Lifestyle counseling by physicians and practice nurses in primary care

An analysis of daily practice

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Summary and discussion

In this chapter the results of our studies are summarised and discussed in view of earlier findings, theory and research methodology. The chapter will conclude with implications for clinical practice and research.

Summary

Aim

The aim of the present thesis was to examine GPs' and PNs' performance of lifestyle counselling during routine primary care consultation, targeting patients' behavioural change in smoking, alcohol use, physical activity and dietary habits. The following research questions were answered and the main results are subsequently summarized:

Part I (literature study):

1a. What is known in the literature about effective face-to-face communication-related behaviour change techniques (BCTs) used in interventions in patients' lifestyle behaviour, i.e. smoking, alcohol, nutrition, weight and physical activity?

1b. What is known in the literature about which primary care provider, GP or nurse, is more effective in using face-to-face communication-related BCTs?

Part II (observational studies):

2. How do GPs and PNs perform lifestyle counselling and apply motivational interviewing in routine primary care consultations?

Part III (feedback studies):

3a. Is video-feedback a feasible and acceptable method to reflect on communication skills according to GPs?

3b. What is the effect of video-feedback on the communication skills, clinical competence and motivational interviewing skills of PNs?

Main findings

Part I: Effective face-to-face communication-related behaviour change techniques

In the first part of this thesis, **Chapter 2**, the literature is systematically reviewed on the relative effectiveness of face-to-face communication-related behaviour change techniques (BCTs) used in interventions in patients' lifestyle behaviour. Furthermore, this chapter also describes which primary care provider (GP or nurse) was more effective in using face-to-face

communication-related BCTs, according to the literature. In total 50 studies were included and assessed on their methodological quality. Twenty-six studies reported significantly favourable health outcomes following communication-related BCTs and provided enough evidence according to a 'best evidence synthesis'.
The results indicated that behavioural counselling, motivational interviewing, education and advice all seem to be potentially effective communication-related BCTs. However, it was not possible to unravel the underlying working mechanisms of the BCTs that might be crucial to the effective outcomes. Furthermore, these BCTs were also found in less successful studies because of differences in, for example, design of the study or patient population, and to some extent quality of the studies.
Finally, existing literature showed that one primary care profession (GP) is not better equipped than the other (nurse), apparently, to provide face-to-face communication-related BCTs.

Part II: Observational studies in primary care; the professionals' role
The second part of this thesis focuses on cross-sectional observational studies. Chapter three to six described GPs' and PNs' application of communication skills and motivational interviewing skills in lifestyle counselling during routine consultations.

Chapter 3 explores whether or not healthy and unhealthy lifestyle choices of patients are currently being discussed more often in primary care consultations than in former decades. Therefore, observations of routine GP-patient consultations from 1975 until 2008 were used. Furthermore, GPs' approach to lifestyle behaviour was analysed as a population, high risk or symptom approach. The 'population approach' refers to discussing lifestyle behaviour with all patients, the 'high risk approach' refers to discussing lifestyle behaviour with patients with (a risk of) a chronic disease, and the 'symptom approach' refers to discussing lifestyle behaviour when relevant to the patient's presented symptom, without the patient being at high risk or having a chronic disease (e.g. asking about smoking habits when the patient is coughing). Besides, it was examined whether the discussion of lifestyle behaviour was related to characteristics of the patients, such as gender, age and educational background.
Results showed that the discussion of smoking behaviour and physical activity has increased somewhat over time. A change in discussion of

nutrition (diet) and alcohol was not significant. Still lifestyle behaviour was discussed in only a minority of the consultations. Overall, alcohol use was the least discussed and physical activity the most discussed during GPs' consultations.
This study also indicated that GPs mainly discussed patients' lifestyle when it is relevant to the patient's complaint (i.e. symptom approach) and do not discuss lifestyle behaviour as a routine procedure (i.e. do not include it in primary prevention). Finally, we found that lifestyle behaviour is more often discussed with older, male patients (except for nutrition), but no differences were found in frequencies between patients from different educational backgrounds (except for physical activity, which was discussed more often with patients with a college or university degree).

Chapter 4 explores the way in which GPs (n=39) and PNs (n=19) performed lifestyle counselling, in terms of providing information and advice about lifestyle and applying motivational interviewing. Therefore, 124 and 141 consultations were selected, respectively, that included any discussion about the patient's lifestyle. The provided information and advice was divided into tailored or generic, i.e. more or less patient-centred, respectively.
This study demonstrated that both GPs and PNs somehow performed lifestyle counselling according to generally accepted criteria. Information about lifestyle was mainly given in generic terms by GPs and PNs. Overall, few patients were given advice about their lifestyle behaviour. When PNs did provide lifestyle advice, they did this most often in a tailored way. GPs delivered both generic and tailored advice. Advice about smoking behaviour was most often tailored to the patient. Furthermore, GPs hardly ever applied MI in their consultations about patient's lifestyle behaviour. PNs trained in MI, did apply this technique, but only to some extent.

Chapter 5 shows that experienced PNs (n=13), who had extra post-educational training in MI prior to our study, had difficulty applying MI during everyday consultations (n=117). PNs applied MI to some extent, with substantial variation between the separate MI items. Furthermore, we found no difference in PNs' application of MI skills concerning primary or secondary prevention consultations. A possible explanation for the lack of differences between the two types of prevention consultations may be the gain to help patients in primary prevention by preventing complications,

equals the necessity to help the disease from aggravating in secondary prevention.

Chapter 6 analyses PNs' (n=19) application of MI skills, generic communication skills and clinical competence within patients' Stages of Change (SOC) - (pre)contemplation, preparation, or, action and maintenance - during everyday consultations (n=103).
This study revealed that PNs adapt their MI skills to a patient's SOC to some extent. It was found that on average PNs apply MI skills more to patients in the preparation stage than in the other stages of change (pre-contemplation, contemplation, action and maintenance). PNs adjusted three MI skills and one generic communication skill to patients' SOC. This explorative study suggests that, at least to some extent, PNs intuitively assess the stage of patients' readiness to change and tailor their communication accordingly. However, differences between the stages were small.

