

Smoking Cessation Methods

SBU Summary and Conclusions

Introduction

The findings of an earlier SBU report (Longer Life and Better Health) and numerous other reviews of the scientific literature clearly show that tobacco smoking is one of the most common contributors to poor health.

One in four middle-aged smokers, ie, between the ages of 35 and 69 years, will die from smoking. In 1990, smoking accounted for 12% of all deaths among males and 4% of all deaths among females in Sweden. This percentage is increasing among women, while it is declining among men. Furthermore, smokers are affected by many diseases as a direct or indirect consequence of smoking.

Smoking cessation has a major impact on health. As soon as a few years after quitting the smoking habit, ex-smokers are at a substantially lower risk for myocardial infarction or stroke. However, their risk for cancer declines at a slower rate.

In 1996, approximately 21% of the men and 23% of the women in Sweden smoked. Less educated individuals smoke at a substantially higher rate than well educated individuals. During the 1980s, the number of adolescent smokers declined, but later increased again. Tobacco use among this group has not change noticeably during the 1990s. Among adolescents, current trends show that females become smokers more frequently than males.

In preparing this report, SBU collaborated with Sweden's National Institute of Public Health to review the scientific literature concerning methods of smoking cessation that have been used within the health services. Hence, the report does not address methods that would prevent people from starting to smoke, nor does it address activities in society aimed at reducing tobacco utilization.

Smoking Cessation Methods

Numerous methods of smoking cessation are described in the literature, but studies concerning only a few of these methods are reviewed here, namely counseling of smokers, treatment involving nicotine replacement agents, cognitive behavioral therapy, hypnosis, acupuncture, and drug therapy other than nicotine.

A large body of scientific studies addressing smoking cessation methods were identified. In reviewing the scientific standards of these studies, approximately 300 studies were found to have good or high scientific quality, 126 of which were analyzed in detail. The following literature review is based on the results of these studies.

Counseling

Scientific studies rather convincingly show that brief, structured counselling is the basis for successful programs to help smokers stop smoking. Asking all patients about their tobacco habits during each contact with the health services demonstrates to patients that the health services take this unhealthy behavior very seriously.

A well-defined, individually-targeted recommendation to stop smoking, followed by brief counseling and an offer to provide help (individually or in a group), and follow up during subsequent visits form the cornerstone of this approach, one which has been proven effective.

Brief counseling can be provided in 5 minutes or less within the framework of routine patient care by healthcare and dental services. The impact of this approach is substantial, and in contrast to several other types of interventions on smoking cessation, it has been well documented in scientific studies; 2% to 3% of all smokers stop smoking as a result of this basic action, which in the aggregate has a major impact at the population level.

More time-consuming interventions from health services staff, such as longer counseling sessions or more visits, can further increase the number of individuals who stop smoking. The results of these more intensive smoking cessation methods are similar in group and individual programs.

Psychological Treatment Methods

Behavior modification therapies, such as having smokers associate smoking with unpleasant experiences, have been tested but have not proven successful in smoking cessation. Likewise, modifications in one's smoking patterns- such as gradually cutting back until one quits completely - have not resulted in more smokers becoming free of their habit. Some programs based on behavioural therapy methods to prevent relapse may, however, increase the probability of becoming a non-smoker.

Hypnosis, Acupuncture, and Drugs

There is no scientific basis for determining whether or not hypnosis is effective in smoking cessation. Scientific studies on acupuncture show that this method does not help smokers stop smoking permanently. Numerous drugs have been tested in smoking cessation studies, but only one of these (clonidine, an antihypertensive agent) is shown to have some effect on smokers, but its application is limited due to substantial side effects. A few isolated reports show that other drugs may be equally as effective as nicotine replacement agents in terms of the percentage of smokers who are able to stop smoking. However, other studies were unable to confirm these findings, and furthermore these particular drugs are not registered in Sweden for use in smoking cessation.

Nicotine Replacement Agents

Nicotine replacement agents belong to one of the most studied drug therapies for smoking cessation. Studies based on sound scientific methods included early 24 000 smokers who were treated with nicotine replacement agents. Providing nicotine during the first phase of the withdrawal period can satisfy the craving for the nicotine and increase the probability that smokers can stop smoking without relapse during the first months when the risks are the greatest.

Nicotine can be delivered in the form of chewing gum, patches, nasal spray, or inhalers. The results are similar using the four different forms of delivery, but no studies directly compare the various forms. A comparison between all nicotine replacement therapies and placebo found an approximate 10% higher success rate in permanent smoking cessation among the smokers on nicotine replacement. However, nasal spray or chewing gum present some risk for continuing dependency. No unfavorable health effects have been found from extended use of nicotine chewing gum or patches, but this question has not been studied systematically for inhalers or nasal spray. Since nicotine replacements can now be purchased without a

prescription, more people independently use these agents to stop smoking. It remains to be seen whether the independent use of these agents leads to results comparable to those achieved when health professionals recommend and support treatment.

Smoking Cessation Among Adolescents and Expectant Mothers

Most smokers begin smoking before the age of 20. Hence, it is remarkable that only one scientific study could be found that addressed smoking cessation within the framework of the school health services. This study shows that group activities to encourage school-aged smokers to stop smoking leads to a substantial reduction in the number of smokers.

