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General discussion

1 This general discussion provides further explanations for the observed findings

2 of the presented studies, discusses the practical implications of the study results,

and provides recommendations for future research. Furthermore, the empirical

4 studies in this dissertation will be put into the context of the socio-ecological

5 model that was introduced in the first chapter.

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IMPROVING GPS' IMPLEMENTATION OF SMOKING CESSATION CARE

Successful implementation of innovations within healthcare, including a guideline for smoking cessation care in general practice, is a complex and often longlasting process.¹ The factors that influence this implementation process operate on several levels, including the general practitioner (GP), patient, organization, community, and public policy level. These levels are summarized in a five-level socio-ecological model depicted in the introductory chapter of this dissertation. This model constitutes the conceptual framework that guided this dissertation; all empirical studies addressed factors related to one or more of these levels.

19 GP level

Chapter three of this dissertation
presented the effectiveness of a
pragmatic, practice-tailored training programme for GPs that aimed
to influence the determining GPrelated factors of implementation.
The trained GPs increased the
number of times they asked their

28 patients about smoking and ad-



vised smokers to quit compared to the untrained GPs. In addition, they reported a higher perceived self-efficacy and intention towards routinely implementing smoking cessation care. However, in additional analyses we could not confirm that an increased self-efficacy or an increased intention to implement smoking cessation care was related to improved delivery of such care. There may be several explanations for this lack of a relation between GPs' self-efficacy, intention and behaviour. The first possible explanations entail methodological considerations. The relatively small GP sample may have resulted in low statistical power and an inadequate way of operationalizing the self-efficacy and intention constructs may have violated the construct validity within the study. Other possible explanations entail theoretical considerations. It can be argued

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1 that cognitive determinants of behaviour may be too parsimonious to predict

2 complex human volitional behaviour, such as GPs' advices to quit, prescriptions

3 for quit-smoking medication, and referrals to follow-up quit smoking support.²

4 As a result, GPs' provision of such guideline-recommended smoking cessation

- 5 care may be influenced by other behavioural attributes than cognitive determi-
- 6 nants alone, such as perceived self-efficacy and intention.
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8 GP action planning

Because the gap between an individual's intention and actual behaviour can be
closed by formulating action plans³⁻⁵, chapter four of this dissertation presented
the effects of this strategy among GPs. Based on these results, no conclusions can
yet be drawn on the effectiveness of action planning on GPs' advices to quit and
follow-up arrangements. This might be due to the previously mentioned small
GP and smoker sample sizes. In addition, coping planning might result in more
positive effects on GPs' provision of quit-smoking advices and arrangements of
follow-up support. This type of planning is known to anticipate behavioural barriers that impede action plans from working.⁶

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19 Patient level

20 Chapter five reports a study in which

a quantitative approach to videorecorded communication was
used to examine the interaction

24 between primary care profession-

als and patients during unsoliciteddialogues about smoking. Overall,

27 this study showed that the prob-

28 ability that smokers expressed a

29 negative statement about quitting



was lowest when primary care professionals asked about smoking (11%), advised to quit (27%), or arranged a follow-up (15%), compared to assessing the smoker's motivation to quit (55%), or providing assistance with quitting (38%). GPs seemed less likely to continue their use of these 5 A's following smokers' negative statements about quitting (19%) compared to smokers' positive statements about quitting (47%), which might relate to GPs' fear of harming the doctor-patient relationship when discussing smoking unsolicited.⁷ Nevertheless, we could not confirm this last finding statistically. This could be explained by several methodological issues. Within multilevel modelling it is desirable to include a sufficient sample size on each level to obtain sufficient power for the statistical test to confirm effects when these are present.⁸ Our two-level model (GP and speech unit level) included 17 GP consultations on the highest level. Literature suggests, however, a minimum sample size of and a sample size of 100 as sufficient at the highest level of such models.^{9;10} Including a small sample size might have led to biased estimates of the effects.⁸ Nevertheless, some suggest that the appropriate sample size depends on the area of research; a sample size on the highest level of 30 is, for instance, appropriate in educational research, whereas a sample size of 5 at the highest level is appropriate in family and longitudinal research.⁹ Until now, multilevel techniques to examine physician-patient communication are rarely used in general practice¹¹, which makes an estimation of the appropriate GP sample size difficult.