Part III: Effects of video-feedback on professionals' communication & motivational interviewing skills
The third part of this thesis comprised of our feedback studies.
Chapter 7 describes the video-feedback method, developed to reflect on the communication skills of experienced GPs. First, GPs (n=28) received a personal, secured web-link to two of their video-recorded consultations. Second, after having watched their consultations, GPs received feedback by telephone or in a face-to-face one-hour session, structured around a written individual feedback report. The report contained scores on the communication behaviour of the GP in comparison with colleagues and their own communication behaviour observed in a previous study, as well as patients' opinions about their GP's communication behaviour. The GPs were asked to reflect on their communication skills and to comment on the usefulness and efficiency of the feedback method. In the end, almost all GPs were satisfied with the feedback method and in particular valued the web-enabled link to the video-recorded consultations and the structured written report. Feedback by telephone or face-to-face feedback was considered equally appropriate.

Chapter 8 examines the effects of individual video-feedback, comparable to that described in Chapter 7, on the generic communication skills, clinical competence (i.e. adherence to clinical guidelines) and MI skills of

experienced PNs (n=17), in a pre-test/post-test control group design. First, 325 PN-patient consultations were videotaped at two moments (T0 and T1), with 3 to 6 months in between. Second, these consultations were rated using two validated observation protocols and analysed with multilevel regression analysis. Before recording the consultations, PNs were allocated to a control or an experimental group. PNs allocated to the experimental group received video-feedback between T0 and T1. PNs in the control group received video-feedback after the study.

This study showed that video-feedback is a potentially effective method to improve PNs' generic communication skills. PNs who received video-feedback appeared to pay significantly more attention to patients' request for help and their physical examination (e.g. explaining the blood pressure control). Furthermore, they gave significantly more understandable information. In addition, a trend appeared for more 'exploration'. Besides, PNs evaluated the video-feedback (method) as useful.

Although a single video-feedback session seemed not sufficient to increase all MI skills, significant improvement in some specific MI skills was found. PNs who received video-feedback paid more attention to 'agenda setting and permission seeking' during their consultations. Finally, this study found that PNs' clinical competence, i.e. adhering to guidelines, did not change after feedback due to already high standards prior to the feedback (ceiling effect).

Methodological reflections

Compared to other studies into lifestyle counselling in primary care, this study has several overall assets. To start with, a sample of routine primary care consultations of GPs and PNs was included, without concentrating on specific patient populations. As such, our results do represent the actual daily situation in general practice. Furthermore, GPs, PNs and patients were not aware of the fact that our observations focussed on communication about lifestyle behaviour. However, PNs were aware that their MI skills were assessed.

As mentioned before, this study comprised of real-life video-recorded GP-patient and PN-patient consultations. Prior studies [1,2] have relied on professionals' and patients' self-reported evaluations of lifestyle communication in consultations, which often does not result in reliable

results about the actual communication. Lastly, a novel feature of our study was the use of web-enabled video-feedback, which seemed to be a feasible and acceptable method according to GPs and PNs, and resulted in improvement of some generic communication skills and more specific MI skills in the PNs under study.

The methodological strengths and weaknesses of different parts of the studies in this thesis, i.e. the sample, design, instruments and outcome measures, will be discussed more specifically below.

Samples under study

All patients who were scheduled for an appointment with the GP or PN on the random days of the video-recordings were invited to participate by a researcher in the waiting room. The response rate for patients who participated in the GP and the PN study was 77.6% and 90%, respectively. This is high in comparison with other studies using video-recordings of consultations [3]. Non-responders most often mentioned the private character of their conversation or the questionnaire(s) as reasons for non-participation. In the GP-patient study, non-responders were somewhat older and more often of female gender [4]. Non-responding patients in the PN-study did not differ from responders regarding gender. We could not compare the age of the non-responding patients in the PN study with the age of the participants in this study, because only few non-responders provided their age. Response rates of participating GPs (44%) and PNs (47%) indicate sufficient interest to participate, although not (yet) all professionals seem to be open to this kind of research or seemed too busy at the time of the study.

Furthermore, GPs in our study (n=40) represent the Dutch GPs regarding gender and practice form (single, duo, group practice or healthcare centre), but were on average 4 years older than the average Dutch GP. It was not possible to determine whether or not the sample of PNs (n=20) was representative for the Dutch population of PNs, since numbers of PNs working in the Netherlands are incomplete. Additionally, the samples of the GP-patient (n=808) and PN-patient (n=350) consultations were relatively small. Also, GPs and PNs represent different patient samples; PNs receive (or create) a patient population with mostly chronically ill patients or patients at risk for chronic illness who potentially benefit from lifestyle interventions, whereas lifestyle counselling is only a part of GPs' workload.

Furthermore, the studies took place in different time-periods. The GP-patient consultations were video-recorded in 2007-2008 and the PN-patient consultations in 2010-2011. This could have influenced our outcomes. However, to our best knowledge, no policy changes with respect to discussing a patient's lifestyle behaviour were implemented between 2007 and 2011. Although, recently there is more attention for using MI in primary care consultations of GPs [5] and the development and implementation of the 'Beweegkuur' (a multidisciplinary lifestyle intervention for people with (risk at) diabetes type 2) took place between 2007 and 2012 [6]. Finally, all PNs were trained in MI and 13 of the 20 PNs received extra post-education training in MI prior to our study, while all but one GP were untrained in MI. Therefore, the results on MI skills of PNs and GPs are not comparable and should be interpreted with this information in mind.

Study design

This thesis is based on three designs; a systematic literature study (Part I), cross-sectional observational studies (Part II) and a pre-test/post-test controlled intervention study (Part III; Chapter 8). Most studies reported in this thesis (Part II: Chapter 3-6) used a cross-sectional design. A disadvantage of this design is the inability to attribute cause and effect. Furthermore, one consultation per patient was included. So, it is possible that patient's lifestyle behaviour is already discussed in a previous consultation or the GP or PN planned to discuss it in a future consultation.

In the third part of this thesis (Chapter 8) a pre-test/post-test controlled intervention study was used. PNs' performed skills in the experimental group differed marginally from those of PNs in the control group at baseline, i.e. in whether or not they had received prior post-educational MI training and how structured their consultations were. We could however not control for this difference because of the small number of PNs. Furthermore, due to pragmatic reasons, randomization, stratified allocation, and blinding of PNs were not possible. Besides, observers were not entirely blind to the intervention, because they also performed data acquisition and provided video-feedback to some extent.

