Correlations of Communication and Interpersonal Skills between Medical Students and Residents

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Purpose: Medical students’ communication and interpersonal skills can be evaluated by standardized patients in a clinical performance examination (CPX). The purpose of this study is to investigate which communication and interpersonal skills are more closely correlated between medical students and residents.

Methods: This study included 2nd-year residents in 2009 who took the eight-station CPX as 4th-year medical students in 2006. In-patients who were cared for by the residents were asked the seven items related to interpersonal and communication skills. The correlation between the scores of these seven items in the 2006 CPX and the scores in the 2009 patient survey was evaluated.

Results: Twenty-six residents, 11 in medical wards and 15 in surgical wards, participated in the study. The medical students’ total scores tended to be correlated with the residents’ scores (r=0.381, p=0.055). There was significant correlation between the scores for students and residents for ‘Explaining more explicably’ (r=0.470, p=0.015), and marginally significant correlation (r=0.385, p=0.052) for ‘Listening attentively.’ There was no significant correlation for the other five items.

Conclusion: ‘Explaining more explicably’ and ‘Listening attentively’, these skills were more closely correlated between medical students and residents. These basic communication skills should be included in graduate or licensing evaluations.

Keywords: Physician-patient relations, Communication, Interpersonal relations, Clinical competence

INTRODUCTION

Communication and interpersonal skills are essential for successful professional conversation [1]. The Association of American Medical Colleges’ Medical School Objectives Project urges faculties to teach communication and interpersonal skills [2]. Medical students’ competence in these skills can be evaluated by standardized patients (SPs) in a clinical performance examination (CPX) [3,4,5]. SPs are trained to play a specific role and to rate performance using a checklist
including items related to patient–physician interaction. Many medical schools and licensing organizations use a CPX for the evaluation of communication and interpersonal skills in high-stakes evaluations [6,7,8]. In South Korea, a CPX was usually performed in 4th-year students in either graduate school of medicine (4 years) or medical school (4 years) following pre-medical school (2 years).

Several studies demonstrated that the scores on communication and interpersonal skills by SPs in CPXs predict the competence of doctors in real clinical practice [9,10]. However, to our knowledge, there is no data about the correlations of specific items or skills between medical students and residents. This information could suggest which areas of communication and interpersonal skills should be emphasized more in graduate or licensing examinations. The aim of this study is to investigate which communication and interpersonal skills are more closely correlated between medical students and residents.

SUBJECTS AND METHODS

1. Study participants

This study includes the 2nd–year residents (in 2009) at Seoul National University Hospital (Republic of Korea) who had taken a CPX as a summative evaluation as 4th–year medical students in Seoul National University College of Medicine (Republic of Korea) in 2006. Those who were not charged with in-patients or who did not consent to the patient survey were excluded. Written consent was obtained from all participating residents, and the Institutional Review Board of Seoul National University Hospital approved the study protocol.

2. The CPX and communication and interpersonal skills

A CPX consisting of eight cases had been developed as a 4th–year assessment by the Seoul·Kyeonggi CPX Consortium (Republic of Korea). Each case required 18 minutes to administer: 1 minute to introduce the case, 12 minutes for the student–SP encounter, and another 5 minutes after the encounter for the student to answer case–related questions (inter–station test) [11]. During the inter–station period, SPs completed checklists, which included the seven items related to communication and interpersonal skills.

SPs, who had been trained and rehearsed, evaluated the students on the seven items using a six–point Likert scale. The seven items were as follows: 'Demonstrating a kind and familiar manner', 'Listening attentively', 'Building a therapeutic relationship', 'Setting up a good atmosphere for communication', 'Demonstrating respectful behavior', 'Explaining more explicity', and 'Demonstrating professionalism'. These items were extracted from 47 items, identified by a focus group interview and a literature review, by our factor analysis on the survey results from 536 Korean patients.

3. Patient survey

For each resident, three in–patients who were under his or her care for at least three days were surveyed on the same seven items (six–point Likert scale) by two trained interviewers (Phyo SR, Jang EY) in 2009. The patients who did not consent to the survey or who were too sick to respond were appropriately excluded. The patients were informed that three points should be regarded as an average score for doctors.

