should involve practical counseling (problem solving/skills training), and intra-treatment and extra-treatment social support
Pharmacotherapy	Every smoker should be encouraged to use pharmacotherapies endorsed in the guideline. Special considerations should be given to specific populations (i.e. pregnancy, adolescents)
Population	Intensive intervention efforts should be used in all tobacco users willing to participate in such efforts.

Andrews et al. (2000). Meeting national tobacco challenges: recommendations for smoking cessation groups. *J of the American Academy of Nurse Practitioners*, 12(12), 524.

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About.com. Homepage for Quitting Smoking. Retrieved February 15, 2002, from quitsmoking.about.com

Audience is the individual smoker attempting to quit. Offers daily tips, quotes, news, personal stories, and how-to guides. Useful for the low-budget intervention facilitator who is looking for specific material to incorporate into a program, such as what to put on an individualized letter or calendar.

Albrecht, S., Payne, L., Stone, C.A., & Reynolds, M.D. (1998). A preliminary study of the use of peer support in smoking cessation programs for pregnant adolescents. *J of the American Academy of Nurse Practitioners*, 10 (3), 119-125.

The authors, researchers at the University of Pittsburgh, using a multicomponent approach for a smoking cessation program for pregnant teens, attempted to assess the value of incorporating peer counseling into the Teen FreshStart Program (ACS). The intervention, eight counseling sessions, showed a greater quit rate for the program using peer counseling. While results were not significant, probably due to small sample size, the components of the program are sound and are backed by current adolescent theories, and therefore should not be dismissed.

American Cancer Society. Homepage. Retrieved February 15, 2002, from www.cancer.org

The ACS sponsors the Fresh Start Program. The site is hard to navigate for specific smoking information, though using their search tool yields in excess of 500 links. ACS does offer free educational materials from the site.

American Lung Association. Homepage. Retrieved February 15, 2002, from www.lungusa.org

The ALA sponsors the Freedom from Smoking Program. Among the best sites on the web for smoking cessation information. Offers some free and some low cost educational materials. Also has links for an online 24-hour support system, www.ffsonline.org.

Andrews, J., Heath, J., Harrell, L., & Forbes, M. (2000). Meeting national tobacco challenges: recommendations for smoking cessation groups. *J of the American Academy of Nurse Practitioners*, 12(12), 522-533.

A comprehensive review of AHCPR/AHRQ (Agency for Healthcare Quality and Research) guidelines for smoking cessation programs. The authors condense a 200-page document into 12 pages without compromising the original integrity. They suggest an intensive intervention that includes pharmacological and behavioral support, in addition to the usual educational materials.

Andrews, J.O., Tinggen, M.S., & Harper, R.J. (1999). A model nurse practitioner-managed smoking cessation clinic. *Oncology Nursing Forum*, 26(10), 1603-1610.

Using AHCPR/AHRQ guidelines, the authors instituted a successful intensive smoking intervention clinic, showing very high rates of success (41%/6 mo and 36%/12 mo). The article breaks down each of the four intervention sessions, and provides an excellent model for anyone devising an intervention program. The authors advocate the use of multiple clinicians in the program, and the importance of follow-up counseling.

Brown, R.A., Larkin, J.C., & Davis, R.L. (2000). Current concepts in the management of smoking cessation: a review. *American J of Managed Care*, 6(3), 394-404.

The authors provide a succinct review of Nicotine Replacement Therapies (NRT), stressing the importance of using them correctly to help smokers quit. They also suggest important points to consider when designing a cessation intervention, such as using interpersonal tactics and tailoring to the individual.

Boston University School of Public Health. Quit Smoking Homepage. Retrieved February 15, 2002, from www.quitnet.org

Another great web site for smoking cessation information. Offers resources, an individualized calendar, online support systems, a national directory of local cessation programs, a pharmaceutical guide, a means of tracking how much money saved since quitting, and a Wizard that allows one to pick the quit date that is right for the individual. Great for any facilitator that want to see how educational materials can be personalized for the individual user.

Cohn, R.C., Dodson, D., French, A., Ervin, B., Ciarlariello, S., & Wilson, T.N. (2000). A pilot smoking cessation program run by pediatric respiratory care practitioners for parents. *Clinical Pediatrics*, 39(2), 121-124.