The patient-professional encounters reported in this thesis involved different GPs and PNs. It may be argued that consultations with the same professional (GP or PN) are more similar than those with different professionals (i.e. patients nesting within professionals) [7]. Therefore, if the

data allowed us to, we controlled for clustering of patients within PNs or GPs in the analysis using multilevel regression analysis [7].

Observational instruments

In this thesis GP-patient and PN-patient encounters were videotaped and communication was coded with two psychometrically sound instruments; (1) the Behaviour Change Counselling Index (BECCI) for rating professionals' MI skills [8,9], and (2) the MAAS-global for coding professionals' generic communication skills and their clinical competence [10]. In previous research, the BECCI has demonstrated acceptable levels of reliability, validity and sensitivity to detect change [9,11,12]. The MAAS-global, also validated, is widely used to assess the communication skills of Dutch primary care professionals [10,13,14]. Additionally, the average interrater agreement between observers was sufficiently high for both the BECCI and the MAAS-global.

However, a disadvantage of both the BECCI and MAAS-global is that they focus on the communication behaviour of the professional, thereby neglecting the utterances of patients and the interaction (sequences) between patient and professional. Furthermore, we used the MAAS-global for coding PNs' communication skills even though this instrument was originally developed for GPs. Some aspects of the protocol may be less relevant for observing PNs' communication. For example, since most patients visit the PN every three months over a lengthy period of time, the PN is (most of the time) already familiar with the patient's reason to attend the consultation. In this context, the item 'introduction' on the MAAS-global seems less applicable. Besides, a recent study suggests that the MAAS-global does not account for certain context variables that influence the communication between professional and patient, such as familiarity with the patient or the experience of the health care provider [15].

The BECCI is developed for brief consultations in healthcare settings [9] and selects crucial elements of MI. It can be used by both researchers and trainers. However, there are other observational instruments to assess (all) MI skills of professionals; the Motivational Interviewing Skills Code (MISC) [16] and the Motivational Interviewing Treatment Integrity Code (MITI) [17]. The MISC [16] does incorporate scores on patient as well as practitioner behaviours, which may be useful in examining patient outcomes. However, the MISC takes extensive time to execute (i.e. several passes per consultation) and is less appropriate for brief consultations into behaviour

change like PN consultations. The MITI [17] also focusses on the communication behaviour of the professional, but uses very global measures and is still in development. Therefore, the BECCI seemed to be the most suitable instrument for this thesis.
Finally, we coded GPs' and PNs' communication about patient's lifestyle behaviour with a self-developed lifestyle counselling protocol in Chapter 4. This protocol has not been validated or used before, but demonstrated high interrater agreement between observers. In addition, the assessment of patient's stage of change (SOC) was based on the conversation between the patient and PN. We did not question the patients themselves about their perception of their current SOC. Although the independent coding of patient's SOC resulted in complete interrater agreement, future research should investigate the overlap between both methods.

Video-feedback tool
To improve the communication skills, clinical competence and MI skills of PNs we used the method of video-feedback. The video-feedback included a web-enabled link to two video-recorded consultations, a face-to-face one-hour session and a written feedback report. This combination of intervention components of video-feedback resulted in small but significant effects on several generic communication skills and, to a smaller extent, on MI skills of PNs. However, we were unable to draw conclusions about the effects of either of the components of the video-feedback separately. The number of PNs participating in our study was too small to compare PNs receiving only video-feedback (i.e. the web-enabled link) with PNs receiving video-feedback including the face-to-face session and/or the written report. Furthermore, although our study showed that a single video-feedback session can lead to significant improvement of communication skills and small improvement of some MI skills, long-term effects have yet to be investigated.

Outcome measures
In this thesis no outcome measures on patient's lifestyle behaviour were included. This could be interpreted as a limitation. However, the aim of our study was to examine and improve professionals' lifestyle counselling in routine practice, with the communication skills, clinical competence and motivational interviewing skills of GPs and PNs as intermediate outcome measures, which holds the promise of better patient outcomes with respect

to behaviour change given the results of earlier studies. Besides, drawing conclusions about the causality of the effect of lifestyle counselling on patient outcomes, while the counselling techniques (i.e. MI skills) are not adequately implemented is not sound, since there is a significant risk of a type III error, i.e. evaluating an intervention that has not been adequately implemented [18,19]. Furthermore, patients' opinion about discussing their lifestyle behaviour was not assessed. Nevertheless, previous research suggests that 78% of the patients think that it is within the GPs' task description to provide unsolicited advice to patients about their lifestyle behaviour [20]. Additionally, we were not aware of the actual lifestyle behaviour of the patient in the GP-study, except when it was discussed during the consultation. Patients of the PN-study did report on their current lifestyle behaviour in a questionnaire (about smoking, physical activity and alcohol use). It is important to be aware of patients' lifestyle behaviour, since previous research [21] showed that many patients with diabetes type 2 misperceive their healthy lifestyle behaviours (i.e. fruit, vegetable and fat consumption and physical activity), which could hinder lifestyle changes. Future research should address outcomes on patient's lifestyle behaviour.

Finally, the significant differences and effects found in our studies as described in this thesis were relatively small and limited. The clinical relevance and robustness of our findings need to be replicated in future studies.

General discussion

In this discussion section the main results of this thesis will be compared with relevant literature and theory and discussed in a broader context.

