Development of a tool to evaluate Advanced Pharmacy Practice Experience preceptors in the clinical setting at a United States college of pharmacy: A pilot study

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Abstract

Introduction: Peer evaluation of Advanced Pharmacy Practice Experience (APPE) preceptors is challenging. This pilot project sought to develop and implement a tool for peer evaluation of APPE preceptors using pharmacy residents as evaluators at one College of Pharmacy in the United States.

Development and Use of Evaluation Tool: A tool was developed using established preceptor evaluation tools to evaluate a convenience sample of APPE preceptors. Pharmacy residents were instructed on the use of the tool then used the tool to evaluate the preceptors during a one hour discussion with the student.

Evaluation: Twenty-one evaluations were completed. Most preceptor evaluations were favourable on a Likert scale indicating agree or strongly agree, but about 10% of responses selected were "not applicable". Pharmacy residents found the preceptor evaluation tool was easy to administer.

Conclusion: Preceptor evaluations conducted by residents are a potential way to provide peer evaluations. Further studies need to be conducted to validate this tool with student and supervisor evaluation

Keywords: *Clinical Teaching; Experiential Education; Peer Evaluation*

Introduction

Standardised criteria exist for evaluation of didactic teaching, but there is limited literature available on the evaluation of clinical teaching (Conigliaro, 2010). Thus, evaluating the quality of experiential teaching can be difficult. Most efforts to assess clinical teaching have been related to evaluation by the learners. However, evaluations from learners may be subjective, personality driven- rather than skills- driven, and subject to halo effects (Beckman, 2005). Due to these drawbacks related to student evaluations, peer evaluation of clinical teaching of pharmacy students during Advanced Pharmacy Practice Experience (APPE) rotations is desired.

The Accreditation Council of Pharmacy Education (ACPE) has standards requiring peer evaluation of faculty members. The ACPE Accreditation Standards and Guidelines state that evaluations of faculty should be an annual assessment from one's self, peers, supervisors, and students. It also states that faculty should be evaluated on their teaching abilities, patient care activities, and other contributions toward the professional development of pharmacy students (ACPE, 2007). In addition, the University of Texas requires peer evaluation for promotion, and many faculty members' primary teaching role is in the experiential setting.

Although peer evaluation is ideal to evaluate experiential teaching, it presents several hurdles. Direct observation by peers can be expensive and time consuming. It can also be intimidating or awkward for the observer and observee (Conigliaro, 2010). Additionally, it is difficult to have evaluators from outside the health system who are not involved in patient care to evaluate teaching without

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violating patient privacy regulations. Thus, Post Graduate Year 1 (PGY1) and Post Graduate Year 2 (PGY2) pharmacy residents who are a part of the preceptor's health system may be an ideal resource for peer evaluations to circumvent violating patient's privacy. PGY1 and PGY2 residents are generally full-time employees of a healthcare system and train under the supervision of preceptors, who are experienced pharmacy practitioners. These preceptors may also supervise pharmacy students as a part of their responsibilities.

To determine the quality of clinical teaching, certain characteristics are often evaluated. Fluit et al. conducted a systematic review of content and quality of the questionnaires used to evaluate clinical teaching in medical schools. They found that no questionnaire was comprehensive in evaluating all desired areas of clinical and there were limitations on the validation of the questionnaires (Fluit, 2010). However, common characteristics of good clinical teachers identified in the literature include thorough medical and clinical knowledge, good clinical reasoning skills, ability to foster positive relationships with students to have a supportive learning environment, good communications skills with effective feedback and guidance, and an enthusiasm for teaching (Beckman, 2005; ACPE, 2007; Secomb, 2007; Conigliaro, 2010; Fluit, 2010; Iblher, 2011). With these attributes in mind, the first goal of our study was to develop a tool for pharmacy residents to evaluate pharmacy student preceptors. The second goal of this pilot study was to determine the utility of the tool in evaluating the effectiveness of clinical teaching by preceptors in APPE rotations.

