A survey of the quality and quantity of clinical education from the viewpoint of medical students

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Abstract

Introduction:
Clinical education is a process during which students gradually acquire skills for clinical management of patients by visiting patients. The aim of this study was to determine the quality and quantity of clinical education from the viewpoint of junior and senior doctors.

Materials and Methods:
This is a descriptive, analytical study. All clinical students of the faculty of medicine in YUMS in the year 1385-1386 were surveyed after they gave their informed written consent. Data were collected by a researcher made questionnaire with approved validity and reliability. 54 students totally consisted of personal identification, the quality and quantity of attending, clinical education, and educational contexts were assessed. Each question had four choice options and the cut-off point was considered 60 out of 100. After the primary data analysis, the students were asked to take part in a Focus Group Discussion to have a conclusion of their ultimate opinions. The data were analyzed using SPSS software.

Results:
68% of the students evaluated the quality of clinical education unsatisfactory and 48% of them assessed the instructors as unsatisfactory. The interns were significantly assessed as unsatisfactory in OBS-GYN, surgery and internal wards more than stagers.

Conclusion:
Quality and quantity of clinical education of the faculty of medicine was evaluated as undesirable from viewpoint of students. Totally, clinical education requires further attention from the different perspectives.

Keywords: Education, Medicine, Students

Introduction
Clinical education is a process in which medical students gradually acquire skills through paying frequent visits to patients. They engage in solving patients’ problems by employing logical reasoning and putting their experience to use (1). Clinical education is one of the extremely sensitive stages of medical education, and it plays a rather significant role in developing students’ professional capabilities. Clinical education is an indispensable component of
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medical training directly affecting a physician’s performance in promoting public health (2). Clinical education is a part of medical education in which students gain the opportunity to practice their theoretical knowledge. Students at the clinical stage must have adequate knowledge and skill, and they should be able to apply these skills in practice. In order to achieve desirable results in clinical education, it is imperative to evaluate and perpetuate clinical education. One of the fundamental ways of assessing clinical education is to take advantage of student opinion (3).

The results of a survey carried out by Ahmadinejad et al in Tehran revealed that medical students’ complete or relative rate of gratification with respect to their clinical education training course was 38.8 percent and their satisfaction with the training offered at three educational settings, namely outpatient, clinical and theoretical were %52, %52 and %78 respectively. There was also a significant relationship between students’ satisfaction of the theoretical and practical examinations and their rate of satisfaction regarding clinical education (4).

The results of a research conducted by Baghaee et al in Oroomieh (2005) indicated that 50.5 percent of the medical trainees were satisfied with their professors’ attentiveness of student presence at the ward; 44.1 percent of the trainees were satisfied with their professors’ responses to the questions and problems they encountered, and 32.3 percent were relatively satisfied with their professors’ conduct and how they treated their students. 36.9 percent were satisfied with the relevance between final exams and the training and instructions offered during the course. 34.8 percent of the students were either dissatisfied or extremely dissatisfied with the incorrect usage of the educational facilities (5). A great part of student dissatisfactions arose from the fact that the educational purposes were not clearly stated at the beginning of the course, the professors did not bother with evaluating their students at the end of the course, and the educational facilities were not utilized (6). The results of the survey carried out by Masik et al in Sarajevo (2007) showed that students had considered their professors’ upgraded knowledge and advanced facilities as key factors in promoting the quality of medical education (7). In the same study, students also emphasized the value of reconsidering and revising clinical educational methods (8).

It is a necessity to evaluate the quality of clinical teaching from the viewpoint of the medical trainees and interns who are regarded as the main clients of the teaching process. Also, evaluation can be made of clinical education through inquiring clinical professors’ opinions (9). This presupposes criteria which are constantly evaluated and revised. In addition, it is essential to study the environment, educational facilities, students, the professors, and their interactions (10-13). Due to the high demands and heavy workload at the hospital, the evaluation of clinical trainees and interns is a very intricate task (14). The most important alternative for such evaluation includes professors’ grasp on theoretical teaching and discipline in clinical teaching. Providing inspection checklists to reassure the fulfillment of educational purposes is essential and should be carried out with adequate precision and care. Since teaching conditions vary, it is recommended to re-examine the options of the checklists on a regular basis (11&15).

There is a relationship between clinical trainee and interns’ quality of education/advancement and the compulsory medical services required at hospitals. Advancing the quality of training physicians is very difficult because there are numerous complications in the hospital environment where physicians work and train. This is especially difficult for those who are directly involved and committed to providing the required services at the
A survey of the quality and education including the internal, gynecology, surgery and pediatrics wards under two parameters, namely the environment and the professor. The questions in the questionnaire were of the four-point Likert scale. For each parameter, the score was determined out of one hundred and the cut-off point was considered 60 out of 100. In other words, scores lower than 60 were taken as unfavorable while 60 and above were regarded as desirable. The collected data were analyzed using SPSS. In order to describe the data, descriptive indices and frequency table were used. In order to analyze the data, the Chi-squared test was used. The significance level was taken as P< 0.05. After the initial analysis of the data, the results were discussed in a group comprising 10 students and overall decisions were made based on what the majority of the members had concurred on.

