Role modeling in clinical practice: A whirlpool around master and apprentice in lifestyle interventions for obesity in general practice
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Chapter 7

Feedback on role model behavior: Effective for clinical trainers?

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Submitted for publication
Abstract

Purpose  The aim of this study was to assess changes in role model behavior of the clinical trainer after giving personal feedback.

Method  First year General Practitioner (GP) trainees at two institutes for GP specialty training in the Netherlands were asked to complete an assessment for their clinical trainers: the Role Model Apperception Tool (RoMAT). The RoMAT consists of attributes of positive role modeling divided into two components (Caring Attitude and Effectiveness) and was scored before and after the trainers received their personal scores combined with the mean score of their peers. The trainers were divided into three performance groups: below average, average and above average.

Results  Only the group of trainers with the lowest scores showed an improvement on the Effectiveness component of the RoMAT. This pattern was confirmed by the number of trainers shifting from the group with below average performance to the average and above average performance groups.

Conclusions  Giving feedback to clinical trainers did result in better scores on role model behavior. This outcome seems to indicate that trainees are able to use the RoMAT to distinguish between positive and negative role modeling, and that the role model behavior of the clinical trainer can be improved.
Introduction

In clinical practice trainees develop into competent physicians by working alongside clinical trainers. Besides being teachers, mentors or coaches, clinical trainers are also observed and imitated as role models, when, for example, they are providing patient care or working together with other healthcare workers. To use clinical workplace learning as an educational tool to foster the development of trainees into competent professionals, it is therefore important to enhance the role model behavior of clinical trainers.\(^1\)

To assist in this effort, we have developed and validated a tool to assess role model behavior. This Role Model Apperception Tool (RoMAT) consists of attributes of positive role modeling drawn from a systematic review of the literature.\(^2\) Trainees can use the RoMAT to distinguish, through apperception, between positive and negative role modeling, and to assess a clinical trainer’s performance as a role model. The RoMAT consists of 17 items scored on a 5-point Likert scale and divided over two components: ‘Caring Attitude’ and ‘Effectiveness’. ‘Caring Attitude’ clusters items that reflect characteristics of the relationship of trainers to their patients, trainees and others. ‘Effectiveness’ represents items relating to the ability of trainers to provide their patients and trainees with what they need. Both components include an equal number of items addressing personal, teaching and clinical qualities, with high reliabilities.\(^3\) (See Chapter 4, Appendix 1)

Previous studies described two ways of improving role modeling by the clinical trainer: by providing Continuing Professional Development (CPD)/Faculty Development (FD) courses\(^4,5\) and by giving personal feedback.\(^6\) In 2013, we evaluated the effect on role model behavior of a combined CPD/FD course on obesity and role modeling for General Practitioner (GP) trainers. An increase in the medical knowledge of the GP trainer was established, but there was no effect on the attitude or role model behavior of the trainer or on the knowledge and attitude of the trainee.\(^7\) Maker and colleagues\(^6\) showed a positive effect of personal feedback on role model behavior of the faculty members of a surgical department.

The aim of this study was to re-evaluate these results by assessing changes in the role model behavior of the GP trainer, using the RoMAT to give personal feedback on the role model function.\(^1\)
Method

In the Netherlands, trainees spend 3–4 days a week during their first and third years of GP specialty training working at GP practices under the supervision of their GP trainers. Throughout their training, trainees spend one day a week at one of the eight institutes for GP specialty training, where they are instructed by teachers. Each year, the GP trainers attend eight training days at these institutes. We invited first year GP trainees, starting between September 2012 and March 2013 at two institutes: the Academic Medical Center, University of Amsterdam (AMC-UVA) (n= 91) and the VU University Medical Center Amsterdam (VUMC) (n=79 ), to complete the RoMAT for their trainers at 6 months (T₁) and 12 (T₂) months as part of the bi-annual evaluation of the trainers. All participants were informed that this newly introduced tool would be part of a study, that participation in the study was voluntary and that questionnaires would be coded in order to prevent responses being traceable to individual respondents. Ethical approval for this study was obtained from the Ethical Review Board of the NVMO (Dutch Association for Medical Education).

After the first assessment, we calculated means and SD scores of all items and of each item separately for all trainers at the same institute. As feedback, the trainers received their personal scores combined with the mean score of their peers. In accordance with the methods used by Maker and colleagues, we divided the trainers into three performance groups for both components (i.e. Caring Attitude and Effectiveness): below average performance (≥ 1 SD below the mean), average performance (- 1 SD < mean <+ 1 SD) and above average performance (≥ 1 SD above the mean). For each group we compared the scores of both components separately at T₁ and T₂ with a paired t-test and calculated the effect sizes (ES) by dividing the mean difference by the common SD. A p-value < 0.05 was considered a statistically significant change; an ES of < 0.3 was regarded as small, between 0.3 and 0.5 as moderate, and > 0.5 as large. We also calculated the number of trainers in each group (below, mean and above average) before and after feedback.
Feedback on role model behavior

Results

A total of 76 trainees responded at both T₁ and T₂, namely 68 (67%) trainees at the AMC–UVA and 8 (11%) at the VUMC (see Table 1).

No significant change in the scores on the Caring Attitude component was established. The scores on the Effectiveness component in the below average performance group increased from 3.89 to 4.08 (p= 0.04) with an ES of .52, showing a large effect.

