Role modeling in clinical practice: A whirlpool around master and apprentice in lifestyle interventions for obesity in general practice
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Chapter 8

General Discussion
General Discussion

The overall goal of the research reported in this thesis was to gain insight into the influence of the clinical trainer as a role model for the trainee, and to find a way to improve the role model behavior of the clinical trainer in general practice. In clinical workplace learning, trainees are expected to grow into their future role as capable, professional physicians by working alongside clinical trainers as their teachers, mentors, coaches, and role models. A trainer and a trainee make a mutual agreement that the former will act as a teacher, mentor, or coach for a certain period of time. This is in contrast to being a role model: A trainer is always and everywhere a role model, even when he or she is not aware of being observed by the trainee. Role modeling is a powerful educational tool in workplace learning and for conveying professional competences from master to apprentice. To optimize the learning environment for the trainee, the trainer receives education by way of continuing professional development (CPD) and faculty development (FD) courses, in the expectation that the trainer will convey the acquired competences to the trainee.

Trainers have a large influence on the behavior of trainees, especially in situations that the latter find difficult. Lifestyle counseling to treat overweight and obese patients (here, both are referred to as ‘obese’) is considered such a situation in which trainees find it difficult to become competent (Chapter 2). Therefore, the aim of the research was to:

1. Gain insight into what influences trainees to become competent in providing lifestyle interventions for overweight and obese patients.
2. Analyze how the clinical trainer, as a role model for the trainee, influences this process.
3. Explore how to improve role modeling in clinical practice, in order to optimize the growth of trainees into their future role as independent and competent professionals who are capable of providing high-quality patient care.
4. Evaluate the effectiveness of an educational intervention (combined CPD/FD courses) to improve the role model behavior of the trainer.
5. Investigate whether this process can be effected by providing feedback on the role model behavior of the trainer.
Key findings and interpretation

1: Lifestyle counseling to treat obesity
GPs are familiar with the patient’s situation at home for a prolonged period of time. They are therefore able to treat chronic illnesses and their complications and, in line with this, pay attention to their prevention. Obesity is considered a chronic condition and an important risk factor for many life-threatening illnesses. Even though more attention is being paid to chronic illnesses, there is still a growing epidemic of obesity.\textsuperscript{12-14}

Some of the GP trainers said that because they had not seen any lifelong results of weight management, they were no longer motivated to treat obese patients or to teach trainees about weight management. Both trainees and trainers ask for tools and programs that are known to have long-term results to help them implement lifestyle counseling for obese patients, especially those who are suffering from physical complaints caused by their weight or are at high cardiovascular risk\textsuperscript{15} (Chapter 2).

Although GP trainees are trained in motivational interviewing technics, and there are guidelines on how to recognize overweight patients and what advice to give to patients at risk, GP trainees do not feel competent to treat patients with obesity, not even toward the end of their GP specialty training. While their attitude changed from astonishment to pity, they were still afraid to address the problem to their overweight patients and had difficulty giving lifestyle counseling to treat obesity (Chapter 2). Even though their personal experience might have caused this lack of competence, it is also likely that the role model behavior of the GP trainer influences the trainee. We therefore reflected on the GP trainer as a role model for the trainee.

2: The clinical trainer as a role model

\textit{Role modeling}

A clinical trainer performs several roles for a trainee, namely as a teacher, mentor, coach, and role model, the last-mentioned being the most implicit of the four roles.\textsuperscript{1} This role modeling also occurs when the trainer's focus is on other, non-trainee related tasks.\textsuperscript{2,16} The difference between the explicit and implicit roles of the trainer became even more clear after identifying the attributes that define positive role modeling (Chapter 3). These attributes can be divided into three categories, namely patient care (=clinical) qualities, teaching qualities, and personal
qualities.\textsuperscript{17-19} We defined these qualities as the 3xH’s: the Head for the teaching qualities, the Heart for the personal qualities, and being Hands-on, exercising the clinical qualities in daily patient care (Chapter 3). Therefore, role modeling is more than just a part of being a teacher; on the contrary, teaching might even be considered as part of role modeling. To convey the 3xH’s qualities, role modeling requires the implicit acting of the trainer to be made explicit to the trainee.\textsuperscript{1,16} Improving role modeling in GP practice as a powerful educational tool\textsuperscript{18,19} can be achieved when the GP trainer has a fairly precise idea of what he or she is modeling and trying to convey.\textsuperscript{20} Other strategies to improve role modeling on the basis of a number of identified characteristics have been described in a review by Cruess.\textsuperscript{16} These are, for instance, raising the trainer’s awareness of serving as a role model or by facilitating reflection on what has been modeled.