Researchers evaluated a 6-week, seven session intervention for parents in Dayton, Ohio based on the ALA's "Freedom from Smoking Program." Only 51% of participants completed the program, though 86% of those who finished the intervention were smoke-free at the end. The study does not provide six- or twelve-month quit rates, and so these success rates are not to be taken as concrete. The importance of the study lies in the data regarding the most and least useful parts of the intervention, and their suggestions for future improvement for interventions.

Dalton, J., Swenson, I., Nettles-Carson, B., & Friedman, B.J. (1991). Brief: counseling hospitalized patients to quit smoking—study of an educational intervention. *J of Continuing Education in Nursing*, 22(5), 209-212.

The Adult Learning Theory, the Transtheoretical Model, and the concept of self-efficacy are used as the background for an educational training program for nurses, teaching them to help patients quit smoking in the psychiatric hospital setting. The intervention was comprised of two 50-minute sessions, which were immediately heeded, but all but forgotten at the 6/mo follow-up. Like actual smoking cessation programs, getting nurses to effectively counsel patients on a regular basis about smoking requires continual reinforcement until the behavior patterns are integrated. If designing an intervention that uses the primary care provider, then, one has to provide continual support.

Der, D.E., You, Y., Wolter, T.D., Bowen, D.A., & Dale, L.C. (2001). A free smoking intervention clinic initiated by medical students. *Mayo Clinic Proceedings*, 76(2), 144-151.

The authors, researchers at the Mayo Medical School, investigated the use of an intervention run by medical students (18% success rate/6mo). Patients met individually for about 15-minutes as manytimes as they wanted at the Salvation Army Free Acute Care Clinic. The found that those who visited more than six times had a greater quit rate at six months than those who visited the clinic less. In addition, medical students were found to be more confident in smoking cessation counseling; perhaps a means to increase smoking cessation overall is to start offering such clinics in all medical schools.

Emmons, K.M., Hammond, S.K., Fava, J.L., Velicer, W.F., Evands, J.L., & Monroe, A.D. (2001). A randomized trial to reduce passive smoke exposure in low-income households with young children. *Pediatrics*, 108(1), 18-24.

Researchers from The Dana-Farber Cancer Institute investigated whether a motivational, theory-driven intervention for parents (Keep Infants Safe from Smoke) would reduce household passive smoke exposure. The intervention, 30-45 minute individual motivational interviews with a health educator and 4 follow-up counseling calls, helped smokers significantly reduce the amount of passive smoke in the household. In addition, they found that educational material alone was not sufficient to reduce the amount participants smoked.

Fisher, E.B., Auslander, W.F., Munro, J.F., Arfken, C.L., Brownson, R.C., & Owens, N.W. (1998). Neighbors for a smoke free north side: evaluation of a community organization approach to promoting smoking cessation among African Americans. *American J of Public Health*, 88(11), 1658-1663.

Researchers evaluated the community-organization approach in implementing an intervention for African-American low-income residents in St. Louis. The article does not give the actual design of Neighbors for a Smoke Free North Side, the intervention, but it does provide guidelines for establishing a community-run organization, and discusses advantages and disadvantages to the community-based design

Froelicher, E.S., & Christopherson, D.J. (2000). Women's Initiative for Nonsmoking (I): design and methods. *Heart & Lung: J of Acute & Critical Care*, 29(6), 429-437.

The article, the first in a series of four, explains in detail the design and methods used for a nurse-run behavioral intervention for women hospitalized with cardiovascular disease in the San Francisco Bay area. The authors provide a good theoretical background, and they give a good amount of overall detail about the design and assessment. The intervention consisted of a one-time counseling session and five 5-10 minute follow-up telephone calls. The results are not yet published; see Martin et al. (2000) for part II.

Glasgow, R.E., Whitlock, E.P., Eakin, E.G., & Lichtenstein, E. (2000). A brief smoking cessation intervention for women in low-income Planned Parenthood Clinics. *American J of Public Health*, 90(5), 786-789.

The authors implement a great intervention evaluation model, assessing reach, efficacy, adoption, implementation, and maintenance, in an intervention including barrier-based counseling and motivational interviewing in low-income women. Their intervention showed a significant difference at the 6-week assessment, but not at the 6-month assessment. The study shows the importance of implementing a follow-up period that is longer than one month, and not taxing current clinic staff.

Higgs, P.E., Edwards, D., Harbin, R.E., & Higgs, P.C. (2000). Evaluation of a self-directed smoking prevention and cessation program. *Pediatric Nursing (26)6*, 150-155.

