Tailoring to educational needs: preparatory studies into doctor-patient communication training and the development of trainers’ expertise in general practice specialty training

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CHAPTER 3

Differential growth in doctor-patient communication skills in GP trainees

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Submitted for publication
Abstract

Context
Although doctor-patient communication is considered a core competency for medical doctors, the effect of training has not been unequivocally established. Moreover, knowledge about the variance in the growth of different skills and whether certain patterns in growth can be detected could help us to develop more efficient programmes. We therefore investigated the growth in GP trainees’ doctor-patient communication skills in their first year and whether the growth was different for distinct categories of skills.

Methods
Seventy-one first-year GP trainees were invited to participate in a study aimed at measuring their consultation skills at the beginning (baseline) and at the end of their first year (follow-up). Consultation skills were assessed with the MAAS-Global rating list for consultation skills (MG).

Results
Data on twenty-nine GP trainees were collected. MG-scores showed a significant growth on all items but one. Patient-oriented skills showed significantly more growth than task-oriented skills. Empathy as a separate skill seems to be mastered predominantly before the start of training.

Discussion
Three patterns in the growth in skills were distinguished: 1) low baseline, relatively high follow-up, 2) moderate baseline, moderate growth, and 3) high baseline, hardly any growth. Patient-oriented skills follow either pattern one or three, while task-oriented skills follow pattern two. These findings may help in defining where the focus should lie in the training of doctor-patient communication skills.
Introduction
Effective doctor-patient communication is generally regarded as one of the key ingredients of good medical practice. As such, it is incorporated in internationally used competency frameworks for medical education and practice, such as the CanMEDS and the ACGME. In addition, many studies have established the influence of the quality of doctor-patient communication skills on medical outcomes and the emotional well-being of both patients and doctors.

The influence of training on acquiring and improving doctor-patient communication skills has not been unequivocally established. Kramer did not find evidence for a positive effect of doctor-patient communication training on third-year GP trainees. Reinders, on the other hand, found a modest effect on first-year GP trainees. Hobma found effects on personalized learning activities for GPs, but this did not lead to GPs obtaining the standard scores set for the assessment instrument used. Chan found that regardless of their years of experience, family doctors could still improve their skills, and noted that doctors whose skills were the poorest at baseline benefitted the most from training. Fallowfield’s study among oncologists showed that the effect of training was transferred into the clinical setting and was still visible a year after the training. Pfeifer and colleagues observed that although first-year medical students acquired communication skills, these skills gradually deteriorated during the clinical years. Their assumption is that communication skills are de-emphasized in the clinical years in favour of clinical knowledge.

Since Kramer’s study in 2004 doctor-patient communication training has evolved. Particularly in undergraduate medical curricula doctor-patient communication training has benefitted from increasing attention. Attempts are made to train clinical teachers to pay attention to the assessment of communication skills by using observational instruments, such as the miniCEX. Recommended approaches for teaching these skills – such as small group teaching with role play, observer-based feedback, enhancing theoretical knowledge about doctor-patient communication and integration of longitudinal programmes – have been embraced. Communication programmes that extend into the clinical years have been implemented in many medical schools around the world.
Tailoring to educational needs

Attention has also been directed towards the integrated teaching of the more traditional interviewing skills – namely those that a doctor uses to obtain the medical information that is needed to formulate a diagnosis – and patient-centred doctor-patient communication skills. Patient-centred communication, as defined by Zandbelt, is a doctor’s facilitating behaviour that enables patients to express their perspective on illness, treatment and health-related behaviour, and the absence of a doctor’s inhibiting behaviour.24

A fluent combination of task-oriented communication skills (structuring, summarizing, physical examination, etc.) and patient-oriented communication skills (exploring feelings, empathy, etc.) – which Kurtz and colleagues call ‘marrying content and process’ – is of the utmost importance to doctors in general and perhaps even more so to GPs.25 The task-oriented skills are important in order to use efficiently the relatively short time that GPs can devote to each patient considering the diversity of complaints and adhering pathology they encounter daily. The more subtle patient-oriented communication skills are important to establish rapport with the patient, which is essential to GPs as they usually have long-term relationships with their patients.26 In this respect, it is interesting that trainees acquire some of the doctor-patient communication skills more easily than others and seem to adopt a certain style.27 This is influenced both by the trainee’s personal characteristics and by the nature of the skills. For instance, Aspegren found that such patient-oriented skills as maintaining eye-contact, avoiding the use of medical jargon and being civil are noticeably present in medical students and junior doctors prior to their formal training, whilst skills to structure the consultation and to build rapport are, even when trained, underdeveloped in both medical students and junior doctors.28

