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Active ingredients and mechanisms of change

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CHAPTER 5

Developing nurses' skills in motivational interviewing to promote a healthy lifestyle in patients with coronary artery disease

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ABSTRACT

Background

If nurses have the communication skills and the time, they can play an important role in increasing the intrinsic motivation of patients with coronary artery disease (CAD) to change their lifestyle. Motivational Interviewing (MI) can be used to further support this role. However, few nurses are sufficiently proficient in applying MI-skills. Increasing these complex communication skills may contribute significantly to achieve lifestyle changes in CAD-patients.

Aims

The aim of this study was to evaluate the coaching of nurses to skilfully use MI in a secondary prevention programme for CAD-patients.

Methods

The design was a before-after study of a learning strategy as a follow-up on a short MI-workshop. At (on average) four-monthly intervals, the nurses received three times feedback and coaching by telephone and email on their use of MI-skills in audio-recorded conversations on lifestyle change with CAD-patients. The MI consistency of the nurses' communication skills was scored using the Motivational Interviewing Target Scheme 2.1 (range 0-32).

Results

Of the 24 nurses, 13 completed all audio-recordings. The mean change in MI consistency of these completers between the first and the last audio-recording was 6.4 (95% CI 3.2 to 9.5). This change indicates an improvement from "a small part of Motivational Interviewing practice" to "a mainly sufficient degree of Motivational Interviewing practice".

Conclusion

A one-year follow-up on a MI workshop with feedback and coaching improves MI-skills of nurses. Healthcare professionals should be aware of the importance of a follow-up on training in complex communication skills, to develop and preserve competency.

INTRODUCTION

Lifestyle is an important factor in primary and secondary prevention of coronary artery diseases (CAD) [1-4]. Nevertheless, about 30 to 50% of myocardial infarction patients continue an unhealthy lifestyle after a myocardial infarction, thus increasing the risk of re-infarction [5-7]. An important question is how to bring about beneficial changes in unhealthy lifestyles such as smoking, unhealthy diet, and lack of exercise. Increasing people's intrinsic motivation for sustained lifestyle changes may be a key factor [8].

Nurses, due to their intensive contact with patients, are in a favourable position to discuss potential lifestyle changes. If nurses take the opportunities to elicit and strengthen intrinsic motivation, they may help prevent reoccurrence of acute cardiovascular events [8,9]. Motivational Interviewing (MI) is particularly designed to strengthen intrinsic motivation to promote healthy behaviour [8-11], and showed to be effective for a variety of outcomes (e.g. body weight, alcohol and tobacco use, sedentary behaviour, dental outcomes) [10]. It is "a collaborative conversation style for strengthening a person's own motivation and commitment to change" (Miller & Rollnick, 2013; p.29) [11]. MI aims to address the patient's ambivalence about change, and to support the patient to resolve this ambivalence by eliciting and exploring the patient's own reasons for change (change talk). When applying MI, the nurse intentionally influences the patient's willingness, ability and readiness to change [11]. Most nurses are not trained as MI counsellors, but by using components of MI they may enhance patients' intrinsic motivation for health behaviour change [12].

Effectively applying newly learned communication skills, such as MI, and further improving these skills in daily nursing practice, can be challenging. The importance to enhance patients' motivation by using professional motivational skills is widely recognized [13]. Systematic training of nurses in applying these skills is essential. However, the systematic review by Schwalbe et al. [14] on the effects of learning and applying MI in daily practice shows that the skills acquired through a workshop-only approach usually fade within months. In this review, 13 studies reporting on MI workshop effects are summarised. The authors conclude that while effects of a MI workshop-only had decreased at three and six months, three to four post-workshop sessions of feedback and/or coaching seemed to lead to retention of MI-skills [14,15]. Based on these findings, we developed a strategy for providing feedback and coaching to nurses, as a follow-up intervention after a three-hour MI workshop, to achieve enhancement of their MI-skill use in daily practice. The feedback and coaching intervention started after the initial workshop, so the pre-intervention workshop itself was not part of the

intervention. In the present study, we investigated the effects of this intervention on the adequate use of MI-skills by nurses in planned conversations about lifestyle change with CAD-patients. We also investigated which difficulties nurses encountered in these conversations, and how MI may have helped them to successfully address these difficulties. The following questions are central in the present study: (1) To what extent does structured feedback and coaching increase recently acquired MI-skills in nurses during their planned conversations on lifestyle change with CAD-patients? (2) What common conversational difficulties do nurses encounter during these conversations, and (3) how can a MI strategy help to reduce these difficulties? (4) Is the feedback and coaching intervention a satisfactory learning strategy for the participating nurses?

