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The implementation of smoking cessation care in general practice

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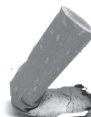


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1

General introduction

1 *Customes lothsome to the eye, hatefull to the nose, harmefull to the braine, dangerous to*
 2 *the lungs, and in the blacke stinking fume thereof, neerest resembling the horrible Stigian*
 3 *smoke of the pit that is bottomelesse.*

5 King James I of England
 6 1566 - 1625

8 The history of smoking starts in the Americas and dates back to as early as
 9 5,000 BC.¹ Native Americans not only used tobacco for religious and recreational
 10 purposes, it was also often part of rituals such as healing practices. Experienced
 11 medicine men used tobacco as a painkiller for ear- and toothache. In addition, a
 12 mix of tobacco and local vegetation was thought to be a particularly good rem-
 13 edy for tuberculosis and asthma. With the arrival of Europeans in the sixteenth
 14 century, the consumption, cultivation, and trading of tobacco quickly spread.
 15 Tobacco smoking was then adopted for pleasure or as a socializing tool. With the
 16 modernization of cigarette consumption, adverse health effects became increas-
 17 ingly noticeable.

18 The first formal statistical evidence on the association between tobacco and
 19 lung cancer was identified in Germany in the late 1920s.² Thereafter, scientific
 20 studies on the health effects of smoking continued, and British epidemiologists
 21 published the clear relationship between smoking and cancer in the British
 22 Medical Journal in 1954.³ After years of intensive research this resulted in a wide
 23 recognition of the negative influence of tobacco smoking on overall health. Po-
 24 litical action against the usage of tobacco was prompted and resulted in multiple
 25 governmental policies which were all aimed at the discouragement of tobacco
 26 usage. Nowadays, it is widely recognized that tobacco smoking is one of the
 27 largest contributors to non-communicable disease, primarily including cancers,
 28 cardiovascular and chronic lung diseases, which account for 63% of all deaths
 29 worldwide.⁴ For this reason, the World Health Organization (WHO) indicates the
 30 tobacco epidemic as one of the biggest public health threats the world has ever
 31 faced.⁵

32 Proven (cost-)effectiveness of many tobacco control measures has led to sub-
 33 stantial political involvement in all parts of the world. In 2003, the Framework
 34 Convention on Tobacco Control of the WHO summarized these measures into a
 35 policy package called 'MPOWER' which has currently been ratified by 177 coun-
 36 tries. The six evidence-based measures include: 1) Monitoring tobacco use and
 37 prevention policies, 2) Protecting people from the hazardous effects of tobacco
 38 smoke, 3) Offering help to smokers who want to quit, 4) Warning people for the
 39 dangers of tobacco, 5) Enforcing bans on tobacco advertising, and 6) Raising

taxes on tobacco. Despite substantial progress in many countries – a third of the world’s population is now covered by at least one of these measures – tobacco use continues to be the leading global cause of preventable death.⁴

The global prevalence of daily tobacco smoking was approximately 18.6% in 2012; 31.3% for men and 6.2% for women aged 15 years and older.⁶ Prevalence rates are substantially higher in developing countries than in developed countries. At the beginning of the 21st century, 80% of the approximately one billion smokers worldwide live in low- and middle-income countries, such as Armenia, Indonesia, and Russia, where daily smoking among men rises up to 54.0%, 55.8%, and 48.8%, respectively.⁶ In Northern and Western Europe, North America and the Western Pacific region, tobacco use is on a decline. However, a still relatively high prevalence of tobacco smoking is measured in the Netherlands when compared to other developed countries; 22.4% of Dutch adults aged 15 years or older smoked in 2012, compared to only 18.4% in New Zealand, 17.2% in the United States, 15.9% in Iceland, and 12.3% in Sweden.⁶

