Evaluating tobacco control policies

Valorization addendum

This chapter aims to discuss the societal impact and relevance of this thesis. The following aspects of this thesis will be discussed: 1) the societal relevance, 2) target groups for which the results are of interest, 3) activities and products resulting from it, 4) its innovativeness, and 5) a planning of this valorization.

Relevance

Tobacco smoking is one of the most preventable causes of death (Forouzanfar et al., 2017) with yearly 5,000,000 deaths among smokers (Reitsma et al., 2017) and 600,000 deaths among non-smokers (World Health Organisation, 2019). Nonetheless, in the Netherlands 22% of adults report to smoke (CBS Statline, 2019). Tobacco control policies aim to reduce smoking prevalence and the associated burdens of smoking (Gravely et al., 2017). In 2016, pictorial health warnings (PHWs) on the packet of tobacco products (European Union, 2015) were introduced in the Netherlands as part of the European Unions' new Tobacco Products Directive (TPD) (European Union, 2014). Evaluating the impact of this policy on Dutch smokers is important because it may lead to recommendations about the future use of tobacco health warnings (Reitsma et al., 2017; Goodchild et al., 2016; U.S. Department of Health and Human Services, 2014), and tobacco control policy at the national level. For the same reason it is important to evaluate the introduction of textual health warnings (THWs) on and a leaflet in the packet of e-cigarette products (European Union, 2014). Although examining the impact of existing tobacco control policies is important to strengthen national tobacco control policy, there is also continued interest in innovative tobacco control policies (McDaniel, Smith, & Malone, 2016; Warner, 2013). A new topic of investigation are dissuasive cigarettes; cigarettes featuring an unpleasant colour and sometimes displaying a THW (Hoek, Gendall, Eckert, & Louviere, 2016). It is important to have sufficient scientific substantiation before introducing dissuasive cigarettes. Recent parliamentary questions about dissuasive cigarettes and plain packaging illustrate the relevance of this thesis for the Dutch context (Overheid.nl, 2019).

Target groups

The results of this thesis are of interest to a variety of target groups. First, the results can be used by Dutch policy makers who are responsible for health promotion. Results provide insight in the impact and working mechanisms of PHWs and therewith provide input for future national level tobacco control policy. For instance, although introducing PHWs improved Dutch smokers' knowledge about the health risks of

smoking, they still have less knowledge when compared to smokers from other high-income countries (Trofor et al., 2018). Based on these findings, policy makers can decide to better inform Dutch smokers about the health risks of smoking. Also, policy makers responsible for tobacco control at the European level could use the results of this thesis as an input to develop future tobacco- and e-cigarette health warnings. For instance, e-cigarette health warnings were barely noticed by e-cigarette users, thus it should be investigated how to improve their noticeability.

Second, the information provided in this thesis is relevant for Dutch organizations such as the Trimbos Institute, the Dutch Alliance for a Smokefree Society (Aliantie Nederland Rookvrij) and health organizations such as the Dutch Cancer Society (KWF Kankerbestrijding) the Lung foundation Netherlands (Longfonds), and the Netherlands Heart Foundation (Hartstichting) as they are active in Dutch tobacco control. These organizations benefit from reliable scientific research. They could use the results of this thesis by developing campaigns or lobbying to national-level policy makers. For instance, based on the findings of this thesis they could design campaigns to further inform smokers about the health risks of (secondhand) smoke or could lobby to policy makers at the department of Public health, Welfare, and Sports.

Third, the results of this thesis are relevant for the general population. They could benefit if the results of this thesis would contribute to a decreased smoking prevalence. A societal cost-benefit analysis showed that the Netherlands would financially benefit from a reduced smoking prevalence (de Kinderen, Wijnen, Evers, Hiligsmann, & Paulus, 2016). Especially relevant for non-smokers is that the results regarding dissuasive cigarettes can be used to make cigarettes unattractive, possibly preventing adolescents from smoking uptake. Attention for smoking prevention remains important as early smoking uptake is associated with stronger nicotine addiction in later life (Khuder, Dayal, & Mutgi, 1999), increased chances of lifetime smoking (Breslau & Peterson, 1996; Klein, Sterk, & Elifson, 2013), and mortality (Gellert, Schöttker, & Brenner 2012; Nash, Liao, Harris, & Freedman, 2017). In addition, smokers could benefit from the results from this thesis as results provide input for tobacco control policy at the national level which may help them to quit smoking or to be better informed about the health risks of smoking. For instance, based on the thesis' implications, the packet of tobacco products may be improved to stimulate smokers to quit smoking.