Breathe Easy (developed by The Paxen Group), a self-directed intervention for adolescents, was analyzed and found to significantly decrease smoking prevalence among adolescents. The article provides important research-based suggestions for designing cessation programs for adolescents, emphasizing the peer-involvement model and an interactive format. Risk Behavior was assessed by modifying the CDC's Youth Risk Behavior Survey. The authors stressed the magnitude of teaching adolescents health behavior skills.

Jenkins, C.N., McPhee, S.J., Pham, G.Q., Le, A., Ha, N., & Stewart, S. (1997). The effectiveness of a media-led intervention to reduce smoking among Vietnamese-American men. *American J of Public Health, 87(6)*, 1031-1034.

According to the authors, researchers from the University of California, San Francisco, a Vietnamese-targeted media intervention showed significant effects on the target population's cessation rates. The intervention's components included all aspects of media campaign (radio, television, billboards, etc), and also targeted Vietnamese physicians, Vietnamese community events, and Vietnamese student. Their study shows the importance of culturally tailoring to a community, running a media campaign for longer than two years, and targeting family members and students in order to achieve a broad penetration.

Kendrick, J.S., Zahniser, S.C., Miller, N., Salas, N., Stine, J., Gargiullo, P.M., et al. (1995). Integrating smoking cessation into routine public prenatal care: the smoking cessation in pregnancy project. *American J of Public Health, 85(2)*, 217-222.

The authors attempted to decrease smoking rate in pregnant women by designing a low-intensity intervention program for WIC clinics in Colorado, Maryland, and Missouri. Because the interventions were different in each state, the article is not as informative about design as previous articles. The important of the article lies in the idea that when assessing smoking rates in pregnant women, biochemical tests should be done because self-reports are not valid. In addition, the authors emphasize that any intervention designed to be incorporated into an existing clinic should assess the workload of current staff to prevent overwhelming.

Klein, J.D., Levine, L.J., & Allan, M.J. (2001). Delivery of smoking prevention and cessation services to adolescents. *Archives of Pediatrics & Adolescent Medicine, 155(5)*, 597-602.

The article offers multiple guidelines for physician's referencing for smoking cessation. Researchers at the University of Rochester Medical Center in New York describe adolescent cessation counseling services in primary care providers. They concluded that PCP's overall do not have a great amount of knowledge of cessation guidelines; when PCP's do offer counseling services, they help in raising quit rate success. Therefore, for programs desiring to use the PCP to enhance the intervention, the program designers should offer the PCP guidance in what to do and how to counsel the patient.

Manfredi, C., Crittenden, K.S., Cho, Y.I., Engler, J., & Warnecke, R. (2000). The effect of a structured smoking cessation program, independent of exposure to existing interventions. *American J of Public Health* 90(5), 751-756.

By varying intensities of different interventions, the authors were able to assess the effect of various intervention components. They conclude that low-intensity elements, such as a follow-up provider phone call, can affect the quit rate of smokers. They also state that a more intense intervention would be more beneficial; however, for the intervention program that does not have a large amount of resources, their findings show that the minimal exposures (provider advice, booklets, posters, etc) do at least have a small effect on quit rates when compared to no exposure at all.

Martin, K., Froelicher, E.S., & Miller, N.H. (2000). Women's Initiative for Nonsmoking (WINS) II: the intervention. *Heart & Lung: J of Acute & Critical Care*, 29(6), 438-435.

Part II in the WINS series (see Froelicher et al. 2000 for part I). The article provides even more theoretical detail than the first article, and also more completely describes the inpatient counseling sessions and outpatient follow-up. The results of the intervention are forthcoming. The series overall provides a good background for those attempting to design an intervention, as their discussion can be generalized to patients not in hospital care settings.

Nicotine Anonymous. Homepage. Retrieved February 15, 2002, from www.nicotine-anonymous.org

Offers a 12-step program that incorporates religious faith. Somewhat useful, though other sites offer more information in general.

Quit Smart Program. Homepage. Retrieved February 15, 2002, from www.quitsmart.com

Run by Duke University Medical Center, the for-profit organization has been evaluated as being highly successful by credible peer-reviewed sources. Offers both a kit and facilitator training for the program, though the kit is rather expensive (\$27/kit).

Secker-Walker, R.H., Flynn, B.S., Solomon, L.J., Skelly, J.M., Dorwaldt, A.L., & Ashikaga, T. (2000). Helping women quit smoking: results of a community intervention program. *American J of Public Health*, 90(6), 940-946.