**Materials and Methods**

The statistical population of this descriptive cross-sectional study was comprised of all the medical students training at the clinical stage at the faculty of medicine in Yasooj on the second semester in the academic year of 2007-2008 and sampling was performed using available sampling. The sample comprised 52 medical students who had willingly filled out the questionnaires. The research tool was a self-administered questionnaire based on foreign samples (12-16) and its scientific correctness was examined and confirmed by university professors and relevant experts. The Cronbach’s Alpha coefficient for the sustainability of the questionnaire was also estimated at 81 percent (acceptable rate) using the dividing method. The questionnaire consisted of two sections; first, the personal information section and second, evaluating the quality and quantity of clinical education including the environment and the professor. The scores lower than 60 were taken as unfavorable while 60 and above were regarded as desirable. The collected data were analyzed using SPSS. In order to describe the data, descriptive indices and frequency table were used. In order to analyze the data, the Chi-squared test was used. The significance level was taken as P< 0.05. After the initial analysis of the data, the results were discussed in a group comprising 10 students and overall decisions were made based on what the majority of the members had concurred on.

**Results**

Among the participants in the survey, 42 percent were male (22 participants), 45 percent were local students, 64 percent were stagers and 36 percent of the participants were studying at the internship level. The interns in the gynecology, surgery and pediatrics wards considered the quantity and quality of clinical education at much lower standards than expected in comparison with stagers, and the difference between these two opinions was significant. 68 percent of the students considered clinical education undesirable, while 48 percent thought the second parameter (professor) was undesirable (Table 1).

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity &amp; Quality</th>
<th>Desirable No.(percentage)</th>
<th>Undesirable No.(percentage)</th>
<th>Total No.(percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>all parameters for clinical education</td>
<td>Environment</td>
<td>13 (39)</td>
<td>20 (61)</td>
<td>33 (100)</td>
</tr>
<tr>
<td></td>
<td>Professor</td>
<td>16 (52)</td>
<td>15 (48)</td>
<td>31 (100)</td>
</tr>
<tr>
<td></td>
<td>Clinical teaching</td>
<td>10 (32)</td>
<td>21 (68)</td>
<td>31 (100)</td>
</tr>
<tr>
<td></td>
<td>Internal</td>
<td>10 (32)</td>
<td>21 (68)</td>
<td>31 (100)</td>
</tr>
<tr>
<td>Wards</td>
<td>Gynecology</td>
<td>8 (24)</td>
<td>25 (76)</td>
<td>33 (100)</td>
</tr>
<tr>
<td></td>
<td>Surgery</td>
<td>13 (31)</td>
<td>29 (69)</td>
<td>42 (100)</td>
</tr>
</tbody>
</table>

Table 1: clinical Students’ viewpoints regarding the quantity and quality of clinical education with respect to the environment, the professors, teaching and training and the wards, Yasooj March, 2008
The stagers considered the quantity and quality of clinical education more desirable (%61) in comparison with interns (%11), and the difference was significant. Also, female students considered the quantity and quality of clinical education at higher standards (%47) in contrast with the male students (%19). However, the difference was not significant.

According to student opinion, the educational environment was not suitable, because there was a shortage of educational facilities, the quantity and quality of the books available at the library was low and not up-to-date, there was not easy access to the required references such as the internet, information boards and journals, there was no information center at the hospital, and there was an inadequate number of computers at the hospital and an insufficient supply of up-to-date journals.

With regard to the physical environment (the hospital), the highest score belonged to the conference hall and the physical environment of clinical education, while the lowest score belonged to the educational facilities. Professors’ conduct, knowledge, capability in conveying their knowledge and clinical skills at the pediatric ward had the highest score while it was lowest at the internal ward.

With respect to the second parameter (professor), interns regarded the work of the clinical professors more undesirable as opposed to the stagers and the difference was significant. Also, male students considered the work of the clinical professors less desirable than the female students, but the difference was not significant (table 2).

Male students considered the surgical and Gynecological wards at lower standards compared to the female students and the difference was significant (table 3).

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**Table 2: clinical Students’ viewpoints regarding the quality of clinical professors’ training abilities according to each student’s educational level and gender, Yasooj March, 2008**

<table>
<thead>
<tr>
<th>Description</th>
<th>Intern</th>
<th>Stage</th>
<th>Gender</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Desirable No.(percentage)</td>
<td>Undesirable No.(percentage)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage</td>
<td>6 (34)</td>
<td>12 (66)</td>
<td>X² = 5.74 , df=1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 (78)</td>
<td>13 (23)</td>
<td>P=0.02</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>7 (44)</td>
<td>9 (56)</td>
<td>NS*</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>9 (60)</td>
<td>6 (40)</td>
<td></td>
</tr>
</tbody>
</table>