METHODS

Design

The study was designed as a before-after study of a learning strategy, in which nurses were coached to use MI-skills within a comprehensive nurse-coordinated secondary prevention programme to improve lifestyle-related risk factors in CAD-patients. The study was conducted within the RESPONSE-2 trial [16].

At the start of the RESPONSE-2 trial, and prior to our MI feedback and coaching intervention, the 24 participating nurses received a 3-hour MI workshop to learn the basic MI-skills (content workshop available upon request). Our feedback and coaching intervention started after the workshop. The first measurement (baseline) was four months (on average) after the workshop. At this point, nurses were sufficiently familiar with the execution of the nurse-coordinated lifestyle intervention programme, but their MI-skills were expected to have decreased due to the elapsed time since the MI workshop [14]. Our hypothesis was that the feedback and coaching sessions would result in an increase to the MI-skills after this baseline session.

At entry in the RESPONSE-2 study, all patients gave written informed consent, including consent to record conversations. The investigation conforms with the principles outlined in the Declaration of Helsinki, and was approved by the Medical Ethics Committee (AMC, Amsterdam, number NL41645.018.12).

Study setting and participants

The study was carried out on the outpatient clinic of 15 hospitals in the Netherlands. The participants were registered nurses with experience in cardiovascular nursing. For

the RESPONSE-2-study [16], patients with an acute coronary syndrome (ACS) and/or coronary revascularisation with at least one lifestyle-related risk factor, received up to four scheduled visits with a nurse. During these visits, the nurse performed a nurse-coordinated secondary prevention programme, aimed at adopting a healthy lifestyle and monitoring the patient's coronary condition and medication adherence. The nurse discussed lifestyle topics with the patient, and, if present, his partner. If the patient expressed his motivation for lifestyle change (smoking, diet, exercise pattern), the nurse discussed referral to a community-based lifestyle intervention programme. The nurse also addressed the progress and the patient's satisfaction with this programme, and the patient's ability to integrate the lifestyle change in his daily life. After finishing the lifestyle programme, the patient and nurse discussed the opportunities to, and the patient's ability to maintain the lifestyle change. In all these conversations, the nurse was expected to integrate MI components in her conversation style.

Intervention

The intervention consisted of four feedback and coaching sessions in one year, each session was based on a planned conversation on lifestyle change between the nurse and a CAD-patient. We audio-recorded the conversations and measured the MI-skills applied by the nurses (see: measurements). Next, the nurses received their feedback and coaching. During the four months between these sessions the nurses had sufficient opportunity to process the feedback and integrate it into the working routines (see flow chart). This procedure ensured that the audio-recordings comprised conversations with different patients, which ensured a variety in the addressed lifestyle topics, in the patients' motivation for lifestyle change, and in the perceived difficulty of the conversations.

The feedback and coaching focussed on improving the effective use of MI components in the conversations, and consisted of one or two compliments and one or two tips for improvement. Hereby, we sought a balance in feedback on skills that were already used well, and skills whose further development would improve the MI level of the conversations. The focus of the feedback was based on the MI-skills measurements, in combination with the determination by a MI expert (JD) of the area in which the skill gain would be most effective. Each point of feedback consisted of three elements: an observation from the audio recording, an interpretation of the meaning of that observation based on MI theory and a suggestion for improvement/development (see table 1). The feedback and coaching was provided by telephone within one week after the audio-recorded patient visit. The MI expert and the nurse discussed the feedback on the audio-recorded conversation. Immediately after this telephone conversation,

a written exemplar of the feedback, including examples from the audio-recorded conversation, and, if appropriate, suggestions for alternative MI approaches in the conversation, was sent to the nurse by email. To ensure continuity in feedback and coaching, the feedback provided during the previous session always was the starting point of the subsequent feedback. By this, we aimed to stimulate transfer of the nurse's MI knowledge and MI-skills to other patient contacts, and to equip the nurse for the natural variety of the patients she will encounter [17].

