

Brief report

Perceptions of pharmacy clerkship students and clinical preceptors regarding preceptors' teaching behaviors at Gondar University in Ethiopia

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This study aimed to compare the perceptions of pharmacy clerkship students and clinical preceptors of preceptors' teaching behaviors at Gondar University. A cross-sectional study was conducted among pharmacy clerkship students and preceptors during June 2014 and December 2015. A 52-item structured questionnaire was self-administered to 126 students and 23 preceptors. The responses are presented using descriptive statistics. The Mann-Whitney U test was applied to test the significance of differences between students and preceptors. The response rate was 89.4% for students and 95.6% for preceptors. Statistically significant differences were observed in the responses regarding two of the five communication skills that were examined, six of the 26 clinical skills, and five of the 21 parameters involving feedback. The mean scores of preceptors (2.6/3) and students (1.9/3) regarding instructors' ability to answer questions were found to be significantly different ($P = 0.01$). Students and preceptors gave mean scores of 1.9 and 2.8, respectively, to a question regarding preceptors' application of appropriate up-to-date knowledge to individual patients ($P = 0.00$). Significant differences were also noted between students and instructors regarding the degree to which preceptors encouraged students to evaluate their own performance ($P = 0.01$). Discrepancies were noted between students and preceptors regarding preceptors' teaching behaviors. Preceptors rated their teaching behaviors more highly than students did. Short-term training is warranted for preceptors to improve some aspects of their teaching skills.

Keywords: Clinical competence; Cross-sectional studies; Ethiopia; Pharmacy education; Feedback

The School of Pharmacy at Gondar University was launched in 2003. Until 2008, it trained product-oriented pharmacy students in a four-year Bachelor of Science (BS) program. In 2009, Gondar University adopted a five-year clinical pharmacy program including four years of academic study and a one-year clinical clerkship. In 2013, the first patient-oriented pharmacists graduated from the five-year curriculum. The novel structure of the program provided pharmacy students with an

opportunity to make use of and refine recently acquired clinical pharmacy knowledge and skills. The aggregate of perceptions reflecting the experiences of students and preceptors can be expressed in terms of the preceptors' ability to communicate effectively with their students and patients, their in-depth clinical knowledge, and their enthusiasm for giving students feedback [1,2]. At the Faculty of Pharmaceutical Sciences, Naresuan University, Thailand, differences were found in the perceptions of students and preceptors regarding instructors' teaching behaviors [1]. The present study aimed to compare the perceptions of pharmacy clerkship students and preceptors regarding preceptors' clinical skills and their methods of evaluating and providing feedback to students at Gondar Uni-

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Received: January 2, 2016; Accepted: February 14, 2016;

Published online: February 15, 2016

This article is available from: <http://jeehp.org/>

versity between the 2014 and 2015 academic years by obtaining data from two groups of graduating students.

This cross-sectional study was conducted at the University of Gondar-School of Pharmacy in northwestern Ethiopia from June 2014 to December 2015. The first 65 responses were collected among students who graduated in 2014 upon completion of their clinical rotations in June 2014. The next 48 responses were taken from students from the graduating class of 2015 in the same manner. All graduating students who had completed their clinical rotations were included. Twenty three clinical instructors who mentored these students were also included as study subjects. A structured questionnaire containing 52 items was obtained by adding five more questions to a previous 47-item instrument developed by Sonthisombat et al. [3]. The first five questions were used to assess preceptors' communication skills, while the next 26 questions were employed to evaluate preceptors' clinical practice and teaching, and the last 21 questions were designed to assess preceptors' provision of feedback and modes of evaluation. These items were directly administered to 23 preceptors and 126 clinical pharmacy clerkship students. A three-point ordinal scale of measurement was applied to assess preceptors' skills and teaching behavior, with a score of 1 indicating that a certain behavior was not performed at all, a score of 2 indicating that the behavior in question was performed but inadequately, and a score of 3 indicating that the behavior in question was carried out well and satisfactorily. Participation in the survey was voluntary and anonymous. Two trained data collectors administered the questionnaires to the students at their university residences, while preceptors received the items directly from the principal investigator. The data collection period was one week for each group of students in June 2014 and December 2015. The data were analyzed with SPSS for Windows, version 20 (IBM Corp., Armonk, NY, USA). The level of significance was set at 0.05 and 95% levels of confidence were used to test the significance of the differences. The non-parametric Mann-Whitney test was applied to test for statistically significant differences between the responses of preceptors and students. Ethi-

cal approval was obtained from the Research and Community Service Ethical Committee of the University of Gondar.

Study subjects

Of the 126 clerkship students (22 females and 104 males) who graduated during the 2014 and 2015 academic years, 89.4% responded to the questionnaire. A total of 23 preceptors, two of whom were female, taught, mentored, and evaluated students during their clinical rotations. Twenty-two preceptors responded to the questionnaire. Two preceptors were assigned to emergency medicine, five to pediatrics, and five to internal medicine. The rest were assigned to surgery wards and ambulatory care (Table 1).

Preceptors' communication skills

Nonparametric testing showed that a statistically significant difference was observed between preceptors and students regarding the instructors' ability to answer questions clearly and precisely ($P = 0.01$) regarding whether the instructors' voices were loud enough to be clearly understood ($P = 0.02$) (Table 2).

Preceptors' clinical skills

Preceptors and students showed significant variation in six of the 26 items that assessed preceptors' clinical skills: posses-

Table 1. Number of clinical instructors and students allocated to each ward per rotation in 2014-2015 at Gondar University in Ethiopia

Clinical rotation sites	Preceptors	Students
Ambulatory clerkship	4	13
Emergency department	2	13
Pediatrics clerkship	5	26
Internal medicine clerkship	5	26
Surgery and drug information center clerkship	5	24
Hospital pharmacy	2	24
Total	23	126

Table 2. Perceptions of students and preceptors regarding preceptors' communication skills in 2015 at Gondar University in Ethiopia

Communication skill parameters	Mean score (out of 3 points)		P-value
	Students (105)	Preceptors (22)	
Connecting all relevant clinical data into a big picture	1.91	2.64	0.09
Explaining the basis for their actions and decision-making in patient management	1.91	2.64	0.13
Presenting information in an organized way	1.97	2.47	0.17
Answering questions clearly and precisely	1.92	2.62	0.01
Speaks loud enough both in class and bedside	1.85	2.85	0.02

Use of questionnaire items was kindly permitted by an editor of the American Journal of Pharmaceutical Education originally published in Am J Pharm Educ 2008;72: 110 available from <http://dx.doi.org/10.5688/aj7205110>.

Table 3. Perceptions of students and preceptors regarding preceptors' clinical practice and bedside teaching at Gondar University in Ethiopia

Preceptors' clinical practice and bedside teaching	Mean score (out of 3 points)		P-value
	Students	Preceptors	
Possessing and demonstrating broad knowledge suitable for management of patients in the settings	1.85	2.84	0.01**
Applying appropriate up-to-date knowledge to individual patients	1.87	2.77	0.00
Having good relationship with patients	1.85	2.82	0.11
Showing enthusiasm in providing patient care	1.84	2.86	0.06
Demonstrating sensitivity to patient needs	1.85	2.82	0.01
Providing good care to patients	1.86	2.80	0.02
Applying updated information from related fields to individual patients	1.85	2.81	0.08
Assigning numbers of patients to take care of based on student capability	1.89	2.71	0.25
Encouraging students to raise questions for solving patient problems	1.86	2.79	0.32
Encouraging students to express their own feelings and opinions in relation to particular patients or problems	1.91	2.64	0.67
Providing a role model of essential attitudes and skills in practice	1.98	2.44	0.50
Being a good mentor (a trusted counselor or teacher)	1.93	2.58	0.02
Emphasizing problem solving skills	1.99	2.39	0.70
Facilitating student participation in practice	1.99	2.40	0.21
Encouraging students to think independently for resolving problems	1.96	2.48	0.14
Using questions to stimulate student learning	1.87	2.78	0.15
Helping students in changing and improving practical skills	1.87	2.77	0.40
Capturing learner attentions while teaching	1.89	2.72	0.04
Demonstrating enthusiasm (interest) for teaching	1.86	2.74	0.11
Demonstrating sensitivity and supportiveness to the students	1.87	2.78	0.87
Using questions to stimulate recall of previous learning and collect them together	1.89	2.68	0.08
Closely supervising students to help facilitate the learning experience	1.80	2.93	0.31
Giving student opportunity to ask, discuss, and exchange opinions	1.89	2.71	0.63
Spending sufficient time with students	1.86	2.81	0.56
Remaining accessible to students when help is needed	1.82	2.92	0.83
Discussing practical application of knowledge and skills	1.89	2.70	0.30

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sion and demonstration of broad knowledge by preceptors ($P=0.01$), preceptors' application of appropriate and up-to-date knowledge to individual patients ($P=0.00$), demonstrating sensitivity to patient needs ($P=0.01$), providing satisfactory care to patients ($P=0.02$), mentoring ($P=0.02$), and instructors' ability to capture the attention of learners while teaching ($P=0.04$) (Table 3).

Preceptors' feedback provision skills

Significantly different ratings were noted between students and instructors regarding the following five parameters: encouraging students to evaluate their own performance ($P=0.01$), inviting comments and/or criticism of the preceptor's own ideas ($P=0.01$), discussing students' strengths and limitations in clinical practice ($P=0.02$), setting criteria for student performance ($P=0.01$), and grading students based on performance and effort ($P=0.02$) (Table 4).

The above findings showed that the preceptors rated their

performance more highly than students did in 11 of the 54 items. This finding is in contrast with those of the study conducted by Sonthisombat et al., in which preceptors did not overrate their teaching behaviors in any of the items that evaluated preceptor communication skills [3]. Another study also reported no significant differences between teachers and students in their attitudes toward communication skills [4]. Our findings may have been due to the recruitment of a small sample of preceptors in this study. This inconsistency may also have resulted from the long-term history of clinical pharmacy practice in the universities that were evaluated in those studies [3,4].

Students claimed strong reservations regarding whether instructors had broad knowledge suitable for the management of patients in clinical settings ($P=0.01$). This may have been due to the fact that teaching materials are often introduced from other countries with limited consideration of local circumstances. It should also be realized that a greater focus on foreign information sources might not be relevant for acquiring

Table 4. Perceptions of students and preceptors regarding preceptors' provision of feedback and modes of evaluation at Gondar University in Ethiopia

Preceptors' provision of feedback and mode of evaluation	Mean score (out of 3 points)		P-value
	Students	Preceptors	
Setting practical responsibility for the students	1.87	2.63	0.08
Explaining goals and expectations of practice experience	1.90	2.69	0.06
Expecting students to set their own goals for practice experience	1.93	2.58	0.07
Setting appropriate and practical practice activities followed established goals and objectives	1.92	2.61	0.15
Setting goals and objectives based on students' expectations and levels of experience	1.92	2.60	0.16
Setting criteria for student performance	1.94	2.50	0.01
Evaluating student attitude, knowledge, and skills appropriately	1.97	2.46	0.31
Evaluating and advising students of their progress timely and systemically	1.86	2.82	0.56
Asking students to evaluate the quality of preceptor's teaching	1.90	2.67	0.14
Evaluating students based on the objectives established at the beginning of the practice experience	1.97	2.45	0.45
Grading students based on performance and effort	1.94	2.60	0.02
Observing student performance in proper manner	1.84	2.86	0.21
Encouraging students to evaluate their own performance	1.91	2.63	0.01
Discussing student strengths and limitations of practice	1.93	2.58	0.23
Giving students positive feedback for good work	1.89	2.69	0.12
Responding positively to students' comments and suggestions about preceptor's teaching	1.93	2.58	0.07
Inviting comments and/or criticism of preceptor's own ideas	1.91	2.63	0.01
Discussing students' strengths and limitations of practice	1.93	2.60	0.02
Encouraging students to participate in multi-disciplinary rounds	1.97	2.47	0.21
Encouraging students to have good attitudes towards their own profession	1.97	2.47	0.43
Shows good attitude towards the emerging clinical pharmacy service	1.95	2.53	0.30