Methods: Development and Use of Evaluation Tool

The evaluation tool was developed by the study authors using various sources, including published literature, student evaluation criteria of APPE preceptors, and resident evaluation criteria of preceptors (Beckman, 2005; ACPE, 2007; Secomb, 2007; Conigliaro, 2010; Fluit, 2010; Iblher, 2011; American Society of Health-System Pharmacy [ASHP], 2012). The tool was designed to be easily used in a one hour timeframe, but as comprehensive as possible. The one hour timeframe was selected after discussion within the study team due to the need for ease of scheduling the evaluation with the many time demands placed on pharmacy residents and preceptors. A Likert scale was used for evaluation of each question. The evaluation tool is shown in Figure 1.

All APPE preceptors for the College of Pharmacy in three different geographic regions within the state of Texas (San Antonio, Austin, and Temple) who had at least one student on an APPE rotation in the three month study timeframe were invited to participate. These regions were chosen for convenience because they were the three regions of the study authors coordinating the pilot project. The preceptors were emailed an informed consent form and additional details about the process of the pilot project. All preceptors were required to give informed consent before participating.

Figure 1: Preceptor Assessment Tool

Pharmacy residents in the three regions were also recruited to serve as the peer evaluators. All pharmacy residents held the faculty title of Clinical Instructor in the College of Pharmacy. The residents were provided details of the study by email and instructed by study authors to schedule a one hour session when the preceptor would have discussions with the student. Preference was given to patient care discussion times, but other discussion times (e.g. topic discussions, journal clubs) were also acceptable. The residents performed the evaluation using the tool during the discussion or immediately following the discussion and filled out a Preceptor Assessment Questionnaire Survey (Figure 2) regarding the evaluation process and tool after completing the evaluation. Every effort was made to ensure that the resident was not evaluating one of his/her own preceptors. Constructive feedback from the resident evaluators was encouraged at every step in the pilot project. Residents returned the evaluation tools and feedback questionnaires to the coordinating study author in his/her region.

Finally, the results of all the evaluation tools and feedback questionnaires were compiled and reported as descriptive statistics. This project was deemed exempt from review by the University of Texas at Austin Institutional Review Board.

Figure 2: Preceptor Assessment Tool Feedback Survey

Residents please give us your feedback regarding the preceptor assessment process.

1. The questions used during the assessment period were observable during the assessment time.

Strongly disagree   Disagree   Neutral   Agree   Strongly Agree

2. The preceptor assessment questionnaire was easy to administer.

Strongly disagree   Disagree   Neutral   Agree   Strongly Agree

3. I was able to complete the preceptor assessment questionnaire without scheduling conflicts.

Strongly disagree   Disagree   Neutral   Agree   Strongly Agree

4. I understood the instructions for conducting the preceptor assessment questionnaire.

Strongly disagree   Disagree   Neutral   Agree   Strongly Agree

5. Please provide feedback about the preceptor assessment process. Any comments or suggestions are encouraged.

Results

Overall, 21 evaluations were completed: eleven in San Antonio, six in Temple, and four in Austin. The results of the evaluations are listed in Table I. The majority of the evaluations were favourable with 87% (n=164) of the responses for all questions being either "Agree" or "Strongly Agree." This was also reflected in the free text comments fields on the individual evaluation forms (Table II).