Thus, effective doctor-patient communication skills are regarded as a main theme in medical education. However, the results of training these skills are conflicting. This inspired us to study the effect and outcomes of our training programme for first-year GP trainees. In this, we were especially interested in the variation in the growth of skills in different aspects of doctor-patient communication skills. We wanted to establish whether some skills are already substantially present in starting GP trainees, whether some skills profit more from training than others, and whether patient-oriented skills benefit more from training than task-oriented skills. If the different doctor-patient communication skills show different
learnability, this will be of importance in building a more efficient doctor-patient communication curriculum that takes this into account.

A widely used and validated instrument for measuring doctor-patient communication skills is the MAAS-Global (MG).\textsuperscript{12,29-31} The MG contains three sections: phase-specific skills (7 items) that follow the timeline of a consultation, general communication skills (6 items) that can be put into practice anywhere in the consultation and do not adhere to any particular timeline, and medical aspects (4 items). A desired standard for graduated GPs was established for all skills.\textsuperscript{13} The phase-specific and general communication skills do not follow the concept of patient- or task-oriented skills. However, in a previous study, we found indications of a two-dimensional structure of the MG that could be classified into two factors that included either the task-oriented doctor-patient skills or the patient-oriented communication skills.\textsuperscript{32} The MG seemed a particularly good instrument to evaluate our training programme and to find answers to the following research questions:

1) What is the growth of doctor-patient communication skills of GP trainees during their first year?
2) Is there a difference in the growth rate of the different skills?
3) If there is a difference in the growth rate of skills, and is this related to whether these skills are patient-oriented or task-oriented skills?

Methods

Participants and Setting
All 71 GP trainees who enrolled in the GP Specialty Training at the Academic Medical Center (AMC) of the University of Amsterdam in 2007 were asked to participate in this study. The group comprised 56 women and 15 men; the average age was 30.3 years (SD:3.6).

The GP Specialty Training takes three years. Trainees work in training practices under the supervision of a GP trainer and also attend modular courses weekly. In their first year of training they start their modular course in doctor-patient communication training in the seventh week. Groups of eight trainees are
guiding by behavioural scientists during twelve 3-hour sessions spread throughout the year. The sessions combine familiarization with the various phases of a consultation, practising skills in role play and discussing real-patient video consultations for feedback. After the seventh and the last session, the trainees’ skills are assessed.

Participation in the study was voluntarily. All participants gave their written informed consent to use their data for research purposes. This study was approved by the Ethical Review Board of the Dutch association for medical education (NVMO) and exempted from further ethical review.

Design and Procedures
Data were collected at three moments: (1) during the introduction to the training before the actual training started, (2) just before the start of the modular course in doctor-patient communication and (3) at the end of the course after 9 months of training. Personal data were gathered at the first measurement moment. At the second moment (baseline) and the third moment (follow-up), participants were asked to videotape 20 consecutive consultations with patients during their work at the GP practice.

Six of each trainee’s consultations were selected for data analysis. In order to select consultations that represent what a GP encounters on an average day, where possible we based our selection on the following three guidelines: (1) four of the six patients should be female, (2) three out of the six consultations should represent the three chapters of the International Classification of Primary Care (ICPC) with the highest prevalence according to the Second Dutch National Study into diseases and health interventions in the GP practice (Musculoskeletal, Respiratory and Skin) 33, (3) and two of the remaining consultations should preferably represent the under criterion 2 named three ICPC chapters. In addition, follow-up consultations and consultations with children should preferably be omitted.

Each consultation was rated by two trained observers drawn from a pool of nine such observers. The observers were the first author and eight fourth-year medical and psychology students. The students had been trained in scoring with the MG by the first author during two half-day sessions. Regular sessions
to ensure consistency in scorings were held. In order to be able to control for differences in consultation difficulty, all consultations were assessed with the Amsterdam Clinical Challenge Scale, using a similar rating procedure.

**Instruments**

The consultations were rated with the MAAS-Global rating list for consultation skills (MG), which comprises 17 items. We, however, used only the items on communication (13 items). Because we excluded follow-up consultations, we dropped the item covering aspects of a follow-up consultation, which left us with 12 items.

