Empathy Scores of “Ankara University School of Medicine” Fifth Year Students in Two Different Curricula; a Preliminary Report

Ankara Üniversitesi Tip Fakültesinde Paralel Yürüttülen Farklı Eğitim Sistemleriyle Öğrenim Gören Dönem 5 Öğrencilerinin “Empati” Beceri Düzeyleri; Ön Çalışma Raporu

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Aim: In 2002 -2003 education term, Ankara University School of Medicine introduced an inte-grated, student-centered curriculum composed primarily of competency-based professional skills and problem-based courses. Prior to the introduction of the new curriculum, a discipline-based, traditional curriculum was used. Both curricula ran parallel until the last class of traditionally educated students graduated in 2007. The purpose of this study was to compare the empathy scores in medical students in their fifth year in relation to their curriculum.

Method: The research groups consisted of 194 fifth year students educated with a traditional curricu-lum and 127 fifth year students educated with the new curriculum. The ‘The Jefferson Scale of Physician Empathy’ was used to measure the empathy scores of the students, which included 20 items with a 7-point Likert scale. t-test was used to compare the empathy scores by curricula.

Results: The results showed that the empathy scores of the traditionally educated fifth year students were significantly different when compared with fifth year students who received the student cen-tered curriculum.

Conclusion: This study reports “preliminary data” of the probable effect of student-centered

Key Words: Empathy, Curriculum change, Medical Education, Professional Development,
Self-assessment.

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Empathy, one of the elements of professionalism, improves both the quality of data obtained from the patient, and the physician's diagnostic ability enhancing both patient and physician satisfaction. In other words greater physician empathy has been associated with fewer medical errors, better patient outcomes and more satisfied patients. Practicing physicians must have professional competencies including humanism, scientific knowledge, qualified care, self-assessment, dutifulness, patient confidentiality, altruism, empathy and compassion, honesty, integrity, and ethical behavior, as well as communication. The General Medical Council (GMC) which oversees the medical education curriculum in the UK, has emphasized that demonstrating empathy represents a professional skill that makes “a good doctor” (1). Also The Accreditation Council for Graduate Medical Education (ACGME) mandates competency in 6 areas; patient care, medical knowledge, practice-based learning and improvement, professionalism, systems-based practice, and interpersonal and communication skills, which are defined as effective teaming with patients, families, and other health professionals (2). All these show that medical educators should focus on professional skills during undergraduate medical education. In order to teach professional skills, in addition to scientific knowledge and medical competencies, an effective curriculum is important for maintaining and improving those skills among medical graduates. Recent studies have reviewed the improvement and development of undergraduate and postgraduate medical education curricula, in terms of enhancing the professional skills of the graduates gained speed (3-7).

Ankara University School of Medicine (AUSM) runs a 6-year programme and developed a student-centered, problem-based, integrated curriculum in 2002-2003 (8). The traditional curriculum ended in 2006-2007. The two curricula ran parallel until the last class of traditionally educated students graduated in 2007. The traditional curriculum was a discipline-based program including lectures with large groups where professional values were transmitted by role modeling. The new curriculum emphasized small-group studies, student-centered, self-directed learning of basic and clinical science material. It was also composed of competency-based professional skills courses as well as community-based and problem-based courses. Course content addresses issues related to communication, doctor-patient relations, medical ethics, cultural issues, and social elements of medicine and the value of self-awareness, self-care, and empathy.

In order to evaluate the effectiveness of this curriculum change in terms of professionalism and empathy, both formative and summative assessments are needed to use. Successful methods for measuring professionalism include self-assessment surveys, critical incident techniques, longitudinal studies, evaluation of video-taped patient visits and standardized patient-based objective structured clinical examinations (OSCEs) as presented in the recent literature (4-7, 9-11). Hojat et al. (12) have developed the Jefferson Scale of Physician Empathy (JSPE), specifically designed for measuring empathy in medical students and doctors in relation to patient care. JSPE is effective when used in self-assessment surveys for a formative assessment. They used the instrument in several studies for their psychometrics (12).

In this study JSPE survey was used to compare the empathy scores of fifth year medical students, who were educated in two different curricula (traditional curriculum and student centered, integrated curriculum), to test the following research hypothesis:

Based on the fact that empathy is the foundation of patient–doctor relationships and one of the essential components of the professional competencies in medical students, the new medical curricula would provide higher empathic score.