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13 GP-patient communication

Studies have shown that emphasizing a link between the patient's (possible future) health status and his/her current smoking behaviour, as recommended by the current GP-guideline¹², may evoke resistance in a patient.¹³ Achieving mutual agreement on the importance of smoking cessation might reduce this resistance.¹³ Following the basic principles of motivational interviewing, GPs may use this resistance, or 'sustain talk', to evoke 'change-talk' in which the patient is encouraged to verbalize arguments to quit smoking. As shown by a meta-analysis of 14 studies, such motivational interviewing techniques significantly increase smoking abstinence rates when compared to a brief quit-smoking advice.¹⁴ In addition, this approach might result in a more balanced relationship between the GP and patient.¹⁵ As a result, patients will feel engaged in the decision-making process, which is known to result in more positive patient outcomes.^{16;17}

Nevertheless, GPs and practice nurses (PNs) apply motivational interviewing techniques only to a minor extent.¹⁸ In addition, it has been suggested that training during and after medical school may not be sufficient for adequately applying these techniques in practice.¹⁹ Although it is still unknown which training components and frequencies are most profitable for healthcare professionals to improve motivational interviewing techniques^{20;21}, previous studies have suggested that the provision of systematic (video-)feedback might be effective.^{18:22} Therefore, it is recommended to examine the effects of (long-term) (video-) feedback on GPs' usage of motivational interviewing techniques in dealing with negative statements of smokers about quitting and reaching mutual agreement on the importance of a smoking cessation advice.

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1 Organization and community level

2 Chapter two of this dissertation

- 3 recommended more focus on or-
- 4 ganizational factors within train-
- 5 ing programmes for health profes-
- 6 sionals in smoking cessation care.7 It may facilitate implementation
- 8 of such care when the conditions
- 9 in which these professionals work
- 10 are addressed. This was recently



confirmed by a study by Geense et al., which reports on the organizational and community barriers primary care professionals perceive as impeding for a full implementation of lifestyle interventions.²³ The GP training programme presented in chapter three of this dissertation attempted to target such organi-14 zational factors, including referral opportunities to quit-smoking programmes in the community, and possibilities to register the smoking status of patients in their electronic medical file. Nevertheless, our trained GPs did not refer smokers to follow-up care more often. Since we do not know whether the trained GPs improved the organization of smoking cessation care in their practice, we are unable to draw further conclusions regarding the effectiveness of including organizational barriers of implementation in training programmes for GPs based on these findings. Future process evaluations of such training programmes might improve our knowledge about effective strategies tackling organizational and community implementation barriers. 24

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26 Public policy level

Chapter six reported the results of
a population-based study in which
we examined the effects of the introduction of full health insurance
coverage of quit-smoking support
in the Netherlands (2011) on GP
prescriptions of stop-smoking
medication and on smoking
prevalence. As shown in this



chapter, this public policy was accompanied by an increase in GP prescriptions
of stop-smoking medication. Unfortunately, this registration-based study was
unable to examine the influence of this policy on the provision of other smoking
cessation activities by GPs, such as advices to quit or referrals for quit-smoking

support. Another population-based study in the Netherlands, however, showed that the number of smokers who called the national smoking-cessation quit line increased more than tenfold; from 848 smokers that enrolled in telephone treatment in 2010 to 9091 smokers in 2011, the year the coverage was introduced.²⁴ We also found a significant decrease in smoking prevalence in 2011, which is in line with recent published findings of a longitudinal four-wave web-based survey among a national representative sample of adult smokers.²⁵ This study found that the self-reported number of quit attempts increased in this year as well as the number of smokers who gave up their smoking successfully. However, this study did not find a significant increase in the self-reported use of stop-smoking medication as a result of the health insurance coverage.²⁵ As argued by the authors, this is probably due to a time-lag in reporting.²⁵

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5 CONCLUSIONS

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It can be concluded that the implementation of smoking cessation care in general practice can be improved by targeting factors on multiple levels. Nevertheless, challenges remain for the future. In particular, there is considerable room for improvement regarding GPs' referrals for follow-up quit-smoking support. In addition, GPs seem to discontinue their use of guideline-recommended smoking cessation care when smokers express negative statements about quitting, which may indicate the importance of improving (the use of) motivational interviewing techniques. These conclusions lead to the following implications.

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7 PRACTICAL IMPLICATIONS

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This section discusses the practical implications of the study findings for current Dutch GP training programmes, GP guidelines, and tobacco control policies that have the potential to facilitate a successful implementation of smoking cessation care in future general practice.

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34 GP training programmes

35 In the Netherlands, various GP training programmes for improving smoking ces-

36 sation care are currently available. To our knowledge, no evidence exists on the

37 effectiveness of these training programmes, which makes it difficult to compare

- them with the GP training programme discussed in *chapter three* of this disserta-
- 39 tion. In addition, large heterogeneity exists with regard to the mode of delivery,

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duration, and content of these training programmes. In contrast to our individual, one-hour GP training programme, these programmes most often have a
longer duration, ranging from 1.5 hours to four days, and are delivered to a group
of professionals. Whereas our GP training programme focused on tailored guidance regarding individual implementation barriers, including organizational and
community factors, only a minority of other training programmes thoroughly
incorporate such implementation aspects.