Although smoking presents a risk to the fetus, 16% of Swedish women continue to smoke at the beginning of their pregnancy, and somewhat less than one third of these women can successfully stop smoking during the remainder of the pregnancy. Studies show that the percentage of pregnant women who smoke can be reduced with the help of structured counseling and self-help material.

Smoking Cessation During Disease or Illness

A hospital stay presents a good opportunity to stop smoking because of the focus on health and an unfamiliar environment that is not supportive of the conditioned reflex to smoke. Research shows that brief counseling by nurses, accompanied by telephone follow up after patients return home, yields good results. The effects are particularly apparent after acute myocardial infarction and coronary artery surgery.

Smoking is the most common contributor to emphysema and chronic bronchitis, and when these patients continue smoking they are at risk for developing severe respiratory insufficiency which requires oxygen therapy. Nevertheless, very few lung patients stop smoking. Among these patients, brief counselling and nicotine replacement have little effect, while more intensive methods, such as those used in smoking cessation clinics, are more effective.

Smoking is also the most common cause underlying circulatory problems in the legs (intermittent claudication), it substantially increases the risks for complications in diabetes, and it further worsens the prognosis in certain forms of cancer. Nine of ten patients with schizophrenia smoke, and they smoke heavily. Studies in this field suggest that it is difficult to help these patient groups stop smoking.

Another patient group, which has not received attention in this context previously, includes substance abusers (alcohol and drugs). These people die from the harmful effects of smoking more often than from the effects of abusing other substances. Group therapy and nicotine replacement is thought to help these smokers stop smoking without unfavorably affecting the treatment they receive for alcohol and drug abuse.

Cost-effectiveness

The cost per year of life saved is 5000 SEK to 15 000 SEK when using counselling methods, and 30 000 SEK to 80 000 SEK when using nicotine replacement agents. These costs are relative low compared to many other interventions in healthcare. The cost per year of life saved when treating elevated blood pressure among middle-aged individuals is 150 000 SEK to 200 000 SEK. It appears to be particularly cost effective to offer smoking cessation during pregnancy, which is profitable from a socioeconomic prospective.

Education

Over the course of 1 year, approximately 70% of all Swedish smokers visit their dentist and approximately 40% visit a physician. Hence, the health services and the dental services represent a major potential resource for impacting on the problem by using the routine meeting between a patient and professional to 1) ask whether or not the patient smokes, and 2) recommend that the patient stop smoking. Nevertheless, some studies show that only one half of all smokers have ever been asked about smoking habits or been asked to stop smoking.

The preliminary results from current Swedish studies show that only 40% of the smokers had been asked about their smoking habits during their most recent physician visit. The corresponding figure for dental visits was 27%.

The strategy of identifying smokers and offering them structured counselling is well supported in the scientific literature as a foundation for successful smoking cessation programs. Hence, clinical departments, primary care centers, and dental clinics should engage in such survey activities and basic smoking cessation methods within the scope of routine clinical services.

The scientific literature shows that educating physicians and dentists in smoking cessation methods increases the percentage of providers who offer such services in their clinical practices. Administrative routines that support the identification of smokers and the systematic documentation of patients' smoking habits increases the percentage of patients who can be given advice and support to stop smoking. Such measures may consist of mandatory keywords in the patient record or special questionnaires that remind health professionals to ask patients about their smoking habits.

Conclusions and Recommendations

- Tobacco smoking is the largest, single, preventable and treatable public health problem, leading to disease and premature death in many individuals.
- Scientific studies show that basic questions regarding smoking habits asked by health services' staff, followed up by clear recommendations to stop smoking and advice on nicotine replacement agents (for those who smoke more than 10 to 15 cigarettes per day) is cost effective when done routinely.
- Several obstacles against carrying out these basic measures in practice have been identified. These include the smoking habits of health services' staff and a lack of faith in one's own ability to contribute to change. Furthermore, staff perceive that resources and time are insufficient for questions about smoking habits and advice on smoking cessation. Smokers who come into contact with health services should be 1) asked about smoking habits, 2) recommended to stop smoking, 3) offered advice, and where appropriate 4) recommended to use nicotine replacement agents.
- Most smokers, over the course of a few years, have contact with their general practitioner and dentist. The scientific literature verifies that brief, structured counseling sessions and treatment using nicotine replacement agents are effective in these settings, not only in special research contexts. Hence it is particularly important that staff and decision makers in primary care and dental services actively take responsibility for smoking cessation.
- In areas of health care which serve patients whose disease is exacerbated by smoking (patients with cardiovascular diseases, pulmonary diseases, diabetes, and cancer), staff should increase their knowledge about smoking cessation and, to a greater extent, offer smoking cessation programs or refer patients to such programs.

- Hypnosis and other psychological methods of smoking cessation are resource-demanding, and their effects are poorly documented. However, some evidence is available to show that cognitive-behavior therapy can reduce the risk that patients start smoking again after having stopped. Acupuncture is not shown to be an effective method of smoking cessation. A range of various drugs (other than nicotine replacement agents) have been tested, but they are either ineffective or associated with problematic side effects and hence cannot be recommended.
- A consolidated body of resources to develop and disseminate knowledge concerning smoking cessation, and develop special expertise concerning these issues, should be found in at least every health services region.