Methods

Participants

The study sample consisted of 194 fifth-year medical students who were educated according to the traditional curriculum during 2001-2006 academic years (represent 70.54% of total students) and 127 fifth-year medical students who were educated according to the new curriculum during 2002-2007 academic years (represent 92.70% of total students) at AUSM. Descriptive statistics of the students of each curriculum in terms of gender is offered in Table 1. The students’ knowledge based assessment scores, do not differ in two different curricula in terms of university entrance selection criteria.

Material

The JSPE for physicians and health professionals (the “HP” version) used in this study includes 20 items (10 items positively worded and 10 items negatively worded) answered on a 7-point Likert scale (1= strongly disagree, 7= strongly agree). Score interval is 20-140, higher the score shows higher empathic consistency.

The “HP-version” was developed by slightly modifying the wording of
analyze the data.

The difference between the empathy scores of fifth year students in terms of different curricula was analyzed with t-test.

Results

Means and standard deviations of empathy scores of fifth-year medical students in two different curricula are 105.12±14.42, and 108.61±13.19 respectively (offered in Table 2).

Analysis showed that the fifth year students' empathy scores in two curricula were significantly different \( [t (319) = 2.19, p<0.05] \) (offered in Table 3).

Discussion

Empathy is the physician’s ability to cognitively recognize a patient’s perspectives and experiences, and convey such an understanding back to the patient (12). It is one of the expected outcomes of medical education and an ability that medical school alumni must have. In this study a significant difference was found between the students’ empathy scores in two different curricula. The mean empathy score for the students from the traditional curriculum was found 105.12 and the mean empathy score for the students from the integrated, student-centered curriculum was found 108.61. By comparison, Hojat et al (12) showed that the mean empathy scores of third year medical students was 118 and the residents was 118 (12), while the mean empathy scores for physicians was 120 (13). The mean empathy scores of our students are low, and we suggest that our students need more instructional support in empathic attitudes and that the new curriculum needs improvement to increase the students’ professional skills by implementing new innovative educational techniques.

Several studies suggest that a small group session like problem-based learning (PBL) contributes in significant ways to the development of professional competencies. PBL students have better interpersonal competencies, which positively affects the quality of their interactions with patients (3, 14, 15). Antepohl et al. (14) reported that medical graduates of a PBL curriculum felt especially well prepared in terms of communication skills with patients, collaboration with other health professionals and development of critical thinking/scientific attitudes (14). One way to preserve and enhance empathy

### Table 1. Descriptive statistics for completers

<table>
<thead>
<tr>
<th>Curriculum</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Traditional</td>
<td>110</td>
<td>56.7</td>
<td>84</td>
<td>43.3</td>
</tr>
<tr>
<td>Student centered</td>
<td>81</td>
<td>63.8</td>
<td>46</td>
<td>36.2</td>
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</table>

### Table 2. Means and standard deviations of the JSPE scores of fifth-year medical students by different curricula.

<table>
<thead>
<tr>
<th>Curriculum</th>
<th>n</th>
<th>Empathy scores</th>
<th></th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Median</td>
<td>Min</td>
<td>Max</td>
<td></td>
</tr>
<tr>
<td>Traditional</td>
<td>194</td>
<td>105.12</td>
<td>14.42</td>
<td>106.00</td>
<td>58</td>
<td>134</td>
<td></td>
</tr>
<tr>
<td>Student centered</td>
<td>127</td>
<td>108.61</td>
<td>13.19</td>
<td>110.54</td>
<td>77</td>
<td>132</td>
<td></td>
</tr>
</tbody>
</table>

