Smoking cessation in the Netherlands

Occupational settings and nationwide policies

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CHAPTER 1

General introduction

GENERAL INTRODUCTION

Tobacco smoking is one of the biggest public health threats worldwide. To improve health on a population level, it remains important to encourage smoking cessation. In this introduction, the smoking epidemic in the Netherlands and the development and implementation of tobacco control policies in the Netherlands are discussed. Second, evidence on the current health burden and societal cost of smoking is presented. Third, the process of smoking cessation and potential ways to encourage smoking cessation are discussed. Finally, the objectives, data sources and outline of this thesis are presented.

SMOKING EPIDEMIC AND DUTCH TOBACCO CONTROL POLICIES

The cigarette epidemic model (Figure 1), developed by Alan Lopez, can be used to describe the uptake and spread of cigarette smoking, the increase in smoking attributable deaths, the decrease in smoking prevalence and the eventual decrease in smoking attributable deaths (1). Based on the four phases of the cigarette epidemic model, the history of smoking and tobacco control in the Netherlands is described from 1950 onwards.

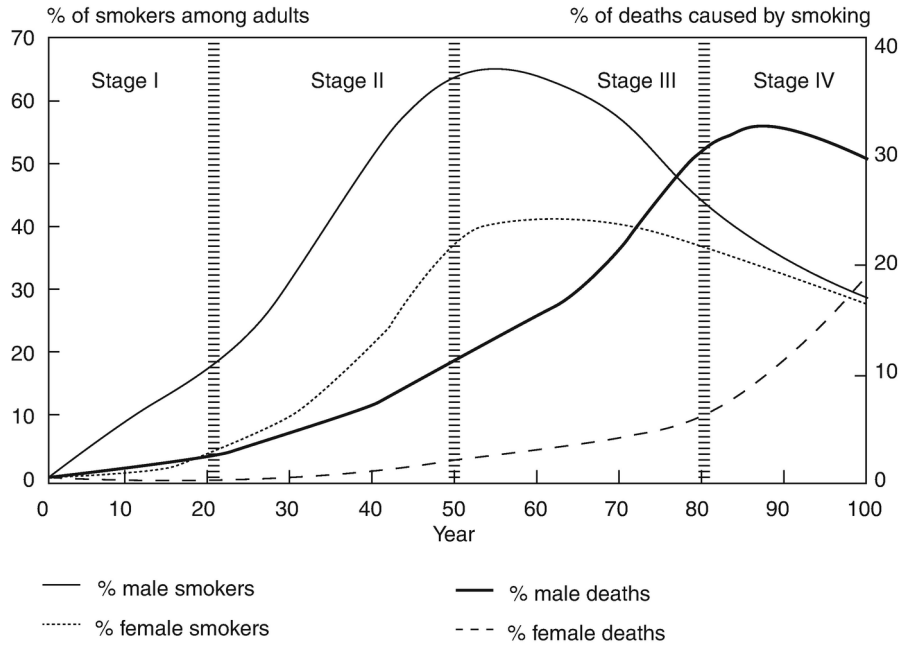

Figure 1. The cigarette epidemic model (Source: Lopez *et al*. 1994) (1).

In the 1950s, the Netherlands was in phase II of the cigarette epidemic model. Smoking prevalence had increased sharply and had become a widespread habit in the Netherlands. However, women were still lagging behind men. In 1958, 90% of Dutch males and 26% of Dutch females smoked (2) (Figure 2). During this time, a significant increase in lung cancer patients was observed. In 1954, the Dutch government solicited the Dutch Health Council to review the evidence on an association between smoking and lung cancer (3). This association was indeed confirmed by the Health Council, but its members were divided on the matter of causality of this association. To avoid negative reactions from the tobacco industry, and not wanting to concern heavy smokers about the potential health consequences of their behaviour, the Health Council restricted its recommendation to the advice that youth should not start smoking (3).

During the following decades, phase III of the cigarette epidemic model started to commence in the Netherlands. The health risks of tobacco use increasingly became public knowledge and smoking prevalence slowly decreased among men. However, tobacco use increased among women up till 42% in 1970 (4) (Figure 2). In these years, smoking attributable mortality among males increased rapidly and it became clear that further action was needed to decrease smoking and its harmful effects. Therefore, in 1975 the Dutch Health Council advised to implement a comprehensive package of measures, including placing a ban on tobacco advertising, placing health warnings on tobacco products, restricting smoking in public places, prohibiting smoking in public transport, restricting points of sale, prohibiting tobacco sales to minors, increasing taxes, organizing mass media campaigns, and training health professionals to help their patients quit smoking (5). However, this advice was not translated into regulation. During the following years, tobacco regulation was not part of the political agenda. Smoking was seen as a personal choice. The government only provided education on the harms of smoking and allowed the tobacco industry to self-regulate its advertising.