\textit{Positive and negative role modeling}

By being aware of their role model status, clinical trainers are able to seek opportunities to demonstrate behavior, to comment on what was done, and to explain what was done.\textsuperscript{18} This helps trainees to use the modeled behavior as a guide for their own professional development. But when the trainer displays negative role modeling, for example in treating obesity, the trainee can adopt less desirable behavior.\textsuperscript{21} It is therefore important for trainees to be able to distinguish positive from negative role modeling. This difference is more easily determined if a trainee can compare the modeled behavior of one trainer with that of another trainer who displays more professionally competent behavior,\textsuperscript{18,19} as is the case in the clinical training setting (surgery, internal medicine, pediatrics, etc.). Considering that in general practice training, only one or sometimes two GPs serve as trainers per GP trainee for a whole year, a tool to determine whether it is desirable to imitate a trainer’s role modeled behavior would allow the trainee to select the correct professional competences to imitate.

\textbf{3: Assessing role modeling}

Incorporating attributes of positive role modeling in a tool for assessing role model behavior resulted in the Role Model Apperception Tool (RoMAT). The 17 items of the RoMAT, which are scored on a 5-point Likert scale, are divided into two components, namely Caring Attitude (=important for communication) and Effectiveness (=important for giving others what they need). Trainees can use this tool to evaluate their trainer, and this feedback can be used by trainers to become
aware of their qualities as a role model and improve their role modeling behavior. Furthermore, this tool allows the trainee to distinguish, through apperception, between positive and negative role model behavior, and more consciously select which behavior to imitate. The tool can also help identify a trainer as a less competent role model, and therefore as less desirable as an educator for the trainee. When aiming to improve role model behavior, it is important to use such a tool as the RoMAT to evaluate the effectiveness of CPD/FD courses (Chapter 4).

4: CPD/FP courses
Role model behavior after education in lifestyle counseling to treat obesity
Although clinical trainers are frequently trained as teachers, they are often unaware of being role models or of displaying negative role modeling that is observed by trainees. Making clinical trainers aware of being role models for trainees creates the opportunity for the trainers to explain themselves when they display less desirable behavior, and to state why they behaved like that. Commenting on what is modeled can reduce the risk of trainees imitating or even adopting this behavior. It may well be that recognizing negative role modeling is also necessary for trainee to learn how not to behave as a physician. Therefore, stimulation and amplification of the role model awareness of the trainer is important and may be established with combined CPD/FD courses.

An FD subject (i.e., conveying knowledge and the correct attitude as a role model) was integrated in a CPD course on new guidelines on obesity and strategies to treat the condition (Chapter 5). This setup was chosen because of the difficulty trainees face in becoming competent in treating obese patients, and because of the importance of weight management for obese patients with complaints or high health risks. As described above, in an earlier study (Chapter 2) we found that trainers were often considered a negative example regarding this specific subject. The course was evaluated with an ‘objective’ pre- and post-assessment of the knowledge and a self-assessment of the attitude of the trainer. As we were seeking an improved workplace climate and master–apprenticeship relation through role modeling, the course was also evaluated with a pre- and post-assessment of knowledge and attitude in the target population (the trainees) and with an assessment of the change in role model behavior of the trainers as determined by the trainees.
Only an increase in the trainers’ knowledge about weight management could be established. Furthermore, the evaluation showed a small correlation of the scores on the Effectiveness component of the RoMAT and a higher attitude score of the trainee, indicating that more positive role model behavior of the trainer is related to a more positive attitude toward weight management of the trainee (Chapter 5). This can be an indication of how positive role modeling is beneficial to the trainee.

The individual scores of the trainers sometimes varied extensively before and after the intervention over a period of six months, showing that a longer and more intensive contact between trainer and trainee can change the evaluation both positively and negatively. However, the trend showing lower scores the second time could mean that, even when the trainer improved in role modeling, the trainee over time has discovered more of the trainer’s weak spots or now has a different perspective on what to expect from a trainer.