SMOKING CESSATION

The UN High-Level Meeting on Non-Communicable Diseases in New York identified tobacco control as the “most urgent and immediate priority” intervention to reduce the prevalence of non-communicable diseases.⁷ However, smokers report substantial difficulties when attempting to give up smoking; smoking is more than an ingrained habit. The substance nicotine, which is present in all types of cigarettes, has a highly addictive character and is known to elicit reinforcing effects, such as relaxation, reduced stress, enhanced vigilance, improved cognitive function, mood modulation, and lower body weight. In addition, smokers report negative reinforcing effects of nicotine which refer to withdrawal symptoms in the context of physical dependence, such as nervousness, restlessness, irritability, anxiety, impaired concentration, impaired cognitive function, increased appetite, and weight gain.^{8;9}

Yet the positive health effects of giving up smoking are instantly noticeable: blood pressure and pulse rate stabilize within 20 minutes, carbon monoxide levels in blood drops within eight hours, and the ability to smell and taste is enhanced within 48 hours. Excessive risks of coronary heart diseases and lung cancer death rates are decreased by 50% within one and five years after cessation, respectively.^{10;11} In general, the advantages of smoking cessation outweigh the disadvantages.

Therefore, it may come as no surprise that, overall, 80% of the smokers report their willingness to quit in the nearby future.^{12;13} The percentage of smokers reporting a quit attempt in a given year is estimated to range from 28-46%.¹²⁻¹⁴ Without any support most relapses occur within eight days after the quit attempt due to nicotine craving and insufficient plans regarding how to cope with these moments of craving or temptation.¹⁵ Evidence-based behavioural support delivered by healthcare professionals, nicotine replacement therapy (NRT), and stop-smoking medication can assist smokers and facilitate smoking abstinence.¹⁶ In recent years, a series of randomized controlled trials, reviews, and reviews of reviews have been performed on the effectiveness of various types of smoking cessation interventions. The following interventions were found to significantly benefit long-term quit rates compared to no intervention or a placebo: tailored (written) quit smoking advice¹⁷⁻¹⁹, individual (telephone) counseling¹⁸⁻²², group behavioural interventions^{18;19}, tailored self-help interventions^{18;20}, pharmacotherapy, including bupropion^{18;19;23;24}, varencline²⁴, nortriptyline^{19;23-25}, multiple types of NRT^{18;19;24;26;27}, as well as a combination of behavioural interventions and pharmacotherapy.^{28;29} Additionally, meta-analyses show the cost-effectiveness of different forms of cessation support, such as NRT^{26;30}, stop-smoking medication^{31;32}, telephone counseling^{26;33-35}, and face-to-face (motivational interviewing) cessation interventions³⁶, when compared to unsupported cessation.

GENERAL PRACTICE

In the Netherlands, every citizen has to be registered with a general practitioner (GP). When encountering a health problem patients first visit their GP, who is freely accessible and acts as a gatekeeper for specialized medical care.³⁷ Nearly 80% of the total population visits their GP on a yearly basis with an average of four visits each year.³⁷⁻³⁹ The standard general practice in the Netherlands consists of 2,350 patients and an average consultation has a length of ten minutes⁴⁰, which results in considerable time pressure and workload for GPs. To reduce the workload of GPs and improve the quality of care for chronically ill patients, with a special focus on lifestyle counseling, practice nurses (PNs) were introduced in Dutch general practice in 1999.⁴¹ PNs work under the supervision of GPs, manage their consultations independently, and base their clinical practice on guidelines developed by the Dutch College of General Practitioners (NHG) and on other multidisciplinary guidelines. The collaboration between GPs and PNs provides a good basis for identifying smokers, motivating them to quit, and delivering effective quit smoking support.

Guideline on smoking cessation care

The first Dutch multidisciplinary guideline for the treatment of tobacco dependence in health care was published in 2004.⁴² Subsequently, the NHG developed the first guideline for the treatment of tobacco dependence in general practice in 2007.⁴³ This guideline is based on the widely accepted 5A-Model.⁴⁴⁻⁴⁸ The model recommends GPs to actively Ask patients about their smoking behaviour. If a patient smokes, GPs are urged to provide a patient-tailored Advise to quit, which emphasizes the relevance of quitting and provides a direct link with the current health status of the patient. Evidence shows that this intervention is time-efficient and can increase cessation rates with 2-3% compared to unassisted quit rates.^{49,50} Although this effect may seem small from a clinician's point of view, it has the potential to result in substantial positive effects on public health level if systematically provided.

Regardless of the smoker's motivation to quit, GPs are recommended to provide the patient with information on the possibilities of quit smoking support in general practice and offer them a follow-up appointment. The GP can also provide the patient with educational leaflets. GPs are further recommended to Assess the patient's willingness to quit and register the smoking status and degree of the patient's quit intention systematically in the electronic patient record. Patients who indicate their unwillingness to quit are asked their permission to discuss smoking cessation during a future consultation.

If patients do indicate their willingness to quit, the guideline urges GPs to directly Assist them with intensive quit smoking support, which anticipates both psychological and physiological withdrawal symptoms. Previous unsuccessful quit attempts are evaluated and potential difficult moments are summarized in a quit plan which describes how the patient will cope with these moments in advance. The GP should assess the patient's degree of nicotine dependence in order to evaluate suitable pharmacological support such as NRT, bupropion, nortriptyline, or varenicline. According to the guideline, patients who contemplate smoking cessation are assisted with a behavioural intervention aimed at increasing their level of motivation. During this intervention, the guideline recommends GPs to discuss the experienced advantages and disadvantages of smoking, alongside the advantages of quitting. An essential component of this intervention is the exploration of the barriers to cessation, such as fear of failure, craving, and weight gain. The guideline informs GPs how to deal with these often mentioned barriers. Finally, GPs are recommended to Arrange a follow-up appointment or a referral to the PN or external quit smoking support if they are short on time and resources to provide the quit smoking support themselves.

Studies have shown that a successful implementation of the 5A-Model for smoking cessation care in general practice reduces smoking rates in patients compared to no intervention.⁴⁶⁻⁴⁸ Nevertheless, the introduction of innovations in healthcare, such as the 5A-Model for the treatment of tobacco dependence in Dutch general practice, is widely known to be a complex process.⁵¹

IMPLEMENTATION GAP

A study published in 2010 found that, over the years, lifestyle counseling has been given more priority in Dutch general practice.⁵³ Nevertheless, smoking is currently discussed in only a minority of all consultations (8.3%).⁵³ In addition, around 80% of all smokers and 40% of smokers who discuss smoking with their GP do not receive a quit smoking advice.⁵⁴ With regard to more intensive quit smoking support, GPs do not routinely refer their patients to PNs or external quit support.^{53;55} Also, these professionals apply motivational interviewing techniques only to a minor extent.^{53;55} Apparently, a substantial gap exists between the evidence-based knowledge on the treatment of tobacco dependence and real-world practices of primary care professionals.

GPs report numerous factors that influence their uptake of clinical guidelines for smoking cessation care. Figure 1 depicts a five-level social-ecological model in order to better understand these factors. This model looks beyond the individual GP and considers the complex interplay between all factors that influence the implementation of smoking cessation care in general practice. These factors are related to the GP, patient, organization, community, and public policy.

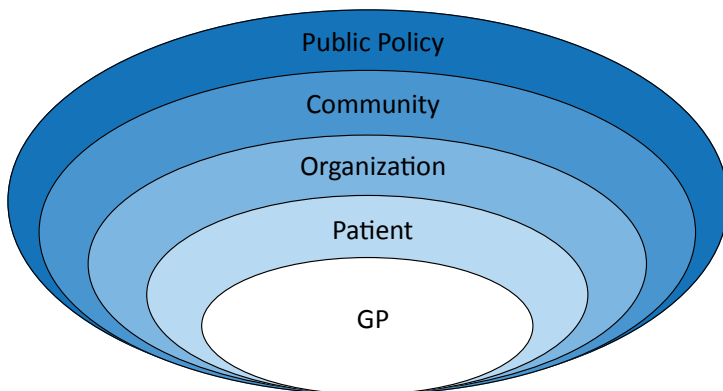


Figure 1. Social-ecological model: a theoretical framework depicting levels that influence the implementation of smoking cessation guidelines in general practice