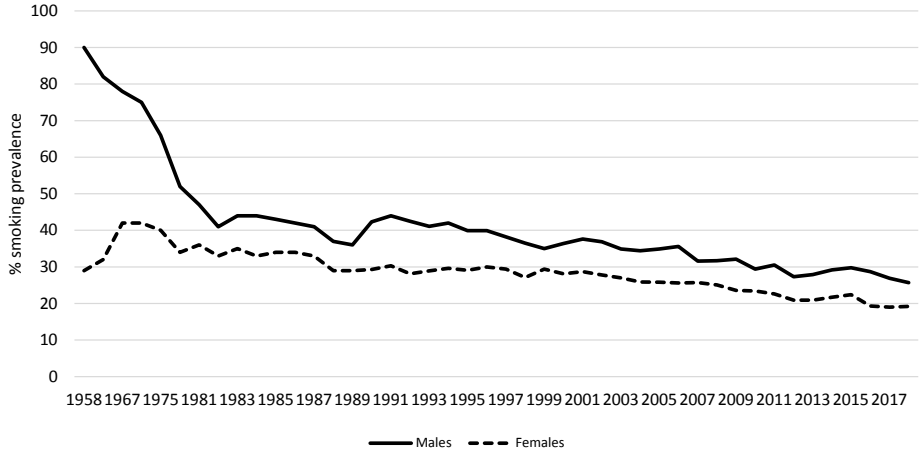

Figure 2. Trends in smoking prevalence in the Netherlands from 1958 to 2018 (4, 6).

Phase IV is marked by a more similar, declining smoking prevalence among men and women. Furthermore, in this phase, tobacco control policies are implemented and social acceptability of smoking decreases (1). In 1990, the first Tobacco Act came in place in the Netherlands. This act prohibited smoking in buildings that are managed or subsidised by the government (7). However, there were no sanctions since the government thought these to be too far-reaching. After the implementation of the Tobacco Act, no changes in smoking rates were found. However, social acceptability of smoking began to decline, which caused the demand for smoke-free laws in private companies to grow. In 2001, the *Stichting van de Arbeid* (Dutch Labour Foundation)

(STAR) published a recommendation for enterprises expressing that tobacco smoke not only causes health problems but also negatively influences work productivity and might cause friction between smokers and non-smokers (8). In 2002, the Tobacco Act was extended with a partial smoking ban in the workplace (carried out from 2004, hospitality industry was exempt), a tobacco advertising ban, and a prohibition of tobacco sales to those under the age of 16 years. Furthermore, sales taxes were increased and a large mass media campaign was implemented. After this, the Dutch smoking prevalence started to decrease again (9) (Figure 2). Around this time, a growing part of society regarded smoking as unhealthy, bothersome and irresponsible. However, policy makers still preferred self-regulation of the tobacco industry, which allowed the tobacco industry to prevent, attenuate or delay new tobacco control legislation (3).

From the 21st century, tobacco control increasingly became an international matter. In 2003, the World Health Organisation's Framework Convention on Tobacco Control (WHO FCTC) was adopted by the World Health Assembly (10). The WHO FCTC came into force in 2005 and has since become a widely embraced treaty(11). The Netherlands has ratified this treaty in 2005, thereby committing itself to implement specific measures to decrease smoking prevalence (3). In order to improve implementation of the FCTC, the WHO introduced the MPOWER package in 2008. MPOWER stands for "Monitoring tobacco use and prevention policies", "Protecting people from tobacco smoke", "Offering help to quit tobacco use", "Warning about the dangers of tobacco", "Enforcing ban on tobacco advertising, promotion and sponsorship", and "Raising tobacco taxes" (11). These measures are quite similar to the advice the Dutch Health Council provided in 1975. However, the Netherlands lagged behind other countries like England, Ireland, France and Norway in the implementation of these measures, which hampered the further decrease of smoking prevalence (3).