Theoretical reflections

As described in the I-change model [22,23], behaviour change can be distinguished in three phases: awareness, motivation and action (see Chapter 1). It is expected that people gain knowledge on and awareness of their own unhealthy lifestyle behaviour through different information channels (e.g. primary care providers) and will become motivated to change that behaviour. In theory, intentions and action plans are formulated next and translated into actual behaviour change and maintenance. Therefore, for this thesis the following 'lifestyle counselling' techniques were examined: Motivational Interviewing (raising awareness, increasing intrinsic motivation, guiding towards behaviour change, overcoming barriers and action planning), tailored to the Stages of Change (raising success rates by tailoring to different motivational phases of behaviour change), and tailoring information and advice to individual patients (raising success by tailoring to personal and social-environmental factors, as observed during the consultation). We hypothesized that healthcare providers performing these lifestyle counselling techniques (within patient's stage of change) are guiding patients towards behaviour change, from awareness to action and maintenance of behaviour, representing the three phases of the I-Change model. However, preceding factors (e.g. biological, social and cultural factors) and informational factors (i.e. quality of the message, channels and sources used), which are also part of the I-Change Model, were only taken into account to some extent (i.e. we controlled for patient characteristics, consultation length and clustering of the data if possible, and took the quality of the provided communication into account). Other contextual or environmental factors, as for example the (non) reimbursement of stop smoking advice (social-environmental factor) or the familiarity of the provider with the patients' social context and disease [15], were not taken into account, but could have influenced the outcomes on providers' performance of lifestyle counselling. According to Michie et al [24], intrapersonal and environmental perspectives are, however, equally important as a way to influence behaviour change.

Implementation of MI in routine practice

Our study showed that GPs and PNs rarely use MI techniques during consultations in which lifestyle behaviour is discussed (Chapter 4,5). Previous, small-scale studies among primary care nurses found similar outcomes. Heinrich [19] found a limited use of MI among PNs in diabetes care, Voogdt-Pruis [25] concluded that within cardiovascular prevention PNs should pay more attention to MI, and Efraimsson and colleagues [26] demonstrated that nurses rarely used MI techniques in their smoking cessation communication with patients. Studies among GPs implementing MI are less common and often based on self-evaluation of their MI skills [27,28]. However, a recent study by Sonntag and colleagues [29] demonstrates that German GPs seldom use MI techniques during their consultations with obese patients. Furthermore, another study concluded that doctors use very few motivational techniques during routine consultations with diabetes patients [30]. Apparently, using MI during routine consultations in primary care is no standard practice (yet).

Previous studies in diabetes care suggest that time pressure and the dominance of biomedical aspects during consultations are barriers for implementing MI [19,31]. More specifically, it is possible that adhering to quality indicators based on clinical guidelines during consultations is an impediment to the use of MI [32]. Such quality indicators may be part of financial incentive and reimbursement systems and therefore demand PNs and GPs to meet certain task requirements, but GPs and PNs also need to take the patients' motivation into account as part of MI. Others also indicate the possible tension between guidelines and patient-centred communication [33] or between guidelines and the context of the patient who visits the general practice [34]. Besides, there are studies that suggest that some patients lack the motivation to visit the practice and to show up on follow-up visits [35] or change their lifestyle behaviour [35,36]. It is possible that MI is not applicable during every consultation nor for every patient [19] or for every lifestyle behaviour. Van Dillen et al [37] indeed pointed out that GPs pick either the confrontational or motivational style to communicate about overweight, but stick to a motivational style when discussing nutrition in general. In our study difficulties in applying MI techniques in routine practice can also be due to differences in the content and extensiveness of the MI training prior to our study (i.e. prior MI training varied between one half day to six half days).

Skill mix of GPs and practice nurses in primary care

The present study demonstrated that both GPs and PNs somehow perform lifestyle counselling according to generally acknowledged criteria (Chapter 4). Furthermore, our systematic literature review showed that GPs and nurses are equally equipped to provide lifestyle counselling (Chapter 2). This is comparable with other studies that suggest that care from GPs and nurses results in similar patient outcomes [38-40]. However, as mentioned before, PNs (can) spend more time on counselling patients compared to GPs and during the education and training of nurses there is more emphasis on patient education, lifestyle and disease prevention [38,41]. GPs, on the other hand, may traditionally be considered to have more authority to deliver care to patients. It is not clear if this also applies to GPs' delivery of preventive care. Furthermore, a study of Voogdt-Pruis [25] showed that nurses adhere better to the Dutch cardiovascular guideline and provide more often lifestyle advice compared to GPs. The current study also found that PNs, in general, adhere to clinical practice guidelines to a great extent (Chapter 8). However, we did not compare this with GPs' adherence to guidelines. Moreover, previous research suggests that nurses are facilitators of the implementation of cardiovascular prevention by assisting GPs [35]. Therefore, the already existing skill mix of GPs and PNs in primary care seems optimal; GPs diagnose and initiate treatments and lifestyle counselling, whereas PNs monitor treatment outcome, provide education and support for behaviour change, and offer follow-up contacts. Patients also appreciate these 'complimentary tasks' of GPs and PNs [42]. However, the optimal skill mix should always be a reflection of the (local) demand for care.

Furthermore, since GPs and PNs may be expected to be aware of the social context of the patient and available facilities and lifestyle programmes in the neighbourhood, they could tailor their advice and information to the needs and wishes of the individual patient. However, our study showed that there is room for improvement in the amount of tailoring of information and advice (Chapter 4) and tailoring to patient's current stage of change (Chapter 6). A potentially worthwhile task delineation in this respect may be that GPs provide generic information about lifestyle to patients, followed by specific information and advice provided by PNs. The added value of this strategy has yet to be investigated.

Improve transfer from research to practice

Overall, our results suggest that schooling and post-educational training in lifestyle counselling and MI are no sufficient guarantees for the actual application of these tools. This is in conformity with previous studies [19,43-45]. Furthermore, other studies also demonstrate that primary healthcare providers feel the need for schooling in lifestyle counselling and MI [2,46]. An important point to stress is that the GPs and PNs who participated in the current study did not show poor communication skills in general. Nevertheless, a single session of video-feedback (Chapter 7) already resulted in significant improvement of several communication skills and some MI skills (i.e. 'agenda setting and permission seeking') in PNs (Chapter 8). It is possible that a basic level of MI knowledge (i.e. prior schooling or training in MI) is needed to increase the effect of individual feedback. So far, it is unknown how much and which training is actually needed for MI and lifestyle counselling [31,47,48]. Previous research among physicians suggest that the most effective feedback is systematic feedback provided over a number of years [49], since many practitioners tend to return to old counselling habits after a few months [43,45,50]. Furthermore, there are indications that training should include various activities such as viewing and discussing video-recorded consultations, role-play and discussing case examples [51-53], as we did in our video-feedback method (Chapter 7,8). Though additional training might strengthen and maintain the new counselling skills, training needs to focus on enhancing new counselling behaviour consistent with MI and suppressing old counselling behaviour that is inconsistent with MI [19]. Yet, enhancing new counselling skills is easier than alter prior counselling habits [43]. Furthermore, all members of a medical practice need to be motivated to change and to have a shared understanding of the meaning of an approach [45]. Besides, it is important that health care providers are supported by their supervisor(s) [33,54] and colleagues [30,55]. Consequently, it is essential to ensure that the training is correctly implemented in routine practice (to safeguard the 'transfer' from knowledge to practice and onwards) [54,56,57] and to examine what hinders and facilitates this process, by means of video-observation research [57].