Table 1
Results for the three groups* before (T₁) and after (T₂) feedback for both components of the Role Model Apperception Tool (RoMAT)

<table>
<thead>
<tr>
<th>Component of RoMAT</th>
<th>Group 1 (≥ 1 SD below the mean)</th>
<th>Group 2 (-1 SD &lt; mean &lt; 1 SD)</th>
<th>Group 3 (≥ 1 SD above the mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caring Attitude</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean score (SD) T₁</td>
<td>4.01 (0.14)</td>
<td>4.71 (0.16)</td>
<td>5.00 (0.00)</td>
</tr>
<tr>
<td>Mean score (SD) T₂</td>
<td>4.15 (0.32)</td>
<td>4.71 (0.25)</td>
<td>4.82 (0.38)</td>
</tr>
<tr>
<td>P</td>
<td>0.134</td>
<td>0.932</td>
<td>0.088</td>
</tr>
<tr>
<td>ES†</td>
<td>0.41</td>
<td>0.01</td>
<td>0.47</td>
</tr>
<tr>
<td>Number of trainers at T₁/T₂</td>
<td>15 / 13</td>
<td>46 / 51</td>
<td>15 / 12</td>
</tr>
<tr>
<td>Effectiveness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean score (SD) T₁</td>
<td>3.89 (0.11)</td>
<td>4.46 (0.21)</td>
<td>4.96 (0.07)</td>
</tr>
<tr>
<td>Mean score (SD) T₂</td>
<td>4.08 (0.37)</td>
<td>4.45 (0.38)</td>
<td>4.75 (0.36)</td>
</tr>
<tr>
<td>P</td>
<td>0.04§</td>
<td>0.92</td>
<td>0.10</td>
</tr>
<tr>
<td>ES†</td>
<td>0.52</td>
<td>0.02</td>
<td>0.55</td>
</tr>
<tr>
<td>Number of trainers at T₁/T₂</td>
<td>18 / 11</td>
<td>47 / 49</td>
<td>11 / 16</td>
</tr>
</tbody>
</table>

* The classification of the trainers in three performance groups for both components (Caring Attitude and Effectiveness): 1. Below average performance (≥ 1 SD below the mean), 2. Average performance (-1 SD < mean <+ 1 SD) and 3. Above average performance (≥ 1 SD above the mean)
† Effect Size (ES) = Mean difference / SD difference
§ Significant difference at p < 0.05

Discussion

After personal feedback, only the group of GP trainers with the lowest scores showed an improvement on the Effectiveness component of the RoMAT. This pattern is confirmed by the number of trainers shifting from the group with below average performance to the average and above average performance groups. The scores on the Caring Attitude component showed the same trend
when comparing scores; it also showed a decrease in the number of trainers in the above average performance group.

The improvement on the Caring Attitude component was not statistically significant. This could be because our GPs, in contrast to many clinical specialists, voluntarily choose to become trainers and are thus very motivated to welcome trainees. Attributes of the Caring Attitude component represent this behavior, resulting in every trainer receiving a high score at the start of a traineeship as well as in a ceiling effect. This might also explain why the total scores for Caring Attitude are higher than those for Effectiveness. These results are in line with our previous study in which the scores by the trainees suggested that, when starting their traineeship, they are most sensitive to the aspects of the Caring Attitude component and have not yet discovered the negative characteristics of their trainers. During the second half of their traineeships, they seem to focus more on the attributes of the Effectiveness component, indicating that a trainer with higher scores on the Effectiveness component is a better role model for preparing the trainee to become an independent GP. This might be why the Effectiveness scores start low and increase significantly over the second 6-month period. In the groups with above average performance, the scores were already high on both components at the start, resulting in regression to the mean at T₂. The results of our study are consistent with those of Maker and colleagues with regard to the improvement in the trainers with the lowest scores and in the number of trainers shifting from the lowest to the highest scores. However, there are two important differences. Firstly, the surgical trainers also improved their overall score. Secondly, the surgical trainers showed improvement on four attributes that are similar to attributes of both the Caring Attitude and the Effectiveness component. These differences might originate from the different settings. GP trainers are volunteers and have to attend eight training days each year, so they are highly motivated and already focussed on being trainers. Furthermore, GP trainees have only one or two GP trainers as their role models at any one time, making it difficult to compare and to distinguish between positive and negative role modeling, while they also have to discuss their feedback with their trainers. This possibly results in high scores at the start of their training. Surgical trainees, working alongside surgeons who at the same time function as their trainers, have more opportunities to make comparisons and their assessments are anonymous. They therefore tend to give their trainers lower scores, resulting in more opportunities for an increase in scores.
Previous studies\(^4\)\(^5\) suggested that targeted education in positive role model attributes can improve role modeling by the clinical trainer, although our CPD/ FD educational intervention showed no improvement on the RoMAT after the course.\(^7\) Giving feedback to the trainers did result in better scores. This outcome seems to indicate that trainees are able to use the RoMAT to distinguish between positive and negative role modeling, and that the role model behavior of the GP trainer can be improved.

**Limitations**

There was a low response in completing the RoMAT the second time at one of the institutes, probably because the form was sent separately from the standard evaluation and participation was voluntary.

**Implications for future research**

To confirm the findings of our study, the RoMAT needs to be implemented, also in clinical settings, and both the trainee’s and the trainer’s results should be monitored.

**Implications for future education**

This study has shown that the RoMAT can be used to evaluate the effectiveness of educational interventions that are designed to improve the role model behavior of trainers. It also facilitates the design of educational interventions for trainees to develop awareness of which role model behavior of their trainers they should imitate.\(^1\)
References