In the past decade, several tobacco control measures have been implemented in the Netherlands. From 2011, with exception of 2012, smoking cessation support was reimbursed by the mandatory healthcare insurance. Second, to protect hospitality industry workers from the harms of second-hand tobacco smoking, from 2008 a partial smoking ban (meaning that smoking was only allowed in separate smoking areas) in restaurants and bars has been in place. In 2014, this turned into a complete ban. Third, in 2014 the legal age to buy tobacco has been increased towards 18 years. Fourth, in 2016 it became mandatory to place graphic pictorial warning labels and the contact information of the national quit line on tobacco products (7). Finally, in 2017 the parliament proposed a ban on the display of tobacco products at point of sale (12). Recently, much attention in the field of tobacco control has been given towards the aim of creating a smoke-free generation ("*rookvrije generatie*"). However, in 2016 the smoking prevalence in the Netherlands was still 24.1% (13) (Figure 2).

CURRENT HEALTH BURDEN AND SOCIETAL COST OF SMOKING

During the past decades, smoking has been increasingly recognised as an unprecedented population health problem. This is due to its negative influence on health status, work productivity, social inequality and societal costs.

Health status

Tobacco use is one of the biggest public health threats and kills more than seven million people yearly (14). Of these seven million deaths, more than six million are caused by direct tobacco use and about 890,000 are caused by second-hand tobacco exposure (14). In the Netherlands, smoking is responsible for 9.4% of the total burden of disease (15). In 2015, 20,000 people died from smoking associated diseases in the Netherlands (15). That tobacco use causes lung cancer is well known. However, tobacco use causes many different types of cancer, including lung cancer, mouth and throat cancer, leukaemia, stomach, liver, kidney and colorectal cancer. Furthermore, smoking causes stroke, coronary heart disease, chronic obstructive pulmonary disease (COPD), diabetes, blindness, asthma, rheumatoid arthritis, and reduced fertility (16). Second-hand tobacco exposure has been causally linked to respiratory symptoms, impaired lung function, respiratory illness, stroke, lung cancer, coronary heart disease, sudden infant death syndrome, and low birth weight in new-borns (16).

Work productivity

Through its negative influence on health, smoking can affect work-related outcome measures, such as sickness absenteeism (17-21), productivity at work (22, 23), presenteeism (21, 24), and frequent smoking breaks (18, 24, 25). The health effects of smoking become more prominent with older age. Therefore, smoking is also associated with a risk of work disability and early retirement (26-28). It has been estimated that about 3% of all work disability benefits can be attributed to smoking, a significant societal burden (29). A wide range of studies have been performed to research the effect of smoking on work-related outcomes (30). However, these studies are highly heterogeneous in terms of type and assessment of outcome, measurement of smoking status, and study population (30). Therefore, there is still some uncertainty in defining the impact of smoking for both employers and employees. Additionally, few studies have looked into the effect of smoking cessation on work-related outcome measures in employees (23, 31). Therefore, it remains unclear what the benefits of encouraging smoking cessation are for employers.

Social inequality

Tobacco use is one of the leading causes of health and social inequalities in Europe (32). Inequalities in mortality from smoking-related conditions account for 22% of the overall inequalities in death rate from any cause among men, and 6% among women (33). Therefore, decreasing smoking prevalence is important to reduce social inequalities (13, 32, 34).

Most smokers start smoking and become addicted in their youth (13), a period in life characterised by experimentation and difficulty with making deliberative choices. Low SEP (socioeconomic position) individuals are especially vulnerable to smoking. They are more likely to smoke, start smoking at a younger age, smoke more cigarettes and are less likely to quit (34-36). Since people with a lower SEP are more likely to smoke, they on average spend a larger share of their household income on tobacco products, thereby having less money to spend on healthy food, healthcare, education and housing, which, again, lowers their SEP (37). Furthermore, they are less informed about health risks, are specifically targeted by tobacco advertising and are more likely to live in social environments where smoking is the norm, such as families, friends, schools and workplaces (38). For people of whom the majority of their family, friends and colleagues consist of smokers, smoking has a social meaning of expressing identity and belonging (38).

Individuals with a lower SEP are more likely to have jobs in workplaces where being a smoker and taking smoking breaks is socially acceptable (39). They are also more likely to be working outdoors, where smoking at work might have fewer restrictions (39, 40). Spending most of their time in pro-smoking social environments limits their exposure to non- and ex-smoker role models and makes it difficult to avoid triggers to smoke. Furthermore, individuals with a low SEP are more likely to work in occupations that could cause health impairments (41). Smoking recurs in successive generations, with parents passing their disadvantages on to their children and grandchildren (42). If smokers become ill, their families are faced with an increase in healthcare expenditures and a loss of income, negatively influencing their SEP, which can turn into a vicious cycle (37).