The items are scored on a 7-point Likert scale, ranging from 0 (‘not present’) to 6 (‘excellent’). Items are case independent and global, but anchored with 3-4 detailed criteria per item. For example, when scoring ‘Dealing with emotions’, the rater has to assess the degree to which the trainee (1) explores patients’ feelings and (2) reflects adequately upon the feelings expressed, and (3) does so sufficiently throughout the consultation. For each consultation, all items must be completed except for the item ‘Physical examination’, which may not be applicable. An overall consultation score was obtained by averaging the individual item scores.

The difficulty of consultations was scored with the Amsterdam Clinical Challenge Scale (ACCS).\(^{34}\) This instrument rates on a 5-point Likert scale the difficulty of a consultation on five aspects: previous history/actual context, problem presented, communication with the patient, physical examination, and patient management. A total score is calculated by averaging these five aspects. Each consultation was rated by two trained observers blinded to each other’s scores.

**Data analysis**

SPSS 16.0\(^{®}\) was used to describe and analyse the data. We performed a G study to investigate the inter-observer reliability.\(^{35}\) To check for differences in the difficulty of consultations, we performed a paired t-test. Since we were not able to meet the predefined selection guidelines in collecting six consultations of every trainee, we used t-tests to calculate whether this influenced the total MG scores. Growth in skills was tested with paired t-tests. We also calculated the percentages of trainees who met the set standard score for every item. The difference in growth
Tailoring to educational needs

between task-related and patient-oriented skills was tested with a Manova for repeated measures. For all tests, we used a significance level of 0.05.

Results

Participants

Of the 71 GP trainees who started the GP training in 2007, 67 enrolled in the study during the introduction to the GP training. Two were not present due to personal circumstances; another two did not wish to give informed consent to use their data for this study. Fifty-five trainees handed in live consultations at baseline; 29 of these trainees also handed in live consultations at follow-up. Reasons for not fully participating in the study are given in figure 1. Twenty-nine were therefore taken into final analyses. The characteristics of these 29 participants and those lost to follow-up are presented in table 1.

Figure 1. Overview of drop-out
Table 1. Personal characteristics of participants and non-participants

<table>
<thead>
<tr>
<th></th>
<th>Participants (n=29)</th>
<th>Non-participants (38)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% male</td>
<td>20.7</td>
<td>23.7</td>
</tr>
<tr>
<td>age in years (mean and SD)</td>
<td>30.0 (3.5)</td>
<td>30 (3.7)</td>
</tr>
<tr>
<td>Dutch Medical degree</td>
<td>96.6</td>
<td>94.7</td>
</tr>
<tr>
<td>Dutch language spoken at home</td>
<td>96.6</td>
<td>94.7</td>
</tr>
</tbody>
</table>

Characteristics of Consultations

Table 2 describes per criterion the percentages of the sets of six consultations that met our pre-fixed selection criteria. T-tests showed there was no significant difference in total MG-scores between consultations that did or did not match the criteria.

Table 2. Percentages of trainees' consultations that met the selection criteria

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 out of 6 are female patients</td>
<td>63.6</td>
<td>31</td>
</tr>
<tr>
<td>ICPC chapters L, R or S represented in at least 3 and at most 4 consultations</td>
<td>67.3</td>
<td>41.4</td>
</tr>
<tr>
<td>No children</td>
<td>94.5</td>
<td>82.8</td>
</tr>
<tr>
<td>No follow-up consultation</td>
<td>89.1</td>
<td>41.4</td>
</tr>
</tbody>
</table>

Since there was considerable drop-out, we decided to include the trainees who had handed in five instead of six consultations. This concerned one trainee in the first round, and four in the second round.

In the first round, 90.9% of the consultations were rated ‘rather easy’ and 9.1% ‘moderately to rather difficult’ with the ACCS. In the second round, the figures were 89.7% and 10.3%, respectively. Since the difference was small, difficulty was not included in the analyses as a control variable. The MAAS-Global scores are given in table 3. The growth in skills was significant on every item except ‘Opening’.