Recommendations for future research

So far, the main findings of the studies are summarized, findings are discussed in light of relevant literature and methodological reflections are described. Next, some recommendations for future research in this area will be presented.

First, future studies are needed to examine the effects of MI, (generic/tailored) information and advice by GPs and PNs on the fulfilment of patients' needs and on health outcomes. So far, the evidence of MI as an effective strategy for chronic diseases and lifestyle counselling is limited [1,19,25,58] (see also Chapter 2). This is in contrast to previous studies using MI as an effective strategy in addictive behaviours, more specific on problem drinkers and for smoking cessation [48]. As pointed out by Heinrich [19] and by Resnicow and colleagues [58] MI in chronic disease and lifestyle counselling may require a different approach than MI in addictive behaviours. Future research could elaborate on this. Additional research is also needed into immediate, intermediate and long-term outcomes (or so called 'endpoints') of lifestyle counselling and MI, as distinguished by the 'six function model of medical communication' of De Haes and Bensing [59]. The endpoints may relate to the patient, the healthcare provider or the context. For example, an immediate endpoint on the part of the healthcare provider could be that the motivation of the patient is discussed, whereas an intermediate endpoint on the part of the patient could be his or her lifestyle behaviour and on the long-term his or her health and quality of life [59].
Furthermore, more insight is needed in how to adapt MI to patient's individual stage of change (Chapter 6), and what the effects are on patient outcomes. Therefore, underlying working mechanisms of the behaviour change techniques (providing information, advice and MI) should be unravelled (Chapter 2). Whereas previous research did detect some processes underlying MI (e.g. strength of commitment at the end of a session predicts behaviour change) [60], more research is needed to detect all underlying working mechanisms and to replicate previous findings. This is also essential to gain more insight into possible implementation determinants [61] of lifestyle counselling and MI.
If MI and tailoring of information and advice prove to be effective for patient outcomes and needs with respect to lifestyle behaviour, then research could further focus on how to integrate MI and lifestyle counselling in routine

primary care consultations of GPs and PNs, while simultaneously complying with the many other clinical demands. Therefore, barriers and facilitators for the implementation of lifestyle counselling in routine primary care need to be examined, by observing the interaction between patients and providers and by actually exploring both providers' and patients' preferences and experiences. In line with a recent study in type 2 diabetes [19], we recommend that future research focuses on adequate training and skill levels for primary care providers for application of MI and lifestyle counselling during routine consultations. Furthermore, more large-scale studies into the implementation of MI and lifestyle counselling in routine practice of GPs and PNs are needed. Further studies should also examine lifestyle counselling with respect to the participation of patients during routine consultations about lifestyle behaviour, their ability and performance of self-management and adherence to lifestyle behaviour changes. Furthermore, patients should explore their own contribution to changes in their behaviour. The Dutch government also stresses the importance of patient's own responsibility and self-management towards their health and behaviour [62,63]. In addition, more insight is needed in how to make lifestyle counselling and MI part of guidelines, protocols and competence profiles of GPs and PNs, in an optimal way. Besides, it may be useful to examine when GPs or PNs deviate from guidelines or protocols and their reasons to do so [63]. Finally, more research is needed into the way primary care providers can align lifestyle counselling with the needs of the individual patient.

Implications for practice

Finally, the implications for primary healthcare practice will be outlined.

It is important to stress that before MI and lifestyle counselling become part of vocational training, guidelines, protocols and competence profiles, and before these techniques will be adequately implemented in routine practice (as recommended below), it is necessary to ensure that these are indeed effective strategies to change and maintain healthy lifestyle behaviour in patients, resulting in positive health outcomes in concordance with patients' needs. Therefore, first more research on patient outcomes and needs related

to MI and lifestyle counselling of GPs and PNs is needed (see recommendations for future research).

Lifestyle counselling and MI in vocational training

Nowadays, MI or 'behaviour change counselling' is part of the education of PNs in the Netherlands [64]. As of 2013, MI will also be integrated in the education of Dutch GPs [5]. During their education, special attention needs to be paid to barriers and facilitators to perform MI and lifestyle counselling, taking into account the transfer from education to clinical practice. The government has recommended, in their 2013 policy agenda, to invest in the education of GPs and task delegation to specialised nurses and physician assistants [62]. It is, however, not clear if and to what extent lifestyle counselling and MI are part of this investment, and if PNs are included in the policy measures (i.e. only specialised nurses and physician assistants are explicitly mentioned).

Lifestyle counselling and MI in tailored CME

The results of our study confirm that lifestyle counselling and MI are no standard practice during routine consultations (yet). Hence, it is recommended that lifestyle counselling and MI not only become part of the vocational education of GPs and PNs, but also of their Continuing Medical Education (CME), for example by means of annual boosters sessions. In addition, video-feedback and peer review by colleagues can strengthen the training effect, i.e. by means of supporting each other and eliciting a shared understanding of the counselling approach.