GP level

The first level of the model identifies GP-related determinants of implementation, including GPs' attitudes and beliefs, such as doubts regarding the (cost-) effectiveness of routinely intervening on their patients' smoking behaviour⁵⁶⁻⁵⁸, a lack of sufficient skills to deliver quit smoking support^{56;57;59} or low confidence in these skills⁵⁷, and a lack of health education or training.⁵⁸⁻⁶¹

Patient level

The second level comprises patient-related determinants of implementation, including the absence of smoke-related complaints^{59;62}, reluctance of the patient to discuss smoking cessation⁶³⁻⁶⁵, a high nicotine dependence, and a lack of motivation to quit.^{56;58-60} This level also includes the interaction between GPs and patients which may influence the likelihood of a successful implementation of smoking cessation care. These factors include GPs' fear for resistance of patients^{56;66}, unpleasant personal experiences⁵⁷, and concerns about the doctor-patient relationship.⁵⁸

Organization level

The third level addresses determinants of implementation within the general practice, including a lack of time^{56-58;60}, the presence of a PN, and availability of quit smoking interventions within the own organization.⁵⁶

Community level

The fourth level of the social-ecological model includes determinants of implementation within the community. These include a lack of overview of health promoting programmes in the community, a lack of accessible and affordable quit smoking programmes, and a lack of collaboration between general practices and hospitals.⁵⁶

Public policy level

The fifth level looks at broader societal determinants that help to create a climate in which the delivery of smoking cessation care in general practice is facilitated. The most important factors include a lack of or unclearness regarding the reimbursement for quit smoking support^{56;67} and a lack of financial compensation for the delivery of quit smoking care.^{56;58;60}

FACILITATION OF GUIDELINE IMPLEMENTATION

A number of theoretical frameworks have been developed in order to assess implementation processes, explain implementation problems, and inform implementation interventions.⁶⁸⁻⁷⁴ Several of these frameworks integrate behaviour change theories that can be used to design implementation interventions.^{74,75} The field of psychology includes an extensive body of evidence regarding such theories to predict and change human behaviour. In the past decade, researchers in this field have acknowledged that clinical behaviour of healthcare professionals can be regarded as a form of human behaviour.⁷⁵⁻⁷⁹ Therefore, a growing number of interventions that aim to facilitate guideline implementation in healthcare integrate such behaviour change theories. These theory-driven interventions aim to improve guideline-recommended clinical behaviours of healthcare professionals, thereby increasing the number of patients who receive care according to these guidelines.

AIM OF DISSERTATION

The overall aim of this dissertation is to examine the implementation of guideline-recommended smoking cessation care in general practice. The five-level socio-ecological model is the conceptual framework that guides this dissertation. All empirical studies address one or more factors related to the GP, patient, organization, community, or public policy level, which determine the implementation of smoking cessation care in general practice. *Chapter two* discusses the results of a meta-analysis on the effectiveness of training health professionals in smoking cessation care. *Chapter three* addresses the effectiveness of a pragmatic, practice-tailored training programme for GPs in which several determinants of implementation were targeted. *Chapter four* examines whether action planning among GPs is an effective strategy to increase the provision of guideline-recommended smoking cessation care. *Chapter five* discusses the extent to which smokers express negative statements about quitting when primary care professionals provide guideline-recommended smoking cessation care. Additionally, this chapter examines the degree to which smokers' negative statements about quitting impede or facilitate the use of guideline-recommended smoking cessation care by GPs and PNs. Finally, *chapter six* discusses the results of a population-based study on the effects of two national tobacco control interventions (the introduction of the GP guideline for smoking cessation care in 2007 and the introduction of full health insurance coverage for stop-smoking programmes in 2011) on GP

prescriptions of stop-smoking medication and on smoking prevalence in the Netherlands.

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