We also looked into the percentage of trainees who were still below the standard set for licensed GPs – a level that they should have at the end of their 3-year training. A difference was seen in the decrease in the percentage of trainees who scored below the standard. This decrease was strongest for the items ‘Communication about clinical management’, ‘Exploration of expectations and feelings’ and ‘Providing information’. ‘Empathy’ seems to be a skill that had already been mastered by a large proportion of the trainees at the very beginning of their GP training. Averaged over all items, 15.8% of trainees achieved the standard score at baseline and 43.1% at follow-up.
### Table 3. MAAS-Global scores

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD)</th>
<th>Range</th>
<th>Standard</th>
<th>Percentage of trainees at or above standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>Follow-up</td>
<td>Difference between 1st and 2nd round</td>
<td>Baseline</td>
</tr>
<tr>
<td>Opening</td>
<td>3.54 (0.3)</td>
<td>3.65 (0.3)</td>
<td>0.11</td>
<td>2.92-4.08</td>
</tr>
<tr>
<td>Clarification of the reason for encounter</td>
<td>0.69 (0.6)</td>
<td>2.36 (0.8)</td>
<td>1.67*</td>
<td>0.00-1.92</td>
</tr>
<tr>
<td>Clinical examination</td>
<td>3.15 (0.4)</td>
<td>3.37 (0.4)</td>
<td>0.22*</td>
<td>2.25-3.83</td>
</tr>
<tr>
<td>Communication about the diagnosis and hypothesis</td>
<td>2.84 (0.5)</td>
<td>3.33 (0.5)</td>
<td>0.49*</td>
<td>1.70-3.83</td>
</tr>
<tr>
<td>Communication about the management</td>
<td>3.05 (0.5)</td>
<td>3.65 (0.4)</td>
<td>0.60*</td>
<td>2.08-2.67</td>
</tr>
<tr>
<td>Evaluation of the consultation</td>
<td>0.52 (0.5)</td>
<td>1.13 (0.6)</td>
<td>0.61*</td>
<td>0.00-1.83</td>
</tr>
<tr>
<td>Exploration of expectations and feelings</td>
<td>2.45 (0.6)</td>
<td>3.43 (0.5)</td>
<td>0.99*</td>
<td>1.17-4.00</td>
</tr>
<tr>
<td>Dealing with emotions</td>
<td>0.92 (0.8)</td>
<td>2.04 (0.8)</td>
<td>1.12*</td>
<td>0.00-3.33</td>
</tr>
<tr>
<td>Providing information</td>
<td>2.85 (0.4)</td>
<td>3.34 (0.4)</td>
<td>0.49*</td>
<td>1.83-3.50</td>
</tr>
<tr>
<td>Summarizing</td>
<td>1.34 (0.9)</td>
<td>2.15 (1.2)</td>
<td>0.81*</td>
<td>0.00-3.00</td>
</tr>
<tr>
<td>Structuring</td>
<td>2.97 (0.4)</td>
<td>3.55 (0.42)</td>
<td>0.59*</td>
<td>2.00-3.67</td>
</tr>
<tr>
<td>Empathy</td>
<td>3.67 (0.6)</td>
<td>4.04 (0.5)</td>
<td>0.37*</td>
<td>1.83-4.67</td>
</tr>
<tr>
<td>Average score over all items</td>
<td>2.33 (0.4)</td>
<td>3.00 (0.4)</td>
<td>0.67*</td>
<td>1.42-3.33</td>
</tr>
<tr>
<td>Task-oriented scale²</td>
<td>2.93</td>
<td>3.47</td>
<td>0.54*</td>
<td>2.19-3.50</td>
</tr>
<tr>
<td>Patient-oriented scale³⁴</td>
<td>2.10</td>
<td>2.95</td>
<td>0.85*</td>
<td>1.01-3.38</td>
</tr>
</tbody>
</table>

1 For licensed GPs
2 Includes the items ‘Communication about diagnosis and hypothesis’, ‘Communication about the management plan’, ‘Providing information’ and ‘Structuring’.
4 The item ‘Evaluation of consultation’ could not be related to either of the two factors; ‘Clinical examination’ was not an item when the original factor analyses were done.

* Significant at the p<0.05 level
Growth in the baseline and follow-up scores on the task-oriented factor and the patient-oriented factor of the earlier found two-factor structure was significant. There was a significant interaction between the two factors and the growth between baseline and follow-up (F (1,28)=11.00, p=.003). The patient-oriented factor showed the largest growth (see table 3). The generalizability coefficient over the 12 items, with 9 observers and 6 consultations, was 0.63, which is considered satisfactory.

**Discussion**

In our study we found that doctor-patient communication did improve in the first year of GP training. However, the growth was not the same for every item, and three different patterns were distinguished. The growth in patient-oriented skills was larger than in task-oriented skills.