Lifestyle counselling and MI in guidelines, protocols and competence profiles

To some extent, lifestyle counselling is already part of guidelines, protocols and competence profiles of GPs and PNs. However, lifestyle counselling is mainly incorporated into disease specific guidelines or standards, as for example the Dutch College of General Practitioners' (DCGP) guidelines and health standards on Diabetes type 2 or COPD, which provide very general recommendations for lifestyle behaviour. Fortunately, the DCGP has recently developed standards to 'stop smoking' [65] and for people with obesity [66], which are aimed at lifestyle behaviour change. Furthermore, the 'prevention consultation' (another DCGP standard) is developed to efficiently guide patients from 45 years and older with risk at heart and

vascular disease, diabetes type 2 or kidney damage [67]. If patients have an elevated risk at heart and vascular disease, diabetes type 2 or kidney damage (measured through a website), they are advised to visit the GP, PN or occupational physician, who offer patients two consultations including, if necessary, tailored lifestyle advice. Hence, GPs or PNs have a defined set of tasks to fulfil in accordance with the 'prevention consultation' standard. The National Association of General Practitioners (LHV) supports several activities with respect to preventive activities for GPs (e.g. partnerships concerning stop smoking, physical activity and obesity) [68]. So far, MI is not directly part of guidelines, protocols or competence profiles, although this technique seems to be underlying the Stop Smoking guideline [65] and does appear to be mentioned as an example of a counselling technique in the competence profile of PNs [69].

As mentioned before, both GPs and PNs use the same guidelines, although PNs also use several specific protocols which include lifestyle behaviour. However, these protocols are mainly used as a checklist of the patient's current (medical) status to justify medical healthcare costs and may therefore hamper proper performance of lifestyle counselling and MI [19]. As stated, it may be desirable that GPs provide general information about lifestyle to patients (as reflected in the guidelines of the DCGP or healthcare standards) followed by PNs' tailored information and advice. Therefore, PNs need more extensive guidelines and protocols on lifestyle counselling and MI. However, these should not be mandatory (i.e. to avoid ticking a checklist), but guiding. In addition, lifestyle counselling (general or specific, depending on the professional) and (brief) MI should be part of the competence profiles of GPs and PNs. This way, the focus of primary care providers (and public health) may gradually shift from 'care and disease' to the recently endorsed focus on 'behaviour and health' [70].

Cooperation and role delineation between professionals

Cooperation between professionals is crucial to optimize lifestyle counselling and facilitate behaviour change in patients. Not only between GPs and PNs, but also the cooperation with other professionals as dieticians and physiotherapists who also play a significant role with respect to lifestyle counselling [46,71]. Therefore, responsibilities of the different professionals should be clearly formulated and not overlap [64]. Furthermore, GPs and PNs should be aware of the local availability of lifestyle interventions and programmes [36,46]. A website that includes the local supply of physical

activity interventions or programmes is already developed for primary care professionals (www.actiefadvies.nl). Websites (or other tools, e.g. leaflets or schedules) with the local availability of interventions or programmes with respect to healthy nutrition, smoking cessation and alcohol use are, to the best of our knowledge, not (yet) available.
The government and the National Association of General Practitioners (LHV) have agreed that GPs play a vital role in the development of more healthcare initiatives in the neighbourhood ('zorg in de buurt') in 2013 [62].

Reinforce patient's responsibility and self-management
Although the performance of lifestyle counselling and MI by GPs and PNs should be strengthened, patients also have their own responsibility towards their lifestyle behaviour. Therefore, patients' responsibility and self-management skills ought to be reinforced by using MI and lifestyle counselling. However, for some patients or in some situations (e.g. not motivated patients) self-management may be very difficult and more guidance and support from professionals is needed [2]. The website of the 'prevention consultation' helps patients (of 45 years and older) to assess their own lifestyle behaviour and provides practical advice tailored to the individual patient (www.testuwleefstijl.nl), including the recommendation to visit a primary care provider or other professional in case of an elevated risk.
As mentioned before, the Dutch government also stresses the importance of patient's own responsibility and self-management towards their health and behaviour [62,63]. Therefore, it may be possible to encourage patient's individual responsibility through several canals (instead of public media campaigns), as in education, work, traffic, living and recreation.
A final remark: there are various good initiatives to foster behaviour change. It would be helpful if these initiatives converge to take the care of patients to the next level, in order to better help patients change and maintain their health behaviour.

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Samenvatting (Summary in Dutch)

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In dit proefschrift is onderzocht hoe huisartsen en praktijkondersteuners tijdens hun dagelijkse consultvoering communiceren over het leefstijlgedrag van patiënten, met betrekking tot roken, alcohol, bewegen en voeding. Daarbij is specifiek gekeken naar het toepassen van motiverende gespreksvoering ('motivational interviewing') door huisartsen en praktijkondersteuners, om patiënten aan te zetten tot gedragsverandering. De overkoepelende term, die in dit proefschrift gebruikt wordt, is 'leefstijl counseling'. De volgende onderzoeksvragen zijn beantwoord:

Deel I (literatuurstudie):
1a. Wat is er bekend in de literatuur over effectieve *face-to-face* communicatiegerelateerde gedragsveranderingtechnieken die gebruikt zijn in interventies om het leefstijlgedrag van patiënten te beïnvloeden, met betrekking tot roken, alcohol, voeding, gewicht en bewegen?
1b. Welke eerstelijnszorgverlener, huisarts of verpleegkundige, is volgens de literatuur het meest effectief in het gebruik van communicatiegerelateerde gedragsveranderingtechnieken?

Deel II (observationele studies):
2. Hoe communiceren huisartsen en praktijkondersteuners over het leefstijlgedrag van patiënten en in hoeverre maken ze gebruik van motiverende gespreksvoering, tijdens hun dagelijkse consultvoering?

Deel III (feedback studies):
3a. Is video-feedback een bruikbare en geaccepteerde methode om te reflecteren op communicatievaardigheden, volgens huisartsen?
3b. Wat is het effect van video-feedback op de communicatievaardigheden, klinische vaardigheden en motiverende gespreksvoering vaardigheden van praktijkondersteuners?

In de **algemene inleiding** van dit proefschrift (**Hoofdstuk 1**) wordt de noodzaak tot (een verbetering in) leefstijl counseling in de eerste lijn gegeven, en worden de theoretische achtergrond en het theoretisch kader gepresenteerd. Het 'Integrated Model for Change' (I-Change (2.0) model) van De Vries (2008) is gehanteerd als voornaamste theoretisch kader. De focus van het I-Change model ligt op intrapersoonlijke determinanten van

gedrag (zoals intentie en motivatie), zonder de invloed van omgevingsfactoren te negeren (zoals familie of beleid).