*Not significant

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**Table 2: clinical Students’ viewpoints regarding the quantity and quality of the wards according to each student’s educational level and gender, Yasooj March, 2008**

<table>
<thead>
<tr>
<th>Wards</th>
<th>Description</th>
<th>Desirable No.(percentage)</th>
<th>Undesirable No.(percentage)</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gynecology</td>
<td>Female</td>
<td>7 (44)</td>
<td>9 (56)</td>
<td>X² = 6.44 , df=1</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>1 (6)</td>
<td>16 (94)</td>
<td>P=0.02</td>
</tr>
<tr>
<td></td>
<td>Intern</td>
<td>1 (5)</td>
<td>17 (95)</td>
<td>X² = 8.78 , df=1</td>
</tr>
<tr>
<td></td>
<td>Stager</td>
<td>7 (50)</td>
<td>7 (50)</td>
<td>P=0.005</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>11 (46)</td>
<td>13 (54)</td>
<td>X² = 5.81 , df=1</td>
</tr>
<tr>
<td>Surgery</td>
<td>Male</td>
<td>2 (11)</td>
<td>16 (89)</td>
<td>P=0.02</td>
</tr>
<tr>
<td></td>
<td>Intern</td>
<td>0 (0)</td>
<td>19 (100)</td>
<td>X² = 15.55 , df=1</td>
</tr>
<tr>
<td></td>
<td>Stager</td>
<td>13 (56)</td>
<td>10 (44)</td>
<td>P=0.0001</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>Intern</td>
<td>11 (58)</td>
<td>8 (42)</td>
<td>X² = 5.41 , df=1</td>
</tr>
<tr>
<td></td>
<td>Stager</td>
<td>14 (93)</td>
<td>1 (7)</td>
<td>P=0.02</td>
</tr>
</tbody>
</table>
**Discussion**

A majority of the students considered the quantity and quality of clinical education undesirable for most of the parameters. The students of internship significantly regarded the quantity and quality of clinical education as more undesirable in comparison with the staggers. These results are in accordance with the results in the works of Ahmadinejad et al and Baghaee et al. (3&4). According to the results above, the internship course training in each ward should be in accordance with the objectives of each ward. It is also necessary to take interns’ demands and requirements into account. The first parameter (the environment) was evaluated as undesirable in most cases, because the quantity and quality of the educational facilities was unsatisfactory, the books available at the library were not up-to-date, accessing scientific references and the use of the internet was very difficult, there were not enough computers at the hospital and the journals were not up-to-date. With respect to the clinical professors’ performance in terms of planning and spending enough time on clinical training, the pediatric ward was the only ward which was desirable and the rest of the wards were evaluated as undesirable. In the pediatric ward, the professors spent more time training students which would obviously help them identify their strong and weak points regarding training students and this is why the pediatric ward has shown better work in comparison with the other wards. The internal ward was considered the weakest. In the discussion group section which was about the scientific capability of the professors, their ability to convey their knowledge to the students and whether the information they presented was up-to-date, only the pediatric ward has shown better work in comparison with the other wards. The internal ward was considered the weakest. In the explanatory responses of the students showed that regular educational rounds had been held, more time had been allocated to each round and the quality of transferring information to the students was better. In the internal ward which was evaluated as the weakest ward, based on students’ explanatory answers, this ward had the shortest rounds. With regard to teaching clinical skills, the pediatric ward was the only acceptable ward, and according to students’ explanatory responses, this was true due to the fact that the professors directly supervised the students’ performance of clinical skills and they reminded them of the strong and weak points at the beginning of the course. However, the clinical professors in the other wards had mostly addressed theoretical matters and endeavored to transfer the theoretical material to the students. A majority of the interns stated that their clinical professors’ performance was not desirable, but most of the staggers considered their clinical professors’ performance as desirable and this showed a significant difference. In the explanatory section of the group discussion, student opinion centered on the fact that the professors of clinical education only presented blocks and focused on theoretical skills rather than practical and did not pay enough attention to clinical education. In this study, the gynecology ward was evaluated as the weakest ward, which matches the results of similar studies (5-6 & 8). The male students evaluated the gynecology ward as more undesirable compared to female students; this difference was significant. During the group discussion, the participants also concluded that the male students become less involved in practical matters due to special cultural issues and only examine the theoretical concepts. Male students do not directly participate in performing physical examinations, and cannot play any particular role at the time of labor, which is very unsatisfactory.

**Conclusion**

The students of internship significantly regarded the gynecology, surgical, and internal wards as more undesirable in comparison with the staggers and the difference was significant. During the group discussion, the students
A survey of the quality and conduct and performance in terms of their clinical activities, holding regular educational rounds, equipping libraries in terms of the variety, number and novelty of the references, operating an information center, running full internet service at the hospital, convincing the hospital staff about the hospital being both a health care and educational center is suggested to the authorities in charge of educational matters.

Acknowledgement
We are grateful to all the relevant authorities and experts of medical education at the university as well as the faculty of medicine. Also, we would like to thank the students who assisted us in carrying out this survey.

References: