

Smoking cessation in routine primary care

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Valorisation

Valorisation

Valorisation has been formulated as the third core task of universities, alongside education and research. It is the translation of scientific knowledge into practice, making it accessible to society. With the pragmatic design used in this thesis and the intensive cooperation with The Eindhoven Corporation of Primary Health Care (SGE), we endorse the importance of making scientific knowledge accessible and more directly applicable in healthcare. The knowledge gathered in this thesis will be discussed throughout this valorisation addendum in four sections: societal and economic relevance, target groups, products and the innovative value.

Societal and economic relevance

The burden of smoking-related diseases on society is enormous. Smoking increases the risk of developing cancer, cardiovascular and pulmonary diseases (1, 2) and is the leading cause of illness and premature death worldwide (3). For example, the vast majority of cases of lung cancer and chronic obstructive pulmonary diseases (COPD) are caused by smoking (4, 5). In fact, tobacco is a legal product that kills almost half of its users if used as intended (6). Of the total burden of disease in the Netherlands (expressed in Disability-Adjusted Life years Lost), 9.4% can be attributed to smoking (7). This makes smoking one of the most important preventable risk factors for serious health consequences. In 2019, 584,600 people in the Netherlands had COPD and it was the fourth greatest contributor to the national burden of disease (8). Smoking also represents an enormous economic burden for society. In the Netherlands alone, the costs of smoking-related care amounted to €2.4 billion in 2015 and COPD care to about €912 million in 2017 (8).

Besides having a huge impact on health, smoking is also a major contributor to inequality of health and mortality. Tobacco use accounts for about a third of the difference in life expectancy between those with lower and higher education (9). For example, the risk of dying from lung cancer was about three times higher for people with a lower education than for people with a higher education (10) and people with a lower socio-economic status are also more likely to develop COPD and even to die from it (11). Positively influencing health for all people is a shared responsibility of society and therefore an important topic when it comes to smoking.

Giving up smoking is the most effective way to prevent premature disability and death and the only effective way to slow down the worsening of COPD (5, 12, 13). Yet, one out of five adults in the Netherlands still smoke (6) and the number of smokers is even higher among patients with COPD (14). Although 80% of the smokers want to quit or feel they should (15), the Dutch 'Continuous Survey of Smoking Habits' showed that only 23% of all smokers received quitting advice and less than 5% was referred to behavioural treatment (16). Besides the fact that the number of quit attempts should be improved, also the use of evidence-based treatments should increase to further decrease the number of smokers. Therefore, it is of utmost importance for societal, economical and health inequity reasons that smokers and especially smokers with COPD are supported in their attempts to quit smoking. We will discuss what primary care can do to successfully reduce smoking.

Target groups

Primary care

As explained and shown in this thesis, primary healthcare is an important key player in smoking cessation at the individual level, due to its strategic and unique position in the health sector. Healthcare providers in primary care have the skills and knowledge to support smokers to quit (17-20), especially in countries where a large percentage of smokers regularly visit their general practitioner. In the Netherlands, primary care has complete coverage of the population and has therefore a good reach into the community. Among 80% of the smokers visit their primary healthcare centre each year (16).

General practitioners and practice nurses

All primary care healthcare professionals, such as physiotherapist, dentists and home nurses have an important role in smoking cessation. However, this thesis focusses on the role of the general practitioner and practice nurse in primary care. Both healthcare providers are important target groups for the dissemination of our research results. The first study we conducted was exploratory in nature, in order to get an idea of current routine care. It revealed that smoking cessation is a difficult topic to discuss in the consulting room and that especially general practitioners have a certain aversion to this type of primary prevention. Yet, the results of our trial showed that general practitioners and practice nurses are both very effective in offering smoking cessation, when their counseling is combined with pharmacotherapy (*Chapter 4*). This information should be a stimulus for healthcare providers to increase the use of combined smoking cessation treatment.

We found that patients and caregivers have a strong preference for smoking cessation assistance from the practice nurse (*Chapters 2 and 4*) as they would have more time to spend, would be better educated in giving smoking cessation treatment and could provide more personalised care. It appeared however, that practice nurses were not more effective than general practitioners in providing smoking cessation support (*Chapter 4*). This was an interesting finding, since both the health professionals and we had expected that the practice nurse would be more effective. This makes the dissemination of research results even more important, because currently the practice nurse is often considered to be more effective. Nevertheless, it is important to acknowledge that the practice nurses achieved high effectiveness rates (32% at 26 weeks and 26% at 52 weeks). This thesis provides a scientific basis for their involvement in smoking cessation assistance and an encouragement to engage the nurse practitioner for smoking cessation support.

The strongest aspect of our research is that we evaluated interventions in a routine care setting, which makes the results very applicable to other primary care settings. Routine care means that general practitioners can give brief advice to quit smoking as they would normally do, and provide pharmacotherapy. The practice nurse can offer more intensive counselling with a least one session for preparing a quit date and providing pharmacotherapy. The total number of counselling sessions that a practice nurse can provide can fluctuate based on the needs of the patient and insights of the practice nurse, with a maximum of 120 minutes (*Chapter 3 and 4*). Because both treatment modalities were part of routine care and are already described in the practice guidelines (21, 22), we believe that no extra training or adjustment is needed to implement these results in other primary care settings in the Netherlands. Another benefit of our research is that our results may increase general practitioners' and practice nurses' confidence in their own abilities. Actively helping smokers to quit in primary care could help to increase the number of successful quit attempts.

As explained before, health inequality between those with a lower and higher socio-economic status is to a large extent caused by smoking. Smoking inequalities emerge mainly in early adolescence under the influence of friendship networks (23), while later in life, these existing inequalities are worsened by differences in quit rates (24). Although this thesis does not address this issue in detail, we would like to mention the importance of developing targeted smoking cessation treatments that meet the specific needs of patients with a lower socioeconomic background. General practitioners and nurse practitioners can also contribute to closing the health inequality gap by discussing smoking or other lifestyle factors in the consultation room, especially for those with a disadvantaged background. People of higher socioeconomic status are

often more able to ask for help themselves, while those with lower socio-economic status have lower self-efficacy (25). Because a large percentage of smokers visit their primary healthcare centre annually, we believe that they have the potential to reach this particular group.

Guideline developers

Our research can inform Dutch and international stop-smoking guidelines general practitioner and the practice nurse. At the start of this thesis, there was no evidence about the effectiveness of the practice nurse in smoking cessation treatment. Our results provides a strong foundation for their involvement in smoking cessation. Also, our outcomes support the use of a combination therapy of counselling with varenicline. Varenicline was fairly new and not yet evaluated in routine care. The results of our trail were also published in a Cochrane Systematic Review evaluating additional behavioural support as adjunct to pharmacotherapy (20).

Chapter 5 provides an overview of differences between smokers with and without COPD. This indicates that smokers with and without COPD should be treated differently, which is currently not mentioned in the guidelines, which state that both types of smokers should be advised to quit, during their regular visits and smokers with COPD also during their routine COPD management check-ups. However, the type of help that is needed is not specified. A recent Cochrane review found that a combination of behavioural treatment and pharmacotherapy is the only effective treatment for smokers with COPD (26). Although there was no convincing evidence for a particular form of behavioural treatment (26), we firmly believe that the practice nurse could give better smoking cessation assistance which is targeted specifically on the special needs and circumstance of smokers with COPD. Yet, this has to be developed and investigated further.

One of the main barriers of implementing smoking cessation assistance in primary care, seems the resistance of general practitioners to talk about smoking cessation and the unawareness of smokers that smoking cessation assistance is available in their primary care centre. Despite the availability of the smoking cessation guideline from the Dutch College of General Practitioners (21), many general practitioners do not seem to comply with the recommendations in this guideline (16). More attention could be paid to the effectiveness of very brief advice in guidelines. Our results show the power of the general practitioner, even when their time is limited. Nonetheless, despite evidence of their effectiveness, effort is needed to overcome the obstacles of implementing evidence-based medicine in daily practice.

Services

In the Netherlands, smoking cessation assistance is fragmented and there are no widely implemented services for treating nicotine addiction. Therefore, smokers depend mainly on the services provided by their primary care centre. Yet, as explained in *Chapter 2*, patients are often not aware that smoking cessation assistance is available in their primary healthcare centre. Also from a healthcare providers perspective, there are certain barriers to start the discussion on smoking cessation, such as a lack of time and experience. Practice nurses are a way to address this gap, as they prove to be good substitutes for general practitioners (27).

Another possibility is to look at the Stop Smoking Services in the United Kingdom, which are able to provide practical support and pharmaceutical treatments on prescription, often free of charge. This service was established in 1999 to target disadvantaged smokers (28). The advantage is that the treatment of smoking cessation is offered by trained professionals, which could be a solution for the lack of time. Although we showed that general practitioners and practice nurses can offer good care as well, we do see promise in such comprehensive service, since implementation of practice guidelines is open to improvement.

Complete reimbursement of stop smoking aids could improve accessibility of professional and evidence-based help to quit, especially for those with a lower socioeconomic background. For example, pharmacotherapy in our trial was freely available for patients included in our study, and the proportion of patients with lower socioeconomic background was fairly high.

Trainers and curriculum

Although the recently published ‘Toekomstvisie huisartsenzorg 2022’ pays attention to indicated and care-related prevention (29), we found that general practitioners were not confident in providing smoking cessation assistance and also trained practice nurses said they would like more training (*Chapter 2*), despite their already high effectiveness rate. A short course is currently available on the website of the National Health Service United Kingdom (NHS UK), and courses are developed in the Netherlands and Germany (30, 31), but those are specially developed for general practitioners. Nonetheless, in our view, curricula of medical training should focus more on the preventive task of the general practitioner and should teach medical students how to give brief advice on smoking, but also on topics like weight gain or other lifestyle matters. It seems especially important to train healthcare professionals how to address the subject in a non-compulsory way.

Products

It was found that smokers with COPD differed from smokers without COPD, in that they reported higher levels of depression, higher levels of cigarette dependence and lower levels of self-efficacy. They also experienced smoking more as a habit and viewed smoking more as a social engagement than smokers without COPD. Therefore, we believe that smokers with COPD have special needs regarding smoking cessation. Smoking cessation assistance, targeted specifically to the needs and circumstances of smokers with COPD might increase the effectiveness of a quit attempt. Because general practitioners have negative beliefs about smoking cessation for patients with COPD, we believe that practice nurses are in the best position to give such specific assistance and patient-centred care. Also, a special counselling programme for smokers with COPD could be developed, since there is no COPD-specific smoking cessation intervention available. More research is needed to define the content of this special intervention for smokers with COPD and a separate guideline.

Innovative value

Pragmatic study design

The aim was to conduct a pragmatic study in which the research results were relevant to the real world situation. There are several examples of interventions that worked well in a very controlled setting, but did not maintain their effectiveness in the real world. Also for healthcare providers, it is important to have the trust that the evidence they build upon is transferable to routine care. In order to design our trial, we followed the main characteristics of a pragmatic trial (32, 33). It was shown in this thesis that conducting a pragmatic trial within a primary care centre is feasible and produces valuable results. However, a good description of the trial is of utmost importance and the Pragmatic-Explanatory-continuum Indicator Summary (PRECIS) showed to be a good method for this (*Chapter 3*). As far as we know, we were one of the first authors to use the PRECIS tool to justify our decisions and to check whether the trial was as pragmatic as we thought it would be. Although conducting a pragmatic trial is challenging, we would like to recommend researchers to consider a pragmatic design and to test the pragmatism with the PRECIS tool.

Open dialog between science and practice

Researchers are often blamed for being stuck in their ivory tower and for developing ideas and theories that do not work in daily practice. Although the rationale behind those ideas and theories are often very good, it is important to check whether the ideas

are feasible in real-life. While science is viewed as a top-down approach, the opposite is a bottom-up approach in which the ideas are derived from practice. We prefer to view the development of our trial as an open dialog between science and practice, rather than bottom-up or top-down. Yet, using a bottom-up approach at the start of this thesis, showed us a unique insight into the barriers and possible solutions from a user's perspective. It allowed for a unique view from healthcare professionals and patients, contributing valuable knowledge and experience. Also, co-creation with a bottom-up development of healthcare innovations, or the conduct of research increased the sense of ownership, acceptance and commitment. We firmly belief that the bottom-up and co-creation approach enhanced the patient enrolment and decreased the attrition rate. Therefore, we would recommend other researchers to use a pragmatic design and keep patients and caregivers involved.

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