Table I: Preceptor Assessment Tool Results (N=21)

Question	SD (n)	D (n)	N (n)	A (n)	SA (n)	NA (n)
The preceptor spent time orienting the student and describing goals and expectations.	0	0	1	1	8	11
The preceptor spent time observing the student and assessing performance on a regular basis.	0	0	0	8	12	1
The preceptor provided constructive feedback on a regular basis.	0	0	1	9	8	3
The preceptor encouraged exploration and application of problem solving skills.	0	0	0	3	18	0
The preceptor communicated subject matter effectively by giving explanations, asking questions and giving instruction for further learning.	0	0	0	3	18	0
The preceptor modeled, coached performance, and facilitated independent work as appropriate.	0	0	0	6	15	0
The preceptor created a stimulating learning environment by being supportive and accessible.	0	0	0	7	13	1
The preceptor demonstrated concern for the student.	0	0	3	10	8	0

SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree; NA = Not Applicable

Table II. Selections from Preceptor Assessment Tool Free Text Comments

The preceptor asked questions to facilitate teaching throughout the session. She encouraged the student to ask questions as well to further her own understanding. When the student was asked a question that she did not know the answer to, the preceptor took into further detail and plan to discuss it with the preceptor tomorrow. Also, the preceptor was good at clarifying and restating questions in a different way when the student appeared confused or wasn't clear on what the question was that the preceptor was asking.

The preceptor was enthusiastic about teaching. Great back-and-forth discussion; student was encouraged to think beyond initial question. The preceptor provided feedback on interaction when viewing electronic medical record (labs).

Gave student encouraging & positive feedback and coached her through answers then asked her to look up information

Engaged student in conversation. Student worked up patients and presented them to preceptor. Asked student questions and coached her through answers then asked her to look up information

Spent time with student and discussed patient and helped facilitate plans.

However, about 10% of all responses on the evaluation tool were "Not Applicable," with the majority of those responses in Question 1 regarding the orientation that the preceptor provided the student. This notion was also seen in the Preceptor Assessment Questionnaire Survey results (Table III), with two residents disagreeing or strongly disagreeing that all the questions could be evaluated in the timeframe.

Table III. Preceptor Assessment Questionnaire Survey Results (N=17)

Question	SD (n)	D (n)	N (n)	A (n)	SA (n)	NR (n)
The questions used during the assessment period were observable during the assessment time.	1	1	2	13	0	0
The preceptor assessment questionnaire was easy to administer.	0	1	1	4	10	1
I was able to complete the preceptor assessment questionnaire without scheduling conflicts.	0	0	0	7	10	0
I understood the instructions for conducting the preceptor assessment questionnaire.	0	0	0	8	8	1

SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree; NR = No Response

Overall, the residents thought that the instructions were clear, and the evaluation tool was easy to administer. The residents' free text comments are included in Table 4 and included concern about preceptors being "on their best teaching behavior" since the preceptor knew the date and time of the evaluation in advance.

Table 4. Preceptor Assessment Questionnaire Survey Free Text Comments

The evaluation form seems more congruent with providing feedback for a preceptor overall for an entire rotation from beginning to end, including orientation and evaluation, versus providing feedback on one interactive session. I like that the evaluation form has only one area at the bottom for comments versus comment lines under each criteria to be assessed.
The questions are very thorough and should provide a somewhat accurate assessment of the preceptor and learning environment. However, the preceptor may be on his/her "best teaching behavior" as he knows he is being observed. The student made a comment when the preceptor left the room that he does not normally discuss each patient in such detail on a regular basis.
I think the assessment was self-explanatory, easy to administer, and not overly time consuming. I think the questions were very pertinent to preceptor-student discussion sessions and daily interactions.

Discussion

In this pilot study evaluating APPE preceptors in three geographic regions within the state of Texas, it was found that preceptors can be evaluated by pharmacy residents using an evaluation tool that is easy to administer. Limited data on preceptor evaluation in the clinical setting currently exist, particularly pharmacy preceptor evaluation. To the authors' knowledge, this is the first time a peer evaluation tool for evaluating pharmacy preceptors has been implemented with pharmacy residents serving as peers.