Societal costs

Recently, two Dutch cost-benefit analyses were conducted to determine the potential benefits of increasing smoking cessation rates from a societal point of view. One study determined the total costs and benefits for a single calendar year (29) and another looked at all future costs and benefits of tobacco control (43). They calculated that the net societal costs of smoking, consisting of the years of life lost, and the disability adjusted life years lost, were 21.2 to 43.2 billion euros yearly, which means that there is potential for a large societal gain in the Netherlands. These costs were mainly caused by the higher healthcare expenses, productivity losses, years of life lost due to premature death, and the years of healthy life lost due to poor health of smokers (29).

More specifically, in the Netherlands, 2.4 billion euros were spent on healthcare for illnesses caused by smoking (15), like cancer, COPD, cardiovascular diseases and diabetes in 2015. These costs were 2.8% of the total national healthcare expenses (15). Decreasing smoking prevalence would lead to a decrease in cost of smoking associated diseases. However, decreasing smoking prevalence would also increase life expectancy and the prevalence of older age associated diseases like dementia. The costs of productivity loss by smokers are estimated 4.6 to 12.5 billion euros yearly, depending on the scenario. Some of these costs, such as sickness absence, lower productivity and smoking breaks are carried by the employer in the Netherlands.

SMOKING CESSATION IN THE NETHERLANDS

In 2018, 22.4% of the Dutch adults reported being a smoker (44). Most smokers want to quit smoking (45). In 2014, 5% of the Dutch smokers reported wanting to quit within the next month, 18% within the next six months, 58% somewhere in the future, beyond six months, and 20% reported that they did not plan on quitting smoking (46). In 2017, 41% of the adult Dutch smokers made a serious quit attempt (lasting for more than 24 hours). This percentage is higher compared to 2014, 2015 and 2016. However, most quitters relapse eventually. Therefore, to reduce smoking prevalence it is important to determine how smokers can be encouraged to engage in a quit attempt, and remain abstinent afterwards.

Successful smoking cessation

Tobacco dependence has behavioural, cognitive, psychological and social elements, which makes smoking cessation difficult. The chance of relapse is the highest right after the quit attempt and decreases over time. Usually, being abstinent from smoking for one year is seen as a successful quit attempt. In 2012, 4-10% of the smokers who attempted to quit in the previous year reported that they refrained from smoking during the entire year (47). Quit success is generally higher for people with lower levels of cigarette dependence (48), a higher self-efficacy (49), and for people who use effective cessation support (47). Lower educated and older smokers are less likely to attempt to quit smoking, and the stress experienced by lower SEP smokers makes quitting more difficult (44). Smoking cessation support methods that are proven to be effective are, among others, self-help interventions (50), physician advice (51), individual (52) and group behavioural therapy counselling (53), telephone counselling (54), nicotine replacement therapy (55), and reimbursement of smoking cessation support (56). These behavioural and pharmacological interventions can increase the chance of quitting successfully from 24% up to more than 300% (14).

Making a quit attempt

The first step to reduce smoking prevalence is to encourage people to engage in a quit attempt. The theory of planned behaviour (57) reasons that behaviour is influenced by attitude, social norm, and self-efficacy. Applied to smoking cessation, attitudes are the positive evaluations of quitting and negative evaluations of smoking, for example concerns about personal health and the health of family members (48). Social norms are the evaluations of family, friends, co-workers and other relevant social actors of quitting and smoking, such as advice from healthcare professionals to quit or positive experiences from friends or family members who have quit smoking. Self-efficacy is the belief of a smoker whether he or she will be able to successfully quit smoking (48). Together, these factors influence the intention of a smoker to make a quit attempt. Other potential behavioural determinants of smoking cessation are habit strength (58) and identity (59). Therefore, to encourage smokers to engage in a quit attempt, these factors need to be addressed.

Encouraging smoking cessation

To further reduce smoking prevalence and its societal burden, encouraging smoking cessation remains essential. Several studies have found that smoking cessation reduces all-cause mortality (60, 61). For those who quit smoking early in their adult life, mortality decreases to the level of a never smoker (60, 61). However, also those who quit smoking after the age of 45 years, or even after 60 years, experience an increase in survival compared to sustained smokers (61). Therefore, it is important to implement effective, accessible and acceptable interventions that target all groups of smokers. Evaluating the effect of these policies on smoking cessation is difficult, since smoking prevalence is already declining and the policies might also influence each other. In the past years, several measures have been taken to encourage smoking cessation in the Netherlands.

