

RESEARCH

Factors Associated With Students' Perception of Preceptor Excellence

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Objectives. To identify factors associated with preceptor excellence as rated by student pharmacists and to assess the correlation of excellent ratings with years as pharmacist, specialty certification, and faculty appointment status.

Methods. A retrospective analysis of student pharmacist evaluations of preceptors from May 2009 to May 2012 was completed to determine factors associated with preceptor excellence.

Results. Preceptors who showed an interest in teaching, related to the student as an individual, encouraged discussion, were accessible, provided feedback, served as a role model, were organized, and/or spent increased time with students were more likely to be rated excellent.

Conclusion. Serving as role models and showing an interest in teaching demonstrated the strongest association with being an excellent preceptor. Identifying factors students associate with preceptor excellence may result in enhanced preceptor recruitment, development, and training.

Keywords: preceptor, experiential education, evaluation, quality assurance

INTRODUCTION

The need for high-quality experiential education has increased significantly since the adoption of the doctor of pharmacy (PharmD) degree.¹ Since fall of 2001, student pharmacist enrollment has increased for 11 consecutive years.² As of July 2013, there were 129 accredited colleges and schools of pharmacy and 1 college of pharmacy with precandidate status. In 2007, advanced pharmacy practice experiences (APPEs) were extended to a minimum of 1440 hours and introductory pharmacy practice experiences (IPPEs) were increased to 300 hours. The Accreditation Council for Pharmacy Education (ACPE) also requires the orientation and continuous development of preceptors,³ and some state boards of pharmacy require preceptor training for preceptor licensing. For example, at least 3 hours of preceptor training provided by an ACPE-approved provider within the previous 2 years or within the license renewal period is required for preceptor certification in Texas.⁴ The increase in the number of colleges and schools of pharmacy, changes in required hours for

experiential education, state board requirements, and required preceptor training all highlight the necessity of trained preceptors to assume the role of mentor, evaluator, and teacher.⁵

While the qualifications of a preceptor have been defined in the literature and other health professions have attempted to identify qualities of effective preceptors, these factors are not clearly defined in the pharmacy education literature. One study identified 5 attributes of an effective preceptor by evaluating the reflective journals of second-year medical students. These characteristics included demonstrating professional expertise, actively engaging students, fostering a positive environment for learning, demonstrating collegiality, and discussing career-related topics and concerns with students.⁶ In another study, medical students and residents ranked the following as the top 5 preceptor behaviors: being open to questions, giving constructive feedback, demonstrating enthusiasm, reviewing differential diagnoses, and delegating patient care responsibilities.⁷ In a review of the literature on preceptor development for nurses, a preceptor is defined as an experienced, knowledgeable professional who guides students to think critically and is required to be supportive and nurturing.⁸ According to the American College of Clinical Pharmacy (ACCP), a quality experiential practice experience involves outcomes-focused training with adequate supervision by a qualified

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preceptor. A qualified preceptor is further defined as having appropriate credentials for the practice setting (ie, residency training, board certification) and displaying characteristics of professionalism, mentorship, and empathy for patients.⁹ Training of preceptors is required by ACPE and encouraged by pharmacy organizations, and studies have shown a benefit from preceptor training and development programs.^{10,11} The American Pharmacists Association and the American Society of Health-System Pharmacists, for instance, offer preceptor orientation and training programs to members to improve experiential education, placing emphasis on having qualified preceptors.^{12,13}

The American Association of Colleges of Pharmacy (AACCP) has identified preceptor development as a significant element of quality experiential education, and the need for this training has been identified.⁹ In one study evaluating the development needs of volunteer pharmacy preceptors, most preceptors (78.4%) indicated that they had previous preceptor training, but 73.5% indicated they would like to have additional training.¹⁰ In another study in which pharmacy student evaluations were compared to preceptor self-evaluations in Thailand, preceptors were found to overrate their performance of key teaching characteristics, such as providing feedback, in comparison with student perceptions. Moreover, all preceptors stated that they did well in giving their students opportunities to ask questions and provide open discussion whereas only 70% of students indicated that their respective preceptors did well in this teaching behavior.⁵ These findings highlight the opportunity to tailor training and development of preceptors by using student evaluations.

The ACPE provides minimal oversight on how preceptors should be evaluated by students. Guidelines encourage colleges and schools of pharmacy to seek student opinions on program evaluation and development and to use instruments such as student evaluation surveys and exit interviews to gather student insight on faculty and staff members and the curriculum. According to the guidelines, the responses obtained then should be used for continuous improvement of the curriculum.³ However, these guidelines do not clearly indicate how and on what factors students should evaluate preceptors with respect to the APPEs or IPPEs.