Belangrijkste bevindingen

Deel I: Effectieve *face-to-face* communicatiegerelateerde gedragsveranderingtechnieken

In het eerste deel van deze thesis, **Hoofdstuk 2**, is een systematisch literatuuronderzoek uitgevoerd naar de relatieve effectiviteit van communicatiegerelateerde *face-to-face* gedragsveranderingtechnieken die gebruikt zijn in interventies om het leefstijlgedrag van patiënten te beïnvloeden. Daarnaast wordt in dit hoofdstuk beschreven welke eerstelijnszorgverlener, huisarts of verpleegkundige, volgens de literatuur het meest effectief is in het toepassen van deze communicatiegerelateerde gedragsveranderingtechnieken. In totaal zijn 50 studies geïncludeerd, waarvan de methodische kwaliteit is geëvalueerd. Zesentwintig studies rapporteerden significante positieve gezondheidsuitkomsten naar aanleiding van de gebruikte gedragsveranderingtechniek(en) én leverden genoeg empirisch bewijs volgens een 'best evidence synthese'. De resultaten laten zien dat 'behavioural counseling', motiverende gespreksvoering, educatie en advies allen potentieel effectieve *face-to-face* communicatiegerelateerde gedragsveranderingtechnieken zijn. Het was echter niet mogelijk om de onderliggende werkingsmechanismen van deze technieken te achterhalen, die wellicht cruciaal zijn voor de effectieve uitkomsten bij patiënten. Daarbij werden deze technieken ook gevonden in minder succesvolle studies, vanwege verschil in bijvoorbeeld de opzet van de studie, de patiënten populatie, en in mindere mate de kwaliteit van de studies. Tot slot blijkt uit de literatuur dat huisartsen en verpleegkundigen even vaardig zijn in het toepassen van communicatiegerelateerde gedragsveranderingtechnieken.

Deel II: Observationele studies in de eerste lijn; de rol van zorgverleners

In het tweede deel van dit proefschrift ligt de focus op cross-sectioneel observationeel onderzoek. In hoofdstuk drie tot en met zes wordt beschreven hoe huisartsen en praktijkondersteuners communicatievaardigheden en motiverende gespreksvoering vaardigheden toepassen bij het uitvoeren van 'leefstijl counseling', tijdens hun dagelijkse consultvoering.

Hoofdstuk 3 onderzoekt of gezonde en ongezonde leefstijl keuzes van patiënten heden ten dagen meer besproken worden in huisartsconsulten dan voorheen. Observaties van dagelijkse consulten tussen huisartsen en patiënten in de periode van 1975 tot 2008 zijn gebruikt. Tevens is het type benadering van huisartsen tot het bespreken van leefstijlgedrag onderzocht. Daarbij is een onderscheid gemaakt tussen de 'populatie benadering', 'hoogrisico benadering' en 'symptoom benadering'. De 'populatie benadering' heeft betrekking op het bespreken van leefstijlgedrag met alle patiënten, de 'hoogrisico benadering' omvat het bespreken van leefstijlgedrag met patiënten met een (verhoogd risico op een) chronische ziekte en de 'symptoom benadering' refereert aan het bespreken van leefstijlgedrag met patiënten wanneer dit relevant is voor de gepresenteerde klacht, zonder dat de patiënt een verhoogd risico loopt of een chronische ziekte heeft (bijvoorbeeld, vragen naar rookgedrag wanneer de patiënt hoest). Verder is onderzocht of het bespreken van leefstijlgedrag gerelateerd is aan patiëntkenmerken, zoals geslacht, leeftijd en opleiding.
Deze studie laat zien dat het bespreken van rookgedrag en bewegen enigszins is toegenomen over de tijd. Dit geldt niet voor het bespreken van voeding (diëten) en alcoholgebruik. In totaal werd het leefstijlgedrag van de patiënt echter in een minderheid van de consulten besproken. Alcoholgebruik van de patiënt werd het minst frequent besproken en bewegen kwam het vaakst aan bod tijdens huisartsconsulten. Huisartsen blijken vooral het leefstijlgedrag van de patiënt te bepreken wanneer dit relevant is voor de klacht van de patiënt (symptoom benadering) en leefstijlgedrag niet met elke patiënt (d.w.z. geen populatie benadering) te bespreken. Tot slot vonden we dat leefstijlgedrag meer wordt besproken met oudere, mannelijke patiënten (behalve als het over voeding gaat). Er werden geen verschillen gevonden tussen patiënten met een verschillende opleiding. Een uitzondering hierop was het bespreken van beweeggedrag, dit werd meer besproken in consulten met patiënten met een HBO of universitaire opleiding.
In **Hoofdstuk 4** is beschreven hoe huisartsen (n=39) en praktijkondersteuners (n=19) leefstijl counseling toepassen, in termen van het geven van informatie en advies over leefstijl en het toepassen van motiverende gespreksvoering. Hiervoor werden respectievelijk 124 en 141 consulten geselecteerd, waarin werd gesproken over het leefstijlgedrag van de patiënt. Het geven van informatie en advies was onderverdeeld in specifiek ('tailored') en generiek, respectievelijk meer of minder