Activities and products

The results of this thesis were presented at three separate occasions of the conference of the Dutch Network of Tobacco Researchers (NNvT) (NNvT, 2017; NNvT, 2018; NNvT, 2019) and at the European Conference on Tobacco or Health (ECToH) (ECToH, 2017). Additionally, results of this thesis were mentioned in a keynote lecture at the conference of the Society for Research on Nicotine and Tobacco in 2019.

This thesis results from collaborations between researchers from Maastricht University, the University of Amsterdam, and a number of international universities that collaborate within the ITC project, particularly the University of Waterloo, the University of Stirling, Columbia's (US) Arnold School of Public Health, and the Medical University of South Carolina.

Several chapters of the thesis have been published in international peer-reviewed scientific journals such as the International Journal of Environmental Research and Public health and BMC Public Health. In addition, the public policy research consultancy company ICF will evaluate the second TPD for the European Commission in 2020. The results of the current thesis will provide input for this evaluation.

Innovativeness of the findings

This thesis includes several innovative studies. The impact of PHWs has been extensively researched at the international level (e.g. Hammond, 2011; Noar et al., 2016a; Noar et al., 2016b; Peters, Ruiter, & Kok, 2013). To the best of our knowledge, the current thesis is the first to examine the impact of the European PHWs (European Union, 2015), that differ from the previously evaluated PHWs (Canadian Cancer Society, 2018). It was also the first to examine whether e-cigarette users' perceptions regarding the level of the addictiveness and toxicity of e-cigarettes differed after introducing the e-cigarette health warnings. Studies regarding the impact of introducing PHWs on risk perceptions remain scarce (Noar et al., 2016a; Noar et al., 2016b) and the current thesis contributed to filling this gap.

Another innovative aspect of this thesis is that it includes a first study to examine perceptions of dissuasive cigarettes among Dutch respondents, and among non-smoking adolescents. Furthermore, it was the first study to use an experimental research design to evaluate dissuasive cigarettes, which provided strong internal-valid evidence.

Planning

Funding has been secured to continue the ITC Netherlands Project in the future, using a new cohort of smokers as of 2020. This project will focus particularly on the impact of tobacco taxation on smoking in the Dutch context. Furthermore, the study will be used to evaluate the introduction of new tobacco control measures in the Netherlands in 2020 and beyond. In addition, Maastricht University will distribute the results of this thesis through a press-release. If picked up by the media, policy makers may learn about this.

References

Breslau, N., & Peterson, E.L. (1996). Smoking cessation in young adults: age at initiation of cigarette smoking and other suspected influences. *American Journal of Public Health, 1*, 214-220. doi:10.2105/AJPH.86.2.214

Canadian Cancer Society. (2018). *Cigarette package health warnings. International Status report*. Retrieved from https://www.tobaccofreekids.org/assets/global/pdfs/en/WL_status_report_en.pdf

CBS Statline. (2019). *Leefstijl en (preventief) gezondheidsonderzoek; persoonskenmerken*. Retrieved from https://opendata.cbs.nl/statline/#/CBS/nl/dataset/83021NED/table?dl=1B893

de Kinderen, R.J.A., Wijnen, B.F.M., Evers, S.M.A.A., Hiligsmann, M., & Paulus, A.T.G. (2016). Social cost-benefit analysis of tobacco control policies in the Netherlands. Retrieved from Trimbos website: https://www.trimbos.nl/docs/754f91b5-ff36-4452-85cb2e00933ff970.pdf

ECToH. (2017). Book of abstracts. Retrieved from https://events.skyroscongressos.com/file/ksJbFmGnz.19OMoIcVU41~BNaZRCFWAq4gGzormMWt3UP3uEQ2cZjRRbWWfID3pkml1K.rKyUwVFe846MISNg--

European Union. (2014). *Directive 2014/40/EU of the European Parliament and of the council.* Retrieved from https://eurlex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:32014L0040&from=EN

European Union. (2015). *Gecombineerde gezondheidswaarschuwingen voor roken bestemde tabaksproducten*. Retrieved from https://ec.europa.eu/health/sites/health/files/tobacco/docs/healthwarnings_netherlands.pdf

Forouzanfar, M.H., Afshin, A., Alexander, L.T., Anderson, H.R., Bhutta, Z.A., Biryukov, S., . . . Murray, C.J.L. (2017). Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks in 188 countries. *The Lancet, 388*, 1659-1724. doi:10.1016/S0140-6736(16)31679-8

Gellert, C., Schöttker, B., & Brenner, H. (2012). Smoking and All-Cause Mortality in Older People Systematic Review and Meta-analysis. *Archives of Internal Medicine, 172*, 837-844. doi:10.1001/archinternmed.2012.1397

Goodchild, M., Nargis, N., & d'Espaignet, E.T. (2016). Global economic cost of smoking attributable diseases. *Tobacco Control, 27,* 58-64. doi:10.1136/tobaccocontrol-2016053305