It seems logical that less experienced trainers scored higher scores on the Caring Attitude component, because they are likely to be more empathetic toward inexperienced trainees. In contrast, trainers with more experience are probably more at ease in providing daily patient care, and consequently have higher scores on the Effectiveness component. They therefore seem to have a greater ability and more opportunities to give trainees what they need to become competent GPs, compared to less experienced trainers. The higher role model scores on both components for trainers with fewer than 2,500 patients to care for, might be caused by having more time available for the trainee. This was also found in a previous study.17

Effectiveness of CPD/FD courses

This minimal effectiveness of the CPD/FD course as measured in the target population24-26 (Chapter 5) might be the result of the expectation that the competences presented to the trainers in a course, will cascade down by way of the master-apprenticeship relation to the training practice and the trainee. This linear model is intended to ensure that the trainee can become a GP who is capable of providing high quality patient care. Already O’Sullivan and Irby27 described a shift from this traditional, linear model of FD to an expanded cyclical model of FD that is embedded in the FD and workplace community. But they looked only at the process of FD and its effectiveness, and only from a theoretical point of view. In our study (Chapter 6), we found that adverse currents – such as
the influence of the patient on the conveyance from trainer to trainee, and the receptiveness of the trainee for the subject – function as filters, diminishing the effects of CPD/FD courses. Therefore, it is better to use a whirlpool than a cascade to visualize the effectiveness of the trainers’ amplification by way of a CPD/FD course. The currents in this whirlpool can be influenced by transforming the filters into multiple turning points that increase rather than decrease the effectiveness. This transformation will make the CPD/FD course more effective, amplify the role model function of the trainer, and improve workplace learning in clinical practice.

5: Role modeling after feedback

It is no surprise that, after receiving feedback, the trainers with the lowest scores improved more than those who were already scoring above the mean\textsuperscript{28,29} (Chapter 7). This is exactly what we expect feedback to accomplish, and it is therefore reassuring and encouraging. Thus, paying attention to role model behavior and making the trainer aware of being a role model can be rewarding. Showing improvement on the RoMAT also demonstrated that the RoMAT is capable of detecting change, and can therefore be used when assessing the effectiveness of interventions regarding the role model function of trainers.

Implications for the future

The RoMAT

Feedback by means of the RoMAT can improve role model behavior (Chapter 7), a finding that is consistent with the literature\textsuperscript{29} Grol and Grimshaw\textsuperscript{30} found that feedback can improve practice behavior, but that this effect stops when the feedback is not continued. Therefore, to improve role modeling permanently, it seems necessary to implement the RoMAT or integrate it in more longitudinal methods of evaluation that are already in use to sustain the positive effect on role modeling.

We are currently discussing an implementation plan with other institutes for GP specialty training in the Netherlands, with the aim of incorporating the RoMAT in the national bi-annual evaluation of GP trainers. We are also exploring the development of a digital form, which will allow the generation of individual feedback and comparisons with peers as reference standards.
**The Whirlpool (See Figure)**

When the influential factors of amplification, awareness, applicability, conveyance, and interaction, which currently function as filters for the flow of information from course to trainer to trainee, become turning points around the whirlpool, we might improve effectiveness of training / courses for trainers. For some components of this process, this has already been confirmed in another study.\(^{27}\)

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**CPD**

- **C**: Conveyance
- **I**: Interaction
- **Q**: Quality of Patient care

**Clinical Trainer**

- **Amplification**
  - Choose topic important for health patient
  - Choose topic from curriculum of trainee
  - Train the teacher
  - Practice role modeling with peers
  - Use accessible (digital) educational materials

- **Applicability**
  - Let peers discuss applicability
  - Use multifaceted/mixed educational methods
  - Implement attention for making implicit explicit

- **Awareness**
  - Use peer groups to assess role modeling
  - Use students to make trainees aware of role modeling

- **Applicability**
  - Choose topic appropriate for phase of training
  - Train the trainer in demonstrating, commenting, and explaining
  - Make asking question about a topic in daily practice part of trainee’s curriculum

**Patient**

- **I**: Interaction
  - Evaluation of trainer by patient
  - Evaluation of trainee by patient
  - Evaluation of trainee by student

**Trainee**

- **C**: Conveyance

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In their studies on the effective implementation of new best evidence in patient care using educational strategies such as CPD courses, Grol and Grimshaw\(^{30}\) emphasize that interactive and continuous educational strategies – including feedback from peers and an emphasis on direct application in daily patient care – are required if these courses are to be effective.