Smoke-free legislation has been associated with increases in numbers of calls to quit lines, quit attempts, and reductions in cigarette consumptions (62-64). In the Netherlands, several types of smoke-free legislation have been implemented, such as smoking bans at the workplace, in the hospitality industry and in public spaces (12). The main goal of smoking bans is to protect non-smokers from the harms of second-hand smoking (62). However, since these measures can decrease the social acceptability of smoking, increase support for smoking regulation, and reduce smoking opportunities and ques, smoke-free legislation has increasingly been used to encourage people to quit smoking and to reduce relapse (63). However, the magitude and duration of the effect of smoke-free legislation on smoking cessation have not been researched before.

A Dutch policy aimed at encouraging smoking cessation is the reimbursement of smoking cessation support via the obligatory healthcare insurance. This policy was introduced in 2011 and was associated with an increase in quit attempts and quit success (65). Furthermore, the reimbursement policy was found to be cost-effective from a healthcare perspective (66). However, the magitude and duration of the effect of reimbursement of smoking cessation support on smoking cessation have not been researched before.

From 2014, the Netherlands has taken up the Stoptober campaign. Stoptober is a temporary abstinence campaign that challenges smokers to quit smoking for 28 days in October. Stoptober was first implemented in England in 2012. The campaign aims to create a positive mass smoking cessation trigger and to develop a social movement that can support everyone during the first 28 days of abstinence (67). A population-level evaluation of the 2012 edition of the campaign in England found that national attempt-to-quit rates increased by 50% (67). Based on an observed effect of 350,000 additional quit attempts in England, it was suggested that Stoptober could have a large public health impact by leading to substantial behaviour change. Due to these promising results, the Netherlands decided to implement

the Stoptober intervention from 2014 onwards, with around 50,000 registered participants each year. However, it is still unclear what the impact of Stoptober is on smoking cessation and precursors of smoking cessation, and whether Stoptober functions according to its theoretical working mechanisms.

THESIS

The main objective of this thesis is to evaluate the potential effects of smoking cessation policies and interventions at national and local levels, including occupational settings. Based on this work, we aim to contribute to the development of smoking cessation services in national, local and occupational settings. Specifically, the following research objectives will be addressed in this thesis:

1. To examine the association of sustained smoking and smoking cessation with work-related outcomes within working populations.
2. To evaluate the population-level effect of specific tobacco control policy measures on precursors of smoking cessation within national populations.
3. To evaluate the effects of the Stoptober campaign on encouraging smoking cessation among participants.

Data sources

In this thesis, a wide variety of data sources was used. The Study on Transitions in Employment, Ability and Motivation in the Netherlands (STREAM) cohort (68) was used to describe the association of sustained smoking and smoking cessation with work-related outcomes. STREAM is a prospective cohort study consisting of a stratified sample of 15,118 Dutch persons aged 45 to 64 years (68). The cohort was developed in order to provide more insight into factors that influence working until retirement in a healthy and productive manner (68).

Furthermore, to evaluate the population-level effect of smoke-free legislation in the hospitality industry, the reimbursement of smoking cessation support, and the population-level effect of the Stoptober campaign, we used Google Trends search query data. Data were collected on a weekly basis from 2004, the year these data were first available, within the Netherlands, on the search term "quit smoking" (e.g. *"stoppen met roken"*). The weekly time points allow for a detailed analysis of the timing of potential effects of tobacco control policies.

To evaluate the effects of the Stoptober campaign, we collected quantitative and qualitative data on the Dutch Stoptober campaign of 2016. Three surveys were distributed to individuals who signed up as participants of the Stoptober campaign. Data were collected on demographic characteristics, smoking behaviour and behavioural determinants of smoking cessation. Furthermore, we conducted semi-structured interviews on experiences with smoking cessation and the Stoptober campaign with participants shortly after the 2016 Stoptober program had ended.

Outline of this thesis

This thesis can be divided into three parts. The first part is about the relation between smoking, smoking cessation and work-related outcomes. The relation between smoking and sickness absenteeism was researched by conducting a systematic literature review and meta-analysis of the available scientific literature on this topic (chapter 2) and a longitudinal analysis of the relation of smoking and smoking cessation with sickness absenteeism, work productivity and work ability among older employees (chapter 3).

The second part entails the population-level effect of several Dutch tobacco control policies implemented in previous years. In chapter 4, Google Trends analyses are used to determine if the introduction of smoking bans in restaurants and bars in 2008 and the reimbursement of smoking cessation support in 2011 and 2013 encouraged people to consider to quit smoking. Chapter 5 describes how Google Trends analyses were used to determine the influence of the Stoptober campaign on contemplating smoking cessation from 2014 to 2016.

The third part of this thesis focuses on the evaluation of the Stoptober campaign. This evaluation consists of a quantitative part, in which the effect of the Stoptober campaign on smoking cessation and socio-cognitive determinants of smoking was researched (chapter 6), and a qualitative part, in which the working mechanisms of the Stoptober campaign and the experiences of its participants were investigated (chapter 7).

In chapter 8, the final chapter of this thesis, the main findings are summarised, clarified and brought into perspective of the scientific literature. Furthermore, the methodology is discussed and implications for research and practice are deliberated.

REFERENCES

1. Lopez AD, Collishaw NE, Piha T. A descriptive model of the cigarette epidemic in developed countries. Tob Control. 1994;3(3):242.
2. Gadourek I. Riskante gewoonten. Groningen, the Netherlands: Wolters; 1963.
3. Willemsen MC. Dutch Tobacco Control Policy. Ned Tijdschr Geneeskd. 2017;161(D949).
4. STIVORO. Trendpublicatie percentage rokers. Percentage rokers in de Nederlandse bevolking 1958 - 2012. Den Haag: STIVORO; 2013.
5. Beernink J, Plokker J. Measures to restrict smoking. Advice from the Health Council. Leidschendam, Netherlands: Ministery of Public Health and Environmental Hygiene; 1975.
6. Health Survey/Lifestyle Monitor, (1990-2018).
7. Tobacco Act 2018 (updated July 1, 2018; cited 2018 October 19). Available from: https://wetten.overheid.nl/BWBR0004302/2018-07-01.
8. Stichting van de Arbeid (Labour Foundation) (STAR). De Lucht geklaard. Een aanbeveling over een rookbeleid van ondernemingen. March 14 2001. Report No.: 3/2001.
9. Verdonk-Kleinjan WMI, Candel MJJM, Knibbe RA, Willemsen MC, de Vries H. Effects of a Workplace-Smoking Ban in Combination With Tax Increases on Smoking in the Dutch Population. Nicotine Tob Res. 2011;13(6):412-8.
10. Fairchild AL, Rosner D, Colgrove J, Bayer R, Fried LP. The EXODUS of Public Health What History Can Tell Us About the Future. Am J Public Health. 2010;100(1):54-63.
11. World Health Organization. MPOWER in Action. Defeating the global tobacco epidemic. Geneva, Switserland: World Health Organization,; 2013.
12. Willemsen MC. Tobacco Control Policy in the Netherlands: Between Economy, Public Health, and Ideology. 1st ed: Springer International Publishing 2018.
13. van Laar MW, van Gestel B, Cruts AAN, van der Pol PM, Ketelaars APM, Beenakkers EMT, et al. 2017 Annual Report of the Netherlands National Drug Monitor (NDM). Utrecht, Netherlands: Netherlands Institute of Mental Health and Addiction (Trimbos Institute); 2018.
14. World Health Organization. Tobacco. Key facts. 2018 (cited 2018 March 19). Available from: http://www.who.int/en/news-room/fact-sheets/detail/tobacco.
15. Rijksinstituut voor Volksgezondheid en Milieu. Volksgezondheid Toekomstverkenning 2018: Een gezond vooruitzicht. Bilthoven; 2018.
16. U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2014.
17. Torres Lana A, Cabrera de Leon A, Marco Garcia MT, Aguirre Jaime A. Smoking and sickness absence among public health workers. Public Health. 2005;119(2):144-9.
18. Tsai SP, Wen CP, Hu SC, Cheng TY, Huang SJ. Workplace smoking related absenteeism and productivity costs in Taiwan. Tob Control. 2005;14 Suppl 1:i33-7.
19. Rabacow FM, Levy RB, Menezes PR, do Carmo Luiz O, Malik AM, Burdorf A. The influence of lifestyle and gender on sickness absence in Brazilian workers. BMC Public Health. 2014;14:317.
20. Weng SF, Ali S, Leonardi-Bee J. Smoking and absence from work: systematic review and meta-analysis of occupational studies. Addiction. 2013;108(2):307-19.
21. Sherman BW, Lynch WD. The relationship between smoking and health care, workers' compensation, and productivity costs for a large employer. J Occup Environ Med. 2013;55(8):879-84.