It is important to note that all pharmacy residents who participated in the pilot study held a Clinical Instructor faculty appointment within the College of Pharmacy, therefore making them peer evaluators. The benefits of our study include providing preceptor feedback, which can improve preceptor teaching methods, and contributing to the professional development of current pharmacy resident evaluators since pharmacy residents were able to observe and evaluate the skills necessary to be a successful preceptor. Additionally, in accordance with ACPE Accreditation Standards and Guidelines, faculty were assessed by peers (pharmacy residents).

This study is not without limitations. There were a small number of evaluation tools which were completed in the three geographic regions. After receiving feedback from the pharmacy resident evaluations, the researchers learned that full descriptions of the evaluation criteria may have been helpful, implying that perhaps some evaluations were more critical than others. Given that preceptors were aware of the time and date of evaluation, it is difficult to rule out a potential Hawthorne effect, where preceptors may have acted on their "best teaching behaviour." Due to time constraints and the complexity of APPE rotation schedules, it was necessary to make appropriate arrangements, including scheduling preceptor evaluation times to ensure student/preceptor contact was observed. More evaluations may have been completed if scheduling had been easier; however, these logistical issues are common when trying to evaluate clinical teaching (Conigliaro 2010). Also, teaching evaluations were typically one hour assessments, which can be viewed as a

snap shot, and it is possible that all questions on the assessment tool may not be readily assessed. For example, 52.4% of surveyors selected "not applicable" for the item on the tool "the preceptor spent time orienting the student and describing goals and expectations." Orienting students and describing rotation objectives is likely an event that takes place on the first day or during orientation to the APPE rotation. It is important to note that the evaluation tool has not been validated with multiple uses, in a larger sample size, or in comparison to student and College of Pharmacy supervisor evaluation of preceptors. However, the tool was developed using various sources, including published literature, student evaluation criteria of APPE preceptors, and resident evaluation criteria of preceptors (ACPE, 2007; Beckman, 2005; Conigliaro, 2010; Fluit, 2010; Iblher, 2011; Secomb, 2007).

This pilot study can be translated to other institutions with minor adjustments in the methodology. Eliminating or revising questions on the survey that may not be applicable during the assessment may also allow for the addition of other questions to gather more information needed to further assess the preceptor. However, if changes are made to the tool, it should be re-evaluated to ensure its validity. Additionally, other institutions could consider other methods of developing and evaluating a peer evaluation tool. If an institution revises our evaluation tool or creates their own, they may want to use the Delphi technique and gain consensus from a panel of experts regarding which attributes of preceptors should be evaluated and what questions to ask in order to evaluate those attributes (Hsu, 2007). Additionally, another institution may choose to do a qualitative analysis on the free text comments on both the evaluation tool and survey to determine the utility of the evaluation tool (Hsieh, 2005). Neither of these approaches was used in this pilot project due to the limited timeframe in which to complete the project, the availability of other evaluation tools from which to create the one in the pilot, and the possible limited number of evaluations completed, which would limit the utility of qualitative analysis.

To ensure that all pharmacy residents are aware of the instructions for completing the evaluation tools and surveys, the authors recommend providing a formal training session during resident orientation or developing a Standard Operating Procedure for use of the tool so that questions or concerns regarding the process can be addressed and standardised definitions of evaluation criteria can be reviewed. This was not done in the current pilot because the authors felt that the standardised instructions that were sent to residents via email were sufficient, and from resident feedback, some, but not all, resident evaluators agreed. To increase the number of evaluations completed, the authors suggest increasing the study period to greater than three months. Additionally, more evaluations could have been completed if preceptors who practiced at APPE rotation sites without residents were included. Each college of pharmacy, in conjunction with individual APPE rotation sites, will have to determine how to obtain peer evaluation of preceptors at institutions without pharmacy residents. One suggestion may be to have preceptors at the same institution do peer evaluations of each other. Future studies may include

validating the evaluation tool, comparing resident assessments of the preceptor to student assessments of the preceptor to rule out potential bias and discrepancies, and assessing the pharmacy preceptor repeatedly over time to identify teaching progress.

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