Figure 1. Flow chart of the Motivational Interviewing learning intervention

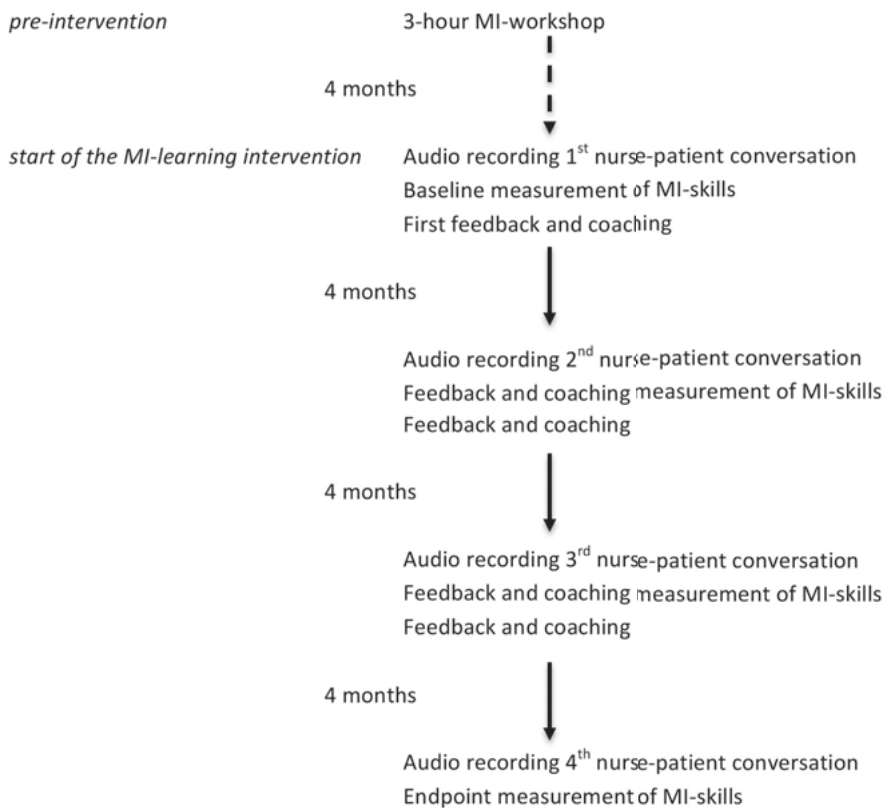


Table 1. Example of the written structured feedback

MIT 2.1 target: Evocation

Observation	<p>While you are working on the strengthening of the patient’s motivation for exercise, and for maintaining his exercise level, the proportion of open questions you ask is high, compared to the number of your reflections.</p> <p>The questions that you ask are adequate and of good quality, and so are the reflections that you offer.</p>
Interpretation	<p>At some times and places in the conversation, a reflection is a more sufficient technique than an open question. In motivational interviewing, as a rule of thumb, an open question should be followed by two reflections.</p> <p>For example, in the conversation, the patient tells you about his concern that he might not be able to keep up to the agreed exercise level, after returning to full time employment.</p> <p>You started this conversation with a very good open question (“Why would you want to exercise more?”). And if you reflect the patient’s reaction this will probably support the patient’s thought process in dealing with this potential barrier.</p>
Hint for improvement / development	<p>Try to trade a question for a reflection sometimes. In your conversations, you have already offered good-quality reflections. Consider e.g. the following suggestion:</p> <p>You: “Why would you want to exercise more?” Patient: “That is easy: for my health.” The patient continues explaining that, in addition to exercise, there are other obligations and activities, like his job, his friends and family, and his weekly choir rehearsal. You: “That’s true.”</p> <p>Alternative reaction: “When you’re back in your job full time, the sports and other exercises need to be squeezed between all the other activities like your choir rehearsal. It is hard to keep up with exercise when you are working long days, coming home tired.”</p> <p>The patient will probably tell you about his view on this potential barrier, and (with your guidance: How can you respond if this might happen?; What other people could help or support you with this?; How could they be of help?) the patient may arrive at an idea for dealing with this potential obstacle.</p>

Data collection and measurements

We compared the MI-skills on endpoint with the skills four months post-workshop, and not with skills immediately post workshop. There are three reasons for this choice: (a) we preferred baseline measurement of the MI-skills in the real intervention condition, with real patients and in the real nurse-coordinated programme of RESPONSE-2, instead of the post-workshop MI-skills in role play conditions (see also Miller et al. [18]); (b) recording of conversations may provoke anxiety for the nurse, we didn't want the recording to interfere with the start-up period of the RESPONSE-2-trial intervention; (c) we wanted the nurses to feel familiar with the performance of the study protocol before starting to record conversations.

A research assistant contacted the nurse to set a date for the audio recording, and randomly selected one of the patient visits scheduled on that particular date. On the planned date, we contacted the outpatient clinic and requested the nurse use the speaker function of the telephone to record the conversation. After explicitly obtaining the patient's verbal consent for this recording, the nurse started the conversation.