22. Bunn WB, III, Stave GM, Downs KE, Alvir JMJ, Dirani R. Effect of Smoking Status on Productivity Loss. Journal of Occupational and Environmental Medicine. 2006;48(10).
23. Halpern MT, Shikiar R, Rentz AM, Khan ZM. Impact of smoking status on workplace absenteeism and productivity. Tob Control. 2001;10(3):233.
24. Berman M, Crane R, Seiber E, Munur M. Estimating the cost of a smoking employee. Tob Control. 2014;23(5):428-33.
25. Borland RON, Cappiello M, Owen N. Leaving work to smoke. Addiction. 2006;92(10):1361-8.
26. Bengtsson T, Nilsson A. Smoking and early retirement due to chronic disability. Econ Hum Biol. 2018;29:31-41.
27. Husemoen LLN, Osler M, Godtfredsen NS, Prescott E. Smoking and subsequent risk of early retirement due to permanent disability. Eur J Public Health. 2004;14(1):86-92.
28. Polder JJ, van Gils PF, Kok L, Talhout R, Feenstra TL. "De rekening van roken". Ned Tijdschr Geneeskd. 2017;161(D833):1-7.
29. Kok L, Berden C, Koopmans C. Kosten van roken. Amsterdam: SEO Economisch onderzoek; 2016. Contract No.: 2015-53.
30. Weng SF, Ali S, Leonardi-Bee J. Smoking and absence from work: systematic review and meta-analysis of occupational studies. Addiction. 2013;108(2):307-19.
31. Baker CL, Flores NM, Zou KH, Bruno M, Harrison VJ. Benefits of quitting smoking on work productivity and activity impairment in the United States, the European Union and China. Int J Clin Pract. 2017;71(1):e12900.
32. Gregoraci G, van Lenthe FJ, Artnik B, Bopp M, Deboosere P, Kovács K, et al. Contribution of smoking to socioeconomic inequalities in mortality: a study of 14 European countries, 1990–2004. Tob Control. 2017;26(3):260.
33. Mackenbach JP, Stirbu I, Roskam A-JR, Schaap MM, Menvielle G, Leinsalu M, et al. Socioeconomic Inequalities in Health in 22 European Countries. N Engl J Medicine. 2008;358(23):2468-81.
34. Bosdriesz JR, Willemsen MC, Stronks K, Kunst AE. Socioeconomic inequalities in smoking cessation in 11 European countries from 1987 to 2012. J Epidemiol Community Health. 2015.
35. Loring B. Tobacco and inequities: Guidance for addressing inequities in tobacco-related harms. Copenhagen: World Health Organization; 2014.
36. National Center for Tobacco Control. Factsheet smoking among adults: Key figures 2016 Utrecht: Netherlands Institute of Mental Health and Addiction (Trimbos Institute); 2017 (
37. Drope J, Schluger N, Cahn Z, Drope J, Hamill S, Islami F, et al. The Tobacco Atlas. Atlanta: American Cancer Society and Vital Strategies; 2018.
38. Voigt K. Smoking and Social Justice. Public Health Ethics. 2010;3(2):91-106.
39. Paul CL, Ross S, Bryant J, Hill W, Bonevski B, Keevy N. The social context of smoking: A qualitative study comparing smokers of high versus low socioeconomic position. BMC Public Health. 2010;10(1):211.
40. Ham DC, Przybeck T, Strickland JR, Luke DA, Bierut LJ, Evanoff BA. Occupation and workplace policies predict smoking behaviors: analysis of national data from the current population survey. J Occup Environ Med. 2011;53(11):1337-45.
41. Clougherty JE, Souza K, Cullen MR. Work and its role in shaping the social gradient in health. Ann N Y Acad of Sci. 2010;1186(1):102-24.
42. Marmot M, Allen J, Bell R, Bloomer E, Goldblatt P. WHO European review of social determinants of health and the health divide. The Lancet. 2012;380(9846):1011-29.
43. De Kinderen RJA, Wijnen BFM, Evers SMAA, Hiligsmann M, Paulus AGT, de Wit GA, et al. Social cost-benefit analysis of tobacco control policies in the Netherlands. Maastricht: Maastricht University; CAPHRI School for Public Health and Primary Care; 2016.

44. CBS, RIVM, Trimbos-instituut. Gezondheidsenquête/Leefstijlmonitor. The Hague/Bilthoven/Utrecht: CBS; 2017.
45. Babb S, Malarcher A, Schauer G, Asman K, Jamal A. Quitting Smoking Among Adults. United States, 2000–2015. 2017.
46. ITC Project. ITC Netherlands National Report. Findings from the Wave 1 to 8 surveys (2008-2014). Waterloo, Ontario, Canada: University of Waterloo; 2015.
47. Ter Weijde W, Croes EA. Roken, een aantal feiten op een rij. Utrecht, Netherlands: National Center for Tobacco Control (Trimbos Institute); 2015.
48. Vangeli E, Stapleton J, Smit ES, Borland R, West R. Predictors of attempts to stop smoking and their success in adult general population samples: a systematic review. Addiction. 2011;106(12):2110-21.
49. Smit ES, Hoving C, Schelleman-Offermans K, West R, de Vries H. Predictors of successful and unsuccessful quit attempts among smokers motivated to quit. Addict Behav. 2014;39(9):1318-24.
50. Hartmann-Boyce J, Lancaster T, Stead LF. Print-based self-help interventions for smoking cessation. Cochrane Database Syst Rev. 2014(6).
51. Stead LF, Buitrago D, Preciado N, Sanchez G, Hartmann-Boyce J, Lancaster T. Physician advice for smoking cessation. Cochrane Database Syst Rev. 2013(5).
52. Lancaster T, Stead LF. Individual behavioural counselling for smoking cessation. Cochrane Database Syst Rev. 2017(3).
53. Stead LF, Carroll AJ, Lancaster T. Group behaviour therapy programmes for smoking cessation. Cochrane Database Syst Rev. 2017(3).
54. Stead LF, Hartmann-Boyce J, Perera R, Lancaster T. Telephone counselling for smoking cessation. Cochrane Database Syst Rev. 2013(8).
55. Hartmann-Boyce J, Chepkin SC, Ye W, Bullen C, Lancaster T. Nicotine replacement therapy versus control for smoking cessation. Cochrane Database Sys Rev 2018(5).
56. van den Brand FA, Nagelhout GE, Reda AA, Winkens B, Evers S, Kotz D, et al. Healthcare financing systems for increasing the use of tobacco dependence treatment. Cochrane Database Syst Rev. 2017(9).
57. Ajzen I. The theory of planned behavior. Organ Behav Hum Decis Process. 1991;50(2):179-211.
58. Gardner B, Abraham C, Lally P, de Bruijn G-J. Towards parsimony in habit measurement: Testing the convergent and predictive validity of an automaticity subscale of the Self-Report Habit Index. Int J Behav Nutr Phys Act. 2012;9(1):102.
59. Meijer E, Gebhardt WA, Dijkstra A, Willemsen MC, Van Laar C. Quitting smoking: The importance of non-smoker identity in predicting smoking behaviour and responses to a smoking ban. Psychol Health. 2015;30(12):1387-409.
60. Kenfield SA, Stampfer MJ, Rosner BA, Colditz GA. Smoking and smoking cessation in relation to mortality in women. JAMA. 2008;299(17):2037-47.
61. Doll R, Peto R, Wheatley K, Gray R, Sutherland I. Mortality in relation to smoking: 40 years' observations on male British doctors. BMJ. 1994;309(6959):901.
62. Hackshaw L, McEwen A, West R, Bauld L. Quit attempts in response to smoke-free legislation in England. Tob Control. 2010;19(2):160.
63. Nagelhout GE, de Vries H, Boudreau C, Allwright S, McNeill A, van den Putte B, et al. Comparative impact of smoke-free legislation on smoking cessation in three European countries. Eur J Public Health. 2012;22(Suppl 1):4-9.
64. Nagelhout GE, Willemsen MC, de Vries H. The population impact of smoke-free workplace and hospitality industry legislation on smoking behaviour. Findings from a national population survey. Addiction. 2010;106(4):816-23.

65. Nagelhout GE, Hummel K, Willemsen MC, Siahpush M, Kunst AE, de Vries H, et al. Are there income differences in the impact of a national reimbursement policy for smoking cessation treatment and accompanying media attention? Findings from the International Tobacco Control (ITC) Netherlands Survey. Drug Alcohol Depend. 2014;140:183-90.
66. Vemer P, Rutten-van Mölken MPMH, Kaper J, Hoogenveen RT, Van Schayck CP, Feenstra TL. If you try to stop smoking, should we pay for it? The cost–utility of reimbursing smoking cessation support in the Netherlands. Addiction. 2010;105(6):1088-97.
67. Brown J, Kotz D, Michie S, Stapleton J, Walmsley M, West R. How effective and cost-effective was the national mass media smoking cessation campaign 'Stoptober'? Drug Alcohol Depend. 2014;135(100):52-8.
68. Ybema J, Geuskens G, van den Heuvel S, de Wind A, Leijten F, Joling C, et al. Study on Transitions in Employment, Ability and Motivation (STREAM): The Design of a Four-year Longitudinal Cohort Study among 15,118 Persons Aged 45 to 64 Years. Br J Med Med Res. 2014;4(6):1383-99.