4. Statistical analysis

Descriptive results of continuous variables were
Table 1. Scores on the Items Related to Interpersonal and Communication Skills for 26 Residents

<table>
<thead>
<tr>
<th>Items</th>
<th>Scores $^a$</th>
<th>Percentile $^b$</th>
<th>Patient rating scores for residents $^c$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrating a kind and familiar manner</td>
<td>3.25</td>
<td>42.0</td>
<td>4.33</td>
</tr>
<tr>
<td></td>
<td>(2.88 to 3.38)</td>
<td>(24.0 to 84.2)</td>
<td>(3.67 to 4.50)</td>
</tr>
<tr>
<td>Listening attentively</td>
<td>3.00</td>
<td>50.6</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>(2.63 to 3.28)</td>
<td>(20.1 to 81.3)</td>
<td>(3.58 to 4.54)</td>
</tr>
<tr>
<td>Building a therapeutic relationship</td>
<td>3.25</td>
<td>49.7</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>(2.88 to 3.38)</td>
<td>(24.3 to 80.0)</td>
<td>(2.67 to 3.75)</td>
</tr>
<tr>
<td>Setting up a good atmosphere for communication</td>
<td>3.25</td>
<td>57.5</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>(3.13 to 3.41)</td>
<td>(29.7 to 79.2)</td>
<td>(3.67 to 4.54)</td>
</tr>
<tr>
<td>Demonstrating respectful behavior</td>
<td>3.32</td>
<td>38.8</td>
<td>4.42</td>
</tr>
<tr>
<td></td>
<td>(3.00 to 3.50)</td>
<td>(22.6 to 77.0)</td>
<td>(3.67 to 5.00)</td>
</tr>
<tr>
<td>Explaining more explicably</td>
<td>3.33</td>
<td>44.3</td>
<td>4.33</td>
</tr>
<tr>
<td></td>
<td>(3.11 to 3.56)</td>
<td>(21.7 to 74.1)</td>
<td>(3.91 to 4.75)</td>
</tr>
<tr>
<td>Demonstrating professionalism</td>
<td>3.57</td>
<td>48.3</td>
<td>4.87</td>
</tr>
<tr>
<td></td>
<td>(3.25 to 3.86)</td>
<td>(24.7 to 78.6)</td>
<td>(4.00 to 5.00)</td>
</tr>
<tr>
<td>Total</td>
<td>3.31</td>
<td>40.5</td>
<td>4.19</td>
</tr>
<tr>
<td></td>
<td>(3.05 to 3.47)</td>
<td>(24.6 to 76.1)</td>
<td>(3.65 to 4.45)</td>
</tr>
</tbody>
</table>

Data denote the median values (inter-quartile range). $^a$Six-point Likert scale (minimum, 1; maximum, 6). $^b$Percentile grades among a total of 174 graduates.

expressed as median values and inter–quartile ranges (IQR), and the Mann–Whitney U–test was used to compare continuous variables. The correlations between SP ratings and patient ratings were evaluated with Pearson’s correlation analyses. SPSS version 12.0 (SPSS Inc., Chicago, USA) was used in the data analyses.

RESULTS

Of 96 residents who took the CPX as 4th–year medical students, 26 residents (27%) participated in this study. Their median age was 29 (IQR, 28 to 29); fourteen of the residents (54%) were male. Eleven residents (42%) worked in medical wards and 15 (58%) in surgical wards.

When rated as 4th–year medical students, the median of the average scores for these seven interpersonal and communication skills in the CPX was 3.31 (IQR, 3.05 to 3.47) and the median percentile among the total 174 graduates was 40.5% (IQR, 24.6 to 76.1) (Table 1). There was no significant difference in scores between genders or between students from medical and surgical wards (p=0.193, p=0.760).

As 2nd–year residents, the median of the average scores for these seven items in the patient survey was 4.19 (IQR, 3.65 to 4.45) (Table 1). The median maximal difference of three patients’ scores for each resident was 2 (IQR, 1 to 2). There was no significant difference in patient–rated scores according to gender or medical/ surgical wards (p=0.595, p=0.683).

Total scores of the medical students tended to be correlated with the residents’ scores (Pearson correlation coefficient [r]=0.381, p=0.055) (Table 2). The scores for ‘Explaining more explicably’ were significantly correlated between medical students and residents (r=0.470, p=0.015). ‘Listening attentively’ showed marginally significant correlation (r=0.385, p=0.052).