We used the validated Motivational Interviewing Target Scheme 2.1 [12,19] (MITS 2.1) to analyse the nurse's use of MI components during the conversation. The MITS describes and assesses the core components of MI, in order to analyse practice performance and to support the development of skilfulness in MI [12]. It describes ten targets of MI consistent practice, seven of which are obligatory, and three are discretionary targets. We used the seven obligatory and one discretionary target (see table 2 for a description and the scoring of MITS-targets). The reason for exclusion of the other discretionary targets is that these targets demand more advanced MI-skills, which requires a more expansive MI training. Each target is scored on a 5-point scale (0–4). The discretionary target is only scored if there is observable evidence [12]. The range of the MITS using these eight targets is 0-32 points. After the analysis of the conversation (see: data analysis), we categorised all feedback in one of the feedback areas based on the content of the MITS-targets.

During the process of feedback and coaching on MI performance, we performed four measurements (see figure 1). We used the difference between MI-skills at baseline and endpoint as outcome measure. The two interim measurements were solely used for feedback and coaching.

After completing all feedback and coaching sessions, the research assistant requested the nurses score their satisfaction with the MI learning intervention, using three

self-developed questions (10-point scale). These questions concerned their satisfaction with this method of communication skill development, the applicability and acceptability of the received feedback, and the management and organisation of the contacts between the nurse and the research team.

Table 2. MITS 2.1 Targets of motivational interviewing consistency

Target	Description	Focus
Activity emphasis	The nurse switches between the activities (considering, discussing, advocating) and uses the activity that, at that point of the conversation, will best serve movement towards change.	<ul style="list-style-type: none"> · switching · active listening · exploring ambivalence · discussing · providing information or advice
Posture	The posture is one of 'being with the patient'.	<ul style="list-style-type: none"> · compassionate · courteous · respectful · considerate · caring and friendly
Empathy	The nurse skilfully performs empathic reflections, to achieve and maintain a trusting working relationship.	<ul style="list-style-type: none"> · reflective statements · accurate understanding of the patient's feelings · genuinely curious about the patient
Collaboration	Purposeful collaboration between all parties to the conversation, evident from all the persons' speech.	<ul style="list-style-type: none"> · collaborative ambience · patient feels encouraged to articulate his ideas · purposeful partnership · the nurse is never impatient and appears able to exercise self-restraint
Independence	The nurse works to establish, legitimise and maintain recognition of the patient's independence.	<ul style="list-style-type: none"> · emphasize control · freedom of choice · autonomy · encouraging to accept responsibility · nurse emphasizes his/her own role as being in service of the patient

Table 2. Continued

Target	Description	Focus
Evocation	Evocation and consolidation of change talk through evocative questions, reflections, affirmations, summaries and other tactics.	<ul style="list-style-type: none">· encourages patient to articulate own motivations for change· desire, reasons, need, ability, commitment, activation statements and taking steps· acceptance and affirmation· the nurse doesn't attempt to persuade the patient
Navigation	The nurse pushes forward the conversation in a promising and productive direction, without causing disengagement.	<ul style="list-style-type: none">· change target is maintained largely at the centre· goal oriented· navigates along cliffs tactically· prevents discord
Information and advice	The nurse gives information or advice in such a manner that the patient will at least consider it.	<ul style="list-style-type: none">· skilfulness· discusses the patient's understanding and the meaning/value he/she attaches to the information· the nurse has good knowledge on the subject

Descriptions derived from the manual for the Motivational Interviewing Target Scheme, Version 2.1 [12]. For this study, eight out of ten targets were used. Targets not used are: Contrasts; Structured brief tactics. Each target is scored: 0=no evidence in the nurse's performance to support the target description (TD); 1=the evidence partly supports the TD; 2=the evidence supports the TD in a mainly sufficient degree; 3=the evidence largely supports the TD; 4=the evidence (almost) completely supports the TD.

Outcomes

The primary outcome was the change in MI-skills. Secondary outcomes were a summary of common conversational difficulties for the nurses and applied MI strategies to cope with these difficulties, and the satisfaction of the nurses with the MI learning.

Data analysis

The conversation parts in which the patient and the nurse discussed lifestyle topics were transcribed. The MI expert analysed the conversation, using both the audio recording and transcript. A second MI coder double scored a random selection of 20% of the sessions to determine the interrater agreement. We considered a maximum of two-point difference in the total score as an agreement, and a difference of >2 points as a disagreement. Based on this dichotomisation, we calculated Kappa of 0.59, which indicates moderate agreement [20]. We also verified whether the nurses who had

followed a MI training prior to the pre-intervention MI workshop (n=9), differed in their baseline and/or endpoint MITS-score from the other nurses (n=15). We found no significant differences between these groups (mean score prior trained nurses 12, range 8-19; mean score other nurses 12.3, range 4.5-17).