Gravely, S., Giovino, G.A., Craig, L., Commar, A., D'espaignet, E.D., Schotte, K., & Fong, G.T. (2017). Implementation of key demand-reduction measures of the WHO Framework Convention on Tobacco Control and change in smoking prevalence in 126 countries: an association study. *The Lancet Public Health, 2*, e166-e174. doi:10.1016/S2468-2667(17)30045-2

Hammond, D. (2011). Health warning messages on tobacco products: a review. *Tobacco Control, 20*, 327-337. doi:10.1136/tc.2010.037630

Hoek, J., Gendall, P., Eckert, C., & Louviere, J. (2016). Dissuasive cigarette sticks: the next step in standardised ('plain') packaging? *Tobacco Control, 25*, 699-705. doi:10.1136/tobaccocontrol-2015-052533

Khuder, S.A., Dayal, H.H., & Mutgi, A.B. (1999). Age at smoking onset and its effect on smoking cessation. *Addictive Behaviors, 24,* 673-677. doi:10.1016/S03064603(98)00113-0

Klein, H., Sterk, C.E., & Elifson K.W. (2013). Initial Smoking Experiences and Current Smoking Behaviors and Perceptions among Current Smokers. *Journal of Addiction, 2013*, 491797. doi:10.1155/2013/491797

Nash, S.H., Liao, L.M., Harris, T.B., & Freedman, N.D. (2017). Cigarette Smoking and Mortality in Adults Aged 70 Years and Older: Results From the NIH-AARP Cohort. *American Journal of Preventive Medicine, 52,* 276-283. doi:10.1016/j.amepre.2016.09.036

McDaniel, P.A., Smith, E.A., & Malone, R.E. (2016). The tobacco endgame: a qualitative review and synthesis. *Tobacco Control, 25*, 594-604. doi:10.1136/tobaccocontrol-2015-052356

NNvT. (2017). *Abstractboek*. Retrieved from https://nnvt.org/wp-content/uploads/2013/07/Abstractboek-2017-v3def.pdf

NNvT. (2018). *Abstractboek*. Retrieved from https://nnvt.org/wp-content/uploads/2018/02/Abstractboek-NNvT-congres-2018.pdf

NNvT. (2019). *Abstractboek*. Retrieved from https://nnvt.org/wp-content/uploads/2019/02/Abstractboek-NNvT-congres-2019-1.pdf

Noar, S.M., Francis, D.B., Bridges, C., Sontag, J.M., Ribisl, K.M., & Brewer, N.T. (2016a). The impact of strengthening cigarette pack warnings: Systematic review of longitudinal observational studies. *Social Science & Medicine, 164*, 118-129. doi:10.1016/j.socscimed.2016.06.011

Noar, S.M., Hall, M.G., Fancis, D.B., Ribisl, K.M., Pepper, J.K., & Brewer, N.T. (2016b). Pictorial cigarette pack warnings: a meta-analysis of experimental studies. *Tobacco Control, 25*¸ 341-354. doi:10.1136/tobaccocontrol-2014-051978

Overheid.nl. (2019). *Niet-dossierstuk*. Retrieved from https://zoek.officielebekendmakingen.nl/nds-tk-2019D35424.html

Peters, G-J.Y., Ruiter, R.A.C., & Kok, G. (2013). Threatening communication: a critical re-analysis and a revised meta-analytic test of fear appeal theory. *Health Psychology Review, 7*, S8-S31. doi:10.1080/17437199.2012.703527

Reitsma, M.B., Fullman, N., Ng, M., Salama, J.S., Abajobir, A. Abate, K.H., . . . Gakidou, E. (2017). Smoking prevalence and attributable disease burden in 195 countries and territories. *The Lancet, 389*, 1885-1906. doi:10.1016/S0140-6736(17)30819-X

Trofor, A.C., Papadakis, S., Lotrean, L.M., Radu-Loghin, C., Eremia, M., Mihaltan, F. (2018). Knowledge of the health risks of smoking and impact of cigarette warning labels among tobacco users in six European countries: Findings from the EUREST-PLUS ITC Europe Surveys. *Tobacco Induced Diseases, 16,* A10. doi:10.18332/tid/99542

U.S. Department of Health and Human Services. (2014). *The Health Consequences of Smoking—50 Years of Progress*. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=6471BC3500A255295CE351B323158D?doi=10.1.1.653.9865&rep=rep1&type=pdf

Warner, K. (2013). An endgame for Tobacco? *Tobacco Control, 22*, i3-i5. doi:10.1136/tobaccocontrol-2013-050989

World Health Organization. (2019). *Mortality and burden of disease from second-hand smoke*. Retrieved from https://www.who.int/gho/phe/secondhand_smoke/burden/en/