Steinert and colleagues\(^{24}\) emphasize the conditions that must be met when developing FD, such as the application of theories of learning and educational principles, programs that extend over longer periods of time, acknowledging the importance of context, and raising the awareness among trainers of their role as teachers. Wright and Carrese\(^{18}\) extend this last item by highlighting the need to make trainers also aware of their role model function.
Further strategies to improve role modeling based on a number of identified characteristics have been described in a review by Cruess and colleagues.\textsuperscript{16} For instance, Cruess called for the creation of conditions like engaging in pertinent staff development and facilitating reflection on clinical experiences and what has been modeled.

Training trainers and trainees in the same topic will positively influence effectiveness, according to Rubak and colleagues.\textsuperscript{28} Choosing a topic that is perceived to be important for the health of patients will also reduce the resistance of the trainer and increase the receptiveness of the trainee. Together, all the points mentioned can create an optimal learning environment in which CPD/FD competences, such as the awareness of being a role model for the trainee, are transferred to and implemented in the training practice, thus improving the effectiveness.

\textit{The Gold Standard}

The effectiveness of CPD and/or FD courses for clinical trainers in improving the professional competences of trainees can only be demonstrated through an assessment of the effect of the course on the trainee’s treatment of patients in the clinical workplace, or, even more adequately, by assessing the influence of these courses on the clinical outcomes of patients treated by these trainees. Not many results have been reported at the level of the target population,\textsuperscript{24-26} however, and when studies were evaluated at this level, little or no effect was found, as in our study. In fact, Breckwoldt and colleagues\textsuperscript{31} reported a paradoxical effect after an FD course: Students of trained clinical teachers performed worse than students of untrained teachers. They concluded that this effect could have been caused by difficulties in integrating new strategies, resulting in a temporary deterioration in performance. This illustrates that, due to the complexity of educational interventions, the lack of reliable measures, and the many influences affecting the outcome, it is very hard to establish whether a CPD/FD course has an effect.

As a result of the diversity of outcomes at different levels, the use of unalike, not always equally valid and reliable evaluation instruments, and the changing length of follow-up periods, in the case of CPD courses, Tian and colleagues\textsuperscript{31} argue for a gold standard against which all courses at all levels should be assessed after a minimum period of one year. According to their study, this will allow comparison between courses and, if all levels of evaluation are assessed, may reveal more relationships between different levels. For the same reasons, a gold standard may also be helpful in evaluating combined CPD/FD courses, whereby the influences
found in the whirlpool effect as turning points (Chapter 6) can be used as core items for this gold standard.

To understand why interventions do or do not work, the outcomes of innovative educational interventions should also be compared with control groups of standard educational interventions and evaluated in the target population with this gold standard.

*The Masterpiece*

After the CPD/FD course, less experienced trainers improved their attitude more than experienced trainers, indicating that training in positive role modeling behavior should start before a GP becomes a GP trainer. As many GPs become trainers of students (clerks), trainees, practice assistants, practice nurses, etc., it would be even better if trainees, during their training period, were already trained in their future function as role models. Programs have already been developed to let GP trainees coach a medical student (clerk) for a short period in the training practice, just like residents coach clerkship students in the hospital setting. By using the RoMAT to evaluate the GP trainee as a role model who is observed by the student, future GPs will become aware of being role models. This evaluation could be part of a 'masterpiece' for the GP trainees, before being registered as independent, professionally competent GPs. This is similar to the old days, when an apprentice had to complete a masterpiece in order to become a master. This part of the masterpiece comprises the CanMEDS role “Scholar.”

The limited ability of students to accurately assess all aspects of being a competent professional GP role model can be overcome by using multisource feedback. Patient evaluation of the GP trainee, for instance, should be another part of the 'masterpiece.' There are several reasons for this. Firstly, a trainee is probably sensitive to feedback of the patient because they find important what is needed in the care for the patient, especially when it is important for the health of the patient (Chapter 6). Secondly, patients are able to compare trainer and trainee, and thirdly, later on in their lives as GPs, they are also evaluated by the patients as part of the visitation process to remain registered as GPs and the accreditation process of their practice. Getting used to this form of feedback is good preparation for their future careers.

In the future, this evaluation of student and patient together with the evaluation of trainer and teachers, who can observe the other competences of the role model behavior of the trainee, could lead to the creation of a complete 'masterpiece' that comprises all the CanMEDS roles.
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