This study examined student evaluations and preceptor demographics to identify factors associated with excellent preceptors, as rated by students. Secondary objectives included identifying the relationship between years as a pharmacist and an excellent rating and the effect of appointment status on excellent ratings.

METHODS

During APPEs from 2009-2012, pharmacy students at the University of Iowa College of Pharmacy completed

eight 5-week practice experiences over a 12-month period. At the end of each experience, students were required to complete an evaluation of the practice site and preceptor. These evaluations were collected and analyzed for quality assurance. Information from student evaluations was maintained in E*Value (Advanced Informatics Solutions, Minneapolis, MN), an online instrument used for organizing coursework, evaluations, and schedules. The student evaluation for preceptors included 14 items that related to feedback, organization of the practice experience, preceptor interest, and overall impression of the practice experience. Students were asked to evaluate each item using a 6-point Likert scale (6=strongly agree, 5=moderately agree, 4=slightly agree, 3=slightly disagree, 2=moderately disagree, 1=strongly disagree). They were also asked to comment on the average amount of time their preceptors discussed patient care and/or practice-related issues with them. At the end of the evaluation, students gave an overall rating for their preceptors on a scale of excellent, good, fair, and poor. Students were asked to evaluate all preceptors with whom they interacted at the practice site and were required to evaluate their primary preceptor by the end of the grading period. Students who did not work with a given preceptor were asked not to submit an evaluation for that preceptor.

Students' evaluations of preceptors from May 2009 to May 2012 were reviewed. Preceptors were predefined as excellent if they were rated as excellent on 80% or more of the student evaluations. Information regarding terminal degree and years as a pharmacist was obtained from preceptors' curriculum vitae, which were kept on file for all preceptors. Appointment status and rank were collected and preceptors were noted to be adjunct, tenured, tenure-track, or clinical track faculty members. Information regarding initial year as a preceptor at the University of Iowa and appointment status was collected from E*Value. Board certification of preceptors was acquired from the Board of Pharmacy Specialties (BPS) website. All specialties under BPS were included. Preceptors with incomplete baseline characteristics and incomplete student evaluations were excluded from analysis. After demographic information was collected, preceptor data were de-identified. The institutional review board (IRB) at the University of Iowa determined that this project did not meet the regulatory definition of human subject's research and, thus, could be conducted without full IRB review.

Baseline characteristics were analyzed using descriptive statistics and reported as counts or numbers and percentages. Initial univariate correlation between independent predictors and preceptor excellence was measured using the Somer D test for ordinal data and

Pearson's correlation coefficients (*r*) for interval data. A forward stepwise multivariate logistic regression was conducted to determine independent factors for the primary outcome of preceptor excellence. Adjusted odds ratios (ORs) and their corresponding 95% confidence intervals (CIs) were reported. Analysis of secondary outcomes comparing preceptor excellence and faculty appointment or BPS certification was conducted using a chi-square test. The student *t* test was used to compare preceptor excellence and years as a pharmacist before first evaluation at the University of Iowa. All tests were 2-tailed and a *p* value of less than 0.05 was predetermined to represent significance. All data were analyzed using SPSS, version 19 (IBM, Armonk, NY).

RESULTS

Included in the analysis were 549 preceptors and 2,639 student evaluations from 2009 to 2012. Ninety-three percent of faculty members were considered adjunct. More than half (62%) of preceptors had a PharmD degree. Only 3% had other terminal degrees outside the field of pharmacy, including master of business administration, doctor of philosophy, or doctor of medicine. Eleven percent of preceptors were BPS-certified. However, more than half (59%) of tenured, tenured-track, and clinical-track faculty members maintained BPS certification, whereas only 7.3% of adjunct faculty members were BPS-certified.

Factors associated with preceptor excellence from APPE student evaluations are presented in Table 1. Serving as a role model, showing interest in teaching, and relating to the student as an individual were the factors students identified as being most strongly associated with

excellent preceptors. Other significant factors included encouraging student participation in discussion and problem-solving exercises, being readily available to answer questions, giving good direction and feedback, having a well-organized practice experience, and spending time with students. Preceptor knowledge, outline of goals and objectives, and completion of the student's evaluations at the midpoint and end of the practice experience did not show a significant association with student perceptions of preceptor excellence.

Assessment of the percentage of adjunct faculty members rated as excellent compared with tenured, tenured-track, and clinical-track faculty members is presented in Figure 1. There was no significant difference between appointment statuses. With respect to the correlation between years as a pharmacist and an excellent rating, the 33% of preceptors who were rated as excellent had an average of 14.2 ± 11.9 years in practice, whereas the 67% who were rated as good, fair, or poor had 14.9 ± 12.0 years in practice ($p=0.536$). There was no difference in the ratings of preceptors with and without BPS certification or in the ratings of preceptors with various terminal degrees (Figure 1).

DISCUSSION

Strengthening requirements for high-quality preceptor development was ranked as high impact/high feasibility by 51% or more of respondents during a consensus-seeking conference for revision of ACPE standards and guidelines.¹⁵ However, the definition of quality or excellent preceptors was not well-defined. Our findings place

Table 1. Comparison of Advanced Pharmacy Practice Experience Student Evaluations of Preceptors

Student Evaluation Instrument Item	Odds Ratio (95% CI)	<i>P</i>
This preceptor is interested in teaching this rotation.	2.3 (1.69-3.20)	<0.001
This preceptor related to me as an individual.	2.0 (1.53-2.66)	<0.001
This preceptor encouraged students to actively participate in discussions and problem-solving exercises.	1.9 (1.50-2.66)	<0.01
Students were encouraged to use resource materials.	0.9 ^a (0.68-1.23)	0.55
The preceptor described their approach to thinking about therapeutic problems.	1.1 ^a (0.88-1.50)	0.34
This preceptor was readily available to answer questions and concerns.	1.4 (1.13-1.84)	0.004
Good direction and feedback were provided.	1.5 (1.20-1.95)	<0.01
The preceptor is knowledgeable in their response to questions or their approach to therapy.	1.04 ^a (0.73-1.49)	0.81
This preceptor evaluated me at the mid-point and the end of the rotation.	0.98 ^a (0.80-1.19)	0.81
This preceptor evaluated me at the end of the rotation in a manner which was helpful to me.	0.95 ^a (0.74-1.22)	0.68
This preceptor served as a role model for a pharmacist practicing in this practice setting.	3.4 (2.57-4.72)	<0.01
The goals and objectives of the rotation were outlined and/or explained at the beginning of the rotation.	0.97 ^a (0.76-1.25)	0.82
Rotation activities were well-organized and structured.	1.5 (1.23-1.84)	<0.01
The preceptor discussed patient care and/or practice-related issues with me an average of (# hours).	1.2 (1.12-1.36)	<0.01

^a Unadjusted odds ratios.

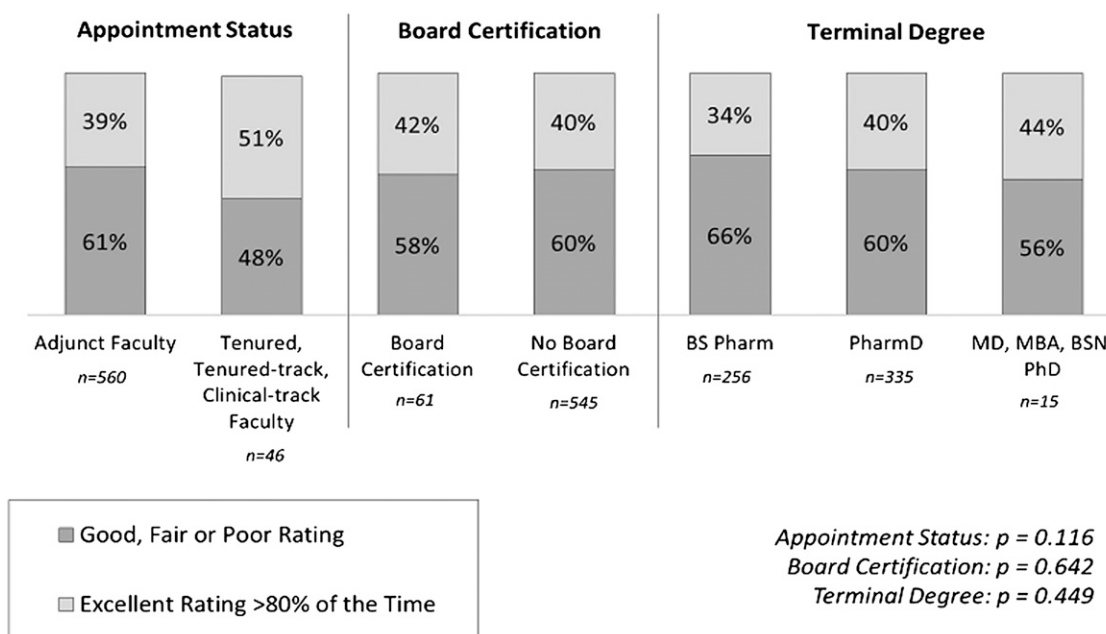


Figure 1. Student Ratings of Preceptors, by Appointment Status, Board Certification, and Terminal Degree of Preceptor.

emphasis on excellent or quality preceptors being role models to students. By identifying predictors of excellence, preceptors will have the opportunity to model their teaching style to provide a meaningful experience for students.

The definition of quality preceptors has been investigated in several studies. Preceptors have been noted to play an instrumental role in experiential education, with knowledge, experience, skills, and effectiveness in mentoring highlighted as important factors in that role.¹⁶ In a comparison of student evaluations and preceptor self-evaluations of preceptor teaching behaviors, 72.4% of preceptors and 64.5% of students felt that preceptors served as role models of essential attitudes and skills in practice.⁵ In general, most preceptors are serving as role models in their particular setting for student pharmacists. In addition to being a role model, showing interest in teaching and in the student are key factors in being an excellent preceptor. Similarly, essential characteristics of a successful clinical teacher, such as being fully present and focusing on the needs of the student, have been described. Effective clinician preceptors also tailor their teaching approach to how students learn and provide meaningful feedback and evaluation.¹⁷ Other studies in medical literature have highlighted the need for preceptors to actively engage students. Treating students with trust and respect and inspiring student confidence in the preceptor's medical skills have also been identified as effective teaching behaviors.⁷

Along with displaying mentorship, ACCP defines a qualified preceptor as one with appropriate credentials for the particular practice setting, including residency

training and certification.⁹ Based on our results, qualifications of the preceptors were not significant factors of preceptor excellence from the students' perspectives. Preceptors with additional cumulative years as a pharmacist and those who had achieved BPS certification, PharmD degree, and faculty appointment were not independently associated with student ratings of preceptor excellence. Most preceptors had their PharmD degree, which is consistent with the AACP Pharmacy Preceptor Survey for 2012,¹⁸ whereas only a minority of preceptors had board certification.¹⁴ However, more than half of tenured, tenured-track, and clinical-track faculty members had BPS certification, which is higher than the 37% previously reported.¹⁹ The lack of influence preceptor qualifications had on student pharmacists' perceptions of excellence highlights the importance of the personal attributes rather than the credentials of preceptors.

As with student perceptions regarding preceptor qualifications, knowledge of the preceptor was not associated with student ratings of preceptor excellence. Students did not associate knowledge in response to questions or approach to therapy with preceptor excellence. In contrast, many preceptor development programs and requirements focus on knowledge. A review of the role of preceptors in undergraduate nursing education identified the requirements of clinical expertise, a sound knowledge base, and clear decision-making ability as important for preceptors facilitating the learning of nursing students in the clinical environment.²⁰ However, in the population studied, these traits were not shown to be significant.

The results of this study highlight the importance of tailoring preceptor development programs to the needs of students. Preceptors should serve as role models and mentors to students.^{16,17} Given that preceptors are responsible for guiding, teaching, and supporting students, preceptor development programs should be required to include training on how to serve as a role model, make time for students, and provide good direction and feedback. Preceptors should relate to students and offer practice experiences only if they have a clear interest in teaching. Not all of the factors associated with preceptor excellence can be taught in a development program, but preceptors should be made aware of the personal characteristics and behaviors required to meet students' needs. For instance, colleges and schools of pharmacy could recommend that preceptors allot a specific amount of time per week for students. A study conducted to assess preceptors' attitudes toward nurse education revealed that they often describe a lack of support in their role, inadequate formalized training, and lack of allocated time to precept students.²¹ Experiential education could be improved by ensuring that preceptors are interested in teaching and have the time to teach.

This study has several limitations. The evaluation instrument was not validated. Further, preceptors may have discussed final grades with a student prior to the student's submission of the evaluation of the preceptor which could have influenced student responses. This bias may have been reduced by use of E*value, which does not release students' grades and evaluations until the students submit their preceptor evaluations. There may be a selection bias with assigned vs elective practice experiences. Although pharmacists may obtain advanced credentials such as Certification for Diabetes Educators, fellowship and/or residency certificates, or other certificate training programs, only BPS certifications were considered in the study. Finally, for students whose experiences involved multiple preceptors (eg, pharmacy technicians, staff pharmacists, and pharmacy managers), not all may have been evaluated, as students were required to evaluate only the primary preceptor to whom they were assigned during each practice experience.

CONCLUSION

Serving as a role model, showing an interest in teaching, and relating to the student as an individual were the factors most strongly associated with students perceiving a preceptor as excellent. From the student-pharmacist perspective, qualifications such as board certification, terminal degree, and number of years as a pharmacist were not key factors associated with student-perceived excellence. With the increase in pharmacy education

institutions, and as ACPE revises current guidelines for colleges and schools of pharmacy and places emphasis on experiential education, identifying the importance of preceptors as role models and mentors provides an opportunity effectively tailor preceptor development programs.

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