patiëntgericht.
In dit hoofdstuk komt naar voren dat zowel huisartsen als praktijkondersteuners leefstijlcounseling toepassen tijdens hun dagelijkse consulten, volgens algemeen geaccepteerde criteria. Informatie over leefstijl werd meestal gegeven in generieke termen door huisartsen en praktijkondersteuners. Advies over leefstijl werd in het algemeen niet veel gegeven aan patiënten. Wanneer praktijkondersteuners advies gaven aan patiënten over hun leefstijlgedrag dan was dit meestal specifiek advies gericht op een bepaalde patiënt en diens situatie. Huisartsen gaven zowel specifiek als generiek advies. Advies over rookgedrag was meestal specifiek van aard. Huisartsen pasten nauwelijks motiverende gespreksvoering toe tijdens consulten over gedragsverandering van de patiënt. De huisartsen waren echter (op één na) niet getraind in motiverende gespreksvoering. Praktijkondersteuners, die wel getraind waren in motiverende gespreksvoering, paste deze techniek enigszins toe tijdens hun consulten over gedragsverandering van de patiënt.
Hoofdstuk 5 beschrijft dat ervaren praktijkondersteuners (n=13) die extra training hebben gehad in motiverende gespreksvoering voorafgaand aan deze studie, moeite hebben met het toepassen van deze manier van gespreksvoering tijdens alledaagse consulten (n=117). De praktijkondersteuners pasten motiverende gespreksvoering enigszins toe tijdens hun consulten, maar met een substantieel verschil tussen de verschillende motiverende gespreksvoering items. Er werd geen verschil gevonden in het toepassen van motiverende gespreksvoering vaardigheden tussen primaire en secundaire preventie consulten. Een mogelijke verklaring voor het gebrek aan verschil tussen de twee typen preventie consulten is wellicht dat de te behalen winst door het voorkomen van complicaties in primaire preventie gelijk is aan de noodzaak om verergering van een ziekte te voorkomen in secundaire preventie.
In **Hoofdstuk 6** wordt het toepassen van motiverende gespreksvoering vaardigheden, algemene communicatievaardigheden en klinische communicatievaardigheden door praktijkondersteuners, binnen de fase van gedragsverandering van de patiënt ('Stage of Change') geanalyseerd. Daarbij is onderscheid gemaakt tussen 1) de precontemplatie- en contemplatiefase, 2) de voorbereidende fase en 3) de actie- en onderhoudsfase van gedragsverandering.
Praktijkondersteuners passen hun motiverende gespreksvoering vaardigheden enigszins aan aan de fase van gedragsverandering van de

patiënt. De resultaten laten zien dat, gemiddeld genomen, praktijkondersteuners hun motiverende gespreksvoering vaardigheden meer aanpassen aan patiënten in de voorbereidende fase dan aan patiënten die op dat moment in een andere fase van gedragsverandering zitten (precontemplatie, actie of onderhoud). Praktijkondersteuners passen drie specifieke motiverende gespreksvoering vaardigheden en één algemene communicatievaardigheid aan aan de fase van gedragsverandering van de patiënt. Deze exploratieve studie laat zien dat praktijkondersteuners enigszins intuïtief de fase van gedragsverandering van de patiënt achterhalen en hun communicatie daar op aanpassen. Echter, de verschillen tussen de fasen van gedragsverandering waren klein.

Deel III: Effecten van video-feedback op de communicatievaardigheden en motiverende gespreksvoering vaardigheden van zorgverleners.

Het derde deel van deze thesis bestaat uit feedback studies.

In **Hoofdstuk 7** is de video-feedback methode beschreven, die is ontwikkeld om te kunnen reflecteren op de communicatievaardigheden van ervaren huisartsen. Allereerst kregen huisartsen (n=28) een persoonlijke, beveiligde web-link naar twee van hun eigen op video opgenomen consulten. Nadat zij deze consulten hadden bekeken kregen zij feedback over de telefoon of in een één op één mondelinge sessie van een uur, gestructureerd aan de hand van een individueel rapport. Dit rapport bevatte scores over de communicatie van de huisarts in vergelijking met collega huisartsen en scores over de eigen communicatie uit een eerdere studie. De mening van patiënten over de communicatie van hun huisarts werd eveneens opgenomen in het rapport. Aan huisartsen werd gevraagd te reflecteren op hun eigen communicatie en een mening te geven over het nut en de bruikbaarheid van de feedback (methode).

Bijna alle huisartsen waren tevreden over de feedback (methode), met name over de web-link naar de op video-opgenomen consulten en het gestructureerde rapport. Feedback over de telefoon of in een één op één mondelinge sessie werden gelijk gewaardeerd.

Hoofdstuk 8 onderzoekt de effecten van individuele video-feedback, vergelijkbaar met de methode beschreven in hoofdstuk 7, op de algemene communicatievaardigheden, klinische competenties (d.w.z. het houden aan richtlijnen en standaarden) en motiverende gespreksvoering vaardigheden van ervaren praktijkondersteuners (n=17), door middel van een voor- en nameting met controlegroep. Ten eerste werden 325 consulten tussen

praktijkondersteuners en patiënten opgenomen op video op twee momenten (T0 en T1), met 3 tot 6 maanden ertussen. Vervolgens werden deze consulten geobserveerd met behulp van twee gevalideerde observatie-instrumenten en geanalyseerd met multilevel regressie analyse. Voor de video-opnamen van de consulten werden praktijkondersteuners toegewezen aan de video-feedback groep of controlegroep. Praktijkondersteuners uit de video-feedback groep kregen video-feedback tussen T0 en T1. Praktijkondersteuners uit de controlegroep kregen video-feedback na afloop van de studie (d.w.z. na T1).

Video-feedback blijkt een potentieel effectieve methode om de algemene communicatievaardigheden van praktijkondersteuners te verbeteren. Praktijkondersteuners die video-feedback ontvingen hadden significant meer aandacht voor de hulpvraag van de patiënt en gaven meer uitleg over het medisch onderzoek in de spreekkamer (bijvoorbeeld over de bloeddrukcontrole). Daarnaast gaven deze praktijkondersteuners significant meer begrijpelijke informatie in vergelijking met praktijkondersteuners uit de controlegroep. Bovendien evalueerden de praktijkondersteuners de feedback (methode) als nuttig. Alhoewel een eenmalige video-feedback sessie niet genoeg lijkt om de motiverende gespreksvoering vaardigheden van praktijkondersteuners te verbeteren, waren er wel significante verbeteringen te zien op enkele specifieke motiverende gespreksvoering vaardigheden. Praktijkondersteuners uit de video-feedback groep besteden significant meer aandacht aan 'agenderen en toestemming vragen' tijdens hun consultvoering dan praktijkondersteuners uit de controle groep. Tot slot laat deze studie zien dat de klinische vaardigheden van praktijkondersteuners, oftewel het opvolgen van richtlijnen, niet veranderden na de feedback, doordat praktijkondersteuners al heel hoog scoorden op deze vaardigheden voorafgaand aan de feedback (plafond effect).

In het laatste hoofdstuk van dit proefschrift, de **samenvatting en algemene discussie,** wordt op de belangrijkste bevindingen gereflecteerd in het kader van eerdere studies en theorie. Daarnaast wordt een methodologische reflectie gegeven en worden aanbevelingen gedaan voor onderzoek en voor de praktijk.