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ing and applying appropriate and up-to-date knowledge to individual patients ($P=0.00$), which may have been why a difference was noted between students and preceptors in regard to this issue [5]. The new implementation of clinical pharmacy services results in exaggerated expectations from patients and students on one hand and frustrations from preceptors on the other [6]. Thus, students provided lower ratings than preceptors regarding instructors' sensitivity to patient needs, while preceptors provided higher rating than students regarding their sensitivity ($P=0.01$). Students believed that the services were unsatisfactory for patients, whereas instructors tended to overrate their services ($P=0.02$). This discrepancy may be due to the fact that preceptors do not work full-time as providers of care. Encouraging students to take time to evaluate their own performance ($P=0.01$) is important for increasing their efficiency. Preceptors try to accomplish this task through student consultation and by forming groups of one to five students in which one student evaluates and makes suggestions about the performance of the other group members. Despite these efforts, students remained relatively unsatisfied with the instructors' ability to motivate students to evaluate their own performance. This may be due to the fact that such modes of instruction are still considered novel, and students' perceptions and attitudes towards group discussion need to change [7].

Students did not agree that the instructors graded them impartially ($P=0.02$). The assessment of students during clerkship is prone to subjectivity. However, preceptors tried to reduce this subjectivity by evaluating students based on case presentations, seminar presentations, pretests, portfolios, and oral and written examinations, so that students could prepare themselves to be evaluated using these parameters. However, students were not fully convinced of the value of this evaluation system because they had experienced a direct shift from a long written examination to a more detailed mode of assessment. Furthermore, they were required to cover a tremendous range of topics. Students felt less confident than preceptors about the preceptors' ability to comment on students' strengths and limitations in clinical practice ($P=0.02$). This situation might create gaps between the extent of feedback that is provided and the degree to which it is implemented by students. Research has found that student ratings of preceptor performance can be a reliable and valid indicator of effective teaching. Some studies have also examined students' perceptions and found that student assessments were an effective means of voicing their opinions about teaching; nonetheless, students were not fully aware of the implications of their evaluations for university instructors [8].

We would like to identify further predictors for low ratings

provided by students and recommend another study to address the potential factors that may contribute to this dynamic. The present study provides a comparison of students' and preceptors' perceptions of the instructors' teaching behavior. By doing so, it provides essential input for the improvement of pharmaceutical education because it is the first comparative study of this nature, to the best of our knowledge. In addition, this study provides directions for future research. However, this study was conducted in a single institution and the results might not be generalizable to other institutions in Ethiopia.

In conclusion, uneven ratings were observed between students and preceptors regarding preceptors' teaching behavior. Preceptors rated their teaching behavior more highly than students did. Short-term training is warranted for preceptors to overcome limitations in their teaching behavior. Special attention should be paid on items for which a significant difference was observed between preceptors and students. In particular, preceptors should be trained in the implementation of service learning in clinical rotation sites and in mentorship in general. Preceptors should participate in workshops involving the development and implementation of new guidelines in order to obtain and demonstrate broad knowledge suitable for the management of patients in clinical settings.

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Conflict of interest

No potential conflict of interest relevant to this article was declared.

Supplementary material

Audio recording of the abstract.

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