To analyse the pre-test/post-test changes for the nurses who completed all four audio recordings ('completers', n=13), we computed the mean MITS-scores at baseline and endpoint, and performed a paired t-test in SPSS version 22. We also tested the null hypothesis of no change for all included nurses (n=24), irrespective of the number of audio recordings they completed, and for the 'noncompleters' (n=11). Due to the non-symmetric distribution of these data, we used the Bootstrapped Quantile Regression (1000 repetitions) in Stata version 13.1 to compute the median difference with 95% confidence intervals for all groups. The score on endpoint for nurses who did not complete all audio recordings was replaced by carrying forward the last observation.

We tallied the number of feedback entries for each feedback area, thus determining the common conversational difficulties and MI solutions for these difficulties. We translated examples of the three most common conversational difficulties. Because translation is an interpretative act, we tried to reduce the risk of loss of meaning by staying as long as possible in Dutch. The original audio recorded Dutch text of the patient and the nurse (and the transcript) was compressed by the first author, this was checked by two other authors, then translated to English by the first author, and the translation was checked by an English native speaker. Finally, we computed the means of the satisfaction scores.

RESULTS

Sixty-nine nurse-patient conversations were recorded, transcribed and analysed, and the 24 nurses (see table 3 for background characteristics) were provided with feedback. Thirteen nurses completed the full intervention. Two nurses completed three recordings, two nurses completed two recordings, and seven nurses completed one recording. Reasons for not completing the full intervention were an insufficient number of intervention patients in the caseload (n=3), prolonged illness (n=1), stopped participation in the RESPONSE-2-study (n=4). For three nurses the reasons were unknown.

Table 3. Background characteristics cardiac care nurses (n=24)

	All nurses (%) n=24	Completers (%) n=13	Non completers (%) n=11
Age (years)			
mean (SD)	44 (8.5)	47 (5.7)	41 (10.0)
Gender			
Female	23 (96%)	13 (100%)	10 (91%)
Male	1 (4%)	0 (0%)	1 (9%)
Education			
second level nurse ^a	4 (17%)	3 (23%)	1 (9%)
first level nurse ^a	14 (58%)	5 (38.5%)	9 (82%)
masters level	6 (25%)	5 (38.5%)	1 (9%)
Previous MI-training			
yes	9 (37.5%)	9 (69%)	0 (0%)
no	15 (62.5%)	4 (31%)	11 (100%)
Years of experience as a nurse			
mean (SD)	22 (9.5)	24 (6.4)	18 (11.7)
Years of experience as a cardiac care nurse			
mean (SD)	7 (3.9)	7 (3.1)	7 (4.7)

^aBased on Robinson & Griffiths (2007) [21].

Effects of feedback on Motivational Interviewing practice performance

For the 13 completers, we found statistically significant improvements in their MI-skills (table 4). The mean increase in MITS-score for these completers was 6.4 (95% CI 3.2 to 9.5). Based on the MITS-definitions of standards of MI consistency, this indicates a clinically important improvement, from demonstrating “a small part of Motivational Interviewing practice” to demonstrating “a mainly sufficient degree of Motivational Interviewing consistent practice” [12]. The 13 completers were very satisfied with the content, applicability and the organisation of the intervention (table 5).

Table 4. Scores on MITS 2.1^a

	Baseline mean (SD)	Endpoint mean (SD) (12 months)	Mean Difference (SD; 95% CI)	Median Difference (95% CI)
Completers (n=13)	12.5 (3.4)	18.8 (3.9)	6.4 (5.2; 3.2 to 9.5)	7 (2.2 to 11.8)
Non completers (n=11)	11.9 (3.6)	12.6 (3.6)	^b	0.0 (-0.8 to 0.8)
All nurses (n=24)	12.2 (3.4)	16.0 (4.8)	^b	2 (-0.9 to 4.9)

^aRange MITS 2.1 [12] (8 targets) 0-32.

^bNon-symmetric distribution: no mean and standard deviation computed.

Table 5. Satisfaction with the intervention (n=13)

	Mean (SD)
Satisfaction with this method of developing Motivational Interviewing skills	9.1 (0.9)
Acceptability and applicability of the feedback	9.3 (0.6)
Satisfaction with the organisation of the audio-recordings	9.0 (0.9)

Nurses were asked to rank their satisfaction with the intervention from 1 (not satisfied at all) to 10 (very satisfied).

Difficulties in the conversation on lifestyle change and possible Motivational Interviewing-solutions

The most prevalent conversational difficulties over all recorded sessions were (1) the effective use of reflections, (2) the utilisation of patient's sense of control as a motivator for long-term conservation of the lifestyle behaviour, and (3) the handling of patient ambivalence about lifestyle change.

1) Reflections. Nurses tended to ask questions, while reflections are more powerful in encouraging the patient to continue exploring his lifestyle behaviour [11]. Good reflections go one step further than the patient's statement, they reflect what the patient meant but has not said, thus reflecting the next step in the patient's thought process on lifestyle change. A skilful worded reflection sounds like a thought unit of the patient, helping the patient to move forward in his thought process (box 1) [11].

Box 1. Trading a question for a reflection

Patient: "My diet, I usually stick to my diet, but sometimes I eat too much."
Nurse: "What do you mean by 'usually'?"

Alternative reaction:

Nurse: "Mostly you're doing well, but you would like to succeed always."

2) *Sense of control.* Frequently, patients reported getting familiar with their changed lifestyle. Mostly, the nurses reacted with an affirmation, sometimes followed by a reflection. But, in order to strengthen long-term motivation, it is important that this reflection emphasizes the patient's control over the acquired lifestyle, thus fostering the patient's belief that he is in control (box 2).

Box 2. Emphasizing control

Nurse: "So, how do you manage at work, now that you've stopped smoking?"
Patient: "Oh, I used to step outside and take a smoke every now and then, with the other smokers. It is the same at parties and other social events. Now I go outside to take a short walk, you know, stretching the legs..."
Nurse: "So you simply replaced the behaviour."
Patient: "Not on purpose."
Nurse: "No, automatically, that's good!"

Alternative reaction:

Nurse: "By changing these routines, you've taken back control over smoking."

3) *Ambivalence.* Often, patients felt ambivalent about changing their lifestyle, which hindered the decision to change their lifestyle behaviour. In MI, when a patient directly or indirectly expresses his ambivalence, the nurse should reflect both the pro and contra side of the ambivalence in a non-judgmental way. The nurses mostly recognised and reflected the patient's ambivalence well. The next step however, to explore the ambivalence and help the patient to solve this ambivalence and reach a decision on lifestyle change, was more difficult to achieve. At this point, many nurses were inclined to give information about the lifestyle risks, e.g. the risks of smoking for a recurrent infarction. Almost all patients, however, were well aware of these risks, which represented one side of their ambivalence: the pro-side. Since the ambivalent patient

experiences two sides, and since information presented by the nurse focuses on the pro-side, the patient feels forced to plead for the other side, contra lifestyle change: “Yes I know. But like I said, it is the stress, and smoking makes me feel better.” (box 3).

This reaction, the emphasis by healthcare professionals on the pro-change side of the patient’s ambivalence, is known as ‘the righting reflex’ [11]. Instead of this persuasive reaction, it is better to explore the ambivalence, and help the patient to express the reasons and motives for lifestyle change himself (change talk).

Box 3. Exploring ambivalence

Nurse: “You seem to be kind of on two tracks. On one hand, you feel stress and the smoking helps you to calm down. And on the other hand, you want to stop smoking for your heart, for your health.”

Patient: “Yes. I have been smoking for more than fifty years. And I wonder... maybe quitting is not always the best thing to do, or is it?”

Nurse: “Like I said, the nicotine in the cigarettes narrows your arteries, and the smoke roughens and damages your arteries. It also makes your blood thicken, and this all increases your risk on another infarction.”

Patient: “A mess in my arteries and all that junk. But not with my cigarettes, they don’t contain so much tar and nicotine.”

Alternative reaction 1:

Nurse: “You seem to be kind of on two tracks. On one hand, you feel stress and the smoking helps you to calm down. And on the other hand, you want to stop smoking for your heart, for your health.”

Patient: “Yes. I’m already smoking more than fifty years. And I wonder... maybe quitting is not always the best thing to do, or is it?”

Nurse: “What do you hope for, concerning the smoking?”

Alternative reaction 2:

Nurse: “Shall we take a closer look at the pros and cons of smoking?”

(With the patient’s permission, the patient and the nurse continue differentially exploring the advantages of smoking in a way that does not induce the patient advocate them, and next elaborate on the most important disadvantages of smoking.)

DISCUSSION AND CONCLUSION

Discussion

Our study suggests that feedback and coaching helps nurses to increase their MI-skills, after presupposed initial decrease of these skills in the four months following the MI workshop. The MI learning strategy also enables the nurses to increasingly use MI-skills in their patient contacts. If nurses integrate this MI approach in their daily practice, they may be able to reduce the conversational difficulties and be more effective in their professional conversations about lifestyle change. For the nurses who completed the whole intervention, we found the intervention had a clinically relevant and statistically significant effect, with a good suitability to nursing practice. Receiving the feedback and coaching didn't take much nursing time (four times 15-30 minutes in one year), and the 13 nurses who completed the intervention expressed high satisfaction with their skill gain. The question whether "better Motivational Interviewing" is associated with better patient outcomes will be subject to a separate analysis.

Although we had four measurements of the MI-skills, we only used two in our statistical analysis: at baseline and at endpoint. We considered the two measurements in between necessary to determine the topics for feedback and coaching, but of no extra value in the information on overall MI skill development of the nurses. The intervention was based on the assumption that skilfulness and expertise develops through "volume of practice" and through the critical reflection on sufficient conversations with a variety of patients [15]. For this, the intervention had to be spread over sufficient time (one year). We considered the number of three sessions for feedback and coaching as the minimum [14] to ensure feedback on a variety of patient behaviours [17]. As a consequence, the two measurements between baseline and endpoint may have been affected too much by the random difficulty of that specific patient conversation to be considered as an adequate reflection of the real MI-skills at that point.

The findings are in line with studies on learning Mi [14,15,18,22], in which the effects of feedback and coaching retained the MI-skills acquired in a previous workshop. In their systematic review, Schwalbe et al. [14] reported a non-significant skill gain for post-workshop feedback, coaching, and coaching and feedback together, based on 13 studies, measured three and six months after the post-workshop measurements. We found a significant increase of MI-skills for the 13 completers, 12 months after the baseline measurement. This baseline measurement, however, took place four months after the workshop, and the MI-skills had probably already decreased by then. Thus, retention of MI-skills as reported in the systematic review [14] may be as valuable as the

increase in MI-skills that we've found in our study. Our study comprised a total coaching time of one to two hours over one year. Based on six studies, Schwalbe et al. [14] found increased skills for 5 to 12 contact hours spread over at least six months. It is plausible that increasing the contact time in our study might have led to further MI skill gain.

Limitations

We measured the performance of nurses who received the MI learning intervention, and there was no control group. Therefore, we are unable to compare the change in MI-skills with a control group. The decision not to expand measures to a control group is based on the finding in a systematic review of six studies that the workshop-only condition leads to a decrease in MI-skills ($d=-0.30$) [14].

Another limitation is that it took four months from workshop to baseline measurement of the MI-skills. We might have found other results had our learning intervention started about two months after the workshop, before the MI-skills start to erode.

The intervention comprised three sessions of feedback and coaching spread over a one-year period. The learning curve of skills will not stop after one year so prolonged coaching would probably have led to further skill development.

Finally, the attrition of 11 of the 24 nurses may have introduced some selection bias. Attrition is a problem in research measuring improvement of communication skills, and our attrition rate is in line with similar research [14,18,23]. The attrition of eight of the eleven nurses was due to organisational or personal circumstances (see: results), the reasons for not completing the intervention of the other three nurses is unclear.

Conclusion

This study demonstrates that a one-year follow-up on a MI workshop with feedback and coaching improves the MI-skills of nurses. The nurses used the acquired skills in their patient conversations, and expressed high satisfaction with their MI skill gain. The learning intervention does not consume much nursing time and can easily be implemented without disturbing the working routines.

IMPLICATIONS FOR PRACTICE

- Nurses can use Motivational Interviewing to address the difficult topic of ambivalence about lifestyle behaviour change in CAD-patients.
- Follow-up workshops on complex communication skills such as Motivational Interviewing may enhance the effective use of these skills in daily practice.
- Implementation of this learning strategy helps nurses to reflect and explore the patient's ambivalence and change talk, and to emphasize the patient's sense of control. It also fosters the quality of the nurse – patient communication, and thus may promote better patient outcomes.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

REFERENCES

1. Smith SC, Benjamin EJ, Bonow RO, Braun LT, Creager MA, Franklin BA, et al. AHA/ACC Secondary prevention and risk reduction therapy for patients with coronary and other atherosclerotic vascular disease: 2011 Update. A guideline from the American College of Cardiology Foundation. *J Am Coll Cardiol.* 2011;58(23):2432-46.
2. National Institute for Health and Care Excellence. Secondary prevention in primary and secondary care for patients following a myocardial infarction. (Clinical guideline 172). 2013. www.nice.org.uk/guidance/cg172. Accessed 6 April 2017.
3. Piepoli MF, Corrà U, Adamopoulos S, Benzer W, Bjarnason-Wehrens B, Cupples M, et al. Secondary prevention in the clinical management of patients with cardiovascular diseases. Core components, standards and outcome measures for referral and delivery. *Eur J Prev Cardiol.* 2014;21(6):664-81.
4. Piepoli MF, Corrà U, Dendale P, Frederix I, Prescott E, Schmid JP, et al. Challenges in secondary prevention after acute myocardial infarction: a call for action. *Eur J Prev Cardiol.* 2016;23(8):1994-2006.
5. Chow CK, Jolly S, Rao-Melacini P, Fox KAA, Anand SS, Yusuf S. Association of diet, exercise, and smoking modification with risk of early cardiovascular events after acute coronary syndromes. *Circulation.* 2010;121:750-8.
6. Jørstad HT, Von Birgelen C, Alings AMW, Liem A, Van Dantzig JM, Jaarsma W, et al. Effect of a nurse-coordinated prevention programme on cardiovascular risk after an acute coronary syndrome: main results of the RESPONSE randomised trial. *Heart.* 2013;99:1421-30.
7. Iestra JD, Kromhout D, Van der Schouw YT, Grobbee DE, Boshuizen HC, Van Staveren WA. Effect size estimates of lifestyle and dietary changes on all-cause mortality in coronary artery disease patients. A systematic review. *Circulation.* 2005;112:924-34.
8. Rubak S, Sandbaek A, Lauritzen T, Christensen B. Motivational Interviewing: A systematic review and meta-analysis. *Br J Gen Pract.* 2005;55:305-12.
9. Bredie SJH, Fouwels AJ, Wollersheim H, Schippers GM. Effectiveness of Nurse Based Motivational Interviewing for smoking cessation in high risk cardiovascular outpatients: a randomized trial. *Eur J Cardiovasc Nurs.* 2011;10:174-9.
10. Lundahl B, Moleni T, Burke BL, Butters R, Tollefson D, Butler C, et al. Motivational Interviewing in medical care settings: A systematic review and meta-analysis of randomized controlled trials. *Patient Educ Couns.* 2013;93:157-68.
11. Miller WR, Rollnick S. *Motivational Interviewing: helping people change.* New York: The Guilford Press; 2013.
12. Allison J, Bes R, Rose G. *Motivational Interviewing Target Scheme (MITS 2.1). An instrument for practitioners, trainers, coaches and researchers.* Hilversum MiCampus; 2012. Available at: http://www.motivationalinterviewing.org/sites/default/files/MITS_2.1.pdf Accessed: November 2013.
13. Piepoli MF, Hoes AW, Agewell S, Albus C, Brotons C, Catapano AL, et al. 2016 European Guidelines on cardiovascular disease prevention in clinical practice. *Atherosclerosis.* 2016;252:207-74.
14. Schwalbe CS, Oh HY, Zweben A. Sustaining Motivational Interviewing: a meta-analysis of training studies. *Addiction.* 2014;109:1287-94.

15. Dunn C, Darnell D. Commentary on Schwalbe et al. (2014): two wishes for the future of Motivational Interviewing – workshops with fewer learning targets and sustainable coaching. *Addiction*. 2014;109:1295-6.
16. Minneboo M, Lachman S, Snaterse M, Jørstad HT, Ter Riet G, Boekholdt SM, et al. Community-based lifestyle intervention in patients with coronary artery disease: The RESPONSE-2 trial. *J Am Coll Cardiol*. 2017;70(3):318-27.
17. Van den Bossche P, Segers M, Jansen N. Transfer of training: the role of feedback in supportive social networks. *Int Train Dev*. 2010;14(2):81-94.
18. Miller WR, Yahne CE, Moyers TB, Martinez J, Pirritano M. A randomized trial of methods to help clinicians learn Motivational Interviewing. *J Consult Clin Psychol*. 2004;72(6):1050-62.
19. Oberink R, Boom SM, Van Dijk N, Visser MRM. Assessment of Motivational Interviewing: a qualitative study of response process validity, content validity and feasibility of the Motivational Interviewing target scheme (MITS) in general practice. *BMC Med Educ*. 2017;17:224.
20. Petrie A, Sabin C. *Medical statistics at a glance*. 2nd ed. Oxford: Blackwell Publishing; 2005.
21. Robinson S, Griffiths P. *Nursing education and regulation: international profiles and perspectives*. London: King's College London, National Nursing Research Unit; 2007. Available at: <http://www.kcl.ac.uk/research/nrru/Publications?Reports/NurseEduProfiles.pdf> Accessed: May 2017.
22. Miller WR, Moyers TB. Motivational Interviewing and the clinical science of Carl Rogers. *J Consult Clin Psychol*. 2017;85(8):757-66.
23. Moyers TB, Manuel JK, Wilson PG, Hendrickson SML, Talcott W, Durand PI. A randomized trial investigating training in Motivational Interviewing for behavioural health providers. *Behav Cogn Psychother*. 2008;36:149-62.