There was no statistically significant correlation for the other items: ‘Demonstrating a kind and familiar manner’, ‘Building a therapeutic relationship’, ‘Setting
Table 2. Correlation between Standardized Patient Ratings in Medical School and Patient-Rated Scores of Residents for Communication and Interpersonal Skills

<table>
<thead>
<tr>
<th>Items</th>
<th>r</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrating a kind and familiar manner</td>
<td>0.111</td>
<td>0.588</td>
</tr>
<tr>
<td>Listening attentively</td>
<td>0.385</td>
<td>0.052</td>
</tr>
<tr>
<td>Building a therapeutic relationship</td>
<td>0.224</td>
<td>0.271</td>
</tr>
<tr>
<td>Setting up a good atmosphere for communication</td>
<td>0.318</td>
<td>0.114</td>
</tr>
<tr>
<td>Demonstrating respectful behavior</td>
<td>0.249</td>
<td>0.220</td>
</tr>
<tr>
<td>Explaining more explicably</td>
<td>0.470</td>
<td>0.015</td>
</tr>
<tr>
<td>Demonstrating professionalism</td>
<td>0.029</td>
<td>0.887</td>
</tr>
<tr>
<td>Total</td>
<td>0.381</td>
<td>0.055</td>
</tr>
</tbody>
</table>

*a) Pearson correlation coefficient, b) From Pearson’s correlation analyses.

up a good atmosphere for communication', 'Demonstrating respectful behavior', and 'Demonstrating professionalism'.

**DISCUSSION**

This is, to our knowledge, the first longitudinal study evaluating which item in communication and interpersonal skills is closely correlated between medical students and doctors in clinical practice. Despite the time interval of about three years between 4th-year medical students and 2nd-year residents, the study demonstrates that there was a correlation on the two items, 'Listening attentively' and 'Explaining more explicably'. It suggests that these basic communication skills should be emphasized more than other communication and interpersonal skills in graduate or licensing examinations. For example, the scores from these two items may have additional points in an entrance examination for medical interns after graduation.

In addition, this study demonstrates that the SP ratings in medical school CPXs can predict the patient ratings of residents’ communication skills. Many medical schools and licensing organizations use the CPX for formative and summative evaluations of communication skills [7,12,13,14]. Our study supports the predictive validity of these examinations using SP ratings.

Patient questionnaires are widely used for assessing clinical skills of physicians [15,16]. Patient ratings are particularly suited for assessment of communication and interpersonal skills, since interpersonal experience can most accurately be measured when the evaluator is personally involved in the interaction [17]. In the present study, the finding that the maximal differences among patients’ scores for each resident were relatively small suggests the reliability of patient ratings.

There are over 25 checklist items related to communication and interpersonal skills described in the literature, but currently there is no gold standard and only a few have been widely used [18]. In this study, the CPX checklists included only seven items based on our previous work (as described). In addition, the items needed may be different for medical students and residents. Therefore, the seven items used in this study may be insufficient to evaluate residents’ communication and interpersonal skills.

There was no significant correlation for five of the seven items, but several reasons may explain this. First, being rated might influence the medical students’
performance in the CPX, while the patient ratings were based on residents’ routine clinical practice. Second, clinical experience, observation for the interpersonal attitude of attending physicians and self maturation might affect the resident–patient interactions, although our hospital did not have the educational program to improve the interpersonal skills of the residents. Third, the CPX is presented in an outpatient setting in medical school, while the residents were evaluated by in-patients. This difference of clinical situation might influence the results. Another explanation why there was a correlation only on the two items, ‘Listening attentively’ and ‘Explaining more explicity’ is that these basic communication skills may not be changeable with time compared with other items.

This study has several limitations. First, the number of subjects is relatively small, which may limit generalization of our conclusions. Second, patient ratings might fail to differentiate various elements of interpersonal relationships [18], even though patients’ experience may be a useful and relevant measure of the quality of the patient–physician relationship [15,19].

In conclusion, on the items ‘Listening attentively’ and ‘Explaining more explicity’ the standardized patient ratings of medical students were correlated with patient ratings of residents. These basic communication skills should be included in a medical school graduation examination or in a licensing examination for clinical practice.

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Conflicts of interest: None.

REFERENCES