We found growth in communication skills during the first year of GP training. This is in contrast to Kramer’s study, in which no difference between first- and third-year GP trainees was found, despite the formal education. The findings of the more recent study by Reinders and colleagues among first-year GP trainees, however, are in line with our data. While studying the effects of patient feedback on growth in communication skills, growth was also found in the control group that received the regular doctor-patient communication training. This difference in growth compared to Kramers’ study could be due to the increasing attention paid to doctor-patient communication training in undergraduate training.

This increased attention may also explain why our first-year GP trainees baseline levels are in close range or higher than those of the first year trainees in Kramer’s study three months into their training, suggesting that today’s post-graduates entering GP training are better trained in doctor-patient communication.

The growth, however, is not the same for each skill. Three patterns emerge from the results. The first pattern is characterized by a low baseline level and a relatively high follow-up level. For these skills growth is large. ‘Clarification of the reason for encounter’ and ‘Dealing with emotions’ are the skills that follow this pattern most clearly. The second pattern is characterized by a
Tailoring to educational needs

moderate baseline level and moderate growth. Most skills follow this pattern. Clear examples are ‘Providing information’ and ‘Structuring’. The third pattern concerned items that already scored quite high and did not improve or improved only slightly, namely ‘Empathy’ and ‘Opening’. When looking at the overall factors task-oriented and patient-oriented skills, it appears that patient-oriented skills more closely resemble the first pattern, whereas the task-oriented skills resemble the second pattern.

It is not surprising that patient-oriented skills follow the first or third pattern. Most GP trainees enter the training either directly after their clinical years of undergraduate training or after working for some time in these clinical settings. Once learned, patient-oriented skills are not commonly emphasized in these settings, whilst the task-related skills that are required to make an accurate diagnosis and to inform the patient about this are encouraged. However, when entering the GP training the patient-oriented skills can be retrieved relatively quickly. The growth in these skills is therefore large (first pattern). Some patient-oriented skills are probably acquired earlier in life or might even be partly innate. These skills are empathy and the common civil communication skills to open a consultation (third pattern).16

The biggest challenge in learning task-related skills is to remember what to do or ask (and in what order to do so) and not to omit important issues. Most of this is learned in undergraduate training and is reinforced during clinical years. Although growth in these skills is expected, the growth is not as substantial as it is for the patient-oriented skills (second pattern).

We also calculated for each skill the percentage of trainees who achieved the standard for a GP. Most of the trainees did not reach these levels for the majority of the skills, implying that these skills should still receive attention in the rest of the GP training. Empathy and the exploration of feelings were clear exceptions to this: almost 90% of the trainees had already reached the standard level at the end of their first year.

Looking from the individual trainee perspective, it is interesting to know whether there are trainees who no longer need the normal training and would benefit from more challenging education. More than 40% of the trainees
achieved the standard score for GPs at the end of the year and are therefore potential candidates for this.

Strengths and Limitations
By using multiple real-patient consultations we created the opportunity for trainees to demonstrate their skills in a variety of interactions in a rich clinical context. However, this method is laborious and might have been a cause of the considerable loss to follow-up, along with the inevitable loss of trainees who stopped or interrupted the training. The relatively large drop-out rate certainly decreased the power of this study. Due to the proportionally larger drop-out, caution is needed in generalizing our findings to the group of trainees who do not speak Dutch at home. We are not aware of any other selection bias due to this drop-out.

Another issue to consider is which part of the observed growth in doctor-patient communication skills can be accounted for by training in the modular course. We did not have a control group that was solely exposed to ‘workplace-based learning’. Yet it seems neither feasible nor ethical to prevent trainees from learning through modular courses for the sole purpose of a study.

Furthermore, the data for this study were gathered at one single institute, and therefore this study should be replicated at other GP training institutes. Given that GP training in the Netherlands is increasingly similar across institutes, one could argue that this would not add many new insights to our results.

Recommendations and Further research
We recommend to focus more on differential growth in doctor-patient communication skills in the field of doctor-patient communication training. Assessing trainees’ doctor-patient communication skills at the start of training can provide an insight into what they need training in. Bearing in mind that some skills benefit more from training programmes than other skills, both educators and researchers should develop and investigate teaching methods that have an impact on the skills that currently remain below the desired standards. Furthermore, looking into the differences in the trainability of different doctor-patient communication skills and the different growth patterns they follow, might provide direction for further research into teaching doctor-patient communication skills.
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Differential growth


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