As elaborated upon in *chapter two*, organizational factors should be consid-8 ered within GP training programmes in order to facilitate a full implementa-9 tion of guideline-recommended smoking cessation care. Although the training programme discussed in *chapter three* incorporated such organizational factors, it is not clear whether the organization with regard to smoking cessation care in general practice improved. Nevertheless, a majority of the GPs addressed organizational barriers during our training, underpinning its importance. There-14 fore, we recommend current Dutch training programmes to focus more on the implementation aspects of smoking cessation care in general practice, including organizational factors, such as a clear task distribution and a supportive work environment. In addition, providing a follow-up meeting for GPs and monitoring their progress after the training may ensure that smoking cessation care is successfully implemented in the long term.

To ensure a routine approach to lifestyle counseling in future general practice, it is recommendable to put more emphasis on this during medical school and GP residency. Currently, GP residents are trained in basic motivational interviewing techniques. We recommend to incorporate ongoing (video-)feedback and monitoring of these GP skills within consultations in which smoking is unsolicited discussed (this approach may also be applied to other aspects of lifestyle counseling). Including this feedback in their portfolios can encourage GP residents to reflect on their progress concerning these skills and develop personal learning goals.²⁶

In addition, forming action plans on who, when, where, and how to implement such techniques and other smoking cessation activities, such as advising to quit and referring for follow-up, might link situational cues in consultations and other aspects of daily practice to these activities. This strategy may especially alleviate implementation barriers operating on an organizational level since it specifies a clearer task allocation within the practice. Coping planning might further stimulate GPs to anticipate obstacles to implementation that might impede action plans from working. Taking into consideration the importance of achieving mutual agreement with the patient regarding the importance of smoking cessation, combined with increasing time restrictions within consultations, (future) GPs should be prepared thoroughly in order to provide adequate
 smoking cessation care.

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GP guideline

As discussed in the *chapter one* of this dissertation, current guidelines for smoking cessation care in general practice are based on the 5A-Model, which entails Asking about smoking, Advising to quit, Assessing motivation to quit, Assisting with quitting, and Arranging follow-up.^{12;27-29} Although these guidelines seem to focus on a full implementation of the 5A-Model by the GP, some recommendations are provided with regard to specifically delegating quit-smoking assistance to trained PNs. In line with these recommendations, *chapter five* showed a clear division of tasks between GPs and PNs with regard to the provision of smoking cessation care; when using the 5 A's, GPs focussed on Asking about smoking and Advising to quit, while PNs focussed on Assisting with quitting. Nevertheless, both GPs and PNs lacked sufficient focus on Advising smokers to quit, Assessing their motivation to quit, and Arranging referrals or follow-up appointments.

Recently, the (dis)advantages of the 5A-Model were summarized.³⁰ On the one hand, this model is a rather straightforward approach for busy healthcare settings. Additionally, the 5A-Model matches existing practices and patients' expectations well. On the other hand, the 5A-Model is tied to only one professional, in particular to physicians. Yet, smoking cessation interventions have shown the added value of involvement of multiple members of a practice team.³¹ Moreover, various factors impede GPs' implementation of the full 5A-Model, some of which can be considered as insurmountable, such as a lack of sufficient consultation time. Therefore, it may be argued that alternative approaches to the treatment of tobacco addiction should be developed which do not solely rely on the GP, but rather involve multiple members of the practice team.

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29 Alternatives to the 5A-Model

A smoking cessation initiative on cardiology wards recommends a simplified Ask-Advise-Refer (A-A-R) approach.³² When applying this approach in general practice, busy GPs solely address the patients' smoking behaviour and refer them to effective smoking cessation treatments provided by PNs. Yet, as shown in a previous study¹⁹ and confirmed in *chapter five* of this dissertation, GPs do not frequently refer patients for quit-smoking support. Moreover, the vast majority of smokers who are passively referred to quit lines fail to call for quit-smoking assistance.^{33;34}

Therefore, Vidrine et al. developed an approach to smoking cessation care in
 general practice known as the Ask-Advise-Connect (A-A-C) approach.³⁵ Contrary

- to the A-A-R approach in which patients are passively referred to follow-up sup-1 port, the A-A-C approach proactively connects patients' with follow-up support. 3 Connections were made by clicking on an automated link in the patient's electronic medical file that sent the smoker's name and phone number to a quit line. 4 Within 48 hours, the patient was then proactively called and quit-smoking support was scheduled. A group-randomized controlled study showed a significant larger proportion of identified smokers that enrolled in quit-smoking treatment 7 within the A-A-C approach compared to the A-A-R approach (A-A-C: 100% versus 8 A-A-R: 68.7%).³⁵ Although evidence of the A-A-C on smoking abstinence rates is still lacking, previous studies have suggested that such proactive approaches to smoking cessation are just as or even more effective than reactive strategies, such as the A-A-R approach.³⁶ In addition, it might be argued that GPs are more inclined to proactively connect smokers with follow-up support, because they perceive this approach as more effective when compared to a passive A-A-R 14 approach.
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17 Tobacco control policy