The authors, researchers at the University of Vermont, used a community-based educational approach (coalitions, task forces, etc.) to

help women quit smoking in Vermont and New Hampshire. The media-based intervention (Breath Easy) had a significantly greater impact on quit rates in exposed counties when compared to control counties. Higher quit rates were seen in those specifically targeted by the program, younger women of lower SES, and the program resulted in a significant change of community norms.

Shiffman, S., Paty, J.A., Rohay, J.M., DiMarino, M.E., & Gitchell, J. (2000). The efficacy of computer-tailored smoking cessation material as a supplement to Nicotine Polacrilex Gum therapy. *Archives of Internal Medicine*, 160(11), 1675-1681.

Researchers from the University of Pittsburgh and Pinney Associates evaluate the effects of the Committed Quitters Program, a set of tailored materials offered to NRT purchasers. The authors offer the tailored educational materials as alternatives to intensive interventions; they found that the quit rate was higher (28%/12mo) for those using the tailored materials, as opposed to those receiving general educational materials (18%/12mo). The study effectively shows the need for customized materials in an intervention.

Sidorov, J., Christianson, M., Girolami, S., & Wydra, C. (1997). A successful tobacco cessation program led by primary care nurses in a managed care setting. *American J of Managed Care*, 3(2), 207-214.

The authors examined a cessation program sponsored by an HMO in Pennsylvania. The intervention, six one-on-one counseling sessions with a primary care nurse, had a 30.5%/12mo quit rate. The researchers found that for patients attending four or more sessions, the quit rate was significantly higher; the quit rate was also significantly higher for patients enrolled in an HMO, and these patients were also more likely to attend four or more visits with the nurse (as compared to patients not in an HMO). Finally, they concluded that the counseling session were the most important factor in determining quit rates, as opposed to other financial incentives offered in the study.

Sorensen, G., Stoddard, A., Hunt, M.K., Hebert, J.R., Ockene, J.K., Avrunin, J.S., et al. (1998). The effects of a health promotion-health protection intervention on behavior change: the WellWorks study. *American J of Public Health*, 88(11), 1685-1690.

The authors evaluated the effects of a 2-year work-site intervention in Massachusetts. The intervention focused on both diet and smoking cessation, but saw no significant effects on smoking cessation. The value of the article lies in the description of work-related intervention design, targeting joint worker-management participation.

Tyc, V.L., Hudson, M.M., Hinds, P., Elliot, V., & Kibby, M.Y. (1997). Tobacco use among pediatric cancer patients: recommendations for developing clinical smoking interventions. *J of Clinical Oncology*, 15(6), 2194-2204.

The article, while focusing on the cancer patient, provides a good background for designing a prevention/cessation program for teens, highlighting the importance of using the primary care provider. As it is more of a literature review, no specific intervention is described. In the review, the authors provide "A comprehensive assessment of

tobacco use," which was adapted for the general patient and used in the "figures" section of this paper.

U.S. Dept. of Health and Human Services. (2000). Treating Tobacco Use and Dependence. Retrieved January 26, 2002, from www.surgeongeneral.gov/tobacco

A 200-page document written as a meta-analysis of 6,000 tobacco articles by a panel comprised of seven government and non-profit organization, including the AHRQ, the CDC, and the NCI. Throughout the body of this paper, it has been referred to as the AHRQ/AHCPR Guidelines. It is an essential, though bulky, work for anyone designing an intervention. For a more concise review of the Guideline, see Andrews et al. (1999) and Andrews et al. (2000) above.

Walsh, R.A., Redman, S., Brinsmead, M.W., Byrne, J.M., & Melmeth, A. (1997). A smoking cessation program at a public antenatal clinic. *American J of Public Health, 87*(7), 1201-1204.

While the intervention in this article was run in Australia, it does provide valuable information about educational methods used, such as teaching the women how to use the self-help manual provided. The authors also discuss the importance of biochemical verification in pregnant women.

Wewers, M.E., Ahijevych, K.L., & Sarna, L. (1998). Smoking cessation interventions in nursing practice. *Nursing Clinics of North America, 33*(1), 61-74.

The authors provide a literature review of recent cessation treatments, focusing in on tailoring for specific populations. The article does emphasize nurse-managed interventions, but can be generalized for any facilitator. Focus is given to the AHCPR guidelines.