### Table 3. T-test results of the JSPE scores of fifth-year medical students by different curricula

<table>
<thead>
<tr>
<th>Curriculum</th>
<th>N</th>
<th>( \overline{X} )</th>
<th>S</th>
<th>sd</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>194</td>
<td>105.12</td>
<td>14.42</td>
<td>319</td>
<td>2.19</td>
<td>0.029</td>
</tr>
<tr>
<td>Student centered</td>
<td>127</td>
<td>108.61</td>
<td>13.19</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
among medical students is to teach and role-model it during school (16). In the study of Tavakol et al. (17) students predominantly agreed that empathy needs to be taught as a skill. Empathic ability was identified as an important innate attribute which nevertheless can be enhanced by educational interventions (17). In a review of empathy training, experimental learning methods, including role-play, case scenario-based activities, PBL and simulation, were shown to improve empathic ability in nurses (18). Also Cunico et al. (19) showed that specific training course, including seminars and laboratories in small groups with tutors, aimed at learning and developing communicative and empathic abilities, is effective in nursing students (19). The results of Prince et al’s study (5) showed that PBL enhances the level of skill displayed in general competencies such as communication skills and teamwork (5). The study by Koh and colleagues (20) systematically reviewed all of the studies in medicine linking problem-based learning to outcomes. They showed that only four competencies had moderate to strong levels of evidence in support of problem-based learning for both self- and observed assessments: coping with uncertainty (strong), appreciation of legal and ethical aspects of health care (strong), communication skills (moderate and strong respectively) and self-directed continuing learning (moderate). They interpreted that Problem-based learning during medical school has positive effects on physician competency after graduation, mainly in social and cognitive dimensions (20). According to Peters et al.’s (21) research, PBL curriculum alumni rated their preparation to practice medicine in a humane fashion more highly than did graduates of its conventional curriculum and expressed more confidence in their ability to manage patients with psychosocial problems (21). Graduates of the PBL curriculum showed higher self-ratings on communication skills in dealing with the social context of patients (7).

PBL activities enable students to practice the professional skills (interpersonal communication, problem-solvers, self-directed, lifelong learning) while still in an educational environment. Graduates of PBL curricula should therefore be better prepared to respond to the challenges of professional practice than graduates of conventional curricula. Formal teaching alone is not enough to ensure that students will develop into competent and responsible doctors. Today, personal and professional development needs behavior change which results from a number of influences including education, feedback, rewards, penalties and participation (22). In order to gain these behaviors and attitudes, different educational and evaluation methods must be restructured and integrated to the curriculum. The traditional method of transmitting professional values by role modeling is no longer adequate. Professionalism must be taught explicitly and evaluated effectively (23). Our faculty curriculum development program, started in 2002-2003 designed to support the teaching and evaluation of professionalism which it supported throughout the students’ early clinical work. Lifelong learning is fostered by using student centered methods like PBL and Competency Based Learning. This program is intended to lead to self-reported changes in teaching and practice as well as new educational initiatives.

Limitations

One of the limitations of our study is that we should have used a pretest-posttest control group design for such a comparative study. The JSPE, should have been administered prior to the start of each curriculum to each group of students who participate in the traditional and the new curriculum (pretest), and then to both groups after completion of the program (posttest). In order to show a significant difference in empathy scores in the favor of the group who were trained under the new curriculum, it could have been confirmed with this defined method. However since the traditional group of the study was in their fifth year, and the other group was in their fourth year, we would not have had the chance to do the pretests.

Another limitation of our study is the evaluation technique which is based on self-assessment. Although self-assessment does not always provide objective information, it is more reliable than asking experts or colleagues (24). As recent studies suggest, it is the patient who can tell us whether a medical student or doctor demonstrates empathy in a particular situation. To use instruments that measure empathic response from the patient’s perspective may be more valuable in terms of objective assessment (25), such as observing and rating student’s attitudes during an intervention with a real patient or with Standardized Patients (SP’s). Van Zanten et al showed that using standardized patients to evaluate some professional attributes, such as empathy and respect, are also
effective to improve the medical students’ empathy skills (9).

Conclusion
This study reports “preliminary data” of curriculum change (from discipline-based, traditional one to integrated, student–centered) effects on empathic perception of medical students. Besides the new curriculum, we suggest that a new communication skills program should be prepared and it may be beneficial for improving the medical students’ empathy skills and may have a positive effect on the empathy scores.

REFERENCES
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We also need further well-designed studies to justify that the new curriculum provides a positive effect on the students’ empathy skills. Further studies should be done periodically to assess the students’ communication skills and to see their developments.

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It was also presented at the 5th Turkish National Medical Education Congress, 2008, in Izmir, Turkey as a poster presentation.