Based on previous studies, we hypothesized that the implementation of smoking cessation treatment in general practice could be facilitated by full health insurance coverage of quit-smoking programmes.^{23;37} Following the findings presented in *chapter* six, it is highly recommended to continue the current full health insurance coverage for quit-smoking programmes. This public policy is likely to further stimulate GPs to provide smoking cessation care (e.g. prescriptions and referrals for behavioural counseling), thereby decreasing smoking prevalence.

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7 IMPLICATIONS FOR FUTURE RESEARCH

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The empirical studies within this dissertation generate a number of hypotheses for future research. In this section, we will address these theoretical considerations and measurement instruments, methodological and statistical considerations, and further research ideas for facilitating the implementation of smoking cessation care in general practice.

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35 Theoretical considerations and measurement instruments

In chapter three we used a screening questionnaire to examine the implementation barriers GPs experience. This questionnaire was based on the Theory of
Planned Behaviour³⁸ and examined GPs' attitudes, social norms, self-efficacy,
and intention to routinely implement smoking cessation care. There may be,

however, other ways to explore underlying theoretical concepts of professional 1 behaviour. Huijg et al. recently developed a theory-based screening questionnaire to examine factors that influence implementation processes within healthcare, in particular healthcare professionals' clinical behaviours.^{39;40} This questionnaire is based on the Theoretical Domain Framework, which was developed by a consensus group of behavioural and implementation research experts and integrates multiple behaviour change theories.⁴¹ This framework has been used to identify factors that influence the implementation of smoking cessation care in dental healthcare.⁴² This study showed that the constructs "memory, attention and decision processes" and "professionals' role and identity" were significantly associated with dentists' adherence to smoking cessation guidelines. Identifying such determining constructs among GPs may further improve our understanding of the implementation of guideline-recommended smoking cessation care within general practice. As a result, this knowledge can inform future behaviour change techniques that aim to improve GPs' provision of smoking cessation care.

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7 Methodological and statistical considerations

Experimental studies with larger GP samples are recommended to further examine the effects of incorporating organizational factors, as well as action planning and coping planning in GP training programmes on their provision of smoking cessation care. An example of such a study is a recently published protocol of a cluster randomized controlled trial of Presseau et al., who will examine the effects of action planning on GPs' provision of guideline-recommended care for patients with diabetes.⁴³ In addition, future quantitative studies on the communication between professionals and patients, using sequence analysis and multilevel modelling, are recommended to ensure sufficient power on both levels of the model. Moreover, adding a third level in the model which incorporates characteristics of the healthcare professional may result in more reliable outcomes. Finally, a replication of our population-based study on the effects of full health insurance coverage of stop-smoking programmes (chapter six) is recommended in order to examine the long-term effects on GP prescription rates and smoking prevalence. In addition, future studies are needed on the effects of this public policy on GPs' provision of other guideline-recommended smoking cessation care, such as quit-smoking advices, quit-smoking assistance, and referrals for quit-smoking support. Such studies may contribute to our knowledge of the facilitating role of public policies on the implementation of smoking cessation care in general practice.

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1 Implementation

We recommend an alternative approach to smoking cessation care in general practice, i.e. an A-A-C approach. Future (qualitative) studies should explore the overall willingness of patients and GPs towards this approach. It is anticipated that several patient groups are reluctant to such a proactive approach.⁴⁴ Identification of these patients allows primary care professionals to tune in to their reluctance by using motivational interviewing techniques. Additionally, we recommend studies that assess the feasibility and effectiveness of this A-A-C approach in Dutch general practice.

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2 WHAT THIS DISSERTATION ADDS

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The empirical studies in this dissertation provide insight in a variety of method-14 ological approaches that can be used to describe and facilitate the implementation of smoking cessation care in general practice. This resulted in study findings which show that training GPs has the potential to facilitate the implementation of smoking cessation care, in particular the degree to which smokers are identified and advised to quit. In addition, full health insurance coverage of stop-smoking programmes increased GP prescription behaviour. Yet challenges remain to incorporate smoking cessation care as a routine procedure in general practice, with a special focus on arranging follow-up support by GPs. This dissertation provided several new ideas for future research in order to overcome these challenges. Multifaceted strategies, based on a socio-ecological approach 24 to guideline implementation and including behavioural change theories, have the potential to facilitate a successful implementation of smoking cessation care in general practice. In the end, the delivery of lifestyle counseling, with a focus on smoking cessation care, should become an ingrained habit for GPs.

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